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Modern principles of knee arthroplasty (KA) are in use for about 30 years. They started in 1979 when the early results of the first modern total condylar knee design was published by Insall et al.[1] from the Hospital for Special Surgery in New York. There were 93% excellent or good results with knee replacement in osteoarthritis after 3 - 5 years. In recent reports from other series of more modern total knee designs, the results have further improved. There are also successful results reported from Kuwait[2]. However, in national studies non-responders are around 10%[3].

Earlier the prosthetic designs were mainly of hinged, unicompartmental or constrained surface replacements. This period included several problems. For example, the design of the implant was obsolete where the aim to mimic the knee joint was not achieved. The material selection was not developed and there was a certain risk of wear or breakage. The fixation principles between the host bone and artificial material were not established with a risk of loosening of the implant. Also, patient selection, operative technique and antiseptic care were yet to be defined. The last 30 years, the more mature period, has been a period of development of all the above mentioned principles. Today, the vast majority of prostheses are surface replacements of total knee design, variations of the first design by John Insall and co-workers, while the larger and more constrained hinged prosthesis and the smaller and less constrained unicompartmental prosthesis are gradually less in use.

The design of most total knee arthroplasties are femoral and tibial components of metal with a plastic part inserted and locked on the top of the tibial component. The metal material is most often an alloy of chrome, cobalt and molybdenum. The use of other metals and also ceramics have been tried but largely abandoned. The plastic material is high density polyethylene (HDPE) where recently, a production technique, so called cross-linking, is used in order to try and improve the wear resistance. The golden standard of fixation to the host bone is the use of bone cement while biologic fixation by hydroapatite coating of the metal adjacent to bone is less used in KA compared to hip arthroplasty. Furthermore, there is a consensus that all patients are given antibiotic and antithrombotic prophylaxis. The operative technique has been improved by the use of proper guide instruments even for minimal invasive surgery and recently, computer navigation has also been introduced. The correct patient selection for the procedure is now better understood. A very young patient with a potential high activity level after the operation has a high risk for a premature loosening and / or material failure. A biologically old patient with limited possibility to participate in the postoperative rehabilitation will not benefit from a knee replacement as there is too little motor power to drive the artificial knee. However with the use of modern knee designs the outcome after total knee replacement is generally good with a low revision rate of about 5% after 10 years. A good result after a total KA means no remaining pain, a good ambulatory function and increased quality of life.

There is information indicating that the incidence of osteoarthritis of the knee may be higher in Kuwait compared to European countries. This can be due to many factors. For example, a difference regarding the composition of the hyaline cartilage, hormonal influence, the frequency of other knee diseases, the knee injury profile, the body weight, the activity level and the different lifestyle (kneeling and sitting). In Kuwait, women are more often affected by symptomatic knee osteoarthritis than men.
In Sweden with a total population of almost 10 million people 10,544 primary knee prosthesis were implanted during 2006\[^3\]. During the same time period 13,942 primary hip prosthesis surgeries were performed\[^4\]. These exact numbers are known as there are national knee and hip registers and all operating hospitals are included. Also the annual revision rates (exchange of prosthesis) are known and the cumulative revision rates can be calculated during different time periods. Due to these data an open comparison between all hospitals can be performed. In the whole world, it is estimated that about 500,000 to 1,000,000 knee prosthesis are implanted annually. The exact number is not known. The incidence of primary knee replacement in Sweden is almost 100 replacements / 100,000 inhabitants for men and 140 replacements / 100,000 inhabitants for women\[^3\]. It is regarded that in a “steady state” situation every 15th elderly woman will have a knee prosthesis. In Kuwait the incidence of KA operated patients is difficult to define for certain. If the surgeries in private hospitals within the country and all hospitals outside the country are added to the numbers from Al Razi Orthopedic Hospital, the total number is estimated to be around 200 to 300 operations per year. A direct comparison of incidence and prevalence numbers between Sweden and Kuwait cannot be done as there is difference in the age population profile between the countries.

However, the number of KA replacements in Kuwaiti people seems to be lower than in the Swedish population despite good clinical results with the procedure.

REFERENCES

Knee Arthroplasty in Kuwait during 25 Years: A National Presentation and an International Review

Ali AlMukaimi1, Ehab El Salawi1, Anders Lindstrand2
1Department of Orthopedics, Al-Razi Hospital, Kuwait
2Department of Clinical Sciences, Lund University Hospital, Lund, Sweden

ABSTRACT
Since 1984, 577 knee arthroplasty operations were performed in Al Razi Orthopedic hospital in Kuwait. An increase in the number of these operations occurred during the last four years and in 2007 there were almost 100 knee arthroplasty operations performed. Six out of seven operated patients were female. The mean age at operation was 67 years for male and 62 years for female patients. The vast majority were of the total knee arthroplasty type. In Sweden, with a total population of almost 10 million people, 10,544 primary knee prosthesis were implanted during 2006. In Kuwait, there is no certain statistics regarding the actual number of knee arthroplasty operations as Kuwaiti patients are also operated in private hospitals within and outside the country. It is estimated that 200 – 300 knee arthroplasty operations are performed annually on Kuwaitis. In order to get better epidemiological data and in order to improve the quality assurance of Knee and Hip arthroplasty operations in Kuwait, we propose that a national register is organised. National registers are in use in many other countries. The main indication for a knee arthroplasty is to relieve knee pain and to improve knee function. The operation allows for an active lifestyle. An active lifestyle, with more walking, is an advantage not only for the knee, but also for the general health. It also helps to better control other diseases like diabetes and obesity. The use of knee arthroplasties in Kuwait is increasing and the outcome of the procedure is generally favorable. It is not an overstatement to say that a well functioning knee arthroplasty means an increased quality of the whole life.

KEY WORDS: knee arthroplasty, Kuwait, national register, osteoarthritis, revision, review article, total knee arthroplasty

INTRODUCTION
The modern era of knee arthroplasty (KA) started about 30 years ago with the introduction of the Total Condylar Knee1. The design was a surface knee joint replacement and already the early good results of the operation were published in the first scientific report1. Earlier attempts to replace the knee joint were either a hinged prosthesis, more constrained total knee arthroplasty (TKA) or unicompartmental knee arthroplasty (UKA). These prostheses were usually not anatomic and biomechanical principles of the knee joint were not incorporated in the design. Apart from the design, knowledge about material properties, patient selection, operative technique and antiseptic principles were not yet well established. The revision rates were high2 and almost 20% needed such a second operation within ten years after the primary procedure was performed. The most common reasons for revision were prosthetic loosening, infection, patellar problems, instability, plastic wear, material failure and fractures.

Today, there are many different TKA designs available. Almost all of these designs are improvements of the original Total Condylar Knee. The two designs mainly used in Al Razi Orthopedic Hospital are PFC and Duracon. Both are well documented in the literature3–9. The 10-year revision rate for these prostheses and other modern TKA designs is less than 5%, which means that there is a four-fold reduction of revisions compared to earlier time periods.

Address correspondence to:
Anders Lindstrand MD, PhD, Dept of Clinical Sciences, Lund University Hospital, 221 85 Lund, Sweden.
E-mail: Anders.Lindstrand@med.lu.se
EPIDEMIOLOGY

Since the establishment of the Al Razi Orthopedic Hospital in Kuwait in 1984, 577 knee prosthesis operations were performed (Fig. 1). The first year, when Al Razi started (1984), no KA was registered. In the next eight years between five and ten operations were done each year. Then a gradual increase occurred. During the 12-year time period between 1985 and 1996, 153 patients were operated for a KA[9]. The last 11-year time period, from 1997 - 2007, there were 424 operations. The major increase in the number of operations occurred during the last four years (Fig. 1). During 2007 there were more than 90 KA done. The vast majority of patients were operated due to primary osteoarthritis (OA) and only a few patients due to secondary OA. Only one out of seven of the 577 patients were male (Fig. 1 & 2). The age of the operated patients was analysed during the time period 1997 - 2007 and the majority of the patients were in the age group of 60 - 69 years at the time of the KA (Fig. 3). The mean age was 67 years for male and 62 years for female patients (Fig. 4). The proportion of right or left sided surgery was equal for both male and female patients (Fig. 5). The vast majority of knee prosthesis were of the TKA type (Fig. 6). There was a small group of patients in whom UKA was performed initially and another 14 cases done with link hinged prosthesis through the later years of KA in Kuwait. There were an almost equal number of Duracon and PFC knee designs used during the whole time period with a tendency for more PFC’s during 2007 (Fig. 7 & 8). Both the Duracon and PFC knee designs are total knee arthroplasty designs (Fig. 9).
Fig 6: Types of knee prosthesis used in Kuwait during 1984–2007.
UKA: Unicompartmental knee prosthesis; Hinge: Hinged total knee prosthesis; TKA: Total knee prosthesis

Fig 7: Distribution according to the design of knee prosthesis used in Kuwait during 1984–2007.

Fig 8: Design of knee prosthesis used in Kuwait during 2007

Fig 9: Long leg radiographs before (9a) and after (9b) PFC total knee arthroplasty of the right knee. HKA (hip-knee-ankle) axis is before the operation 22 degrees in varus (9a) and after the operation 0 degree (9b), which means that a line drawn from the center of the hip to the center of the ankle will be located in the center of the knee. There is no remaining deformity of the lower limb after total knee arthroplasty and the alignment is now physiologic.

DISCUSSION
Number of operated patients
There is a gradual increase in the number of patients undergoing KA during the study period. During the first eight years the procedure was performed less than once a month and during the next 11-year period one to three operations were performed each month. The major increase is seen during the last four years and especially, during 2007 where almost eight operations were performed monthly. This is a natural development and depends on gradual introduction of a new technology where many factors have to be dealt with like correct indication for the procedure, good operative environment, optimal operative technique, and control of postoperative pain and at the same time...
adequate postoperative rehabilitation as well as modern antibiotic and antithrombotic programs. In the beginning of the KA era, the complication rates were higher and one in five patients were revised after 10 years\[3\]. Therefore it was wise to wait and see during the early prosthetic period. The patients have to be confident with the procedure and subsequently the complication and revision rates have to be low. Despite this gradual increase, in comparison to other countries, the incidence of KA operations in Kuwait seems to be low\[10\]. In future, an increase in the number of KA patients in Kuwait is expected. Therefore, the resources for the procedure need proper attention.

Women

In Kuwait, women are operated much more often than men. This sex difference was pronounced especially in the last time period where eight out of nine operated patients were female. If the entire time period since KA started in Kuwait is analysed, there was no such large sex difference during the first decade. As the total number of operated patients was less than or around 10 during each of the first eight years in the late 80’s and the early 90’s, the sex difference of that period is probably not fully relevant. The era of joint replacement had just started in the country. Judging from the last few years when 60 - 90 patients were operated annually in Al Razi, it is more probable that this clear sex difference reflects a true difference. The sex difference is much higher than reports from other countries and even in national registers. For example, in the Swedish Knee Arthroplasty Register, the proportion of operated women has reduced from 70 to 60% during the last 30 years\[2\]. Female patients in Kuwait seem to be more affected by symptomatic OA and the true incidence of OA may be higher, especially in females, in this country.

Age

The mean age at operation in Kuwait was 63 years which is somewhat a lower age than in other reports. For example the mean age in the Swedish Knee Arthroplasty Register is presently 69 years\[2\]. In the beginning of the register, 33 years ago, the mean age was 65 years and during the 90’s it was 72 years. In the register there was a small sex difference as women were about one year older than men at operation. In Kuwait, women were considerably younger than men as the mean age was 62 years at surgery. The sex difference, where females were operated five years earlier than men indicates an earlier onset of OA symptoms in females.

Overweight and biomechanics

Overweight is common in Kuwait. Overweight means that the resulting load on the diseased knee is increased with possibly more pain on weight-bearing and more disease progression. The mechanical axis of the lower limb of a normal knee is located almost in the middle of the knee joint. When joint space reduction occurs due to OA, the mechanical axis shifts medially (varus knees) or laterally (valgus knees). The limbs become slowly more deformed in varus (Fig 9a) or valgus. This is a slow progress with only a part of a millimeter change each year during the initial stage of OA. The OA disease is diagnosed by standing radiographs and classified in stages I – V\[11\], which means successive progression of the cartilage wear and later, bone attrition also. However, usually the patients are asymptomatic, or have minor symptoms in the beginning of the disease. An aggravation of the symptoms occurs later\[12\].

Modern life in Kuwait

In the modern life of Kuwait demanding ambulatory activity is not necessary as the daily use of automobiles is so developed. However, the knee joint and its cartilage, needs normal daily loading to maintain their properties. If the daily load of the knee is too low, the cartilage becomes more vulnerable and this is another external factor for the extent of OA in the country. The OA disease seems to start earlier here, where apart from the limited activity level, the arabic style of sitting and kneeling as well as obesity might be key factors.

Design

The modern TKA designs like PFC and Duracon are well documented with favorable results\[3-8\]. The results of hinge and unicompartmental designs are less homogenous with mixed outcomes reported in the literature\[2,13\]. Occasional knee arthroplasty operations may be indicated for these designs also, but the majority of operations are best done by surface replacements of total knee arthroplasty design. Whether a patellar implant should be used as well is still controversial and in Kuwait, the use of patellar implants is low as the clinical results are good anyway\[2,3\]. The Arab lifestyle of kneeling and sitting on the floor puts a patellar implant under great stress with the risk of subsequent loosening or fracture. Therefore, it appears that a patellar implant is not necessary in majority of patients with total knee replacement. Similarly, in Norway and Sweden only 4%\[4\] and 8%\[2,15\] of the patients respectively get a patellar implant during the primary total knee arthroplasty procedure.

Fixation

The implant is most often fixed to bone by bone cement and in the Kuwait series, all implants were cemented. This is a well documented principle
since many years[2,16,17] and in the Swedish Knee Arthroplasty Register, 98% of the KA operations were cemented during 2006[21]. In the 80’s and 90’s, uncemented or biologic fixation was used in parts of the world either as porous coated or press fit implants. Presently non-cemented hydroxyapatite porous coated implants are used on a minor scale and clinical as well as radiographic results are needed before any conclusion can be drawn. The advantage of the cement is that the implant is fixed to bone during the operation after the curing time of the cement which is between 10 - 15 minutes. This cement fixation tolerates the early postoperative walking and range of motion training well, whereas in non-cement fixation a certain micro-motion may occur which can prohibit a well fixed implant in the long term. If, the hydroxyapatite porous coated implant becomes osseointegrated with the spongious host bone, a more biologic fixation will have occurred, which would be similar in principle to the Branemark tooth fixation.

Revision

In TKA, the risk for a second prosthetic operation of the same knee (revision) is less than 5% during the first 10 years when modern and well documented designs are used for OA[22]. This means that in 19 out of 20 patients, the primary prosthesis will not be revised during the first 10 years. The most common reason for a revision is loosening of an implant which can occur either between the host bone and cement, or between the cement and the prosthesis. This means that there is a place for further development of the fixation principles used today. One possible improvement relates to the cement characteristics. Low viscosity cement has been tried as also improvement of the mixing technique between the powder (polymer) and liquid (monomer). Today, most often closed systems are used in conjunction with vacuum mixing. Also the non-cemented or biologic fixation is under development as mentioned before. The problem is that the full clinical proof will need a 10-year period before the final outcome is known. However, early signs of loosening can be shown by radiostereometry (radiostereometric analysis = RSA) which is an indicator of what will happen by time[13,16,18,19]. In the RSA system, four to six small (0.8 mm in diameter) tantalum markers are inserted per- or peroperatively in the implant and peroperatively in the adjacent bone. Postoperatively two radiographs are obtained simultaneously at a 90 degree angle to each other. The tantalum markers are defined on both X-rays and two rigid bodies are formed. By a special computer program the micromotion between two examinations is calculated. It may be, for example, comparisons of examinations done directly postoperatively and at six months, one year and two years. The resolution of RSA is about 0.1 - 0.2 degrees for rotation and 0.1 - 0.2 mm for translation depending on the amount of valid tantalum balls and the size of the rigid bodies calculated. The RSA method can evaluate new prosthetic systems and new cement products within one to two years and make a prognosis for the 10-year clinical outcome.

Another complication is infection which was more common in earlier years and is today, often less than 1% due to ultraclean operation environment, prophylactic antibiotics both systemic and locally in the cement and atraumatic surgery[22]. Patellar complications may occur both as postoperative patellar dislocation, patellar implant wear or patellar fracture. The patellar problem was bigger in earlier times when the patellar implant was metal backed polyethylene. Presently, there is no consensus regarding the use of a patellar implant in TKA. Our opinion is that routine use of a patellar implant in TKA replacement is not necessary.

Material failure occurs by time especially in persons with a high activity level, or if there is a non-optimal position of the implants which is best seen on radiographs. In osteoporotic patients and those with a low activity level, there is a risk of periprosthetic fractures which are often demanding to treat. Instability may occur either as a result of poor surgery or as a result of a fall with a ligament injury and occasionally, the whole femoro-tibial implant may dislocate, which results in severe pain and inability to walk. Symptomatic disease progression of OA can occur in the non-replaced patellar compartment. This is also a complication which may indicate a revision depending on the severity of symptoms.

KA in old or seriously diseased patients

Another issue is the risk of performing a KA operation in elderly and more generally diseased patients[3]. The risk of serious complications increases in such cases. Also, the early mortality rate is higher in the generally diseased patients. Therefore, some patients have to sign a high risk consent before a KA. It is however important to state, that most patients with an operated knee prosthesis have a low risk for a complications and a much better life to look forward to[10].

FUTURE

National registers

In many countries, there are National Registers for knee and hip prosthesis[2,14, 20 - 22] where all operating hospitals are reporting to a computer based center. For example, all Scandinavian countries have there own knee and hip registers. The center for the knee register in Sweden is located in the University
Hospital in Lund and the register was founded by late Professor Göran Bauer in 1975[21]. At this time, it was the first national register for joint replacement worldwide. The main idea of these registers is to follow the risk for a revision which is defined as removing, exchanging or adding an artificial implant to the primary operation. In this way, the cumulative revision rates, the confidence interval and risk ratio can be calculated for each hospital and the open comparison between the hospitals can be done[22,23]. Also, the incidence of KA operations for each hospital, age and sex profiles, type and designs of implants, and use of fixation methods can be followed. Each year, there is a written report from Lund to the participating hospitals followed by a one day conference. During the lifetime of 33 years for the Swedish Knee Arthroplasty register, the incidence of KA operations has increased from 1000 to 10,544, the use of total knee arthroplasty designs in OA have increased from 10% to 90% and the revision rates have decreased from 20% to less than 5%. It is an amazing development which would not be known about, without the National Knee register. Therefore, we believe that a national register for knee and hip replacement in Kuwait should be established which must include basic data of all Kuwaiti patients undergoing KA in Kuwait or abroad.

Joint sparing surgery

One issue dominating the present scientific debate is the use of joint sparing surgery like osteotomy[23-25] versus joint sacrificing surgery by a KA. The results of osteotomy are at best, as good as the results of total knee arthroplasty. The rehabilitation after an osteotomy operation is, however, regarded as somewhat more demanding for the patient and operation results in a slight residual limb deformity. For example, the most common medial OA with a preoperative varus deformity is deliberately changed by the osteotomy to a slight valgus deformity. Also, according to certain reports, the beneficial effect of an osteotomy is more time dependant than a knee arthroplasty with a deterioration of the result with passing of years.

Type of prosthetic operation

The type of knee prosthesis is also debated. The low use of UKA in the last decade can be related to two factors, namely, patient selection and operative technique[2,13]. If these two factors are properly dealt with, the outcome can be more favorable. It is also important to operate upon patients using UKA, where the stage of osteoarthritis is grade I - III. This means that the most advanced cases, grade IV and V, are excluded. Also, the anterior cruciate ligament should be viable at surgery, otherwise the outcome after a unicompartmental knee prosthesis will result in a less stable knee. Another factor is the age, where there is a tendency to operate upon younger and more active people by a more “conservative” and thus, less bone sacrificing type of KA. The more active young patient puts more stress on the UKA with a higher risk for premature loosening or material failure. It is mandatory to respect the rules and regulations when using a UKA; if one fails in any one of these factors, the result will be influenced. In comparison, most patients will get a good result by a TKA independent of the grade of arthrosis or the viability of the anterior cruciate ligament.

Surgical training

Surgical training is also an important issue. There needs to be a regular training program for arthroplasty surgeons, where the surgical procedures are theoretically planned and practically performed on plastic bone. Preoperative templating of the radiographs, when the size and position of the implants is planned, has also a clear advantage. Operation by computer navigation is technically demanding and needs long theoretical and practical training. The operative training of a knee arthroplasty surgeon has, by tradition, been provided by the medical companies, but more responsibility is gradually shifting to the hospitals and the Ministry of Health in different countries.

REFERENCES


Original Article

Symptomatic Pleural Effusion after Coronary Artery Bypass Grafting requiring Intervention

Adel K Ayed1,2, Chezian Chandrasekaran2
1Department of Surgery, Faculty of Medicine, Kuwait University, Kuwait
2Department of Thoracic Surgery, Chest Diseases Hospital, Kuwait


ABSTRACT

Objectives: To identify risk factors for pleural effusion after coronary artery bypass grafting (CABG) and to describe the pleural fluid findings
Design: Case-control study
Setting: Chest Diseases Hospital, Ministry of Health, Kuwait
Subjects: Four-hundred and twelve patients who underwent CABG at our institution from June 2006 to June 2007.
Intervention: Thoracocentesis or tube thoracostomy
Main Outcome Measures: Age, sex, type of surgery, perioperative data, time of occurrence of the effusion after CABG, characteristics of fluid, and left ventricular ejection fraction
Results: Fifty-one patients (12.4%) suffered significant pleural effusion. Univariate analysis showed a higher risk profile in the pleural effusion group who had longer cardiopulmonary bypass time, longer aortic cross clamp time, diabetes mellitus, female gender and higher 24-hour blood loss (p < 0.005). Furthermore, the pleural effusion group had longer intubation time (33.8 ± 6.08 hours versus control 8.4 ± 1.7 hours, p = 0.003). Out of these 51 effusions, 34 were early and 17 late. Early effusions were bloody, contained higher lactate dehydrogenase and C-reactive protein. Late effusions tended to be more difficult to manage.
Conclusions: Large pleural effusion may develop in a proportion of patients after CABG. The occurrence seems mainly related to perioperative surgical variables. Most early effusions can be managed with therapeutic thoracocentesis. Resolution of late effusions may require pleurodesis.

INTRODUCTION

Pleural effusion following coronary artery bypass grafting (CABG) is a common occurrence with some patients developing significant effusion during their initial hospitalization or after hospital discharge. The reported incidence varies in the literature from 42 to 89%[1]. The incidence of post-CABG effusion is higher in patients who receive internal mammary artery (IMA) grafts than those who receive saphenous vein grafts (SVG)[2]. This difference is attributed to the performance of pleurotomy to take down the IMA. Most effusions due to CABG surgery are left sided or larger on the left side, if the effusions are bilateral. Most effusions occur in the early postoperative period. They are small, regress with time and of no clinical significance[3]. Occasionally, a patient may develop a moderate to large effusion that requires drainage to relieve respiratory symptoms. The incidence of symptomatic pleural effusion (SPE) is around 10%-12%[3,4]. The effusions usually resolve with one or two thoracocentesis but occasionally several thoracocentesis are required. Large persistent effusion may lead to respiratory insufficiency and may require aggressive surgical intervention. Operative intervention such as thoracoscopy or thoracotomy has been necessary for some patients[5]. The objectives of the present study were to determine what perioperative factors are associated with the development of SPE and to analyze the results of pleural fluid in the same group.

SUBJECTS AND METHODS

Selection of patients
The present study was conducted at the Chest Diseases Hospital, Kuwait, which is a tertiary care hospital where more than 500 CABG cases are performed annually.
performed annually. To be included in the present study as a case of post CABG effusion, patients were required to meet the following criteria:
(i) CABG within one year of therapeutic thoracocentesis
(ii) Non-emergent operative status
(iii) No other explanation for the pleural effusion (e.g. congestive heart failure, pulmonary embolism, drug reaction or pleuropulmonary infection).

Data collection
A case-control study was conducted in which patients with SPE were analyzed. Both cases and controls were hospitalized during the one-year study period (June 2006 to June 2007, 412 patients) and in whom the data were collected. Data were collected regarding the age and gender, type of surgery, perioperative data, time of occurrence of the effusion after CABG, characteristics of fluid, list of medical problems, and left ventricular ejection fraction (EF) by echocardiography or angiography.

Patients evaluation
Patients who had symptomatic pleural effusion had their chest radiographs analyzed. The size of effusion was estimated on the lateral radiograph visually by assessing the percentage of area of the hemithorax occupied by fluid and more than 30% were defined as large. Pleural effusions were classified as early if the initial thoracocentesis was performed within three weeks of surgery and as late if the initial thoracocentesis was performed three weeks or more after surgery. All patients having symptomatic large effusion underwent thoracocentesis and pleural fluid was analyzed for red and white blood cell count, differential count, lactate dehydrogenase (LDH), glucose, protein, and C-reactive protein (CRP) along with estimation of blood CRP (upper limit of reference range 10). If a patient underwent more than one thoracocentesis, only the pleural fluid values from the initial thoracocentesis were analyzed.

Operative technique and postoperative care
Patients in this study had CABG or CABG plus valve operations, all of which utilized cardiopulmonary bypass and cold blood cardioplegia. All patients received epsilon aminocaproic acid during surgery as an anti-fibrinolytic agent. All patients underwent IMA grafting. Each patient had the mediastinum and left pleural cavity drained with two chest tubes (size 32 F). The chest tubes were removed on the first postoperative day if the drainage in the previous eight hours was less than 100 ml. Otherwise, the tubes were left in place for another 24-hour. All patients had at least three chest roentgenograms during hospitalization, one immediately after surgery, one on the first postoperative day and one after the chest tube removal. Thereafter, a chest radiograph was done during an outpatient visit after three weeks or earlier if a critical indication existed.

Statistical analysis
Univariate analysis was conducted using either the $X^2$ test or Fisher’s exact test for categorical variables and the student t-test for continuous variables. Two tailed p-values of less than 0.05 were considered statistically significant. Multivariate analysis was conducted using stepwise logistic regression and all predictors that were significantly associated with pleural effusion in univariate analysis were considered.

RESULTS
During the 12-month study period, the total number of patients who underwent CABG was 412 (CABG 383 and CABG +Valve 29). Fifty-one patients underwent therapeutic thoracocentesis for SPE within 12 months of undergoing CABG and they met our selection criteria. Their mean age was 59.4 years; 38 were men and 13 women. The overall incidence of symptomatic post-CABG pleural effusion was 12.4%. The patient characteristics are shown in Table 1. The demographic data in relation to age, EF and number of grafts were similar in both the groups. Patients who developed SPE had significantly higher incidence of diabetes mellitus (28 of 51, 55% versus 108 of 361, 30%, p = 0.01). There were differences in both groups with respect to aortic cross clamp time, cardiopulmonary bypass time, 24-hour blood loss, intubation time and intensive care unit (ICU) stay (Table 1). Regression analysis confirmed a significant difference between the two groups with respect to female sex, 24-hour blood loss, and ICU days (Table 2). The pleural fluid analysis findings of all 51 patients are shown in Table 3. These patients were further classified into two groups early and late. Pleural fluid that developed early was characterized by the bloody appearance as compared to late group.

Outcome
There were no differences in the two groups of patients with respect to age, EF, amount of effusion and perioperative data (Table 4). There is a significant difference between the two groups of pleural effusion as regards the number of polymorphs, lymphocytes, pleural CRP and LDH (Table 4). Recurrence rate was higher in the late group (11 of 17, 65%) compared to early group (5 of 34, 15%, p = 0.01). The need for pleurodesis occurred in seven of 11 patients (64%) and one out of five (20%) in the late and early groups respectively (p = 0.02).
DISCUSSION

The incidence of pleural effusion immediately after surgery in patients undergoing CABG has been reported to be 42 to 89%. The wide variability in the incidence is probably related to the technique used to diagnose the pleural effusion. The majority of pleural effusion is small and usually left sided. However, large and bilateral effusions have been reported[6]. The etiology of post-CABG effusions and why some effusions persist while others resolve remains unknown. The incidence of SPE in the present series is 12.4%. There are several potential reasons to expect an increase in frequency or severity of pleural effusions after CABG using IMA grafts as opposed to saphenous grafts. Sternal blood supply is decreased with the use of IMA grafts as opposed to saphenous grafts. Sternal or left internal mammary artery grafting in the postoperative course in 200 patients receiving IMA grafts and reported that 8.5% required thoracocentesis or tube thoracostomy by the sixth postoperative day. Aarnio et al[9] studied the postoperative course in 200 patients receiving IMA grafts and reported that 8.5% required thoracocentesis immediately after surgery. Light et al[3] in their study had 10% of patients developing moderate to large pleural effusion that could be attributed to CABG. No case-control studies have been reported in relation to patients developing pleural effusion after CABG. The data on the pleural findings from the literature are incomplete.

Table 1: Patient characteristics – Univariate Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control Group A</th>
<th>Case Study Group B</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 361</td>
<td>n = 51</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>56.5 (6.6)</td>
<td>59.4 (8.2)</td>
<td>5.9 - 0.01</td>
<td>0.2</td>
</tr>
<tr>
<td>EF (%)</td>
<td>49.3 (13.9)</td>
<td>51.9 (10.8)</td>
<td>7.5 - 2.3</td>
<td>0.2</td>
</tr>
<tr>
<td>No. of grafts</td>
<td>2.7 (1.09)</td>
<td>2.9 (0.8)</td>
<td>0.5 - 0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Bypass time (minutes)</td>
<td>108.5 (45.7)</td>
<td>126.2 (38.8)</td>
<td>34.4 - 0.9</td>
<td>0.03</td>
</tr>
<tr>
<td>Aortic cross clamp time (minutes)</td>
<td>67.1 (5.3)</td>
<td>81.5 (30.3)</td>
<td>25.8 - 1.58</td>
<td>0.02</td>
</tr>
<tr>
<td>S. albumin (g/l)</td>
<td>37.1 (5.3)</td>
<td>35.9 (7.1)</td>
<td>1.35 - 3.6</td>
<td>0.3</td>
</tr>
<tr>
<td>CAGB + valve</td>
<td>43 (12%)</td>
<td>10 (20%)</td>
<td>0.18 - 1.6</td>
<td>0.2</td>
</tr>
<tr>
<td>24-hour blood loss</td>
<td>601 (301)</td>
<td>773.6 (399)</td>
<td>312.5 -32.8</td>
<td>0.01</td>
</tr>
<tr>
<td>Intubation time (hours)</td>
<td>8.4 (1.7)</td>
<td>33.8 (6.08)</td>
<td>-43.1-7.6</td>
<td>0.005</td>
</tr>
<tr>
<td>ICU days</td>
<td>2.1 (1.7)</td>
<td>6.3 (9.4)</td>
<td>-6.8-1.4</td>
<td>0.003</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>108 (30%)</td>
<td>28 (53%)</td>
<td>0.15-0.7</td>
<td>0.01</td>
</tr>
<tr>
<td>No. of F:M</td>
<td>28,333</td>
<td>13,38</td>
<td>1.1-13</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Table 2: Multivariate analysis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>OR</th>
<th>p-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU days</td>
<td>1.3</td>
<td>0.04</td>
<td>1.1 - 1.7</td>
</tr>
<tr>
<td>24-hour blood loss</td>
<td>1.2</td>
<td>0.03</td>
<td>0.9 - 1.3</td>
</tr>
<tr>
<td>Sex: Female</td>
<td>4</td>
<td>0.03</td>
<td>1 - 14</td>
</tr>
</tbody>
</table>

Table 3: Characteristics of pleural fluid.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of postoperative days</td>
<td>18.9 (14.6)</td>
</tr>
<tr>
<td>Amount of effusion (ml)</td>
<td>1189 (492.4)</td>
</tr>
<tr>
<td>R.B.C (cells/mm3)</td>
<td>2684.2 (2630.4)</td>
</tr>
<tr>
<td>W.B.C (cells/mm3)</td>
<td>2662.5 (2610.6)</td>
</tr>
<tr>
<td>Polymorphs (%)</td>
<td>40.8 (27.2)</td>
</tr>
<tr>
<td>Lymphocytes (%)</td>
<td>59.8 (27.6)</td>
</tr>
<tr>
<td>Protein (g/l)</td>
<td>470.1 (459.4)</td>
</tr>
<tr>
<td>Glucose (mmol/l)</td>
<td>2.7 (6.2)</td>
</tr>
<tr>
<td>Pleural fluid CRP (mg/l)</td>
<td>24.5 (21.7)</td>
</tr>
<tr>
<td>Serum CRP (mg/l)</td>
<td>19.1 (16)</td>
</tr>
<tr>
<td>Pleural/Serum CRP ratio</td>
<td>1.4 (1.3)</td>
</tr>
</tbody>
</table>

CRP: C-reactive protein; LDH: lactate dehydrogenase; RBC: red blood cells; SD: standard deviation; WBC: white blood cells.
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Table 4: Comparison between early and late pleural effusions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Early N=34 Mean (SD)</th>
<th>Late N=17 Mean (SD)</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>58.9 (7.8)</td>
<td>60.5 (9.2)</td>
<td>-6.5 - 3.3</td>
<td>0.5</td>
</tr>
<tr>
<td>E.F (%)</td>
<td>52.5 (11.1)</td>
<td>50.8 (10.2)</td>
<td>-4.8 - 8.1</td>
<td>0.6</td>
</tr>
<tr>
<td>No of grafts</td>
<td>2.8 (0.85)</td>
<td>3.1 (0.9)</td>
<td>-0.7 - 0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Bypass time (minutes)</td>
<td>125.5 (43.9)</td>
<td>127.7 (26.9)</td>
<td>-25.6 - 21.1</td>
<td>0.8</td>
</tr>
<tr>
<td>Aortic cross clamping time (m)</td>
<td>82.3 (32.3)</td>
<td>79.8 (26.7)</td>
<td>-15.7 - 21.1</td>
<td>0.7</td>
</tr>
<tr>
<td>24-hour blood loss (ml)</td>
<td>716.5 (34.7)</td>
<td>887.9 (476.3)</td>
<td>-407.2 - 64.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Intubation time (hours)</td>
<td>34.9 (59.9)</td>
<td>31.6 (64.5)</td>
<td>-33.3 - 40</td>
<td>0.8</td>
</tr>
<tr>
<td>ICU (days)</td>
<td>5.7 (6.3)</td>
<td>7.5 (13.8)</td>
<td>-7.4 - 3.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Serum albumin (g/l)</td>
<td>34.5 (6.6)</td>
<td>38.7 (7.5)</td>
<td>-8.3 - 0.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Polymorphs (%)</td>
<td>47.6 (26.7)</td>
<td>27.1 (23.4)</td>
<td>5.1 - 35.7</td>
<td>0.01</td>
</tr>
<tr>
<td>Lymphocytes (%)</td>
<td>53 (26.3)</td>
<td>73.4 (23.3)</td>
<td>-3.6 - 4.8</td>
<td>0.01</td>
</tr>
<tr>
<td>Amount of effusion (ml)</td>
<td>1099.4 (429.1)</td>
<td>1368.2 (571.6)</td>
<td>-555.5 - 17.8</td>
<td>0.06</td>
</tr>
<tr>
<td>LDH (IU/l)</td>
<td>605.3 (506.4)</td>
<td>199.6 (119.5)</td>
<td>154.2 - 657.1</td>
<td>0.002</td>
</tr>
<tr>
<td>Protein (g/l)</td>
<td>40.1 (6)</td>
<td>44.7 (7.2)</td>
<td>-8.3 - 6.6</td>
<td>0.02</td>
</tr>
<tr>
<td>Glucose (mmol/l)</td>
<td>7.5 (2.8)</td>
<td>8.1 (2.1)</td>
<td>-2.2 - 0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>CRP pleura (mg/l)</td>
<td>28.8 (22.5)</td>
<td>15.3 (13.7)</td>
<td>0.33 - 25.5</td>
<td>0.04</td>
</tr>
<tr>
<td>CRP serum (mg/l)</td>
<td>21 (16.9)</td>
<td>15.3 (13.7)</td>
<td>-3.8 - 15.2</td>
<td>0.2</td>
</tr>
<tr>
<td>CRP pleura/serum</td>
<td>1.6 (1.5)</td>
<td>1.05 (0.3)</td>
<td>-0.2 - 1.3</td>
<td>0.1</td>
</tr>
</tbody>
</table>

CI: confidence interval; CRP: C-reactive protein; EF: ejection fraction; ICU: intensive care unit; LDH: lactate dehydrogenase; SD: standard deviation.

The univariate analysis of perioperative data in our study revealed the incidence of diabetes mellitus being high in patients developing pleural effusion compared to the control group. The 24-hour blood loss and ICU stay was also higher in the study group. The symptomatic patients in our study were further classified into early phase and late phase groups. Pleural fluid analysis findings differed significantly. It was exudative in both groups. Mean LDH was three times higher (605.3 IU) in the early group as reported before[10]. We assume the source of LDH being red blood cells in the early group with high erythrocyte count. Pleural fluid protein and glucose levels did not differ significantly in both groups. In the early group the leukocyte differential count showed high polymorph count (mean 47.6%) whereas the late group showed a high lymphocyte count (mean 53%). The differences in the pleural findings imply clues as to the etiology of the effusion. The pathogenesis of early effusion is probably related to trauma during surgery that results in bleeding into the pleural space. Increased red blood cell count provided good evidence for the traumatic origin. Late pleural effusion seems to have a different pathogenesis. High lymphocyte count suggests an immunologic etiology. Other possible explanations for early pleural effusion are interruption of lymphatics that normally drain the pleural space, leakage of fluid from the mediastinum or damage from topical hypothermia. In our study pleural fluid CRP was significantly higher in the early group comprising of bloody pleural fluid. The ratio of pleural CRP with serum CRP is not statistically significant. This may be attributed to acute inflammatory response to surgery. The value of CRP as a marker for discriminating between transudative and exudative pleural effusion has been reported[11,12]. Pleural effusion after CABG should be treated conservatively and should include management of congestive heart failure if appropriate and periodic thoracocentesis as indicated. Other causes for these should be sought only if the patient is febrile, the effusion is large or if it fails to resolve in an appropriate time frame. These effusions tend to resolve within eight weeks but long-term effusions have persisted for three to 20 months. Some long-term effusions result from prolonged oozing of blood and serum into the pleural space at the site of the harvested IMA while others are the result of trapped lung[13]. More aggressive therapy including thoracostomy tube placement with or without chemical pleurodesis may be necessary in some cases. Surgical interventions in the form of decortication by thoracoscopy or thoracotomy may be needed in some cases with trapped lung and for preventing re-accumulation of the effusions. Use of supplemental soft tissue drain in a non-randomized study was pointed out by Payne et al[4] which showed a significant reduction (3.5%) in the incidence of pleural effusion as compared to routine chest drain (11.9%). Some patients develop respiratory insufficiency and may require more aggressive surgical intervention including thoracoscopic decortication if the pleural fluid continues to re-accumulate or becomes loculated[8]. In the present series the recurrence was higher in the late group (11 of 17 (65%) versus five of 34 (15%) in the early group).
CONCLUSIONS

Although occurrence of pleural effusion post CABG seems mainly related to perioperative surgical variables such as cardiopulmonary bypass time and aortic cross clamp time, they do not seem to independently influence pleural effusion rate. Characteristics of early and late pleural effusion differ significantly, suggesting a different pathogenesis. Resolution of symptomatic effusion may require pleurodesis.

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ABSTRACT

Objectives: To analyse risk factors for prostatic abscess, determine who can be treated conservatively, and what criteria will prompt surgical intervention

Design: Prospective study

Setting: Department of Urology, Al-Sabah Hospital, Kuwait

Subjects: Nine patients with prostatic abscess managed during the eight-year period between 15th of December, 1998 and 15th of December, 2006 were included in the study.

Intervention: Conservative or surgical management

Main Outcome Measures: Evaluation of success by ultrasound and CT scan

Results: Small abscesses were successfully treated conservatively by appropriate antimicrobial drugs. Large abscesses required transurethral de-roofing in addition to the drug therapy.

Conclusion: Patients with chronic prostatitis and with already existing risk factors are more prone to develop prostatic abscess. Digital rectal examination in immune compromised patients should be done with caution and restricted to one time only as they have the possibility of developing septicemia. Generally, the bigger the size of an abscess, the higher is the probability of surgical drainage.

KEY WORDS: antibiotics, prostatic abscess, PSA, transurethral resection

INTRODUCTION

Prostatic abscess is an uncommon urological problem. It is usually a consequence of urinary tract infection. It is postulated that the mechanism for this is the retrograde passage of contaminated urine up the ejaculatory ducts[1]. As prostatic abscesses mimic several inflammatory conditions involving the lower urinary tract or pelvic organs, early and accurate diagnosis may be difficult. The commonest precursor is chronic bacterial prostatitis. The progression to overt abscess has been greatly minimized by a plethora of modern powerful antibiotics. It is much more common in patients with chronic prostatitis, especially when there is an already existing risk factor such as diabetes mellitus, previous urethral instrumentation, benign prostatic hypertrophy, urethral stricture, or immunosuppression and renal insufficiency.

The commonest causative organism was E.coli, incriminated in around 73% of cases. Before the advent of potent antibiotics the mortality was high, between three and 16%[3]. Persistent bacteremia maintained by a prostatic focus is noted in occasional cases of prostatic abscess due to methicillin resistant Staphylococcus aureus[3]. Prostatic abscess due to fungi is a rare condition. It is generally secondary to systemic disease in immunosuppressed patients.

It usually occurs with affection of other organs in a septic patient[4]. The initial treatment of prostatic abscess is with antimicrobial drugs, and many cases with small abscesses respond well and get cured. Failure of medical treatment requires the addition of surgical management. Many procedures are in use. Transurethral de-roofing of the abscess was the method employed in all our cases. Ultrasound guided trans-rectal aspiration of pus from the prostatic abscess cavity followed by lavage with saline and antibiotics was performed with complete success, and no relapse was observed[5]. Percutaneous puncture of prostatic abscess under ultrasound control and under local anaesthesia is an alternative method to the existing traumatic methods of treatment of prostatic abscess[6].

PATIENTS AND METHODS

This study spans over a period of eight years during which nine cases of prostatic abscess were managed. The youngest patient was 35 years old...
and the oldest was 72 years old; the mean age was 53.5 years. All patients were admitted because of high fever, dysuria, frequency, leucocytosis, pelvic or perineal tenderness. All patients showed elevated Prostatic Specific Antigen (PSA) of more than 6 ng/ml (normal range up to 4 ng/ml). In all cases the diagnosis was obtained by clinical examination, laboratory workup, abdominal ultrasound and CT-scan. Abdominal ultrasound (Fig. 1) and CT scan (Fig. 2) were the main diagnostic tools, which also showed the size and the extent of the abscess. Small abscesses were treated conservatively with antimicrobial drugs, while larger ones were treated by surgical transurethral drainage. At the transurethral de-roofing of the abscess, the sight of pus gushing out was quite remarkable (Fig. 3).

All patients who were subjected to transurethral drainage, initially received ciprofloxacin 250 mg orally every 12 hour and metronidazole 500 mg orally every 8 hour, for two days prior to surgery. Some patients did not show significant satisfactory response to the medical treatment, as evidenced by persistence of symptoms, high fever and leucocytosis. They were then selected for surgery. Seven patients continued their drug therapy of ciprofloxacin 250 mg / 12 hourly and metronidazole 500 mg / 8 hourly for four more weeks. While the other two patients, namely, the transplant patient and the patient with renal failure were referred to the nephrologist for further management.

RESULTS
All patients were admitted to the hospital and in all cases, antibiotic therapy was initiated immediately after the diagnosis was made and continued until clinical and laboratory evidence revealed complete healing of the abscess. There were four patients who were diabetic and were on insulin therapy. One patient suffered from chronic renal failure and was on dialysis while another patient was on immunosuppressive therapy because of previous renal transplantation. Another case was on permanent suprapubic catheter drainage for an unstable urinary bladder. Seven patients were attending the urology outpatient clinic for more than three years for chronic prostatitis. All of these patients with prostatic abscess were having either one or more of the already existing risk factors like diabetes, chronic renal failure, immunosuppression or chronic prostatitis. Seven out of nine patients with prostatic abscess had history of long standing chronic prostatitis. The two patients who did not have chronic prostatitis had uncontrolled diabetes mellitus. Digital rectal examination revealed the presence of a very tender, enlarged prostate. One out of nine patients developed septicemia following rectal examination. This patient was having uncontrolled diabetes and was also on hemodialysis for chronic renal failure. Transrectal ultrasound and
December 2008

CT scan were performed in all cases and these tests delineated the extent of the prostatic abscess. All patients were started with a combination of ciprofloxacin and metronidazole. Four patients responded favourably and did not require surgical treatment. In these four patients, this combination of drugs was continued for four more weeks and they showed complete disappearance of the abscess as evidenced by a second US examination. The other group of five patients did not show significant improvement with the medical treatment, and eventually they underwent transurethral de-roofing of the abscess under general anaesthesia. All the five patients who required surgical treatment were having associated co-morbid conditions as mentioned earlier. In these five patients, the US and CT evaluation revealed abscesses larger than 2.5 cm or more. The combination drug therapy was continued for four more weeks in three of these five patients, while the patient with renal transplantation continued for four more weeks in three of these five patients, the US tests delineated the extent of the prostatic abscess. Antibiotics disguise these features. Severe, unremitting perineal and rectal pain with occasional tenesmus often causes the condition to be confused with an anorectal abscess. If a rectal examination is performed, the prostate will be felt to be enlarged, hot, and extremely tender and perhaps fluctuant. Seven patients had history of prostatitis diagnosed at the urology out-patient clinic. In our study, all patients had one or more of the pre-existing co-morbid conditions. One patient was on dialysis for chronic renal failure, four patients had diabetes mellitus, one patient was a recipient of kidney transplant and was on immunosuppression and one patient had permanent suprapubic catheter for an unstable bladder. In majority of our cases, the organisms were isolated either from the urine of patients who were not subjected to surgical intervention, or from pus obtained during the transurethral de-roofing of the abscess. The commonest organism responsible was Escherichia coli, which reflected the data in the literature. Fungal urinary tract infection represents a high-risk event in severely ill patients. Prostatic abscess due to Candida tropicalis presents with no systemic manifestations. Treatment with antifungal drugs combined with transurethral resection was required for drainage with a favourable course. Brucellosis is a multisystem disease in many Mediterranean countries. Human Brucella prostatic abscess presents with fever and urinary symptoms, which is subsequently confirmed by culture. Emphysematous prostatic abscess is a very rare form of prostatitis. Emphysematous prostatic abscess due to Klebsiella pneumonia may have a poor prognosis according to a few previous reports. Appropriate use of effective antibiotics with drainage of pus is the best treatment.

Table 1: The type of microorganisms isolated from urine and pus culture

<table>
<thead>
<tr>
<th>Number of cases</th>
<th>Causative organism</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 / 9</td>
<td>Escherichia coli</td>
<td>55.6</td>
</tr>
<tr>
<td>2 / 9</td>
<td>Streptococcus faecalis</td>
<td>22.2</td>
</tr>
<tr>
<td>1 / 9</td>
<td>Proteus mirabilis</td>
<td>11.1</td>
</tr>
<tr>
<td>1 / 9</td>
<td>Klebsiella pneumonia</td>
<td>11.1</td>
</tr>
</tbody>
</table>

The commonest organism grown in urine and pus culture was E.Coli, incrriminated in around 55.6% of cases. Streptococcus faecalis was isolated in 22.2% while Proteus mirabilis and Klebsiella pneumonia were present in 11.1% of cases each (Table 1). There was no growth of Candida species either in urine or pus especially in the diabetic patients. The level of PSA came down to the normal value (not more than 4 ng / ml) in the group treated medically as well as in the group where surgery was also combined. The maximum stay in the hospital was one week, following which they were followed up in the outpatient clinic.

DISCUSSION

Abscess of the prostate is infrequently encountered now as a result of effective antibiotics. The clinical diagnosis often remains difficult. However, in some patients, because of the seriousness, a quick diagnosis and interventionist treatment is required. All our patients presented with symptoms and signs of lower urinary tract infection, namely, dysuria, frequency, pelvic or perineal tenderness or heaviness, fever and leucocytosis. In addition to the foregoing symptoms and signs, the temperature rising steeply with rigors heralds the advent of a prostatic abscess. Antibiotics disguise these features. Severe, unremitting perineal and rectal pain with occasional tenesmus often causes the condition to be confused with an anorectal abscess. If a rectal examination is performed, the prostate will be felt to be enlarged, hot, and extremely tender and perhaps fluctuant. Seven patients had history of prostatitis diagnosed at the urology out-patient clinic. In our study, all patients had one or more of the pre-existing co-morbid conditions. One patient was on dialysis for chronic renal failure, four patients had diabetes mellitus, one patient was a recipient of kidney transplant and was on immunosuppression and one patient had permanent suprapubic catheter for an unstable bladder. In majority of our cases, the organisms were isolated either from the urine of patients who were not subjected to surgical intervention, or from pus obtained during the transurethral de-roofing of the abscess. The commonest organism responsible was Escherichia coli, which reflected the data in the literature. Fungal urinary tract infection represents a high-risk event in severely ill patients. Prostatic abscess due to Candida tropicalis presents with no systemic manifestations. Treatment with antifungal drugs combined with transurethral resection was required for drainage with a favourable course. Brucellosis is a multisystem disease in many Mediterranean countries. Human Brucella prostatic abscess presents with fever and urinary symptoms, which is subsequently confirmed by culture. Emphysematous prostatic abscess is a very rare form of prostatitis. Emphysematous prostatic abscess due to Klebsiella pneumonia may have a poor prognosis according to a few previous reports. Appropriate use of effective antibiotics with drainage of pus is the best treatment.

Trans-rectal ultra sound has an important value in diagnosis and treatment of prostatic abscess. Trans-rectal US guided aspiration is an effective and minimally invasive treatment modality with low incidence of serious complications. This was of prognostic value, as small abscess, smaller than two centimeters in diameter, responded to drug treatment. One case of prostatic abscess went into septicemic shock soon after routine digital rectal examination and hence rectal examination was performed with caution and limited to one time in any patient. Contrary to many reports we believe that any route for surgically treating prostatic abscesses other than transurethral, transrectal or transperineal is fraught with complications, some of which could be very serious.
CONCLUSION
Although rare, immune compromised patients with chronic prostatitis are more prone to develop prostatic abscess. In such patients, prostatic abscesses larger than 2.5 cm in diameter invariably require surgical drainage. Rectal examination, if performed, should be gentle and restricted to one time only, so as to avoid the remote possibility of septicemia.

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Ali Karimi, Syed-Mojtaba Hoseini
Center for Cellular and Molecular Research, Shahre-Kord University of Medical Sciences, Shahre-Kord, Iran

ABSTRACT

Objective: To determine the prevalence of HBV, HCV and HIV infection in voluntary blood donors from Shahre Kord, a central province of Iran, during 2004-2006

Design: Retrospective, descriptive and analytical study based on data from Serology Laboratory of the Blood Transfusion Center (BTC) at Shahre-Kord, Iran

Setting: The BTC, Shahre-Kord, Iran

Subjects: 35,124 apparently healthy voluntary blood donors

Intervention: Detection of HBsAg, anti-HBc, anti-HCV and anti-HIV markers in blood samples using immunoenzymatic tests and Western blotting, as determined by the BTC

Main Outcome Measures: Analysis of data obtained from the Serology Laboratory of the BTC, Shahre-Kord, Iran to determine prevalence

Results: Overall prevalence estimates were: 0.1% for HBsAg, 0.07% for anti-HBc, 0.2% for anti-HCV and 0.002% for anti-HIV antibody. There was a statistically significant increase in the overall prevalence of HBsAg and HBCAb (from 0.015% to 0.02%) and the prevalence of HCVAb (from 0.06% to 0.48%) during the study period (p < 0.05). Three male donors were co-infected by HCV and HBV.

Conclusion: This study suggests the need to investigate risk factors and risk groups for these infections in Iran. In the light of these results, an effective control and training program should be implemented.

INTRODUCTION

Hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) infections are among the most important world public health problems representing a significant cause of morbidity and mortality, especially in developing countries. It is estimated that 350 million people worldwide (7%) are chronic HBV carriers[1,2] and 600,000 die each year from HBV-related liver disease or hepatocellular carcinoma[3,4]. HCV infection is found in approximately 160 million people (3%) out of the world population and is the most common chronic blood borne infection in the world[5-7]. In addition, prevalence of human immunodeficiency virus (HIV) is increasing everyday and it has become a disaster for humankind in some areas[4].

Their transmission occurs, mainly, through direct contact with blood, intravenous injections, transfusion, and sexual relations[8]. Over many years, hepatitis was the main cause of transfusion-associated chronic disease, liver cirrhosis, hepatocellular carcinoma, and death[9]. Both HCV and HBV infections are also of major public health concern and the prevention of these two viral diseases is important. The infected individuals are at risk of chronic liver disease (5 to 10% of HBV and more than 50% of HCV)[10]. HIV infection is one of the most important public health concerns. A number of risk factors such as needle sharing and drug injection have been identified for HIV infection[11].

For more than a decade, the screening of blood donors for HBV and HCV and HIV infection became obligatory in Iran as part of the control program, leading to a tighter control of blood samples used in transfusion. However, few studies have been carried out with wide variation in the prevalence of these viruses among Iranian blood donors. The prevalence of HBsAg, anti-HCV, and anti-HIV was 0.6, 1.1 and 0%, respectively in Kashan in 2000[12]. In Zahedan, the prevalence of HBsAg and anti-HCV was 5.19 and 1.9%, respectively[13]. Therefore, the aim of this study was to determine the prevalence of HBsAg, anti-HCV antibody and anti-HIV antibody in voluntary blood donors. This report presents the results of a retrospective study of screening blood donors in Char Mahal, a central province of Iran from 2004 to 2006.

Address correspondence to:
Dr. Ali Karimi, Shahre-Kord Blood Transfusion Center, Iran. E-mail: alikarimi72@yahoo.co.uk
MATERIAL AND METHODS
This is a retrospective and descriptive study in which data were obtained from the Laboratory of the Blood Transfusion Center (BTC) of Share-Kord, Iran. The study was approved by the local ethical committee. The data included the markers of HBV (HbsAg and HBcAb), antibodies against HIV and HCV obtained from 35,124 blood donor referred to the center during 2004-2006. These samples were analyzed using immuno-enzymatic tests (ELISA; Ortho, USA and Western blotting; Gene Labs Diagnostics, Ltd). All HIV and HCV positive samples were confirmed by Western blotting. The HbsAg positive samples were confirmed by HBcAb.

RESULTS
Our results showed that out of 35,124 samples (blood donors), 38 (0.1%) were positive for HbsAg, 26 (0.07%) for anti-HBc, 74 (0.2%) for HCV specific antibody (confirmed by Western blotting) and one (0.002%) for anti-HIV antibody. The mean age of HBV and HCV infected individuals was 32.4 and 33.4 years respectively. Two out of the 38 (5.2%) HBV and three out of the 74 (4%) HCV positives were female. There was no significant relationship between HBV and HCV infections and gender (p > 0.05). Three male donors were co-infected by HCV and HBV. Also, there was no significant relationship between HBV / HCV co-infection and gender (p > 0.05).

Based on the results, the overall prevalence of HbsAg, anti-HBc, and particularly anti-HCV was significantly increased from 2004 to 2006. HbsAg and anti-HBc prevalence increased significantly from 0.015% in 2005 to 0.02% in 2006 (p < 0.05). Similarly, there was increase in anti-HCV prevalence among the blood donors from 0.06% in 2005 to 0.48% in 2006 (p < 0.05).

DISCUSSION
We verified that the prevalence of HbsAg, anti-HBc, anti-HCV and anti-HIV markers in Shahre-Kord, Iran increased significantly from 2004 to 2006. In this study, the overall 0.1% HbsAg prevalence in the volunteer blood donors was lower than that in some other Iranian cities like Kashan (0.6%)[12] and Zahedan[13]. However, a comparison with developed countries, like Germany (0.16% in 1997-2002)[14], United States (0.07% in 2002)[15], Italy (0.003% in 1994-1997)[16] and Canada (0.012% in 2000) showed that HbsAg prevalence in Shahre-Kord blood donors was higher. The overall prevalence for anti-core antibody (HBc) in the Shahre-Kord specimens (0.07%) was lower than that in Urmiae (0.57%)[18], Kashan (1.1%)[12], Markazi (0.2%)[19], Zahedan (1.9%)[13] but was higher than in Italy (0.03%)[16].

The overall prevalence for anti-HCV marker in blood donors in Share-Kord during this period was 0.2%. This marker has been found to be variable in different regions of Iran, ranging from 1.9% in Zahedan[13] to 0.2% in the central province[19]. Although the HCV prevalence was not as high as in other cities in this country, it has increased since 2005. These data should alert the regional officials to focus action on HCV prevention in view of the unavailability of a vaccine.

As observed for the HbsAg and anti-HBcAb prevalence, the anti-HCV prevalence found in our region was higher than in developed countries like United States (0.25% in 2002)[20], Germany (0.1% in 1997/2002)[14], Canada (0.017% in 2000)[17] and Italy (0.002% in 1994/1997)[16].

Another agent, which has similar transmission route as HBV, is HIV. There is a potential hazard for everybody in the world because of the characteristics of the diseases[4]. Although in this study, the prevalence of HIV was 0.002%, Iran is not a sensitive area because of few visitors from other countries and cultural circumstances. However, there are young populations including drug-users who are not well informed about the disease and are among the most important high risk groups.

Comparing with other developed countries, HBV and HCV prevalence in Iran is high. This study also demonstrates that HCV infection is a serious problem in our region, which requires further study and greater attention on the part of federal government health authorities.

CONCLUSION
This study suggests that it is necessary to investigate risk factors and risk groups for these infections in Iran. In the light of these results, an effective control and training program for civilians should be implemented.

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Miliary Tuberculosis in Kuwait: Clinical Presentation, Diagnosis and Treatment Outcome

Abdel Salam El Shamy1, Fatma Al Saidi1, Ghassan Baidas2, Mohammed Al Bader1, Mohammed Sawy1, Rismon Hakkim1
1Department of Chest Diseases, Al Rashid Allergy Centre, Kuwait
2Department of Medicine, Sabah Hospital, Kuwait

ABSTRACT

Objective: To assess the demographic, clinical and laboratory features, methods of diagnosis, treatment and outcome in patients with miliary tuberculosis (TB) in Kuwait

Design: Retrospective (medical records review)

Setting: Tuberculosis department, Al Rashed Allergy Center, Kuwait

Subjects: Thirty-four patients with miliary TB admitted from January 1996 to December 2005

Main Outcome Measures: Demographic features, clinical presentation, investigation results, treatment history and follow up records

Results: There were 22 male and 12 female patients; mean age 33 years. 91% were expatriates. Fever (91%), weight loss (88%), cough (82%), night sweats (61%) and hemoptysis (17%) were common presenting symptoms. Lymphadenopathy (35%), hepatomegaly (26%) and meningeal signs (12%) were seen. Anemia (65%), leucocytosis (21%), thrombocytopenia (6%), thrombocytosis (12%), raised liver enzymes (32%) and hypoalbuminemia (85%) were common laboratory findings. Sputum culture for Acid-Fast Bacilli (AFB) was positive in 64%. AFB culture was positive from cerebro-spinal fluid in three patients, lymph node in two, pus, endometrium, bronchial biopsy, liver biopsy, joint aspirate, ileal biopsy, urine, trans-bronchial biopsy and bronchial lavage in one case each. 73% were sensitive to all first line anti-TB drugs. Hepatitis (23%), hyperuricemia (9%), skin rashes (3%), nephropathy (3%) were the side-effects of anti-tuberculosis drugs. One patient (3%) died, 56% were cured, 35% left the country or were deported, and 6% defaulted. One patient had relapse.

Conclusions: Diagnosis of miliary TB could be confirmed by clinical features, radiological features and AFB culture, even when classical miliary patterns were not present. Anti-TB drugs were generally safe. Majority of patients were cured completely when followed up regularly.

KEY WORDS: granulomatous tissue, human immunodeficiency virus, miliary tuberculosis

INTRODUCTION

Tuberculosis (TB) is still a major cause of morbidity and mortality worldwide. About 8.5 million new cases are detected and nearly two million deaths occur annually[1]. An increase in TB incidence, including miliary TB, has been associated with the human immunodeficiency virus (HIV)[2].

Miliary TB is defined as the acute diffuse dissemination of Mycobacterium tuberculosis from the primary site of infection. The result is formation of small (< 2 mm) discrete foci of granulomatous tissue, which are widely distributed throughout the lung and other viscera[3]. Chest radiograph is characterized by uniformly distributed lesions resembling millet seeds, hence the name miliary TB. The radiograph is occasionally normal and the patient presents with constitutional symptoms alone or with evidence of multi-organ involvement.

Disseminated TB is defined as TB with involvement of at least two organs[4]. The term disseminated TB and miliary TB are often used interchangeably.

This retrospective study was undertaken to assess the demographic, clinical and laboratory features, methods of diagnosis, treatment and outcome in patients with miliary TB in Kuwait, and to compare the results with previously reported studies.

SUBJECTS AND METHODS

This study was conducted at Department of TB, Allergy and Chest Diseases Center, Kuwait. The medical records of all patients admitted in male and female TB wards over a 10 year duration, from January 1996 to December 2005 were retrospectively reviewed. The case files of all patients who were diagnosed as having miliary TB were reviewed. Name, age, gender, file number, nationality, history...
of exposure to TB cases, associated medical illness, presenting symptoms, clinical findings, investigation results, and treatment history were noted. Case files from TB Control Clinic, where patients were being followed up as outpatients after the initial intensive phase of treatment in the hospital, and TB treatment cards were reviewed to note the treatment outcome.

RESULTS

From January 1996 to December 2005, 35 patients with military TB were admitted in the male and female TB wards of the Department of Tuberculosis. One patient was of the pediatric age group (9 years). This child was excluded from the study. Among the 34 patients included in the study, 22 (64.7%) were male and 12 (35.3%) female. Mean age was 33.4 years (range 19 to 73 years). Twenty patients (59%) were in the age group of 25 to 34 years. Twenty-eight patients (82%) were expatriates from South Asian countries, three were Kuwaiti nationals, two non-Kuwaiti Arabs and one from Africa. Ten out of 22 male patients were smokers, while none of the female patients smoked. No patient had a previous history of TB. Three patients (8.8%) gave history of close contact with pulmonary TB patients.

Clinical Features

The symptoms and signs of the patients at the time of presentation are shown in Table 1. Fever (91%), weight loss (88%), cough (82%), night sweats (61%) were the most frequent presenting symptoms. Six patients (17%) had hemoptysis.

On physical examination 22 patients (64%) had crackles, 12 (35%) had cervical lymphadenopathy, nine (26%) had hepatomegaly, and four (12%) had signs of meningitis. At the time of presentation patients weighed from 31 to 84 kg. During the hospital stay three patients lost weight (1, 2 & 5 kg) at the end of a two month treatment period, while the rest of the patients gained weight ranging from zero to 19 kg (mean 2.5 kg).

Twelve patients (35%) were diabetic. Four patients were hypertensive and six had dyslipidemia. One patient was a case of chronic obstructive pulmonary disease and two had bronchial asthma. All patients tested negative for HIV infection.

Laboratory data

Anemia was seen in 22 patients (65%). Hemoglobin level ranged from 7.6 to 16.1 g/dl (mean = 10.8 g/dl). Seven patients (21%) had leucocytosis. None had leucopenia. Six percent patients had thrombocytopenia and 12% showed thrombocytosis. Erythrocyte Sedimentation Rate (ESR) ranged from 10 to 122. 66% had ESR more than 50 mm. Elevated liver enzymes were seen in 11 patients (32%) at the time of admission. Twenty-nine patients (85%) were hypo-albuminemic.

Tuberculin Test was > 10 mm in 22 (68%) and < 5 mm in nine (26%) of the 32 patients tested. One patient had a PPD reading of 6 mm. BCG scars were seen in 22 (69%) out of 32 patients tested for PPD. Among the 22 patients who had received BCG vaccination in childhood, PPD was negative in six (27%) and positive (> 10 mm) in 16 patients (73%). Out of the 10 who had not received BCG vaccination, PPD was negative in three (30%) and positive in six cases (60%).

Diagnostic investigations

Out of the 34 patients, sputum for Acid Fast Bacilli (AFB) smear was positive and culture grown in 13 patients (38%). In nine patients (26%), the smear was negative for AFB but culture grown. In thirteen patients (38%) sputum for AFB smear and culture were negative.

In those with a negative sputum AFB, Mycobacterium tuberculosis could be isolated in another five patients by various procedures. AFB was grown from Fine Needle Aspiration cytology (FNAC) study of lymph nodes in two patients, from endometrial biopsy in one, pus from anal fissure had grown AFB in one, and from cerebro-spinal fluid (CSF) in one patient. One patient had necrotizing granuloma by lymph node biopsy and one patient had tuberculomata shown in CT scan of head, both suggestive of TB infection.

In six patients (17%) diagnosis was made by X-ray findings and clinical features, without any bacteriological or histo-pathological confirmation.
In those with a positive sputum AFB culture, AFB could also be isolated from other organs in some patients. Positive AFB cultures were obtained from bronchial biopsy (1), liver biopsy (1), joint aspirate (1), ileal mucosa biopsy (1), urine (1), CSF (2), trans-bronchial biopsy (1) and bronchial lavage (1). AFB culture was positive from CSF in three patients among whom two were also sputum AFB positive and one was sputum negative.

Radiological Findings:
All patients had miliary shadows bilaterally. Other findings in addition to the miliary pattern were as follows: pleural effusion in two, pneumothorax in one, hilar and paratracheal adenopathy in two, consolidation in one, and cavitation in one patient.

AFB Sensitivity Results:
Out of the 27 patients with positive AFB culture, 25 were sensitive to all first line anti-TB drugs tested. One patient showed resistance to isoniazid (INH) but was sensitive to other drugs. One patient was resistant to streptomycin (S) while sensitive to other drugs.

Treatment and Outcome:
All patients received treatment for tuberculosis. Drug combinations used were HERZ for 25 (74%), SHRZ for five (15%), SERZ 1, SHERZ 1, HRZ + Ciprofloxacin for one patient. (H = isoniazid, E = ethambutol, R = rifampicin, Z = pyrazinamide, S = streptomycin.)

Seventeen patients (50%) received corticosteroids along with anti-TB drugs during the initial phase of treatment. Steroids were given to those patients with multi-system involvement, especially central nervous system involvement and those with serious constitutional symptoms.

Eight patients (23%) developed hepatitis, one had skin rash, one developed streptomycin induced nephropathy and three had very high levels of hyperuricemia. All patients improved with symptomatic treatment and by substituting the offending drug with another drug.

Initial intensive phase of treatment varied from two to four months. Eleven patients (32%) received two months initial phase treatment, 15 (44%) received three months treatment and two patients (6%) were given treatment for four months. Five patients (15%) left the country before completion of initial phase of treatment. The intensive phase of treatment was under direct observation therapy (DOT), while the patient was admitted in the hospital.

One patient died two days after admission to the hospital. This patient had multi-system involvement and died of multi organ failure.

During continuation phase of treatment, patients were given isoniazid and rifampicin. One patient, who was isoniazid resistant, was treated with rifampicin and ethambutol combination and the total duration of treatment was one year. Other patients who completed treatment received anti-TB drugs for a total of nine to 12 months.

Twelve patients (35%) left the country or were deported while on treatment. Two patients defaulted and could not be traced. Nineteen patients (56%) were declared cured after nine to 12 months of anti TB treatment, and were not relapsed.

One patient had a relapse, one year after completion of nine months treatment. This patient later presented with cough, fever, night sweats and generalized weakness. Chest X-ray showed right upper lobe infiltrates with cavitation. Sputum AFB Ziehl–Neilson stain and culture were positive. Sputum AFB was sensitive to all first line drugs. He was treated with re-treatment regimen (SHERZ for two months, HERZ for one month and HR for six months) for a total of nine months. He had good clinical, microbiological and radiological response with treatment, and had no further relapse on follow up.

DISCUSSION
Though the incidence of TB has declined steeply in the state of Kuwait, the disease still remains a common health problem. The notification rate of TB for the whole population has declined from 259 TB cases per 100,000 people in 1965 to 24 per 100,000 in 1999[8]. An average of 500 cases including pulmonary and extra-pulmonary TB cases are detected annually in Kuwait.

During the 10 year period from January 1996 to December 2005, 34 patients were diagnosed as miliary TB among those admitted in the Department of Tuberculosis in Kuwait. This comprises about 1.5% of all admissions during this 10 year period.

In comparison with other studies, the patients in this study group are younger. In a study from Saudi Arabia, out of 47 patients with miliary TB, 68% were over 60 years of age[6]. In a study from Pakistan, mean age group was 54.1 years and another from Edinburgh, mean age was 73.5 years[9,10]. The age difference in this study reflects the demographic pattern of the expatriate population of Kuwait.

The presenting signs and symptoms were non-specific and did not suggest the diagnosis of miliary TB. The symptoms and signs were the same as reported in various studies[6-14].

<table>
<thead>
<tr>
<th>Table 2: Sputum AFB results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sputum AFB results</td>
</tr>
<tr>
<td>Smear +ve, culture +ve</td>
</tr>
<tr>
<td>Smear -ve, culture +ve</td>
</tr>
<tr>
<td>Smear -ve, culture -ve</td>
</tr>
</tbody>
</table>
Hematological abnormalities were common in these patients. Microcytic hypochromic anemia, leucocytosis, thrombocytosis, thrombocytopenia, raised ESR, abnormal liver enzymes and hypoalbuminemia were the abnormalities found in these patients at the time of admission. Same findings were noted in other studies also. Hypoalbuminemia and anemia reflects the state of malnutrition of these patients at the time of presentation.

35% patients were diabetic in this study. None of these patients had HIV co-infection. No patient had previous TB infection. In other studies, an underlying risk factor was seen in 50 to 70% cases. Diabetes mellitus was the most common associated risk factor in all studies. Other associated medical conditions reported were previous tuberculosis, malignancy, renal failure, congestive heart failure, chronic liver disease, silicosis, immunosuppressive drug therapy and HIV infection.

32% had positive PPD reading (Mantoux test) and 22% had negative PPD reading. There was no relation with the severity of illness and PPD measurement. 69% of patients who developed miliary TB had received BCG vaccination in the childhood, and for 31% there was no evidence of BCG vaccination. There was no significant relation between BCG vaccination and PPD measurement in these patients.

AFB could be isolated by culture from the sputum of 63% patients. Sputum culture has been reported to be positive in other series in 54 to 76% samples. In another five patients, microbiological confirmation could be made by culture of specimens from other sites like lymph nodes, endometrium, CSF and anal fissure.

*Mycobacterium tuberculosis* could be isolated by culture of various specimens like urine, CSF, liver biopsy, bronchial lavage, bronchial biopsy, transbronchial biopsy, knee joint aspirate and ileal mucosal biopsy. One patient had tuberculomata in the brain shown in CT scan of head. For five patients diagnosis was made solely on the basis of radiological presentation and clinical features.

The treatment of patients was according to the Kuwait National TB Program policy based on WHO recommendations and ATS / CDC guidelines. The choices of anti-TB drugs were modified based on drug sensitivity results and adverse reactions to drugs. For 88.5% of patients, the initial phase of treatment was with the standard four drug regimen (i.e.; rifampicin [R], isoniazid [H], pyrazinamide [Z], and ethambutol [E] or streptomycin[S]). One patient who was a relapse case was started on a five drug regimen (SHERZ).

73% patients were sensitive to all tested drugs (SHER in all and Z in some cases). One patient was resistant to isoniazid and sensitive to all other drugs. This patient was started on SERZ. Another patient was resistant to streptomycin while sensitive to other drugs. This patient was treated with HERZ.

Adverse reactions to anti TB drugs were generally not serious. Drug induced hepatitis was the most common side effect (23%). Upper abdominal pain, nausea, vomiting, fever were the symptoms associated with hepatitis. It was possible to continue the four drug treatment for all by re-introducing drugs sequentially or substituting another drug and monitoring liver enzyme levels. One patient could not tolerate pyrazinamide, for whom the drug combination of SHER was given. One patient developed skin rashes following anti TB drugs. This was treated with emmolients and anti-histaminics. Anti TB treatment was continued in this patient. Streptomycin induced nephropathy occurred in one patient. This patient also had defective color vision. He was treated with the combination of HRZ and ciprofloxacin.

Cortico-steroids were given to 50% patients along with anti-TB drugs during the beginning of the treatment. Steroids were given to those patients with multi-system involvement, especially central nervous system involvement and those with serious constitutional symptoms.

There was only one death (3%). Mortality from miliary TB has been reported in various series from 10 to 28%.[6-12] The low mortality in this study group is most probably as a result of the relatively younger age group of the patients. It has been shown that TB in elderly is associated with higher mortality.[15,16]

During the continuation phase of treatment, patients were given isoniazid and rifampicin. For the isoniazid resistant patient, the continuation phase of treatment was with rifampicin and ethambutol and the total duration of treatment was one year. Anti-TB treatment was given to the patients for a total of six to 12 months. 54% patients were declared cured. One patient had relapsed one year after completing treatment. This patient presented after one year with TB cervical lymphadenitis and pulmonary TB. He was treated with re-treatment regimen (2 SHERZ / 1 HERZ / 6 HR) for a total of nine months. 37% patients were deported or they left the country after starting treatment. These patients were advised to continue anti-TB treatment in their home countries. Two patients defaulted and were lost to follow-up.
CONCLUSION

The diagnosis of miliary TB should be considered in those presenting with features of TB and systemic symptoms even if the classical miliary pattern is not seen in the chest X-ray. The diagnosis can be confirmed by clinical features, radiological features, AFB culture from sputum and other specimens like bronchial lavage, CSF, urine, lymph node aspirate etc. Treatment with first line anti TB drugs is generally safe and majority of patients are cured completely if followed up regularly.

REFERENCES

The Versatility of the Medial Thigh Flap for Coverage of Large Perineoscrotal Defects

Ahmad Al-Fadhli, Hisham Burezq, Nabeel Abdul fattah, Wael Ayad
Department of Plastic and Reconstructive Surgery, Al Babtain Center for Burns and Plastic Surgery, Sabah Health Center, State of Kuwait

ABSTRACT

Objective: To study the versatility, aesthetic and functional outcome of medial thigh flap for coverage of large perineoscrotal defects

Design: Prospective

Setting: Al-Babtain Center for Burns and Plastic Surgery (State Government Institute)

Subjects: Seven patients with Fournier’s gangrene seen between July 2005 and October 2006 at Al-Babtain Center for Burns and Plastic Surgery

Intervention: Reconstructive surgery for coverage of scrotal and perineal defects after debridement of Fournier’s gangrene. Nine medial thigh fasciocutaneous flaps were performed under general anesthesia.

Main Outcome Measures: General aesthetic and functional results in the form of the range of motion of both hip joints.

Results: All flaps survived well with good aesthetic and functional results, with the exception of partial distal necrosis in two cases. This was managed conservatively in one case, while the other case needed debridement and minimal advancement of the flap.

Conclusion: The medial thigh fasciocutaneous flap offers a good option for coverage of perineoscrotal defects. The flap provided a single stage, stable, well vascularized soft tissue coverage in our patients with no significant complications.

KEY WORDS: fasciocutaneous flap, Fournier’s disease, medial thigh

INTRODUCTION

Perineoscrotal (Fournier’s) gangrene is a rare potentially fatal clinical entity[1]. It is characterized by progressive spread of necrosis in the skin and subcutaneous tissue combined with severe systemic infection[2]. Following aggressive surgical debridement, major scrotal and perineal defects with exposed testes are a challenge for reconstructive surgeons[3,4]. Numerous techniques have been described for reconstruction of these defects including split thickness skin grafts[5,6], muscle flaps (e.g., Gracilis flap[7,8]) and fasciocutaneous flaps (e.g., pudendal flap[9,10], perineal flap[11] and anterolateral thigh flap[12]). This study presents the author’s experience of using the medial thigh flap for coverage of scrotal and perineal defects after debridement of Fournier’s gangrene.

PATIENTS AND METHODS

Between July 2005 and October 2006 at Al-Babtain Center for Burns and Plastic Surgery medial thigh flap was performed in seven male adult patients. Their mean age was 42 (range 33 - 52 years). All patients presented with soft tissue defects of the scrotal and perineal areas after extensive multiple debridement sessions for Fournier’s gangrene. Broad spectrum systemic antibiotics were given and continued for five days postoperatively. Nine medial thigh fasciocutaneous flaps were performed (five unilateral and two bilateral). Patients were followed for 3 - 18 months postoperatively.

Anatomical basis of the flap: The medial thigh flap located along the medial aspect of the thigh, is based on a septocutaneous branch of the femoral artery at the apex of the femoral triangle. The axis of the flap extends from the apex of the femoral triangle toward the medial femoral condyle. The skin territory of the flap extends from the inferior aspect of the femoral triangle to the junction of the middle and distal thirds of the medial thigh. The lateral borders of the flap are located between the lateral edge of the adductor longus and the medial edge of the rectus femoris muscle.

Address correspondence to:
Dr. Hisham Burezq MD FRCSC FAAP, PO box 1574, Mishref 40179, State of Kuwait. F (965) 2562-6020, E-mail: burezq@msn.com
Surgical technique: All patients (Figs. 1 - 4) were done under general anesthesia with orotracheal intubation in lithotomy position. As previously described in the literature\cite{13,14}, the axis of the flap was drawn as a line from the pubic tubercle to the medial femoral condyle. The base of the flap was designed to be over the femoral triangle. The dominant pedicle was located at the apex of the femoral triangle 6 - 8 cm below the inguinal ligament and the exact site was detected preoperatively by Doppler examination. The width of the flap was 7 - 10 cm according to the redundancy of the skin, while the length was 17 - 25 cm tapered distally to facilitate direct closure of the donor site. Elevation of the flap in a subfascial bloodless plane started from distal to proximal until few centimeters distal to the pedicle. This was followed by careful dissection of the pedicle and rotation of the flap as a hammock to cover the testicles and the perineal area creating a scrotum with a tension free inset. Direct closure of the donor site with suction drain was done in all cases. A scrotal support was used postoperatively until dependent edema subsided. Patients were allowed to move out of their beds two weeks postoperatively to start gradual physiotherapy.

RESULTS

All flaps survived well, with the exception of partial distal necrosis in two cases. This was managed conservatively in one case, while the other case needed debridement and minimal advancement of the flap. Infection of the donor site suture line occurred in one case which was managed by frequent dressing.

DISCUSSION

Scrotal reconstruction after Fournier’s gangrene remains a major challenge. Reconstruction of the...
scrotum is important for functional, cosmetic and psychological reasons\cite{12}. The ideal reconstructive approach would seem to incorporate the following flap features: a single stage procedure, excellent flap reliability, sensate flaps with a potential for normal function, minimal donor-site morbidity and simplicity\cite{13,14}. Although simple split skin grafts could provide an adequate coverage and a very good aesthetic result, the highly vascular nature of these flaps is necessary because of the avascular and / or infection nature of these wounds. In addition, thicker soft tissue coverage of the testes would provide a better protective cushion. The medial thigh flap is a reliable fasciocutaneous flap which can be done in a reasonably short operative time (around 20-30 minutes for flap elevation). The donor scar is hidden in the medial aspect of the thigh. We have transposed the flap medially and used it to cover scrotal, penile, perineal and proximal thigh defects. The exact limitations on width and length of the flap are unknown, but the rich suprafascial plexus in this area allows safe elevation of flaps with a 3:1 length-to-width ratio\cite{17}. Our largest flap measured approximately 10 cm X 25 cm. Wang et al\cite{18} have described the vascular supply and innervation of the medial thigh fasciocutaneous flap. Hallock\cite{13} reported the same flap for scrotal reconstruction following Fournier’s gangrene. Although gracilis musculocutaneous flap share the same cutaneous territory and the donor site defect, medial thigh fasciocutaneous flap has the advantage of being easier and faster to raise, less bulky, easier to transpose and provides thin pliable skin\cite{19}. In addition, elevating the medial thigh flap does not preclude the use of a Gracilis muscle flap, which may be raised on its own vascular pedicle at the same or later procedure\cite{20}. We considered previous surgery (e.g., femoral hernia repair and radical lymphadenectomy) or significant trauma to the groin as a relative contraindication to use the medial thigh flap. In such cases preoperative doppler study would be a must to evaluate and locate the septocutaneous branch supplying the flap if still present. Other pedicled thigh fasciocutaneous flaps have been described, though they appear less versatile than the medial thigh flap as the laterally based superomedial thigh flap, which is raised on the proximal medial thigh\cite{20}. Hayashi and Maruyama\cite{21} have used an anteromedial thigh fasciocutaneous flap for reconstruction of the groin and lower abdominal wall. Song et al\cite{22} have previously described its use as a free flap for reconstruction of the neck and forearm and Yu et al\cite{22} used the anterolateral thigh fasciocutaneous island flap in perineoscrotal reconstruction. This is more difficult to dissect, more bulky and it is far from the defect.

There are some drawbacks in our study. The comparison between the sperm count before and after surgery would be of a great importance to define the functional results of our flap. In addition, a larger population size was needed to study indications, contraindications and the range of different possible complications.

**CONCLUSION**

The medial thigh fasciocutaneous flap offers a good option for perineoscrotal defects. The flap provided a single stage, stable, well vascularized soft tissue coverage in our patients with no significant complications.

**REFERENCES**

**ABSTRACT**

**Objective:** To determine the incidence, risk factors and possible causative agents of hospital acquired pneumonia (HAP) in adult hospitalized patients in medical wards of a general hospital in Kuwait.

**Setting:** Four medical wards comprising a total of 140 beds in a 500 bedded general hospital in Kuwait.

**Design:** Retrospective study involving records of all adult medical patients admitted to Al-Jahra Hospital between January and June 2005 who developed HAP. They were analyzed and reported by age, sex, risk factors, and causative agents.

**Subjects:** Patients admitted to the medical wards, who developed HAP (as defined by the American Thoracic Society (ATS) and the Infectious Diseases Society, IDSA).

**Results:** Out of a total of 1971 patients admitted over a six month period (from January to June 2005), 132 patients (6.6%) developed HAP. The commonest risk factors detected were the use of H2 blocker (75.8%), smoking (40.2%), diabetes mellitus (39.4%), and chronic obstructive pulmonary disease (COPD) (38.6%). The commonest organisms detected on culture were *Pseudomonas aeruginosa* (46.2%), *Klebsiella pneumonia* (24.2%) and *Candida albicans* (21.2%).

**Conclusion:** Overall incidence of HAP in this study was 6.6% and is concordant with the reported international rates. H2 receptor blockers, cigarette smoking, diabetes mellitus and COPD were the common underlying risk factors. Candida infection likely represents a contamination effect.

**KEY WORDS:** hospital acquired infections, nosocomial pneumonia, risk factors

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**INTRODUCTION**

Hospital-acquired pneumonia (HAP) is a respiratory infection developing more than 48 hours after hospital admission and which was not incubating at the time of admission[1]. HAP is the most common healthcare-acquired infection contributing to death[2,3] and is estimated to increase hospital stay by 7 - 9 days[4, 5]. In a proportion of patients, HAP is associated with mechanical ventilation, in which case it is termed as ventilator-associated pneumonia (VAP)[4]. Although HAP is not a reportable illness, available data suggest that it occurs at a rate of between five and ten cases per 1,000 hospital admissions, with the incidence increasing by as much as six to 20-fold in mechanically ventilated patients[6-8].

The development of pneumonia is preceded by colonization with normal flora (*Streptococcus*, *Staphylococcus*, or *Haemophilus* species) or nosocomial pathogens (gram-negative rods or methicillin-resistant *S aureus* [MRSA]). Pathogens present in the oropharynx and contiguous structures colonize bronchial secretions after endotracheal intubation. Aspiration of contaminated secretions is the chief mechanism by which the pathogens reach the lung parenchyma. Other mechanisms are inhalation of aerosolized material, hematogenous spread, and dissemination from contiguous structures.

Modifiable risk factors for HAP and VAP include bronchial aspiration, compromised consciousness, the use of antacids or H2 blockers, and the presence of a nasogastric tube. Non-modifiable risk factors include age over 60 years, chronic obstructive pulmonary disease (COPD), upper respiratory tract abnormality, disease severity - as measured by the Acute Physiology Score and Chronic Health Evaluation (APACHE II), neurological disease, trauma, and surgery[9-11].

In this study, we attempt to identify the incidence and the most common pathogens causing HAP. We also wanted to increase awareness regarding
identification of susceptible patients likely to develop these infections, aiming for early diagnosis and deciding proper empirical antimicrobial therapy.

**SUBJECTS AND METHODS**

**Study design:** A retrospective cohort study was carried out involving all the records of adult patients admitted to the medical wards over a period of six months (from January to June 2005).

**Inclusion criteria:** Any adult patient who developed HAP during the study period was included. HAP was defined as pneumonia that occurs 48 hours or more after admission, and which was not incubating at the time of admission. The diagnosis of pneumonia was based on clinical manifestations, Chest X-ray (CXR) findings and positive sputum cultures. The patients were analyzed and reported by age, sex, clinical picture, CXR and sputum analysis. The cause and risk factors were also identified.

**Statistical analysis:** A pre-designed SPSS (Statistical Package for Social Science Vs 15.00, SPSS Inc. USA) file was used for data entry and analysis. The following analysis were done: frequency, percentage, and chi-square test.

**RESULTS**

Out of the 1971 patients records analyzed over the six months period, 132 patients (6.6%) developed HAP. Out of these, 95 patients (72%) were male and 37 (28%) were female.

**Table 1: Age and sex distribution in the study group**

<table>
<thead>
<tr>
<th>Age in years</th>
<th>15-29 n (%)</th>
<th>30-44 n (%)</th>
<th>45-59 n (%)</th>
<th>60-74 n (%)</th>
<th>&gt; 75 n (%)</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>10 (10.5)</td>
<td>11 (11.6)</td>
<td>19 (20)</td>
<td>36 (37.9)</td>
<td>19 (20)</td>
<td>95 (100)</td>
</tr>
<tr>
<td>Female</td>
<td>8 (21.6)</td>
<td>2 (5.4)</td>
<td>10 (27)</td>
<td>12 (32.4)</td>
<td>5 (13.5)</td>
<td>37 (100)</td>
</tr>
</tbody>
</table>

$X^2 = 4.89$, p-value > 0.05 = Not significant

**Fig. 1:** Distribution of patients according to number of risk factors

The mean age was 57.2 years. The commonest age group who developed nosocomial pneumonia was above 60 years (54.6%) while the least affected age group was from 30 - 45 years (9.8%). However no statistically significant difference was detected as regard age and sex distribution. The age and sex distribution of all cases is shown in Table 1.

Fever, cough and expectoration were the presenting features in most cases. The development of a new infiltrate in the CXR occurred in 82 patients (62%).

The most prevalent risk factors detected in this study were the use of H2 blockers in 100 patients (75.8%), smoking in 53 patients (40.2%), diabetes in 52 patients (39.4%) and COPD in 51 patients (38.6%). Others had stroke (34 patients, 25.8%) out of whom six patients (4.5%) had a nasogastric tube, 33 (25%) had interstitial lung disease (ILD), 30 (22.7%) had congestive heart failure (CHF) while 11 (8.3%) had malignancy and seven patients (5.3%) had chronic renal failure (CRF) as shown in Table 2.

**Table 2: Distribution of risk factors**

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2 blockers</td>
<td>100</td>
<td>75.8</td>
</tr>
<tr>
<td>Smoking</td>
<td>53</td>
<td>40.2</td>
</tr>
<tr>
<td>DM</td>
<td>52</td>
<td>38.6</td>
</tr>
<tr>
<td>COPD</td>
<td>51</td>
<td>38.6</td>
</tr>
<tr>
<td>CVA</td>
<td>34</td>
<td>25.8</td>
</tr>
<tr>
<td>ILD</td>
<td>33</td>
<td>25.0</td>
</tr>
<tr>
<td>CHF</td>
<td>30</td>
<td>22.7</td>
</tr>
<tr>
<td>Malignancy</td>
<td>11</td>
<td>8.3</td>
</tr>
<tr>
<td>CRF</td>
<td>7</td>
<td>5.3</td>
</tr>
<tr>
<td>NGT</td>
<td>6</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**Table 3: Distribution of the pathogen types in the study group**

<table>
<thead>
<tr>
<th>Types of organisms detected</th>
<th>n</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>61</td>
<td>46.2</td>
</tr>
<tr>
<td>Klebsiella pneumonia</td>
<td>32</td>
<td>24.2</td>
</tr>
<tr>
<td>Candida albicans</td>
<td>28</td>
<td>21.2</td>
</tr>
<tr>
<td>Acinetobacter</td>
<td>11</td>
<td>8.3</td>
</tr>
<tr>
<td>Candida species not albicans</td>
<td>10</td>
<td>7.6</td>
</tr>
<tr>
<td>Providencia stuartii</td>
<td>6</td>
<td>4.5</td>
</tr>
<tr>
<td>Serratia marcescens</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>Staph aureus</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>MRSA</td>
<td>1</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Analysis of patients as regard presence of multiple risk factors showed that 87% of patients had multiple risks (i.e., two or more risk factors were detected in the same patient, Fig. 1).

As regard the type of pathogens, gram negative organisms were prevalent including *Pseudomonas aeruginosa* (46.2%), *Klebsiella pneumoni* (24.2%). *Candida albicans* was detected in (21.2%) as shown in Table 3.

However the infection was caused by single organism in the majority of patients (Fig. 2). Associating the type of organism to the number of risk factors showed that a high percentage of infection occurs in patients with multiple risk factors with a significant difference detected in patients infected by *Pseudomonas aeruginosa*, *Klebsiella pneumoni*, *Acinetobacter*, and *Staphylococcus aureus*.

HAP due to viruses or fungi are significantly less common. In this study *Candida albicans* was isolated in 28 patients (21.2%). This high rate likely represents a contamination as isolation of *Candida albicans* and other Candida species from respiratory aspirates is common, but usually represents colonization of the airways rather than pneumonia, and rarely requires treatment with antifungal therapy.

**CONCLUSION**

The overall incidence of hospital-acquired pneumonia (HAP) was 6.6% in all medical cases reviewed. The use of H2 blockers was the most significant risk factor for the development of HAP in this study. Cigarette smoking, diabetes mellitus and COPD were the other common underlying risk factors. Associating the type of organism to the number of risk factors showed that a high percentage of infection occurred in patients with multiple risk factors. Also, a high-risk approach should be directed towards patients who are admitted to the hospital to identify susceptible patients liable to develop nosocomial pneumonia. An awareness of the susceptibility patterns of the nosocomial pathogens within a given health-care setting is important for appropriate empiric antimicrobial therapy.

**ACKNOWLEDGEMENTS**

We wish to express our sincere thanks to Dr Hani Samir (Registrar, Dept. of Internal Medicine, Jahra Hospital, Kuwait) for the help provided in collecting patient data.

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**Table 4:** Distribution of the types of organism according to the number of risk factors

<table>
<thead>
<tr>
<th>Types of organisms</th>
<th>No risk n</th>
<th>%</th>
<th>Single risk n</th>
<th>%</th>
<th>Multiple risk n</th>
<th>%</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Pseudomonas aeruginosa</em></td>
<td>3</td>
<td>4.9</td>
<td>2</td>
<td>3.3</td>
<td>56</td>
<td>91.8</td>
<td>61</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td><em>Klebsiella pneumoni</em></td>
<td>0</td>
<td>0.0</td>
<td>7</td>
<td>21.9</td>
<td>25</td>
<td>78.1</td>
<td>32</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td><em>Candida albicans</em></td>
<td>1</td>
<td>3.6</td>
<td>3</td>
<td>10.7</td>
<td>24</td>
<td>85.7</td>
<td>28</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td><em>Acinetobacter</em></td>
<td>2</td>
<td>18.2</td>
<td>0</td>
<td>0.0</td>
<td>9</td>
<td>81.8</td>
<td>11</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td><em>Candida species not albicans</em></td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>10</td>
<td>100</td>
<td>10</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td><em>Providencia stuartii</em></td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>6</td>
<td>100</td>
<td>6</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td><em>Serratia marcescens</em></td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>100</td>
<td>5</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td><em>Staph aureus</em></td>
<td>1</td>
<td>20.0</td>
<td>0</td>
<td>0.0</td>
<td>4</td>
<td>80</td>
<td>5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>MRSA</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>100</td>
<td>1</td>
<td>&gt; 0.05</td>
</tr>
</tbody>
</table>

P <0.05 = significant

**Fig. 2:** Distribution of patients according to number of organisms

Analysis of patients as regard presence of multiple risk factors showed that 87% of patients had multiple risks (i.e., two or more risk factors were detected in the same patient).

As regard the type of pathogens, gram negative organisms were prevalent including *Pseudomonas aeruginosa* (46.2%), *Klebsiella pneumoni* (24.2%). *Candida albicans* was detected in (21.2%) as shown in Table 3.

However the infection was caused by single organism in the majority of patients.

Associating the type of organism to the number of risk factors showed that a high percentage of infection occurs in patients with multiple risk factors with a significant difference detected in patients infected by *Pseudomonas aeruginosa*, *Klebsiella pneumoni*, *Acinetobacter*, and *Staphylococcus aureus* (Table 4).

**DISCUSSION**

In our study, we attempted to identify the incidence and the most common pathogens causing HAP. We also wanted to increase the awareness regarding identification of susceptible patients likely to develop these infections, aiming for early diagnosis and deciding on proper empirical antimicrobial therapy.

This study showed that the incidence of HAP in our institute was 6.6% and this correlates well with international rates.

In our study, 87% patients had multiple risks factors (i.e., two or more risk factors were detected in the same patient). The most significant risk factors for the development of HAP were the use of H2 blockers, cigarette smoking and COPD. Stress ulcer prophylaxis appears to increase the risk of HAP in this study. The influence of stress ulcer prophylaxis on the risk of HAP is controversial in the literature.

Associating the type of organism to the number of risk factors showed that a high percentage of infection occurs in patients with multiple risk factors with a significant difference detected in patients infected by *Pseudomonas aeruginosa*, *Klebsiella pneumoni*, *Acinetobacter*, and *Staphylococcus aureus*.

HAP due to viruses or fungi are significantly less common. In this study *Candida albicans* was isolated in 28 patients (21.2%). This high rate likely represents a contamination as isolation of *Candida albicans* and other Candida species from respiratory aspirates is common, but usually represents colonization of the airways rather than pneumonia, and rarely requires treatment with antifungal therapy.

HAP due to viruses or fungi are significantly less common. In this study *Candida albicans* was isolated in 28 patients (21.2%). This high rate likely represents a contamination as isolation of *Candida albicans* and other Candida species from respiratory aspirates is common, but usually represents colonization of the airways rather than pneumonia, and rarely requires treatment with antifungal therapy.

**CONCLUSION**

The overall incidence of hospital-acquired pneumonia (HAP) was 6.6% in all medical cases reviewed. The use of H2 blockers was the most significant risk factor for the development of HAP in this study. Cigarette smoking, diabetes mellitus and COPD were the other common underlying risk factors. Associating the type of organism to the number of risk factors showed that a high percentage of infection occurred in patients with multiple risk factors. Also, a high-risk approach should be directed towards patients who are admitted to the hospital to identify susceptible patients liable to develop nosocomial pneumonia. An awareness of the susceptibility patterns of the nosocomial pathogens within a given health-care setting is important for appropriate empiric antimicrobial therapy.

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Laparoscopic Adjustable Gastric Band for Morbid Obesity – Local Experience in Al-Ahsa Region of Saudi Arabia

Abdul Rahman Saleh Almulhim1, Lileswar Kaman1, Ali Ibrahim Al-Sultan2
1Department of Surgery and 2Department of Internal Medicine, College of Medicine, Al Ahsa, King Faisal University, Hofuf, Kingdom of Saudi Arabia

ABSTRACT

Objective: To present our experience of laparoscopic gastric banding (LAGB) for morbid obesity in the Eastern Province of Saudi Arabia

Design: Retrospective reviews of patients undergoing surgery for morbid obesity.

Setting: King Fahad Hospital, Hofuf, Saudi Arabia

Subjects: One-hundred and eighty two (182) patients from January 2000 to December 2006 were included in the study.

 Intervention: Laparoscopic gastric banding

Main Outcome Measures: Preoperative age, sex, body mass index (BMI), co-morbidities, operative variables and postoperative hospital stay and complications were recorded. The postoperative weight loss was recorded at three monthly intervals.

Results: The mean age was 30.3 years (range 18 - 51 years) and the mean BMI was 52.6 kg per square meter (range 41 - 61.5 kg per square meter). There were two conversions to open procedure because of dense adhesions from previous surgeries. The mean operative time was 2.7 hours (range 1.25 - 3.5 hours). The mean postoperative hospital stay was 3.7 days (range 2 - 12 days). There was no mortality. Three patients had band removal after one year postoperatively. The mean follow up period was 11 months (range 3 - 40 months). The mean BMI decreased to 50.2, 45.4, 41.2 and 37.7 kg per square meter at 3, 6, 9 and 12 months postoperatively, with an average excess weight loss reduction of 43.5% after one year.

Conclusions: Laparoscopic gastric banding is an effective and safe procedure for the treatment of morbid obesity in Saudi patients.

KEY WORDS: bariatric surgery, laparoscopic adjustable gastric banding, obesity

INTRODUCTION

Morbid obesity (BMI more than 40) is a serious health problem. Morbid obesity increases the incidence of pulmonary and cardiovascular diseases, diabetes mellitus and various cancers[1-3]. More over it decreases the life expectancy drastically[1-3]. Surgery is at present considered the standard of care for treatment of morbid obesity[1,2-4]. Two types of surgeries are performed for obesity. The first type is the intestinal bypass procedure and the second type is the stomach volume restriction namely the adjustable gastric banding, and vertical banded gastroplasty[5,6]. Laparoscopic gastric banding Laparoscopic gastric banding (LAGB) is a safe, controllable and potentially reversible method that achieves significant weight loss. Moreover there is no opening of digestive tract and no suture line in the gastrointestinal tract. Also, it gives all the advantages of minimally invasive surgeries[7,8]. The aim of this article is to report early and late outcome of LAGB for treatment of morbid obesity in the Al-Ahsa region of Saudi Arabia.

SUBJECTS AND METHODS

Between January 2000 to December 2006, 182 patients underwent LAGB in the department of Surgery, King Fahad Hospital, Hofuf, which is an affiliated teaching hospital to the College of Medicine in Al-Ahsa, King Faisal University, Kingdom of Saudi Arabia. The medical data of these patients were recorded in a prospective database. The demographic profile, BMI and perioperative variables were included. The short-term and long-term weight loss was analyzed.

A multidisciplinary team well experienced in the management of morbid obesity patients did...
a detailed history and proper patient counseling. Dietary assessment and follow up to exclude concentrated “sweet” eaters and “binge” eaters were carried out. Inclusion criteria were as indicated by the National Institutes of Health (NIH)[9]:

- BMI > 40
- Adult with BMI > 35 who have serious co morbidities
- Well-informed and motivated adult
- Acceptable risk for surgery and those who had failed non-surgical weight loss

Operations were performed under general anesthesia. The operation was done using the Lap Band system, Bioenteries, Carpinteria, Ca, USA, and a 30 ml proximal gastric pouch was created. Patients were placed in reversed trendelenburg position with the surgeon standing between the legs. Five ports were used for surgery with 45° optics. Pneumoperitoneum was created using Veress needle.

Gastric dissection started at the angle of the cardia by division of the phrenogastric ligament. Over the lesser omentum, the peritoneal sheet close to the edge of the right crus was opened and then gradually a retro gastric tunnel was created reaching the left crus and the phrenogastric ligament (pars flaccida technique). Dissection was performed with an articulating dissector, close to the gastric wall, and carefully maintained above the lesser sac. The Lap Band was introduced through a 15 mm port and the end plug placed in the dissector slot. The device was fixed with three gastro-gastric stitches to avoid gastric slippage through the band. The reservoir was not filled until the fourth postoperative week. The adjustable band was connected to an injectable port, which was placed in the epigastric region anterior to the rectus sheath.

A contrast study of the upper gastrointestinal tract was done on the first postoperative day. Oral liquid diet was started in absence of a leakage and patients were discharged from the hospital as soon as possible. The patients were asked to take semilisolid diet for first postoperative month. A barium swallow was done after four weeks to verify the correct position of the band. The first band inflation was done at the same time. The patients were then instructed to follow a normal diet, to take small bites, to chew well, to eat slowly, to avoid drinking while eating, and to avoid soda-containing drinks. Future LapBand capacity adjustment was performed as and when necessary during the follow up, depending on the patient’s eating capacity and weight loss. Prophylactic intravenous antibiotic administration (cefotaxime) was routine for all patients.

RESULTS

A total of 182 patients underwent LAGB, out of which 127 (70%) were female and 55 (30%) male. The mean age was 30.3 years (range 18 - 51) and the mean BMI was 52.6 kg per square meter (range 41 - 61.5 kg per square meter). Thirty (16.5%) patients had diabetes mellitus. Forty-one (22.5%) patients had hypertension. The mean operative time was 2.7 hours (range 1.25 - 3.5 hours). There were two conversions to open surgery because of dense adhesions from previous surgeries. Fourteen (8%) patients had postoperative complications (nine had pulmonary complications, three patients had wound infection, and another patient had port site hernia (at 12 mm camera port). The mean postoperative hospital stay was 3.7 days (range 2 -12 days). There was no mortality. Three patients had band removal after one year post operative. In one patient, it was because of persistent dysphagia and in two patients, it was because of pouch dilations.

The mean follow up period was 11 months (range 3 - 40 months). The mean BMI decreased to 50.2, 45.4, 41.2 and 37.7 kg per square meter at 3, 6, 9 and 12 months postoperatively, with an average excess weight loss reduction of 43.5% after one year.

DISCUSSION

Surgery is a valuable tool available for sustained and effective long term weight loss[9]. Bypass procedures for obesity have better long term weight loss, but with more serious complications[10,11]. LAGB is a safe, effective and reversible procedure for the treatment of morbid obesity [1- 5]. LAGB is a short procedure with minimal perioperative morbidity and mortality[5].

In our study, the operative time decreased with experience. It was 3.5 hours in 2000, and decreased to 1.25 hours in 2006. There is a definite learning curve associated with the laparoscopically placed adjustable gastric band[12].

The reported weight loss after two years and more is about 45%[6- 7]. In our series, the loss of weight was gradual. The mean BMI decreased to 50.2, 45.4, 41.2 and 37.7 kg per square meter at 3, 6, 9 and 12 months postoperatively. We intend to continue our follow up for longer durations and see the pattern of weight loss. This study shows that significant weight loss is obtained during the first 12 months after implantation of the band.

The reported complications are band slippage, pouch dilatations, band erosion, port site infections, leak from the band, port and the connecting tube[6- 7]. The complication rate was about 10% in a large series[10-13]. These late complications lead to re-operations in up to 20% cases[10-13].
In our series, 8% patients had immediate complications mainly pulmonary complications. We had to remove the band in three patients, (one for band migration, two for pouch dilatations). This is consistent with a large reported series in the literature. We did not encounter other reported long-term complications. However, our follow up period was not short and there were numbers of patients who were not compliant.

In our series, most complications occurred in the first group of patients, and this was due in part to the learning curve. The reported mortality rate is 0.05%[7]. In our series we did not have any mortality.

The reported weight loss after LAGB is about 45%[6-8]. The one year, two year and three year reported loss of weight is 42.5, 52 and 58% respectively[6-8]. There has been a favorable outcome of diabetes and hypertension control after LAGB[7].

CONCLUSION

Our experience with the LAGB is satisfactory in terms of loss of weight and excellent short as well as long term outcome in relation to morbidity and mortality. However, patient selection has to be improved to reduce the non-responder rate, and further studies are needed to identify and exclude these patients.

REFERENCES

Case Report

The Continuing Dilemma of Hyperinvasive Strongyloidirosis Syndrome: A Case Report and Review of Literature

Mohsen Nasr¹, Soondal K Surrun¹,², Mirza Kahvic³
¹Department of Internal Medicine, Al-Jahra Hospital, Kuwait
²Department of Internal Medicine, Singapore General Hospital, Singapore
³Department of Pathology, Al-Jahra Hospital, Kuwait

ABSTRACT

A 28-year-old man from Bangladesh was admitted to Al-Jahra Hospital in Kuwait with an Addison’s crisis after suddenly stopping steroids prescribed for uveitis. His hospital stay was further complicated by severe gastritis, peritonitis and meningitis. Investigations revealed Strongyloides stercoralis in the sputum, stomach aspirate and duodenal mucosa. The patient died in spite of intensive treatment. The problem of hyperinvasive strongyloidirosis syndrome is reviewed.

KEY WORDS: Addison’s crisis, fatal outcome, hyperinvasive strongyloidirosis syndrome, Strongyloides stercoralis

INTRODUCTION

Strongyloidirosis is endemic in some parts of Asia, South-East Asia, Western Europe and South America. Strongyloides stercoralis is peculiar in its unique auto-infective cycle when it may propagate in its host for long periods. The infestation usually gives rise to mild symptoms. Migration and air travel have helped asymptomatic infected individuals to reach non-endemic areas. Rarely, Strongyloides stercoralis may invade many organs and give rise to the potentially fatal strongyloidirosis hyperinfection syndrome (SHS), particularly in immunocompromised patient. A high index of suspicion is necessary to diagnose SHS early in order to start definitive treatment promptly.

CASE REPORT

A 28-year-old man from Bangladesh was admitted in Al-Jahra Hospital in Kuwait, with a history of central abdominal pain of one day duration associated with vomiting but no diarrhea. He was previously in good general health and had been in Kuwait for over four years. He visited Bangladesh again for three weeks about a year before he presented with uveitis. The etiology of the uveitis was unknown and he responded very well to steroids. He was on a maintenance dose of 20 mg of prednisolone without any side effects. After six months of continuous medication and feeling better, he suddenly stopped the steroid a week prior to admission. On examination, he was in pain with a pulse of 100 per minute and a supine blood pressure of 100/60 mmHg and a standing blood pressure of 80/45 mmHg. He had no pallor, dehydration or jaundice. The abdominal examination revealed moderate tenderness in the epigastric area without guarding or rigidity. The examination of other systems was normal. The salient laboratory investigations revealed eosinophilia, hyponatremia and hyperkalemia (Table 1). Liver function tests and serum amylase were normal. The clinical diagnosis of acute adrenal insufficiency was entertained and he was treated with IV hydrocortisone and normal saline infusion. The postural hypotension and the electrolyte imbalance were corrected but the abdominal pain persisted. A gastroscopy revealed several small erosions in the duodenum and a biopsy was taken. He was prescribed a proton pump inhibitor (PPI). The abdominal pain continued and he developed bronchospasm. The stools and sputum analyses showed filariform larvae of S. stercoralis filariform. These larvae were also seen in the mucosa of the duodenum (Fig. 1). However, they were not surrounded by anti-inflammatory cells. A high resolution CT-scan of the thorax revealed thickened interstitium, central and peripheral patches of ground glass appearance and bilateral small patchy areas of consolidation (Fig. 2). A

Address correspondence to:
Dr Mohsen Nasr, Department of Internal Medicine, Al-Jahra Hospital, Kuwait. E-mail: mohsennasr@hotmail.com
diagnosis of SHS was made, the PPI was stopped and albendazole as well as ceftriaxone were prescribed.

The next day the patient became confused and on examination there was neck rigidity, a positive Kernig’s sign, rebound tenderness of the abdomen with guarding and sluggish bowel sounds. A clinical diagnosis of meningitis with an associated acute abdomen was then made. Plain X-ray of the abdomen showed multiple fluid levels but no air under the diaphragm. The patient was examined by a surgeon who recommended conservative management. Metronidazole 500 mg intravenously 8 hourly was added. A CT-scan of the brain was ordered and a lumbar puncture was scheduled after the CT-scan. However the patient deteriorated and collapsed before these could be performed, and resuscitation was unsuccessful.

DISCUSSION

As strongyloidiasis is not endemic in Kuwait, this migrant worker had probably been infected in Bangladesh. The initial uveitis may have been idiopathic, or may be due to an allergic response due to the parasites elsewhere in the body. Some parasites may even migrate to the eye where they may become invasive even in non-immune suppressed subjects[2,3]. As the uveitis responded well to steroids and there were no symptoms for six months, we presumed that SHS was not the problem initially. Stools examination was not done prior to the present hospitalization. Even if it were done, it is known that in over 70% of cases the examination fails to detect the larvae as the parasite load is low and the larval output is irregular[4]. During the hyperinfective phase in our patient, the parasite was found in the sputum, the stools but not in the urine. Immunodiagnostic assays have been found to be non-specific in detecting disseminated infection because of the cross-reactivity with other nematodes[4]. It is difficult to recognize the larvae of *S. stercoralis* in intestinal biopsy[5]. In our patient larvae were found in duodenal mucosa, and the absence of inflammatory cells around the larvae confirmed an immune deficient status.

After treating the acute adrenal insufficiency with intravenous steroids and normal saline infusion, the electrolytes imbalance was corrected but the eosinophilia persisted. He continued to have abdominal pain for which he had a gastroscopy. The presence of gastritis prompted the use a PPI, which must have decreased the gastric pH leading to more proliferation of the parasite. The diagnosis of SHS was entertained as
he developed wheezes while on steroids; this was later confirmed by sputum and stools examination as well as by duodenal biopsy. The PPI was stopped and an anti-helmithic was started. The patient deteriorated rapidly, developing peritonitis and meningitis, which culminated in the death of the patient. Ivermectin, the drug of choice in SHS, was not available at that time in Kuwait. Ivermectin orally or intravenously could have probably helped the patient. Some authors have even used ivermectin as a rectal enema in SHS[6]. This fatal case illustrates that SHS is still challenging and carries a high mortality index[7].

Patients receiving steroids or other immuno-suppressants are at risk of developing SHS. Other risks factors include immuno-compromised states such as in the elderly, in patients with chronic renal failure, patients with underlying malignancies, and those infected with Human T cell lymphotropic virus type I. Patients with HIV do not commonly get SHS.

The large number of filariform larvae released in SHS can invade not only the gastrointestinal tissues but also the lung, central nervous system, peritoneum, liver and kidney. Therefore the patient, usually with one or several risk factors, may present with an acute abdomen, pneumonia, meningitis, renal failure or a gram negative sepsis. These infections may complicate or even dominate the clinical picture and may sometimes cause delay in diagnosis. The diagnosis of SHS demands a high index of suspicion and should be considered in patients coming or returning from endemic areas.

The specific larvicidal drug ivermectin is used in the treatment of SHS. It is used in a dosage of 200 µg / kg body weight intravenously or orally for 5 to 7 days or longer until the parasites are eliminated. Supportive treatment such as fluid replacement, correction of electrolyte imbalance, and appropriate antibiotic coverage should be given in case of associated infections. Intensive care measures are necessary for those who are very sick or who have multiple organ failure. In spite of these measures the mortality due to SHS is still high.

We still do not know the immunobiology of strongyloides and the host-parasite relationship that could help us in the total understanding of the disease. Both immune and non-immune subjects are at risk of developing SHS and the exact reasons elude us. The recorded cases of SHS are quite low when the prevalence of strongyloidiasis world-wide, the widespread use of steroids, the increasing number of persons reaching old age, the number of patients with other underlying diseases causing immuno-depression, are all taken into consideration. There must definitely be other reasons why only a small portion of these individuals progress to SHS.

On their work on S. ratti infections, Patterson and Viney concluded that nematodes genotypes vary in their survivorship and fecundity and consequently in their dynamics of infection[8]. This remains to be proved for S. stercoralis infection in man. On the same note, IgM and IgG antibodies are both protective against larval S. stercoralis infection in mice as they recognize different antigens and utilize different killing mechanisms[9]. Probably the same mechanisms are present in men. The parasitic female of S. venezuelensis adheres to the mucosa of the host intestine by adhesion molecules secreted from its mouth. Specific antibodies generated against secreted adhesion molecules inhibit the attachment of the worm in the gut[10]. Is the same mechanism involved in S. stercoralis infestation in men? Finally the genetic predisposing factors in both parasite and man are complex and complicate our understanding of immunologic mechanisms involved in S. stercoralis infection[11]. This partly explains why there is still no definite agreed protocol regarding the prevention of SHS. One is therefore tempted to give all travellers and migrant workers a course of antihelminthic before starting long-term steroid therapy.

CONCLUSION

Air travel helps asymptomatic persons infested with Strongyloides stercoralis to reach non-endemic areas rapidly. The diagnosis of SHS demands a high index of suspicion and should be considered in patients coming or returning from endemic areas. Early diagnosis is essential to treat this potentially fatal condition. With increasing air travel and migration, it is expected that Strongyloides stercoralis will still be a menace for years to come.

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Case Report

Perinatal Arterial Stroke due to Unilateral Cerebral Infarction: Case Report

Vuthamy M Ranjini Srinivasagam, Abdul Hakeem Malik, Nawal Al-Kazemi
Neonatal Unit, Maternity Hospital, Kuwait

ABSTRACT
Perinatal arterial ischemic stroke is a significant cause of neurological deficit including cerebral palsy, mental retardation, delayed motor development, epilepsy and severe cognitive impairment. Arterial stroke is diagnosed primarily in term neonates. One such case of a term newborn with unilateral cerebral infarction which led to spastic hemiplegia is reported along with review of relevant literature.

KEY WORDS: arterial infarction, perinatal, stroke, unilateral

INTRODUCTION
Perinatal arterial stroke (PAS) is diagnosed primarily in term neonates and is responsible for at least 22 to 70% of congenital hemiplegic cerebral palsy in this population and probably some cases of spastic quadriplegic cerebral palsy.[1,2] It is the second commonest cause of seizures in newborn of more than 32 week gestation and 12% of all neonatal seizures in full term infants are due to cerebral infarction.[3]

CASE REPORT
A term baby girl was born by spontaneous vaginal delivery to a 25-year-old primi gravida mother at 41 ± 2 weeks. Parents are first cousins. Antenatal period was uneventful. Artificial rupture of membranes done 22 hours prior to delivery revealed a clear liquor and labor was augmented with pitocin. Some episodes of deep deceleration of the fetal heart rate were noted during the induction. Apgar scores were seven and nine at one and five minutes respectively. She was kept in the delivery room for routine observation. At five hours of age, she was noticed to be cyanosed but she improved with free flow O2 and was admitted to the Special Care Unit (SCU) for close observation.

The first blood gas analysis done at six hours of age was normal. At 13 hours of age, she had clonic convulsions of the limbs which were treated with phenobarbitone injection. Two further episodes of clonic seizures at 18 hours and 23 hours were also treated with phenobarbitone and phenytoin and she was started on maintenance doses of both drugs. Vital signs including blood pressure were normal. She was lethargic and her anterior fontanelle was tense and bulging. Septic screening was negative. She was started on empirical antibiotics. Lumbar puncture failed. Cranial ultrasound examination on day two was normal. On repeat ultrasound on day five, compression of the left lateral ventricle with edema of the adjacent brain parenchyma was noted.

Her condition improved and anticonvulsants were gradually tapered and stopped by day eight and enteral feeds were started. On day nine, she had sudden deterioration with tachypnea and labor was augmented with pitocin. Some episodes of deep deceleration of the fetal heart rate were noted during the induction. Apgar scores were seven and nine at one and five minutes respectively. She was kept in the delivery room for routine observation. At five hours of age, she was noticed to be cyanosed but she improved with free flow O2 and was admitted to the Special Care Unit (SCU) for close observation.

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Her condition improved and anticonvulsants were gradually tapered and stopped by day eight and enteral feeds were started. On day nine, she had sudden deterioration with tachypnea and aspiration pneumonia was suspected on CXR. After a full septic screening including CSF examination, she was started on second line antibiotics. All cultures were sterile. On day 10, she developed severe metabolic acidosis and was transferred to intensive care unit for ventilation. She was noted to be hypertensive and was started on IV hydralazine. Echocardiogram on day 11 was normal.

Cranial ultrasound examination repeated on day 11, revealed an increase in the echogenecity of the left parieto-occipital region suggesting edema of the parenchyma with mass effect on the left frontal horn, effaced sulci and ill defined gyri. A suspicion of left middle cerebral artery infarction was raised (Fig. 1). Magnetic resonance imaging of the brain (MRI) and magnetic resonance...
angiography (MRA) were done on day 14. MRI brain showed diffuse altered signal of the left cerebral hemisphere (sparking the thalamus and the medial surface) with diffusion restriction along the left middle cerebral artery territory (Fig. 2 and 3). MRA revealed narrowing of a long segment of the intracranial part of the left internal carotid artery with occlusion of the left middle cerebral artery (Fig. 4). Electroencephalogram (EEG) on day 29 showed a background activity of 3 - 4 HZ with asymmetry over the left hemisphere.

Protein S, Protein C and Antithrombin III levels were normal and maternal screening for Antiphospholipid syndrome was negative. Factor V Leiden mutation, Prothrombin 20210A mutation and MTHFR (methylene tetrahydrofolate reductase) mutation could not be done in Kuwait.

Her head circumference was below the 3rd centile for age. The deep tendon reflexes were brisk on the right side. She was sucking well by day 27. At discharge on day 41, she was alert and establishing good eye contact. Head circumference remained the same as at birth and except for brisk deep tendon reflexes on the right side no signs of hemiparesis were noted. At follow-up at three months of age, tone was increased on the right side. Head circumference was still below the 3rd centile on the chart. At five months of age, paucity of movements was noted on the right side. Psychosocial development was normal. At eight months, frank signs of a right hemiparesis could be noted and the head circumference had fallen well below the 3rd centile. She is on follow-up with the pediatric neurologist, and is on regular physiotherapy.

DISCUSSION

PAS occurs by definition between 28 weeks gestation and seven days of age although studies of PAS often include cerebro-vascular events occurring up to 28 days of life[1]. In the Canadian Pediatric stroke registry, a quarter of the children were term neonates[6]. Perinatal stroke has become increasingly recognized but the incidence is under estimated because of the variation in the presentation,

Fig.1: Cranial ultrasound - coronal view showing an area of ill-defined echogenicity in the distribution of the left middle cerebral artery

Fig.2: MRI - diffusion weighted imaging showing increased signal intensity in the distribution of the left middle cerebral artery with mild dilatation of the left lateral ventricle

Fig.3: MRI - apparent diffusion coefficient image showing the same infarct to be hypointense

Fig.4: MRA showing absence of flow in the left middle cerebral artery and narrowing of the intracranial segment of the left internal carotid artery
The incidence is reported as one in 4000 term births[4].

Factors contributing to the increased risk of stroke among neonates include complications that occur before, during and after delivery. Maternal conditions include prothrombotic disorders such as the presence of antiphospholipid antibodies (anticardiolipin and lupus anticoagulant antibodies), cocaine abuse, pre-eclampsia and placental conditions such as chorioamnionitis and placental vasculopathy[5]. Foetal Parvovirus B19 infection can also predispose to stroke. During a traumatic delivery the infant may develop a cervical arterial dissection which may predispose to stroke especially in the context of thrombophilia.

Neonatal risk factors include cardiac disorders, blood disorders such as polycythemia, birth asphyxia (< 5%) and genetic thrombophilias such as factor V Leiden mutation, Prothrombin 20210A mutation and MTHFR involved in homocysteine metabolism, elevated lipoprotein (a), Protein C deficiency and elevated factor VIII C[6]. Presence of factor V Leiden mutation may influence both the nature and combination of sites involved and lead to high risk of hemiplegia and when associated with high factor VIII C levels, it is associated with an 80% risk of poor neurological outcome[7]. But in a vast majority of infants as in this case, the cause is undetermined.

Newborns with PAS either present acutely with seizure or lethargy or may be clinically asymptomatic until several months of age when, pathologic handedness or seizures are first noted[8]. Seizures are the most common presenting feature as in this case and occur as early as 12 hours after birth and up to 10 days after delivery[9]. Seizures are usually focal and may occur in the absence of other signs of neonatal encephalopathy such as abnormalities of tone or feeding, or depressed level of alertness[8].

Focal neurological signs are rare, with hemiparesis present in less than 25% of the cases[9]. Many of the babies are well in the interictal period and are likely to remain undetected[9]. In one study, a male predominance of 1.5:1 was noted[10].

Diagnostic tests include computerised axial tomogram (CT), MRI, MRA and less commonly conventional angiogram. Cranial ultrasound has a limited role because of the peripheral location of most infarcts[11]. As noted in this case, cranial ultrasound by an experienced sonologist may reveal an echodense structure within the vascular territory after a phase of normal appearance[11].

MRI is more sensitive in detecting early or small infarcts. Diffusion weighted MRI is more sensitive than CT to detect early signs of the infarction. In this technique, as early as two days after the infarct, abnormal focal findings indicating cytotoxic edema can be seen before the above abnormality can be seen on regular MRI sequence. This diffusion restriction does not persist for more than one week. After five days, the diagnosis has to rest entirely on T2 weighted images[12].

Vascular imaging modalities such as MRA or conventional angiography can define the presence or absence of arterial stenosis or occlusion. In this case, MRA clearly demonstrated the narrowing of the intracranial segment of the left internal carotid artery and the occlusion of the left middle cerebral artery. Unilateral infarcts are more common on the left side and the anterior (carotid) circulation is five times more commonly involved than the posterior circulation[8].

Outcome of PAS is variable and depends on the severity, anatomic location and other factors not yet well characterized. In one third of newborns the outcome is normal. In two-thirds of survivors neurological deficits are detected after several years[8]. Infarct topography is a predictor of hemiparesis. It is more likely with concomitant MRI abnormalities in the basal ganglia, posterior limb of the internal capsule and the cerebral cortex[10].

In affected infants, upper limbs are affected more severely than the lower limbs with loss of independent finger movements. Seizures disorders are present in 15% of the children. Infants with acute presentation were more likely to develop epilepsy. Delayed presentation (> 28 days) was associated with increased risk for cerebral palsy[13]. Language delay, learning difficulties and behavioral disorders are more common in the acute group. Mortality is less than 10%. Recurrence risk for PAS is less than 5%[8].

In the absence of a known pathophysiological mechanism, only supportive care is provided to the newborn[14]. Thrombolytic treatment is rarely if ever an option and anticoagulant therapy is controversial and rarely indicated given the relatively low recurrence risk. In the Canadian Pediatric stroke registry, less than 10% received anticoagulant therapy[8]. It should be considered when the etiology is clearly embolic in nature.

CONCLUSION

Recognition of PAS is important since early diagnosis and in selected cases specific therapy may improve the outcome. Seizures in the first three days of life combined with pathological EEG findings should lead to MRI regardless of a normal cranial ultrasound. There is much to be learned about the natural history of perinatal stroke and further evidence based strategies for prevention or treatment are needed to improve the outcome.
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Case Report

Atypical Rash in Adult Onset Still’s Disease: Case Report

Tarek Abdel Hamed Mostafa Dowod, Magdy Abas Ali Mohammed, Anwaar Yahya Al-Sumait
Department of Medicine, Al-Adan Hospital, Ministry of Health, Kuwait

ABSTRACT

The diagnosis of adult onset Still’s disease is usually based on a symptom complex and the well-described typical rash, seen in most patients (Still’s rash). Other cutaneous manifestations of adult onset Still’s disease have been reported but these are not well known. This case report describes the occurrence of an atypical skin eruption (prurigo pigmentosa) in a young female with adult onset Still’s disease in the absence of the classic evanescent rash of Still’s disease. The association of prurigo pigmentosa and adult onset Still’s disease is extremely rare and only a single case report exists in the English literature. Therefore, we should carefully follow the clinical course of a patient in order not to overlook these atypical cutaneous manifestations of adult onset Still’s disease.

KEY WORDS: adult onset Still’s disease, prurigo pigmentosa, Still’s rash

INTRODUCTION

Both prurigo pigmentosa (PP) and adult onset Still’s disease (AOSD) independently are uncommon diseases. Expectedly the association of PP and AOSD is extremely rare. Only one case report of PP in association with AOSD exists in English literature [1].

AOSD is an inflammatory disorder used to describe a series of adult patients who did not fulfill criteria for classic rheumatoid arthritis but had features similar to children with systemic rheumatoid arthritis [2,3].

To establish a diagnosis of AOSD requires the presence of certain major or minor criteria or a combination of both, and absence of certain exclusions (Tables 1, 2 and 3) [4].

Six sets of criteria have now been proposed for establishing the diagnosis of AOSD [5-10]. These sets are similar with the difference being the number of major and minor criteria required.

A comparison of these six sets of criteria demonstrated that the Japanese criteria had the greatest sensitivity in establishing the diagnosis. The Japanese criteria requires the presence of five features with at least two being major diagnostic criteria.

PP is a rare dermatosis with unknown etiology [11]. It is seen most commonly among young adult Japanese females [12]. Clinically, it presents itself as pruritic urticarial papules, papulo-vesicular and vesicles arranged in a reticulate pattern and distributed symmetrically on the back, neck and chest [13]. Lesions involute in a matter of days leaving behind net like pigmentation. Exacerbations and recurrences are the rule [14].

CASE REPORT

A 26-year-old Nepali female, a mother of one child with no significant past medical history presented with a ten-day history of daily spiking fever, chills, arthralgias, myalgias and pruritic skin eruption.

On examination, she looked pale, febrile (temperature 39.2 °C), had non-suppurative pharyngitis and generalized lymphadenopathy. The lymph nodes were slightly tender, small and discrete. The cardio-respiratory, abdominal and neurological systems were normal. There was no evidence of active arthritis.

The skin eruption was in the form of pruritic papular eruption arranged in a reticulate pattern and distributed symmetrically on the face, neck, trunk, and legs (Figs. 1a, 1b and 1c).

Investigations: CBC: WBC 13.95 X 10⁹/l, differential count showed neutrophilic leukocytosis (11.65 X 10⁹/l), Hb 10.1 g/dl, MCV 82.3 fl (79.4-94.8 fl), MCHC 26.4 pg (25.6-32.2 pg), platelets 314 X 10⁹/l (182-369 10⁹/l),
ESR 115 mm/hour, C-reactive protein 201 ng/l, ASO titer < 200 IU/ml, liver function tests: AST 131 IU/l (0-31), ALT 273 IU/l (0-35), ALP 266 (35-104 IU/l), total bilirubin 15.9 µmol/l (3-22).

S. iron 8.25 µmol (6.6-26) and S. transferrin 3.91 g/l (2.52-4.29) were normal. S. ferritin 2000 ng/ml (10-120) was very high. Coagulation profile was normal. Other biochemical profile including renal profile, lipid profile, S. calcium, S. magnesium and phosphorus were within normal limits. S. pregnancy test was negative.

Complete sepsis work-up including throat swab, urine routine, blood culture, thick and thin blood film for malaria, Widal test, Brucella agglutination tests, monospot test, CMV serology, mycoplasma serology, HIV serology, hepatitis serology were all negative.

Collagen screen (RA factor, ANA, ANCA, anti-mitochondrial antibody, thyroid autoantibodies) was negative. Screening for occult malignancy (stool for occult blood, tumor markers) was negative.

Chest X-ray, ECG, abdominal ultrasound, echocardiography, intravenous urogram did not reveal any abnormalities. CT scan chest, abdomen and pelvis revealed discrete axillary, para-
vacular, aorto-pulmonary and left para-aortic lymphadenopathy.

Cervical lymph node biopsy revealed reactive lymphadenitis. Bone marrow examination was consistent with anemia of chronic illness with no evidence of hematological malignancies or lymphomatous infiltration. Skin biopsy was consistent with PP.

Management: The patient was initially managed conservatively with adequate hydration and acetaminophen tablet as required. However, she complained of daily spiking fever up to 41 °C associated with chills and sweating.

The diagnosis of adult-onset Still’s disease was made after excluding the infective, collagen and malignant disorders, supported by the markedly elevated serum ferritin level.

The eruption and fever subsided after the administration of prednisolone 1 mg/kg/day. It required almost a week for fever to resolve completely. The patient was discharged on a steroid tapering dose. On follow-up, ESR, C-reactive protein and S. ferritin level returned to levels within the normal reference range.

**DISCUSSION**

The diagnosis of AOSD can be very difficult. There are no specific tests and reliance is usually placed on a symptom complex and the well described typical rash seen in most patients. The classic evanescent rash of Still’s disease was first
noted by Boldero in 1933\cite{15} and is referred to as a Still’s rash or rheumatoid rash despite the absence of an association with adult sero-positive rheumatoid arthritis. While 92% of all patients demonstrate some cutaneous manifestations during their illness, the more specific Still’s rash is seen in 86% of patients with AOSD\cite{16}. Other cutaneous manifestations of AOSD have been reported but these are not well known (Table 4).

AOSD has been associated with markedly elevated serum ferritin level in as many as 70% of patients with disease activity and has been suggested as a serologic marker to monitor the response of treatment\cite{17}. The association of PP and AOSD is very rare and only a single case report exists in the literature\cite{1}. In this case, the patient developed PP-like lesions in addition to the typical rash of AOSD.

In our case, except for Still’s rash, all the criteria of AOSD were present, with support from highly raised serum ferritin level. The diagnosis was made after excluding all other possible causes, i.e., infectious diseases, other rheumatic diseases, vasculitis and malignant disease.

Our case suggests that PP can also be included as one of the many varied dermatological features of AOSD. Paucity of its description in the literature merits its presentation.

CONCLUSION
The diagnosis of AOSD can be made in the absence of the typical Still’s rash but in the presence of other atypical cutaneous features. Therefore, we should carefully follow the clinical course of a patient in order not to overlook these atypical cutaneous manifestations of ASOD.

ACKNOWLEDGMENT
We thank Dr Sara Jassim Al–Ghabandi and Dr Jaffer Ismail Ali for their kind co-operation and support in the preparation of this study.

REFERENCES
Case Report

The Holt-Oram Syndrome with Double Outlet Right Ventricle with Valvular and Subvalvular Pulmonary Stenosis

Awni Al-Madani
Department of Pediatric Cardiology, Queen Alia Heart Institute, Amman, Jordan


ABSTRACT

The Holt-Oram syndrome is an autosomal dominant condition characterized by skeletal abnormalities that are frequently accompanied by congenital cardiac defects, most commonly an atrial septal defect. We report a rare case of sporadic Holt-Oram syndrome with double outlet right ventricle (DORV), valvular and subvalvular pulmonary stenosis, persistent left superior vena cava draining to the left atrium, and an ectopic right kidney.

KEY WORDS: DORV, Holt-Oram syndrome, pulmonary stenosis

INTRODUCTION

The Holt-Oram syndrome is an autosomal dominant condition characterized by skeletal abnormalities that are frequently accompanied by congenital cardiac defects. The cause of these disparate clinical features is unknown but mutations in a gene on chromosome 12q2 can produce a wide range of disease phenotypes. Characteristics of the Holt-Oram syndrome include skeletal defects range from minor signs such as clinodactyly, limited supination, and sloping shoulders to severe reduction deformity of the upper arm. Cardiac defects were seen in 95% of familial cases and included both atrial septal defects (ASD, 34%) and ventricular septal defects (VSD, 25%). Herein, we report a rare sporadic case of Holt-Oram syndrome with double outlet right ventricle (DORV), valvular and subvalvular pulmonary stenosis, and persistent left superior vena cava (SVC).

CASE REPORT

A 20-month-old boy, a product of full term normal vaginal delivery, was referred for cardiac assessment because of cyanosis and heart murmur. He was the third of six siblings with no similar illnesses in the family. Parents were not relatives and both were healthy. At admission his height and weight were below the fifth centile and he had central cyanosis. Cardiac examination showed ejection systolic murmur grade III/VI at the third intercostals space along the left sternal border with a faint second heart sound. His peripheral pulses were felt well symmetrically.

He also had a deformity of the right upper limb, absence of the right radius, and narrow shoulder (Fig. 1). Chest X-ray showed cardiomegaly, boot shaped heart and oligemic lung fields (Fig. 2). His right upper limb X-ray showed absence of the radius bone, with hypoplasia of the right thumb (Fig. 3). Intravenous urography (IVU) showed the right kidney ectopically situated in the pelvis (Fig. 4).

The electrocardiogram (EKG) revealed right axis deviation and right ventricular hypertrophy. A 2-D echocardiogram showed DORV, valvular and subvalvular pulmonary stenosis with maximum pressure gradient of 75 mmHg. Cardiac catheterization showed DORV with aortic-mitral discontinuity, VSD, pulmonary valvular and subvalvular stenosis (Figs. 5 and 6), and persistent left SVC draining to the coronary sinus. The hemodynamic data and O2 saturations are shown in Table 1.

DISCUSSION

The original description of Holt-Oram syndrome emphasized anomalies of upper extremities associated with ostium secundum ASD transmitted through four generations. Autosomal dominant transmission was subsequently established although 40% of cases in one report were sporadic. A gene for Holt-Oram syndrome has been previously mapped to chromosome 12q2. The review of literature from 1974 -1995 showed that atrial septal defect was the most common cardiac abnormality (60.3%...
Fig. 1: Shows deformity of right forearm with hypoplastic thumb and narrow shoulder.

Fig. 2a, 2b: Chest X-Ray showing cardiomegaly, boot shaped heart, and oligemic lung fields.

Fig. 3: X-Ray of the upper limbs shows absent radius, and hypoplasia of the right thumb.

Fig. 4: IVU shows ectopic right kidney in the pelvis.

Table 1: Hemodynamics and $O_2$ saturations

<table>
<thead>
<tr>
<th>Site</th>
<th>$O_2$ Saturation</th>
<th>Pressure mmHg</th>
</tr>
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<tbody>
<tr>
<td>SVC</td>
<td>60</td>
<td>-----</td>
</tr>
<tr>
<td>RA</td>
<td>65</td>
<td>Mean=7</td>
</tr>
<tr>
<td>RV</td>
<td>75</td>
<td>100/0-12</td>
</tr>
<tr>
<td>PA</td>
<td>74</td>
<td>20/11</td>
</tr>
<tr>
<td>LA</td>
<td>95</td>
<td>Mean =9</td>
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<tr>
<td>LV</td>
<td>92</td>
<td>100/0-15</td>
</tr>
<tr>
<td>AO</td>
<td>85</td>
<td>100/60</td>
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</tbody>
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SVC = superior vena cava; RA = right atrium; RV = right ventricle; PA = pulmonary artery; LA = left atrium; LV = left ventricle; AO = aorta
of 189 cases) occurring singly or in combination with other malformations. Thirty-three cases (17.5%) reported in the literature had more complex congenital malformations of the heart. Other cardiovascular anomalies included the following: Persistent left SVC draining into the coronary sinus in four patients; DORV with mitral valve atresia, hypoplasia of the left ventricle, normally related great arteries, perimembranous VSD with outlet extension and infundibular pulmonary stenosis in one case; complete atrio-ventricular septal defect with sub aortic stenosis in one case; aortic arch hypoplasia and coarctation of the aorta in one case and high degree atrio-ventricular block in one patient.

Our patient had the following cardiovascular anomalies: DORV, valvular and subvalvular pulmonary stenosis, left SVC draining to the coronary sinus and ectopic right kidney. These findings have been reported rarely.

CONCLUSION

The Holt-Oram syndrome is an autosomal dominant condition, characterized by skeletal abnormalities associated with congenital heart defects mostly ASD secundum. Herein, we report a “sporadic case” of Holt-Oram syndrome in association with DORV, pulmonary and subvalvular pulmonary stenosis and left SVC draining to the coronary sinus.

REFERENCES

Case Report

Removal from the Small Intestine of a Long Foreign Body (17 cm Long Pencil) that was Introduced per Anum

Mujahed Al-enezi, Samir Fouad, Eman Abul
Department of Surgery, Al Sabah Hospital, Kuwait

ABSTRACT

We report a case of a 14-year-old male with a 17 cm long foreign body in his small bowel. The clinical presentation was non-specific and the diagnosis was made only at laparoscopy. This case study emphasizes the possibility of a linear foreign body in the small bowel which has migrated from the large bowel. This type of migration of the foreign body has not been previously reported.

KEY WORDS: foreign body, migration, small bowel

INTRODUCTION

A wide range of foreign bodies (FB) has been retrieved from the gut and reported. The presentation may be in the form of complications like intestinal obstruction, perforation, formation of abscesses, etc[1]. Most cases of ingested FB occur in children who swallow coins and small objects. In adults, the problem most often consists of esophageal meat impaction, or less commonly, lodged bones[2] or toothpicks[3]. Prisoners and mentally defective persons occasionally swallow foreign objects intentionally. About 90% of swallowed FB pass into the stomach and from there into the intestine and eventually pass out without incident, 10% hang in the esophagus and up to 1% will result in intestinal perforation[4]. If they traverse the esophagus, objects whose dimension exceeds 2.5 cm tend to remain in the stomach. Ten percent require endoscopic removal and 1% requires surgery. In the case of insertion of FB into the rectum (as part of sexual activity), it usually can be removed either with or without local anesthesia of the anal canal. Sometimes general or spinal anesthesia is needed for transrectal extraction; rarely laparotomy is necessary. In our case the FB was anally introduced and was found in the small intestine.

CASE REPORT

A 14-year-old male student was admitted to the surgical department as a case of acute abdomen. The patient was a known case of bronchial asthma with no history of psychological or mental problems. He was admitted about six days prior to this with complaints of right iliac fossa pain of five days duration. At that time the plain abdominal X-ray (Fig.1) and the ultrasound scan were reported normal. The patient was treated conservatively and was discharged on the fourth day. During the second admission, he presented again with generalized abdominal pain more on the right side associated with fever, diarrhea, and anal pain. His temperature was 38 °C, and the pulse and blood pressure were normal. Systemic examination did not reveal any abnormality. Abdominal examination revealed generalized tenderness, with moderate rigidity, and the presence of a diffuse mass in the right lumbar region, about 5 cm in diameter, tender and firm. The bowel sounds were present. The hemoglobin was 14.9 gms/dl and the leucocyte count was 20.5 x 10⁹/l. Exploratory laparoscopy was done on the same day under general anesthesia, which showed normal appendix, yellowish fluid in the peritoneum and a protrusion in the ileum stenting a segment of the small intestine. Laparotomy was performed through a lower midline incision and through an enterotomy about one foot from the ileo-cecal junction at the site of the protrusion, the FB was extracted (Fig. 2). This was a 17 cm long lead pencil. This FB was causing kinking and partial obstruction of that segment of the ileum. Appendicectomy was done and the abdomen was closed. Post-operative course was uneventful.
On interrogation in the post-operative period, the patient admitted to passing the pencil per anum about a month before the operation. During this period he was having irregular bowel motions in the form of alternating diarrhea and constipation.

**DISCUSSION**

In the present case, patient presented first with abdominal pain, mainly in the right iliac fossa associated with low grade fever and diarrhea, but he did not give any history of introducing the foreign body. The initial diagnosis of FB ingestion or insertion may be difficult in the absence of positive history. Bowel perforation in these situations is difficult to distinguish from other causes of acute abdomen. A plain X-ray of the abdomen revealed a linear radio-opaque shadow at the right side of the abdomen which was reported as an artifact. Ultrasound scan did not reveal any sign of a foreign body. The patient improved on symptomatic treatment. He was discharged and was for follow up in the surgical out patient clinic. However, he later presented to the surgical casualty as a case of acute abdomen.

The presence of foreign material anywhere in the body can be difficult to diagnose and identify. This depends on the nature of the FB and the ability to detect it radiologically, or by other means of investigation, especially if there is no proper history. Unusual objects have been recovered from a variety of sites in the gastro-intestinal tract. It is rare to find a case of swallowed FB in adult except in a mentally retarded or psychotic patient; but it has been well described in children. Laparoscopic adjustable gastric banding for morbid obesity migrated completely into gastric lumen and had passed far down the jejunum causing small bowel obstruction\(^5\). Biliary stents commonly used in the management of obstructive jaundice have migrated into the gut and caused obstruction\(^6\). A case of distal small bowel obstruction caused by a migrated self expanding metal esophageal stent was reported\(^7\). Percutaneous endoscopic gastrostomy tube used for long-term enteral nutrition in patients with inadequate oral intake can occasionally migrate to produce small bowel obstruction\(^8\).

There are no reported cases of introducing a long FB through the oral or anal route that has migrated through the gastro-intestinal tract to be found in the small intestine. In our case the FB was introduced through the anal verge and had passed through the colonic flexures to be found in the small intestine about one foot proximal to the cecum causing partial obstruction of the bowel but without perforation.

Laparoscopy is gaining increasing acceptance
for the diagnosis and treatment of selected cases of small bowel obstruction due to FB\cite{9}. When expertise is available, laparoscopy is safe and effective in the management of bezoar-induced small bowel obstruction and is associated with superior post-operative outcomes when compared with the conventional open approach\cite{10}.

REFERENCES

Case Report

Left Main Coronary Artery Ostial Stenosis with Biologic Glue Post-Bentall Procedure

Mohammad Al-Mutairi, Fahed AlEnezi, Tareq Al-Einati
Divisions of Cardiology and Cardiothoracic Surgery, Chest Diseases Hospital, Kuwait

ABSTRACT

We describe a case of acute occlusion of the left main coronary artery by a biologic glue same day after Bentall procedure for ectasia of the ascending aorta. Surgical treatment of this condition required emergency coronary artery bypass surgery.

KEY WORDS: Bentall procedure, biologic glue, coronary artery, narrowing, stenosis

INTRODUCTION

Biologic glues such as gelatin-resorcinol-formaldehyde (GRF) glue (Cardial, Technopole, Sainte-Etienne, France)[1-4], Fibrin-glue (Aventis Behring GmbH, Marburg, Germany), and more recently, BioGlue (Cryolife International, Inc, Kennesaw, GA) have been used to secure graft anastomoses in an aorta that has become fragile due to different pathological processes. Reported early complications due to their use are rare. Therefore, we would like to report this case of acute occlusion of the left main coronary artery (LMCA) by biological glue and discuss the possible mechanisms that could have led to this complication.

CASE REPORT

A 29-year-old woman was admitted to a peripheral hospital with hypochromic microcytic anemia for investigation. Her hemoglobin on admission was 71 g/l. There was no history of gastrointestinal bleeding and no menorrhagia. On physical examination, the patient had a marfanoid habitus with arm span exceeding height, reduced upper to lower body segment ratio, arachnodactyly of fingers and toes, with positive thumb and wrist signs. Her pulse rate was 95 beats per minute and her blood pressure was 140/70 mmHg. Cardiac auscultation revealed a diastolic murmur. Echocardiography showed good left ventricular systolic function with ejection fraction of 65%, moderate to severe aortic regurgitation and dilated aortic root. Transesophageal echocardiography (TEE) confirmed the dilation of the aortic root measured at 7.4 cm (Fig. 1). Magnetic resonance imaging (MRI) of the mediastinum reported sino-tubular ectasia of the ascending aorta, likely due to cystic medial necrosis (Fig. 2).

The patient was referred to our hospital for surgical repair. She underwent a Bentall procedure with a 25 mm St. Jude valved conduit and re-implantation of both coronary ostia. A biologic glue was applied generously during the operation to consolidate the aortic wall and minimize the risk of bleeding.

Immediate intra-operative TEE showed good valve repair and very mild anterior wall hypokinesia that was attributed to the prolonged cardiopulmonary bypass and cross-clamp time.

The patient was admitted to the intensive care unit. Few hours later the patient’s hemodynamics deteriorated with sinus tachycardia and severe hypotension requiring an increase in inotropic support. Her electrocardiogram showed ST segment depression in the anterolateral leads with frequent premature ventricular contractions. Her troponin level increased up to 100 ng/ml. Bedside echocardiography demonstrated severe anterior wall hypokinesis with a drop in her left ventricular ejection fraction from 50% (intra-operatively) to 35%. There was no evidence of cardiac tamponade.

Urgent coronary angiography was performed which demonstrated a critical stenosis in the very proximal LMCA just after the implanted coronary button (Figs. 3 & 4). The patient was taken to the operating theatre and she underwent a coronary artery bypass graft surgery. A single vein graft was anastomosed to the left anterior descending artery. Her hospital
course was complicated by heart failure and chest infection and she received treatment for both. She was released home three weeks post surgery with very close follow-up in the clinic.

DISCUSSION

The Bentall procedure for aortic root and valve replacement with coronary re-implantation was initially described in 1968[5]. This procedure is considered the “gold standard” for the treatment of combined valve and ascending aortic pathology. The procedure is performed most commonly in patients with degenerative aortic disease, including atherosclerotic disease, ectasia and post-stenotic aortic dilatation[6,7]. The complication of single coronary ostial stenosis following re-implantation is extremely rare in this procedure, occurring in less than 2% of patients[8].

Biologic adhesive hemostatic sealants facilitate cardiac surgical procedures and are particularly useful in cases in which the proclivity for bleeding is high[9]. Various biologic glues have been used in cardiac surgery for more than two decades[10]. Despite initial enthusiasm, late complications directly related to their use have become apparent with time[11].

Embolization of GRF biological glue to the cerebral parenchyma, following repair of an aortic dissection, has been described before[12]. This may be due to peri-operative migration of the glue into the luminal surface of the aorta and embolization to the brain. Acute coronary syndrome four days following repair of aortic dissection was described and attributed to possible embolization of a fragment of glue to the left anterior descending artery[13]. Late obstruction of coronary ostia eight months following repair of aortic dissection has also been described[14]. This has been attributed to excessive application of formaldehyde glue causing scarring.

Our patient deteriorated quite rapidly in the immediate post-operative period with this critical coronary stenosis. One possible mechanism for this stenosis is significant local shrinkage and distortion of the coronary anastamotic site secondary to the rapid polymerization of the glue that was generously applied. Another possibility is unexpected leak of the biologic glue into the
lumen of the LMCA leading to gradual blood flow obstruction within hours. Kinking of the anastomosed coronary artery although possible, would have been seen intra-operatively with poor flow in the coronary artery.

CONCLUSION
The use of biologic glues can be associated with a certain amount of risk, both acute as well as long term. Therefore, we believe and suggest that great care is required when biological glues are used.

REFERENCES
Case Report

Streptococcus Pneumoniae as a Cause of Early Onset Neonatal Sepsis: First Report from Kuwait

Adnan El-Kishawi1, Aymen H El-Emmawie1, Nasser Yehia A Aly2,3
1Departments of Pediatrics and 2Infection Control, Farwaniya Hospital, Ministry of Health, Kuwait
3Department of Tropical Medicine and Hygiene, Faculty of Medicine, University of Alexandria, Egypt

ABSTRACT

Streptococcus pneumoniae is a rarely recognized cause of neonatal sepsis. We present a case of S. pneumoniae bacteremia that developed on the second day of life in a neonate born at 38 weeks of gestation to a mother who had prolonged rupture of the membranes (19 hours). The isolate was penicillin sensitive. The child responded to a 14 day course of antibiotics. S. pneumoniae was isolated from the vagina of the mother by a swab culture collected prior to delivery, and isolates from the mother and the baby had the same sensitivity patterns. This case expands the spectrum of organisms responsible for early onset neonatal sepsis in Kuwait. To our knowledge, such an incident was not previously reported from Kuwait.

KEY WORDS: neonatal, sepsis, Streptococcus pneumoniae

INTRODUCTION

Streptococcus pneumoniae is an alpha hemolytic Gram-positive diplococcus. It is present in more than 50% of the healthy population in the respiratory tract. Neonatal materno-fetal infection is rare but serious[1]. Much like group B streptococcus, it may cause early onset infection and has been suspected to spread from mothers who are colonized in the vagina at the time of delivery[2]. S. pneumoniae is not a part of the resident vaginal flora but in some women it can be a transient part of the vaginal flora, and pelvic infection can occur especially, if a predisposing condition exists[3]. The mortality in neonates is up to 60%[1].

CASE REPORT

The patient was a vaginally-delivered female neonate of 38 weeks gestation. She had a birth weight of 3 kg and an Apgar score of eight and nine at one and five minutes respectively. Her mother was 20 years old, Para 0+0, and had prolonged rupture of membranes (PROM) 19 hours prior to delivery. However, she did not receive any intra-partum antibiotics. A high vaginal swab was taken. The mother had neither fever nor chorio-amnionitis. There was no tachycardia on fetal heart tracing.

The patient was asymptomatic during the first day. Twenty-seven hours post-delivery, she developed mild tachypnea, poor sucking, cyanosis and irritability which warranted admission to the neonatal intensive care unit (NICU). The patient was afebrile but had skin mottling. Ampicillin and gentamicin were started after drawing blood and cerebrospinal fluid (CSF) for cultures. The patient was placed under oxygen hood. Within few hours, the patient had gradual deterioration of respiration with respiratory acidosis. She was mechanically ventilated for one day. Chest radiograph showed increased broncho-vascular markings. Head ultrasound was normal.

Initially, the patient had a leukocyte count of 13.2 x 10^9/l (neutrophils 62% and lymphocytes 32%), platelet count of 392 x 10^9/l, hemoglobin of 14.5 g/dl and C-reactive protein of 118 mg/dl. The next day the leukocyte count dropped to 2.9 x 10^9/l (neutrophils of 11% and lymphocytes of 88%).

Two pediatric aerobic blood culture bottles were positive for gram-positive lancet shaped diplococci 72 hours following incubation using the Bactec System (Becton Dickenson, USA). The isolate showed alpha hemolysis and growth was inhibited by optochin. The organism was identified as Streptococcus pneumoniae using the Vitek system (Vitek, bioMerieux, France) and was sensitive to ampicillin, pencillin, vancomycin, cefotaxime and resistant to gentamicin. CSF culture was negative. The mother’s high vaginal swab culture also showed growth of Streptococcus pneumoniae which was sensitive to ampicillin, penicillin, vancomycin and cefotaxime.

Antibiotics were changed to ampicillin and cefotaxime and given for 14 days. After one week
of treatment, the repeat blood cultures showed no growth and the C-reactive protein dropped to 13.4 mg/dl. The patient responded well to treatment and was discharged without any sequelae.

**DISCUSSION**

We report the first case of neonatal sepsis due to *S. pneumoniae* in a full-term neonate from Kuwait. Most reports suggest that babies infected are likely to be greater or equal to 38 weeks gestation. Most mothers found to carry this organism were asymptomatic at the time of delivery[4].

Although molecular confirmation of the two isolates was not conducted in our case, evidence to suggest that the organism had spread perinatally was based on: 1) isolation of *S. pneumoniae* from the patient’s blood having the same sensitivity pattern as that of the isolate recovered from the mother 2) the presence of a probable maternal risk factor for infection or colonization (PROM). However, we do not know the full extent of the mother’s risk factors for colonization with *S. pneumoniae*.

Investigators have found evidence to suggest that *S. pneumoniae* is acquired from the mother during childbirth in a manner similar to that by which group B streptococcus is acquired[5]. Several studies have demonstrated genital colonization with *S. pneumoniae* to be exceptionally rare (≤ 0.03%)[6].

Early onset *S. pneumoniae* neonatal sepsis has a worse prognosis and higher mortality than late onset sepsis[7]. Death in early onset sepsis usually occurs within 36 hours of presentation. Presentation of *S. pneumoniae* neonatal sepsis has no distinct features to differentiate it from other causes of neonatal sepsis.

In one study[8], various forms of clinical presentation attributed to *S. pneumoniae* included bacteremia (27%), bacterial meningitis (27%), pneumonia (13%), septic arthritis / osteomyelitis (3%) and otitis media (27%). Invasive *S. pneumoniae* infection in that study also presented with leucopenia / neutropenia, but this did not predict poor outcome.

It is interesting that there are available effective pneumococcal vaccines. However, at present, there is no data to support routine pneumococcal immunization of pregnant women, at least until the incidence of the condition has been fully established.

Despite the overall rarity of neonatal *S. pneumoniae* disease laboratories should at least consider reporting its presence in a vaginal screening culture performed for group B streptococcus. The rarity of vaginal carriage of Pneumococcus suggests that this organism carries a higher invasion to colonization ratio than Group B Streptococcus and maternal carriage or neonatal colonization should be more aggressively treated[9].

Indeed, *S. pneumoniae* should always be considered as a cause of neonatal sepsis[9]. It should be specifically sought in swabs taken from the pregnant mother and newborn. If *S. pneumoniae* is isolated, even in the absence of symptoms, antibiotic therapy should be strongly considered for the mother and the baby[10].

In areas where *S. pneumoniae* resistance is a significant problem serious consideration should be given to adding vancomycin and / or large dose cefotaxime to the antibiotic regimens if *S. pneumoniae* is being considered as the cause of the neonatal sepsis[11].

**CONCLUSION**

*S. pneumoniae* is an unusual pathogen in the etiology of sepsis among preterm neonates. Materno-fetal transmission was the only likely source of infection.

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Kuwait Medical Journal 2008, 40 (4): 326 - 331

The First Pilot Study on Characteristics and Practice Patterns of Kuwaiti Breast Cancer Patients

Department of Anatomy, Faculty of Medicine, Health Science Centre, Kuwait University, P.O. Box 24923, Safat 13110, Kuwait. E-mail: fred@hsc.edu.kw

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Nongenetic breast cancer risk factors have never been evaluated in Kuwait. Accordingly, we aimed at examining these factors as well as the immune profile of the patients. Fifty stage I breast cancer patients and 50 age group-matched normal controls were assessed for the level of their peripheral blood lymphocyte subsets and for risk factors associated with their demographic and reproductive characteristics and with diet. The percentages of CD4+ T lymphocytes, CD4+:CD8+ ratio, and CD19+ B lymphocytes were significantly higher in the patients as compared to controls, while the percentages of CD8+ T lymphocytes and natural killer (CD56+) cells were significantly reduced. Risk factors associated with the disease included higher BMI, lack of regular exercise and physical activity in the past 5 years, early age at menarche, late age at first pregnancy, lack of previous information about breast cancer, hormonal therapy, and presence in Kuwait during the invasion/liberation. Other parameters included significantly more frequent consumption of carbohydrate, sweets, animal fat, and vegetable oil (margarine) and less frequent consumption of fresh vegetables and olive oil. This is the first study to highlight the environmental risk factors associated with breast cancer among the Kuwaiti women. We recommend introducing a nationwide campaign to further investigate these factors and to address them accordingly.

Graft Repair of Tracheo-innominate Artery Fistula following Percutaneous Tracheostomy

Jamal-Eddine H, Ayed AK, Al-Moosa A, Al-Sarraf N
Department of Thoracic Surgery, Chest Disease Hospital, Kuwait


Tracheo-innominate fistula (TIF) is a rare complication following percutaneous dilatational tracheostomy (PDT), occurring in < or =1% of cases. It usually develops three days to six weeks after the procedure and is fatal in the majority of cases, even after successful initial repair. We present a successfully treated case of TIF using a Goretex graft to replace the severely destroyed segment of the innominate artery.
Parasites of Urological Importance

Kehinde EO, Anim JT, Hira PR
Division of Urology, Department of Surgery, Faculty of Medicine, Kuwait University, Safat, Kuwait
E-mail: ekehinde@hsc.edu.kw

Urol Int 2008; 81:1-13

With the world increasingly becoming a global village, transnational and transcontinental migration has become the order of the day. It is expected that migrants will take with them some diseases (including parasites) which are normally endemic in their countries of origin, to their host countries. Similarly, environmental changes that result from development of water resources, global warming, growth and migration of population can facilitate the spread of parasites. In this review we describe the epidemiology, presentation, diagnosis and treatment options of parasites that urologists may encounter. Notably among these parasites are Schistosoma haematobium, Echinococcus granulosus, Wuchereria bancrofti and Onchocerca volvulus.

Effect of Smoking Habit on Circulating Adipokines in Diabetic and Non-Diabetic Subjects

Al Mutairi SS, Mojiminiyi OA, Shihab-Eldeen AA, Al Sharafi A, Abdella N
Department of Medicine, Kuwait University, Kuwait
E-mail: san.mut@hsc.edu.kw

Ann Nutr Metab 2008; 52:329-334

**Background:** Despite the well-known inverse association between smoking and body weight, there have been conflicting reports on the association between smoking and adipokines such as leptin and adiponectin.

**Aim:** To determine and compare whether tobacco smoking (cigarettes or sheesha) affects circulating levels of adiponectin and/or influences leptin and leptin receptor (sOb-R) concentrations and free leptin in diabetic and non-diabetic subjects.

**Methods and subjects:** Fasting plasma adiponectin, leptin, sOb-R, glucose, insulin, and lipid profile were determined in 236 subjects grouped as control subjects (n = 53); non-diabetic cigarette smokers (n = 34), non-diabetic sheesha smokers (n = 38), diabetic nonsmokers (n = 75) and diabetic smokers (n = 36). Uni- and multivariate regression analyses were used to determine the associations of these variables with body mass index (BMI) and smoking.

**Results:** When compared to control subjects, smoking cigarettes or sheesha was associated with significantly higher glucose, insulin resistance, total cholesterol, triglycerides, low-density lipoprotein cholesterol (LDL-C) and lower serum leptin, sOb-R and free leptin. The effects of smoking on BMI, leptin and sOb-R were dose-dependent. Binary logistic regression analysis showed that smoking is a significant determinant of BMI; leptin, sOb-R, free leptin index, adiponectin and LDL-C.

**Conclusions:** We conclude that smoking sheesha does not reduce the metabolic effects of smoking. Smoking may modify leptin receptors and modulate leptin synthesis but the weight-lowering effect may not be related to leptin-induced anorectic signals.
Could Nuclear Matrix Protein 22 (NMP22) Play a Role with Urine Cytology in Screening for Bladder Cancer? - Experience at Kuwait University

Department of Pathology, Faculty of Medicine, Kuwait University, Safat, Kuwait

Cytopathology 2008 Jul 9 [Epub ahead of print]

Objectives: This prospective study was undertaken to evaluate nuclear matrix protein (NMP22) compared to urine cytology in the detection of bladder cancer and also to determine whether indexing suspicious cytology to NMP22 could enhance the clinical utility of cytology.

Methods: Cytological findings of voided urine collected prior to a cystoscopic biopsy were correlated with urine NMP22 assay in 46 patients attending the urology clinic in Mubarak Al-Kabeer Hospital. The patients were clinically categorized into newly diagnosed cases of transitional cell carcinoma (TCC), recurrent TCC, TCC in remission and controls.

Results: Using histological diagnosis as the gold standard the sensitivity and specificity of NMP22 were 78% and 43% respectively and of cases with malignant urine cytology were 30% and 87% respectively. If suspicious and malignant cytology were combined as positive results the sensitivity increased significantly to 87% while the specificity decreased but not significantly to 74%. Suspicious or malignant cytology enhanced by positive NMP22 gave a sensitivity of 70% and specificity of 87% neither of which was significantly different from cytology alone. There were three false positive cases on cytology and 13 false positive cases on NMP22 assay. There were three false negative cytology and five false negative NMP22 cases but only one was false negative for both, resulting in a high sensitivity (96%) but low specificity (30%) if either positive NMP22 or malignant or suspicious cytology was taken as a positive result.

Conclusion: Combining NMP22 with malignant or suspicious cytological result improved sensitivity for the detection of bladder cancer but with a major decrease in specificity, suggesting a potential role in screening rather than diagnosis.

Diagnostic Accuracy of Urinary Creatinine Concentration in the Estimation of Differential Renal Function in Patients with Obstructive Uropathy

Al-Hunayan A, Al-Ateeqi A, Kehinde EO, Thalib L, Loutfi I, Mojiminiyi OA
Department of Surgery (Division of Urology), Faculty of Medicine, Kuwait University, Safat, Kuwait E-mail: alhunayan@gmail.com

Urol Int 2008; 80:300-305

Objectives: To determine the diagnostic accuracy of spot urine creatinine concentration (UCC) as a new test for the evaluation of differential renal function in obstructed kidneys (DRF(ok)) drained by percutaneous nephrostomy tube (PCNT).

Methods: In patients with obstructed kidneys drained by PCNT, DRF(ok) was derived from UCC by comparing the value of UCC in the obstructed kidney to the value in the contralateral kidney, and was derived from dimercaptosuccinic acid (DMSA) renal scans and creatinine clearance (CCr) using standard methods. Subsequently, the results of UCC were compared to the results of DMSA and CCr.

Results: 61 patients were enrolled. Bland-Altman plots to compare DMSA and UCC showed that the upper limit of agreement was 14.8% (95% CI 10.7-18.5) and the lower limit was -19.9% (95% CI -23.8 to -16.1). The sensitivity and specificity of detecting DMSA DRF(ok) < or = 35% using UCC was 85.2 and 91.2%, respectively. When UCC was compared to CCr, Bland-Altman tests gave an upper limit of agreement of 10.4% (95% CI 7.9-12.8) and a lower limit of agreement of -11.3% (95% CI -13.8 to -8.9).

Conclusions: UCC is accurate in the estimation of DRF(ok) drained by PCNT.
Risk factors for the development of diabetes mellitus in chronic hepatitis C virus genotype 4 infection

Chehadeh W, Abdella N, Ben-Nakhi A, Al-Arouj M, Al-Nakib W
Department of Microbiology, Faculty of Medicine, Kuwait University, Kuwait

J Gastroenterol Hepatol 2008 Aug 20

**Background and Aim**: A high occurrence of type 2 diabetes (T2D) in patients with chronic hepatitis C virus (HCV) infection has been reported in Kuwait and other countries. However, HCV genotype 4 has been underrepresented in all previous studies. Our aim was to investigate the viral and host risk factors associated with the development of T2D in patients with chronic hepatitis C genotype 4 infection in the absence of liver fibrosis and steatosis.

**Methods**: The study population consisted of 181 HCV-positive patients and 170 control HCV-negative patients with T2D.

**Results**: The prevalence of HCV-patients with T2D was 39.8%. There was no significant association of T2D with gender, nationality, obesity, HCV viral load, or antiviral therapy. Older age (>50 years) and family history of diabetes were the only independent risk factor for T2D in HCV patients. However, the median age and the prevalence of obesity in HCV-positive patients with T2D were significantly lower than those in diabetic HCV-negative patients. By following-up HCV-patients receiving antiviral drugs, a significant decrease of fasting plasma glucose and glycosylated hemoglobin levels was observed in diabetic patients who achieved a sustained viral response (SVR).

**Conclusions**: The risk factors associated with the development of T2D in the general population cannot alone account for the high prevalence of T2D obtained in chronic HCV genotype 4 infection. In the absence of liver fibrosis and steatosis, the improvement in glycemic control obtained in SVR patients may imply direct involvement of HCV in the development of T2D.
Temporal Epidemiology of Microfilaraemia among Migrant Workers Entering Kuwait

Akhtar S, Mohammad HG, Michael E
Department of Community Medicine and Behavioural Sciences, Faculty of Medicine, Kuwait University, PO Box 24923, Safat 13110, Kuwait. E-mail: saeed.akhtar@hsc.edu.kw

BMC Res Notes. 2008 Mar 19;1(1):8

Background: There is paucity of published data on the microfilarial infection among migrants from endemic countries entering Kuwait. The primary objectives of this study were to use routine health surveillance data to i) to estimate the prevalence of microfilarial infection in migrant workers to Kuwait and ii) to determine the occurrence of any time trends in the proportions of microfilaria positives among these workers over the recent past.

Methods: Monthly aggregates of microfilaria thick slide test results obtained from routine health examinations of migrant workers conducted at the Ports and Border Division of Ministry of Health, Kuwait between January 1, 1992 and December 31, 2006, were available for trend analysis of these time series data.

Results: During the study period, the prevalence (per 100,000) of microfilaraemia positive migrant workers was 48 (1169/2449360). A third-order polynomial regression model of monthly proportions of microfilaraemic workers revealed a significant initial increase ($\beta_1 = 2.976 (± 0.157); P < 0.001$), followed by a significant declining trend ($\beta_2 = - 0.0358 (± 0.002); P < 0.001$) and a slight but significant upward trend ($\beta_3 = 0.0001 (± < 0.001); P < 0.001$) towards the end of study period.

Conclusion: This study showed a recent steady but apparently asymptotic decline in the prevalence of microfilarial infection in migrant workers from filarial endemic countries to Kuwait. This may reflect either changes in the socio-economic backgrounds of recent migrants or the effects of recently initiated mass drug administration programs carried out in the endemic countries of origin.

The Technical Aspects and Clinical Significance of Detecting Extended-Spectrum Beta-Lactamase-Producing Enterobacteriaceae at a Tertiary-Care Hospital in Kuwait

Mokaddas EM, Abdulla AA, Shati S, Rotimi VO
Department of Microbiology, Faculty of Medicine, Kuwait University, Safat, Kuwait
E-mail: e.mokaddas@hsc.edu.kw


Extended-spectrum beta-lactamase (ESBL) production by Enterobacteriaceae is an emerging problem. This 3-year prospective study was undertaken to determine the prevalence of such enzymes among the clinically significant isolates of the Enterobacteriaceae family gathered from patients, and to evaluate the different techniques for their detection as well as their clinical significance. Members of the Enterobacteriaceae family isolated from blood, inhibited by the third-generation cephalosporins with minimum inhibitory concentrations (MICs) of < or =2 microg/ml and MIC < or =8 microg/ml and isolates from other sources inhibited by MIC < or =8 microg/ml were also investigated for ESBL production by VITEK2 and E test. Their clinical significance in septicemic patients was analyzed. Out of 3,215 isolates, 1018 (31.7%) were ESBL-producers by both VITEK2 and E test. Of these, 428 (42%) were Klebsiella pneumoniae and 376 (37.0%) were Escherichia coli with overall prevalence rates of 13.3% and 11.7%, respectively. There were a total of 184 septicemic patients infected by ESBL-producing Enterobacteriaceae out of which 134 (73%) needed modification of therapy; most (58%) of these patients were initially on third-generation cephalosporin therapy. A total of 58 (31.5%) patients were infected by ESBL-producing blood isolates which were inhibited by cefotaxime/ceftriaxone at MICs =8 microg/ml (within the susceptibility range). Resistance to both aminoglycosides and quinolones were significantly higher among ESBL-producing isolates compared to non-producers.
Body Iron Stores in Relation to the Metabolic Syndrome, Glycemic Control and Complications in Female Patients with Type 2 Diabetes

Mojiminiyi OA, Marouf R, Abdella NA
Department of Pathology, Faculty of Medicine, Kuwait University, PO Box 24923, Safat 13110, Kuwait. E-mail: segunade@yahoo.com

Nutr Metab Cardiovasc Dis 2008; 18:559-566

Background and aim: Studies suggest that iron plays a significant role in the development of diabetes and its complications. This study evaluates the associations of iron metabolism parameters with the metabolic syndrome (MS), control and complications in female patients with type 2 diabetes mellitus (T2DM).

Methods and results: Ferritin, soluble Transferrin Receptor (sTfR), sTfR/Log ferritin ratio (sTfR-F index), iron, full blood count and high-sensitivity C-reactive protein (hs-CRP) were determined in 110 female patients with T2DM. Steady state beta cell function (%B), insulin sensitivity (%S) and insulin resistance were assessed with homeostasis model. Patients were divided into tertiles of ferritin and sTfR-F index and according to the presence or absence of the MS and diabetic complications. Patients within the lowest tertile of the sTfR-F index had significantly higher fasting insulin, percent B, low-density lipoprotein cholesterol and Apolipoprotein B than those in the highest tertile. Ferritin showed significant correlations with insulin, percent B and inverse correlations with adiponectin and percent S. The sTfR-F index was significantly correlated with insulin, percent B and lipid parameters. Correcting for hs-CRP abolished the correlations with ferritin but not the sTfR-F index. Higher indices of body iron were significantly associated with diabetes complications but no associations were found with MS, glucose or glycemic control. Multiple regression analysis with confounding variables showed ferritin and the sTfR-F index were not independently associated with diabetes complications.

Conclusions: Association of ferritin with metabolic derangements and complications in diabetes is partly dependent on association with inflammation. Iron status, estimated with the sTfR-F index, is associated with metabolic derangements and complications but the associations are dependent on other risk factors. Prospective studies that use the sTfR-F index as a marker of iron status are required to confirm the role of iron in the etiopathogenesis of T2DM and its complications.
**Forthcoming Conferences and Meetings**

Compiled and edited by
Babichan K Chandy

Kuwait Medical Journal 2008, 40 (4): 332 - 338

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International **HIV/AIDS** Conference titled
“Challenges & Insights”
Dec 15 - 17, 2008
London, England, *United Kingdom*
Contact: Abubakar Yaro
Tel: 447-939-848-695
E-Mail: abubakar@ahro.kabissa.org

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**ESICON 2008**, 38th Annual Conference of the
**Endocrine** Society of India
Dec 18 - 20, 2008
Cochin, *India*
Contact: Dr Unnikrishnan AG
Phone: 914-842-801-234 ext 10-66
Fax: 914-842-802-131
E-Mail: endocoordinator@aims.amrita.edu

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**Family Medicine**
Dec 21 - 28, 2008
Fort Lauderdale, FL, *United States*
Contact: Dr. Martin Gerretsen
Phone: 1-888-647-7327; Fax: 1-888-547-7337
E-Mail: cruises@seacourses.com

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Seventh International Conference of Medical:
Contemporary Researches on **Health Problems Sciences**
Dec 23 - 25, 2008
Cairo, *Egypt*
Contact: Hemat Allam, MD
Phone: 00-20-105-660-460; Fax: 00-20-237-622-603
E-Mail: hemat.allam@yahoo.com

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**Infectious Diseases** in the Adult Patient: A Primary Care Update
Dec 29, 2008 - Jan 02, 2009
Sarasota, FL, *United States*
Contact: Christy or Cristina
Phone: 1-866-267-4263 or 1-941-388-1766; Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

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The 25th Annual Conference on **Obstetrics, Gynecology, Perinatal Medicine, Neonatology and the Law**
Jan 02 - 06, 2009
Panama City, *Panama*
Contact: Continuing Medical Education, Boston University School of Medicine, 715 Albany Street, A305, Boston, MA 02118
Phone: 617-638-4605; Fax: 617- 638-4905
E-Mail: cme@bu.edu

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17th Annual Winter **Diagnostic Imaging** Update
Jan 05 - 09, 2009
Beaver Creek, CO, *United States*
Contact: Meeting Organiser
Phone: 650-473-5052; Fax: 650-473-5062
E-Mail: radiologycme@med.stanford.edu

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Update in Pediatric **Emergency and Critical care**
Jan 05 – 11, 2009
Kelowna, BC, *Canada*
Contact: A / Prof Geoff Ramin
Phone: 61- 400-005-668
E-mail: geoffr@medicine-on-the-edge.com.au

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**Medico legal Investigation of Death**
Jan 05 - 07, 2009
Las Vegas, NV, *United States*
Contact: CME Office
Phone: 313-577-1180; Fax: 313-577-7554
E-Mail: thjohnso@med.wayne.edu

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2009 Annual Meeting of the **American Society for Reconstructive Microsurgery**
Jan 10 - 12, 2009
Maui, HI, *United States*
Contact: American Society for Reconstructive Microsurgery - 20 North Michigan Avenue, Suite 700, Chicago, IL 60602
Phone: 312-456-9579; Fax: 312-782-0553
E-Mail: contact@microsurg.org

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**Endocrinology and Rheumatology:** The Most Useful Topics in Both Specialties
Jan 12 - 16, 2009
Sarasota, FL, *United States*
Contact: Christy or Cristina
Phone: 1-866-267-4263 or 1-941-388-1766; Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

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**STD Intensive**
Jan 12 - 16, 2009
Cincinnati, OH, *United States*
Contact: University of Cincinnati, Continuing Medical Education, PO Box 670556, Cincinnati, OH, 45267-0556
Tel.:1-800-207-9399 / 513-558-7277; Fax: 513-558-1708 or 513-558-1756
E-Mail: uccme@uc.edu
The 12th Bangkok International Symposium on HIV Medicine
Jan 14-16, 2009
Bangkok, Thailand
Contact: Ms Jeerakan Janhom
Phone: 662-652-3040 ext 102; Fax: 662-254-7574
E-Mail: jeerakan.j@hivnat.org

The Surgical Management of Spinal Disorders
Jan 17-20, 2009
Beaver Creek, CO, United States
Contact: Nancy Henkel
Phone: 630-681-1040
E-Mail: nhenkel@broad-water.com

6th International Conference for Medical Students in the GCC Countries
Jan 18-21, 2009
Al Ain, United Arab Emirates
Contact: Dr. Abdulla Al Rahoomi
Tel: 00-971-504-475-142; Fax: 00-97-137-137-392
E-Mail: gcc6mconf@uaeu.ac.ae

Dermatology, Lower Extremity, and Practice Management
Jan 18-Feb 01, 2009
Santiago, Chile
Contact: Dr Martin Gerretsen
Tel: 1-888-647-7327; Fax: 1-888-547-7337
E-Mail: cruises@seacourses.com

The Art of Ultrasound Scanning in Fetal Care
Jan 20-22, 2009
Riyadh, Saudi Arabia
Contact: Ms. Virginia Mendoza
Phone: 96-614-427-392; Fax: 96-614-427-393
E-Mail: vmendoza@kfshrc.edu.sa

Clinical Congress of Gastroenterology and Hepatology
Jan 23-25, 2009
Las Vegas, NV, United States
Contact: Ann Means
Phone: 301-941-2618
E-Mail: ameans@gastro.org

Winter Rheumatology Symposium
Jan 24-30, 2009
Snowmass, CO, United States
Contact: American College of Rheumatology, 1800 Century Place, Suite 250, Atlanta, GA 30345-4300
Phone: 404 633 3777; Fax: 404 633 1870

17th European Congress of Psychiatry - AEP 2009
Jan 24-28, 2009
Lisbon, Portugal
Contact: Liraz Bregman
Phone: 41-229-080-488; Fax: 41-227-322-850
E-Mail: aep2009@kenes.com

Advances in Medicine 2009
Jan 25-30, 2009
Miami Beach, FL, United States
Contact: Olivia Cata
Phone: 305-243-7540; Fax: 305-243-7515
E-Mail: ocata@med.miami.edu

Pediatric Emergency Medicine: A Review and Update
Jan 26-30, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Phone: 1-866-267-4263 or 1-941-388-1766
Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

26th Medical and Surgical Gastroenterology: A Multidisciplinary Approach
Jan 26-29, 2009
Snowmass Village, CO, United States
Contact: Johns Hopkins University School of Medicine, CME Office
Phone: 410-955-2959; Fax: 410-955-0807
E-Mail: cmenet@jhmi.edu

NYU Radiology in Hualalai
Jan 27-31, 2009
Hualalai, HI, United States
Contact: Meeting Organiser
Phone: 212-263-3936; Fax: 212-263-3959
E-Mail: michelle.koplik@nyumc.org

Emerging Techniques in Plastic Surgery
Jan 29-31, 2009
New York, NY, United States
Contact: NYU Post-Graduate Medical School, PO Box 1855, Murray Hill Station, New York 10016
Phone: 212-263-5295; Fax: 212-263-5293
E-Mail: rachel.godfrey@med.nyu.edu

Controversy and Updates in Vascular Surgery (CACVS)
Jan 29-31, 2009
Paris, France
Contact: Verane Bergeron
Phone: 33-491-097-053; Fax: 33-496-153-308
E-Mail: Vbergeron@comnco.com

Arthroscopic Surgery 2009
Jan 30-Feb 03, 2009
Idaho, ID, United States
Contact: Sue Duncan, Karon Sorensen
Phone: 801-587-5457; Fax: 801-587-5411
E-Mail: sue.duncan@hsc.utah.edu
23rd Annual Surgical Pathology Workshop
Feb 01 - 06, 2009
Park City, UT, United States
Contact: Leita Rogers
Phone: 801-581-2034; Fax: 801-585-3831
E-Mail: leita.rogers@aruplab.com

Medical Alsalama Hospital 1st International Congress: Challenges beyond the Millennium
Feb 05 - 06, 2009
Abu Dhabi, United Arab Emirates
Contact: Prof Alaa El-Din Ibrahim
Phone: 00-971-501-283-467; Fax: 0-26-215-687
E-Mail: alaabkbs@yahoo.com

New Horizons in Anesthesiology
Feb 08 - 13, 2009
Steamboat Springs, CO, United States
Contact: Office of Continuing Medical Education
Tel: 404-727-5695; Fax: 404-727-5667
E-Mail: cme@emory.edu

Society of Cardiovascular Anesthesiologists 12th Comprehensive Review and Update of Preoperative Echocardiography
Feb 08 - 14, 2009
San Diego, CA, United States
Contact: SCA, P O Box 11086, 2209 Dickens Road, Richmond, VA 23230-1086, US Phone: 804-282-0084; Fax: 804-282-0090
E-Mail:sca@societyhq.com

50th Annual Postgraduate Course in Obstetrics & Gynecology
Feb 08 - 11, 2009
Park City, UT, United States
Contact: Natalie Moore
Phone: 801-581-5501; Fax: 801-585-5146
E-Mail:natalie.moore@hsc.utah.edu

Critical Care and Pulmonary Medicine: An Update and Review
Feb 09 - 12, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Phone: 1-866-267-4263 or 1-941-388-1766
Fax: 1-941-365-7073
E-Mail:mail@ams4cme.com

29th Annual San Diego Cardiothoracic Surgery Symposium
Feb 12 - 15, 2009
San Diego, CA, United States
Contact: Susan Westwood
Phone: 1-805-541-3118; Fax: 1-805-541-3117
E-Mail: susan@amainc.com

5th European Congress on Hematologic Malignancies: From Clinical Science to Clinical Practice
Feb 13 - 15, 2009
Munich, Germany
Contact: Imedex Customer Service
Phone: 1-678-242-0906; Fax: 1-678-242-0920
E-Mail: meetings@imedex.com

Mayo Clinic Interactive Surgery Symposium
Feb 22 - 27, 2009
Kohala Coast, HI, United States
Contact: Mayo School of CME
Phone: 480-301-4580; Fax: 480-301-8323
E-Mail:mca.cme@mayo.edu

STD Advanced
Feb 23 - 27, 2009
Cincinnati, OH, United States
Contact: University of Cincinnati, Continuing Medical Education, PO Box 670556, Cincinnati, OH, 45267-0556
Tel: 1-800-207-9399 / 513-558-7277; Fax: 513-558-1708 or 513-558-1756
E-Mail: uccme@uc.edu
Emergency Medicine: An Evidence-Based Approach to Adult Care
Feb 23 - 27, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Tel: 1-866-267-4263 or 1-941-388-1766
Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

Society of Urodynamics and Female Urology (SUFU) Annual Meeting
Feb 25 - 28, 2009
Las Vegas, NV, United States
Contact: Meeting Organiser
Phone: 847-517-7225
E-Mail: debbie@wjweiser.com

4th International Breast Cancer Congress
March 04 - 06, 2009
Middle East, Iran, Islamic Republic of Iran
Contact: Meeting Organiser
Phone: 982-122-748-001-2; Fax: 982-122-748-001-2
E-Mail: info@crc.ir

10th Annual Advanced Breast Imaging and Interventions
Mar 04 – 09, 2009
Las Vegas, NV, USA
Contact: Stanford Radiology Continuing Medical Education Program, 480 California Avenue, Suite 301, Palo Alto, CA 94306 USA
Phone: 1-888-556-2230 / 1 650 473- 5052
Fax: 1 650 473- 5062
E-Mail: radiologycme@med.stanford.edu

The Society of Surgical Oncology Cancer Symposium 2009
Mar 05 - 08, 2009
Phoenix, AZ, United States
Contact: Meeting Organiser
Phone: 847-427-1400; Fax: 847-427-9656
E-Mail: MtgReg@surgonc.org

2009 Annual Scientific Meeting of the Society of Interventional Radiology
Mar 07 - 12, 2009
San Diego, CA, United States
Contact: Society of Interventional Radiology, 3975 Fair Ridge Drive Suite 400 North, Fairfax, Virginia 22033
Phone: 800-488-7284 / 703-691-1803; Fax: 703-691-1855
E-Mail: annualmeeting@sirweb.org

Interventional Cardiology 2009: 24th Annual International Symposium
Mar 08 - 13, 2009
Snowmass Village, CO, United States
Contact: Michelle Gherardi
Phone: 760-720-2263; Fax: 760-720-6263
E-Mail: mgherardi@promedicacme.com

3rd National Congress on Psychopharmacology
Mar 12 - 15, 2009
Istanbul, Turkey
Contact: Toygun kutay
Phone: 903-124-405-011; Fax: 903-124-414-563
E-Mail: toygun.kutay@serenas.com.tr

American Academy of Allergy, Asthma and Immunology (AAAAI) Annual Meeting 2009
Mar 13 - 17, 2009
Washington, DC, United States
Contact: AAAAI Education Manager
Phone: 414-272-6071
E-Mail: cme@aaaai.org

The 7th Annual Scientific Conference of the Saudi Thoracic Society
Mar 17 - 19, 2009
Riyadh, Saudi Arabia
Contact: Prof Mohamed Al-Hajjaj
Phone: 00-96-614-672-548; Fax: 00-96-612-487-431
E-Mail: msalhajjaj@yahoo.com

International Symposium on Antimicrobial Agents and Resistance (ISAAR 2009)
Mar 18 - 20, 2009
Bangkok, Thailand
Contact: Susan Chung
Tel: 822-3410-0327; Fax: 822-3410-0023
E-Mail: isaar@ansorp.org

The 3rd International Summit Forum of Orthopedic Trauma
Mar 20 - 23, 2009
Guangzhou, China
Contact: GuoXian Pei
Phone: 86-20-61-641-741; Fax: 86-20-61-360-066
E-Mail: chinjot@yahoo.com.cn

Infectious Diseases: Adult Issues in the Outpatient and Inpatient Settings
Mar 23 - 27, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Tel: 1-866-267-4263 or 1-941-388-1766; Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

The 2nd Biennial Congress of the Asian-Pacific Hepato-Pancreato-Biliary Association
Mar 25 - 27, 2009
Bangkok, Thailand
Contact: Wildblue Organizer, Mr Nondh Ninsanond
Phone: 66-27-142-590-1; Fax: 66-27-142-656
E-Mail: info@2-aphpba2009.org
The First Middle East Asia Allergy Asthma Immunology Congress
Mar 26 - 29, 2009
Dubai, United Arab Emirates
Contact: Prof Ruby Pawankar, Dr Fares Zaitoun, Dr Bassam, Dr Abdulla
Phone: 81-485-972-861; Fax: 81-485-972-861
E-Mail: rpawankar@gmail.com

5th International Symposium on Diabetes and Pregnancy - DIP 2009
Mar 26 - 28, 2009
Sorrento, Italy
Contact: Liraz Bregman
Phone: 41-229-080-488; Fax: 41-227-322-850
E-Mail: dip@kenes.com

1st Pan-Asian Computerised Tomographic Colonography (CTC) Congress
Mar 26 - 28, 2009
Hangzhou, China
Contact: Lesley Stevens
Phone: 00-441-920-885 Fax: 44-192-0-885-145
E-Mail: info@ctcasia.org

2nd Cleft Lip & Palate Workshop
Mar 31 - Apr 02, 2009
Riyadh, Saudi Arabia
Contact: Ms. Marci Andaya
Phone: 96-614-427-651; Fax: 96-614-427-653
E-Mail: mandaya@ksfhr.edu.sa

24th Annual New Treatments in Chronic Liver Disease
Apr 04 - 05, 2009
San Diego, CA, United States
Contact: Meredith Insch
Tel: 858-587-4404; Fax: 858-587-4438
E-Mail: Med.edu@scrippshealth.org

75th Annual Meeting of the German Cardiac Society
Apr 16 - 18, 2009
Mannheim, Germany
Contact: Kongress-Abteilung der DGK, Deutsche Gesellschaft für Kardiologie, Achenbachstr, 43, 40237 Dusseldorf
Phone: 492-116-006-920; Fax: 49-21-160-069-233
E-Mail: kongress@dgk.org

XII. International Congress of IFPE (International Federation of Psychiatric Epidemiology)
Apr 16 - 19, 2009
Vienna, Austria
Contact: Austropa Interconvention
Phone: 43-158-800-510; Fax: 43-158-800-520
E-Mail: ifpe2009@interconvention.at

39th Annual Aesthetic Plastic Surgery Symposium
Apr 17 - 18, 2009
Toronto, ON, Canada
Contact: University of Toronto CME Office
Phone: 416-978-2719 / 1-888-512-8173
E-Mail: ce.med@utoronto.ca

17th Annual Meeting of the Internal Society for Magnetic Resonance in Medicine
Apr 18 - 24, 2009
Honolulu, HI, United States
Contact: ISMRM, 2030 Addison Street, 7th Floor, Berkeley, CA 94704 USA
Phone: 1 510-841-1899; Fax: 1 510-841-2340
E-Mail: info@ismrm.org

Challenges in the Outcome of Psychiatric Disorders
Apr 21 - 23, 2009
Jeddah, Saudi Arabia
Contact: Dr Mohamed Khaled
Phone: 00-966-507-377-541; Fax: 00-96-626-835-874
E-Mail: moh.khaled.hamed@gmail.com

2nd World Congress of Total Intravenous Anaesthesia - TCI
Apr 21 - 25, 2009
Berlin, Germany
Contact: Liraz Bregman
Phone: 41-229-080-488; Fax: 41-227-322-850
E-Mail: tivatci@kenes.com

44th Annual Meeting of the European Association for the Study of the Liver: EASL 2009
Apr 22 - 26, 2009
Copenhagen, Denmark
Contact: Liraz Bregman
Phone: 41-229-080-488; Fax: 41-227-322-850
E-Mail: easl2009@easl.ch

2nd Central European Congress of Surgery 2009 and 3rd International Pancreatic Days
Apr 23 - 25, 2009
Katowice, Poland
Contact: Guarant International
Phone: 284-001-444
E-Mail: cesc@guarant.cz

BSR (British Society of Rheumatology) BHPR Annual Conference
Apr 28 - May 01, 2009
Glasgow, Scotland, United Kingdom
Contact: The British Society for Rheumatology
Bride House, 18-20 Bride Lane, London EC4Y 8EE
Phone: 44-0-2-078-420-900; Fax: 44-0-2-078-420-914
E-Mail: hgardner@rheumatology.org.uk
8th Congress of Turkish German Gynecology Association
Apr 29 - May 03, 2009
Antalya, Turkey
Contact: Tuba Celiker
Phone: 902-122-823-373
E-Mail: tuba.celiker@serenas.com.tr

2009 Annual Meeting of the American Society for Aesthetic Plastic Surgery (ASAPS)
May 02 - 09, 2009
Las Vegas, NV, United States
Contact: American Society for Aesthetic Plastic Surgery (ASAPS)
Phone: 800-364-2147; Fax: 562-799-1098
E-Mail: asaps@surgery.org

Urgent Care, Sports Medicine and Primary Care:
An Evidence-Based Trifecta
May 11 - 15, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Phone: 1-866-267-4263 or 1-941-388-1766
Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

1st International Meeting on Aesthetic and Reconstructive Facial Surgery
May 13 - 17, 2009
Mykonos, Greece
Contact: Congress Organizers and Secretariat, Aktina, City Congress SA, 26 Filellinon Street, GR-10558, Athens, Greece
Phone: 302-103-232-433 Fax: 302-103-232-338
E-Mail: info@imafr2009.org

ISPOR 14th Annual International Meeting
May 16 - May 20, 2009
Orlando, FL, United States
Contact: Sue Capon, Director of Meetings
Phone: 609-219-0773; Fax: 609-219-0774
E-Mail: info@ispor.org

162nd American Psychiatric Association Annual Meeting
May 16 - 21, 2009
San Francisco, CA, United States
Contact: American Psychiatric Association
Phone: 703-907-7300
E-Mail: apa@psych.org

Trauma & Acute Care Management
May 18 - 21, 2009
Riyadh, Saudi Arabia
Contact: Dr Heythem Al-Zamel, MD (Trauma Surgery / Surgical Critical Care) & (Director of General Surgery Residency Training Program)
Phone: 00-96-61-252-0088 / ext 14-124 / 14-149
Fax: 00-96-612-520-051
E-Mail: halzamel83@hotmail.com

2nd International Congress on Leukemia-Lymphoma-Myeloma
May 20 - 24, 2009
Istanbul, Turkey
Contact: Ipek Durusu
Phone: 903-124-909-897; Fax: 903-124-909-868
E-Mail: thdofis@thd.org.tr

Obstetric Anaesthesia 2009
May 20 - 22, 2009
Jersey, England, United Kingdom
Contact: Meeting Secretariat
Phone: 44-2-087-411-311; Fax: 44-2-087-410-611
Website : www.oaameetings.info

8th Congress of European Federation of Internal Medicine
May 27 - 30, 2009
Istanbul, Turkey
Contact: Hakan Biyikli
Tel: 903-124-405-011; Fax: 903-124-414-563
E-Mail: hakan.biyikli@serenas.com.tr

FESSH 2009 (XIV International Congress of Federation of the European Societies for Surgery of the Hand)
June 03 - 06, 2009
Poznan, Poland
Contact: Pawel Surdziel
Phone: 48-618-310-346; Fax: 48-618-310-163
E-Mail: pawelsurdziel@tlen.pl

Annual Scientific Meeting of Australian Gynecological Endoscopy Society
June 04 - 06, 2009
Melbourne, VIC, Australia
Contact: AGES Conferences and Secretariat, Ms Michele Bender, Conference Connection, 282 Edinburgh Road, CASTLECRAIG NSW 2068
Phone: 61-0-299-672-928; Fax: 61-0-299-672-627
E-Mail: secretariat@ages.com.au

27th Annual Meeting of the European Society for Pediatric Infectious Diseases ESPID 2009
June 09 - 13, 2009
Brussels, Belgium
Contact: Liraz Bregman
Phone: 41-229-080-488; Fax: 41-227-322-850
E-Mail: espid@kenes.com

Focal Therapy and Imaging in Prostate and Kidney Cancer
June 10 - 13, 2009
Amsterdam, Netherlands
Contact: Mr Nikolas Dargonakis
Phone: 302-107-257-693; Fax: 302-107-257-532
E-Mail: info@erasmus.gr
5th World Congress of the International Society of Physical and Rehabilitation Medicine
June 13 - 17, 2009
Istanbul, Turkey
Contact: Ms Sezen Elagoz
Phone: 902-123-438-003 Fax: 902-123-438-023
E-Mail: selagoz@teamcon.com.tr

Society of Nuclear Medicine 56th Annual Meeting
June 13 - 17, 2009
Toronto, ON, Canada
Contact: Kristie Morris, 1850 Samuel Morse Drive, Reston, VA 20190
Phone: 703-708-9000 ext 1229; Fax: 703-709-9274
E-Mail: kmorris@snm.org

20th Congress of the European Society of Paediatric and Neonatal Intensive Care ESPNIC
June 17 - 20, 2009
Verona, Italy
Contact: Liraz Bregman
Phone: 41-229-080-488 Fax: 41-227-322-850
E-Mail: espnic@kenes.com

Congreso Oncología - Habana 2009
June 18 - 21, 2009
Havana, Cuba
Contact: Lic Elizabeth Alvarez Velazquez
Phone: 53-7-838-2573
E-Mail: rpinor@infomed.sld.cu

The 1st World Congress on Controversies in Psychiatry
June 18 - 21, 2009
Berlin, Germany
Contact: Organizing Secretariat
Phone: 97-235-666-166
E-Mail: copsy@comtecmed.com

Cardiology Update in Primary Care Medicine: An Evidence-Based Approach
June 22 - 26, 2009
Sarasota, FL, United States
Contact: Christy or Cristina
Phone: 1-866-267-4263 / 1-941-388-1766; Fax: 1-941-365-7073
E-Mail: mail@ams4cme.com

1st Meeting of the European Academy of Otorhinolaryngology & Head and Neck Surgery (EAORL-HNS)
June 27 - 30, 2009
Mannheim, Germany
Contact: Frau Ganthaler
Phone: 43-0-158-804-224; Fax: 43-0-158-804-185
E-Mail: ganthaler@mondial-congress.com

9th World Congress of Biological Psychiatry
June 28 - July 02, 2009
Paris, France
Contact: Ms Gesche Ohle
E-Mail: GOhle@cpo-hanser.de

4th Europaediatrics 2009
July 03 - 06, 2009
Moscow, Russian Federation
Contact: Meeting Organiser
Phone: 302-106-889-100; Fax: 302-106-844-777
E-Mail: europaediatrics2009@acnc.gr

XVII World Congress of Aesthetic Medicine
July 17 - 19, 2009
Vancouver, BC, Canada
Contact: Natalie Lampmu
Phone: 604-685-0450; Fax: 604-685-0451
E-Mail: nlamppu@caam.ca

3rd Annual LAVA (Latest Advances in Interventional Techniques)
July 27 - 30, 2009
Maui, HI, United States
Contact: Stanford Radiology CME
Phone: 650-473-5052 888-556-2230; Fax: 650-473-5062
E-Mail: radiologycme@med.stanford.e

World Congress on Thyroid Cancer
Aug 06 - 10, 2009
Toronto, ON, Canada
Contact: Meeting Organiser
Phone: 416-978-2719 / 1-888-512-8173; Fax: 416-946-7028
E-Mail: help-ENT0909@cmetoronto.ca

European Plastic Surgery Research Council
Aug 20 - 23, 2009
Hamburg, Germany
Contact: Lars Steinsraesser
E-Mail: info@epsrc.eu

Psychiatry at Sea Cruise (to Alaska)
Aug 22 - 29, 2009
Vancouver, AK, United States
Contact: Dr Martin Gerretsen
Phone: 1-888-647-7327; Fax: 1-888-547-7337
E-Mail: cruises@seacourses.com

EBA 2009 - Europena Burns Association Congress
Sept 02 - 05, 2009
Lausanne, Switzerland
Contact: Gerald Howard
Phone: 41-0-223-399-635; Fax: 41-0-223-399-601
E-Mail: gerald.howard@mci-group.com
WHO-Facts Sheet

1. Melamine Milk Crisis: Vigilance Needed to Ensure Safe Infant Food
2. Targeted Action on HIV and Tuberculosis Needed to Reach Drug Users
3. Marketers of Electronic Cigarettes Should Halt Unproved Therapy Claims
4. Millions with Mental Disorders are Deprived of Necessary Treatment and Care
5. WHO Launches New HIV/Aids Guide to Help Countries Reach Universal Access
6. World Health Organization Provides Updated Malaria Situation

Compiled and edited by
Babichan K Chandy


1. MELAMINE MILK CRISIS: VIGILANCE NEEDED TO ENSURE SAFE INFANT FOOD

The World Health Organization (WHO) and the UN Food and Agriculture Organization (FAO) are urging affected countries to ensure safe feeding of millions of infants following the ongoing melamine milk crisis in China. The two agencies also called on countries to be alert to the possible spread of melamine contaminated dairy products.

Safe feeding

“While breastfeeding is the ideal way of providing infants with the nutrients they need for healthy growth and development - it is also critical to ensure that there is an adequate supply of safe powdered infant formula to meet the needs of infants who are not breastfed,” said Dr. Jørgen Schlundt, Director of the WHO Food Safety Department.

Replacing powdered infant formula with other products such as condensed milk, honey mixed with milk, or fresh milk is inappropriate as such products would put at risk the safety and nutritional status of this vulnerable population group, the two agencies advised.

“Restoring consumer confidence is critical. Melamine-contaminated products should be removed from the food chain in order to prevent further exposure. The safe supply of dairy products needs to be restored immediately,” said Dr. Ezzeddine Boutrif, Director of the FAO Nutrition and Consumer Protection Division.

WHO recommends that all infants should be fed exclusively with breast milk for the first six months of life. No other liquid or food, not even water, is needed during this period. Thereafter, infants should receive adequate and safe complementary foods while breastfeeding continues up to two years of age and beyond.

Increased vigilance

Countries should closely monitor their markets, following reports of findings of imported melamine-contaminated products in several countries over the last two weeks.

The two agencies highlighted that melamine-contaminated products could reach markets in other countries through both formal and informal trade. Getting information about the origin of the product, up to date recall information or in some cases testing for melamine contamination might be considered. If found contaminated, appropriate actions such as product recall and safe disposal should be taken, based on an assessment of the risk to human health.

Food safety is not the sole responsibility of public authorities. The food industry is also responsible for ensuring a safe supply of food to the consumer. “It is critical that the industry strongly invests in food safety and adopts a food safety culture covering the food chain from raw materials through to the final product,” said Dr. Boutrif. Incidents such as this not only impact food safety and human health but also put the livelihoods of hundreds of millions of dairy farmers at risk. “There is a need for countries to do major investment in strengthening their food control and food-borne disease surveillance systems.
as it could minimise the potential occurrence of food safety incidents like this one," said Dr. Schlundt.

The melamine-contaminated dairy products event first came to the attention of the international organizations on 11 September. Both WHO and FAO have used the International Food Safety Authorities Network (INFOSAN) to inform and update national food safety authorities on this food safety crisis, one of the largest in recent years.

Over 54,000 children have sought medical treatment in China related to the consumption of melamine-contaminated infant formula. Almost 12,900 are currently hospitalized.

The level of melamine found in the contaminated infant formula has been as high as 2,560 milligram per kilogram of food, while the level of cyanuric acid is unknown.

For more information contact: Sari Setiogi, Media Relations Officer, ph. +41 22 791 3576, e-mail SetiogiS@who.int

2. TARGETED ACTION ON HIV AND TUBERCULOSIS NEEDED TO REACH DRUG USERS

Health and criminal justice authorities need to provide targeted services to drug users, especially those who inject drugs, to prevent and treat tuberculosis (TB) and HIV. TB is a major cause of death for people living with HIV, but drug users who are HIV positive face stigma, discrimination and barriers to accessing life-saving treatments.

The new guidelines issued with the aim to reduce these preventable deaths by, for example, improving access to antiretroviral drugs and to isoniazid for drug users living with HIV. Isoniazid preventive therapy (IPT) significantly reduces the risk of TB disease in people living with HIV, but is not widely used. These are the first recommendations to actively include TB and HIV care within the context of support to drug users. They form part of the Evidence for Action series and build on policy guidance on both TB/HIV and injecting drug use.

Even where IPT is available, health care and outreach workers face major challenges in delivering full care to drug users who are often marginalised by homelessness, poverty, imprisonment, and by public and political hostility. These factors contribute to the transmission of both HIV and TB, and at the same time are barriers to TB, HIV and drug dependence treatment.

To ensure all drug users, including those in prison, can benefit from TB and HIV prevention, treatment support and care, WHO, UNAIDS and the UN Office on Drugs and Crime have developed Policy Guidelines for Collaborative TB and HIV services for Injecting and Other Drug Users - An Integrated Approach. The measures* aim to break down the barriers that stand in the way of better health, outline key interventions, and promote ways to improve coordination and planning across all those who interact with injecting and other drug users.

HIV weakens a person’s immune system. Because of this, people living with HIV are up to 50 times more likely to develop TB in their lifetimes than people who are HIV negative. Without proper treatment, the majority of people living with HIV die within two to three months of becoming sick with TB. In 2006, 231,000 people died with HIV and TB. Many of these deaths were preventable.

Unsafe injecting drug use is now a major route of transmission for HIV. Excluding Africa, nearly one in three of all new HIV infections are attributable to unsafe injecting drug use. In areas of Eastern Europe and central Asia, that figure rises to two out three new infections. In some areas of Eastern Europe a significant association between HIV and multidrug-resistant TB has been observed by researchers.

Addressing TB/HIV is a key theme of the 2008 International AIDS Society conference and comes two months after world leaders issued a call to drastically cut the number of TB/HIV deaths by 2015 at the landmark Global Leaders’ Forum on the co-epidemic, held at the UN headquarters in New York.

*Summary of the 13 recommendations in the Policy Guidelines for Collaborative TB and HIV services for Injecting and Other Drug Users:

Join Planning:
1. Multisectoral coordination on TB and HIV activities for drug users
2. National plans with roles and responsibilities of service providers
3. Staff training to build effective teams
4. Operational research on TB/HIV services for drug users
**Key Interventions:**
1. TB infection control in congregate settings including prisons
2. Case-finding protocol for TB and HIV for services dealing with drug users
3. Access to appropriate treatments for drug users
4. Isoniazid preventive therapy for drug users living with HIV
5. Health workers to assess and provide HIV prevention methods

**Overcoming Barriers:**
1. Universal access to TB and HIV prevention, treatment and care as well as drug treatment services to drug users
2. Quality medical services available to prisoners
3. Treatment adherence support measures for drug users
4. Other infections (e.g. hepatitis) and factors should not prevent drug users accessing HIV and TB treatments

For more information contact: Mexico City: Saira Stewart, WHO HIV/AIDS Department, tel +4179 467 2013 stewarts@who.int; Geneva: Glenn Thomas, WHO Stop TB Department, tel +4179 509 0677 thomasg@who.int

**3. MARKETERS OF ELECTRONIC CIGARETTES SHOULD HALT UNPROVEN THERAPY CLAIMS**

Contrary to what some marketers of the electronic cigarette imply in their advertisements, the World Health Organization (WHO) does not consider it to be a legitimate therapy for smokers trying to quit.

“The electronic cigarette is not a proven nicotine replacement therapy,” said Dr Ala Alwan, Assistant Director-General of WHO’s Noncommunicable Diseases and Mental Health Cluster. “WHO has no scientific evidence to confirm the product’s safety and efficacy. Its marketers should immediately remove from their web sites and other informational materials any suggestion that WHO considers it to be a safe and effective smoking cessation aid.”

The typical electronic cigarette is made of stainless steel, has a chamber for storing liquid nicotine in various concentrations, is powered by a rechargeable battery and resembles a real cigarette. Users puff on it as they would a real cigarette, but they do not light it, and it produces no smoke. Rather, it produces a fine, heated mist, which is absorbed into the lungs.

Developed in China in 2004, the electronic cigarette is sold there and in numerous other countries, including Brazil, Canada, Finland, Israel, Lebanon, the Netherlands, Sweden, Turkey and the United Kingdom.

Marketers of the electronic cigarette typically describe it as a means to help smokers break their addictions to tobacco. Some have even gone so far as to imply that WHO views it as a legitimate nicotine replacement therapy like nicotine gum, lozenges and patches.

But WHO knows of no evidentiary basis for the marketers’ claim that the electronic cigarette helps people quit smoking. Indeed, as far as WHO is aware, no rigorous, peer-reviewed studies have been conducted showing that the electronic cigarette is a safe and effective nicotine replacement therapy.

WHO does not discount the possibility that the electronic cigarette could be useful as a smoking cessation aid. The only way to know is to test.

“If the marketers of the electronic cigarette want to help smokers quit, then they need to conduct clinical studies and toxicity analyses and operate within the proper regulatory framework,” said Douglas Bettcher, Director a.i. of WHO’s Tobacco Free Initiative. “Until they do that, WHO cannot consider the electronic cigarette to be an appropriate nicotine replacement therapy, and it certainly cannot accept false suggestions that it has approved and endorsed the product. “

The WHO Study Group on Tobacco Product Regulation is scheduled to address the electronic cigarette, among other topics, 12-14 November 2008 in Durban, South Africa. Convened by WHO Director-General Dr Margaret Chan, its mandate is to advise her on scientifically sound and evidence-based recommendations to the Member States about tobacco product regulation.

For more information contact: Timothy A. O’Leary, Communications Officer, Tobacco Free Initiative, WHO, Geneva, Telephone: +41 22 791 5539, Mobile: +41 79 516 5601. E-mail: olearyt@who.int

**4. MILLIONS WITH MENTAL DISORDERS ARE DEPRIVED OF NECESSARY TREATMENT AND CARE**

WHO calls for urgent scaling up of services for mental disorders

More than 75% of people suffering from mental disorders in the developing world receive no treatment or care. A new WHO programme launched in October 2008, on World Mental Health Day 2008 highlights the huge treatment gap for a number of mental, neurological and substance use disorders. Across Africa for example, nine out of ten people suffering from epilepsy go untreated, unable to access simple and inexpensive anticonvulsant drugs which cost less than US$$5 a year per person.
WHO is now calling on governments, donors and mental health stakeholders to rapidly increase funding and basic mental health services to close this huge treatment gap. The programme, Mental health Gap Action Programme (mhGAP): Scaling up care for mental, neurological and substance use disorders asserts that with proper care, psychosocial assistance and medication, tens of millions could be treated for diseases such as depression, schizophrenia, and epilepsy and begin to lead healthy lives, even where resources are scarce.

“Governments across the world need to see mental health as a vital component of primary health care. We need to change policy and practice. Only then can we get the essential mental health services to the tens of millions in need”, said Dr Margaret Chan, Director-General of the World Health Organization.

The mhGAP focuses on the gap between what is needed to treat a range of priority disorders and what is actually available worldwide. In the majority of countries, less than 2% of health funds are spent on mental health. In any one year, one-third of people living with schizophrenia, more than half of those suffering from depression, and three-quarters of those with alcohol use disorders are unable to access simple and affordable treatment or care. Worldwide, every 40 seconds, one person dies of suicide that is one of the leading causes of death among young adults. Suicide is a condition that is preventable.

It does not have to be this way. In Chile, the national primary care programme now includes treatment of depression for all who need it bringing much needed care to hundreds of thousands of people. An epilepsy project in China which integrated a model of epilepsy control into local health systems achieved excellent results. This confirmed that epilepsy could be treated with an inexpensive anti-convulsant medicine by health professionals who had undergone basic training. The project which started in six provinces has now been extended to 15 provinces and tens of thousands of sufferers have been treated.

The extra cost to scale up services for mental disorders is not too large. A study conducted by WHO showed that in low-income countries, scaling up a package of essential interventions for three mental disorders – schizophrenia, bipolar disorder and depression – and for one risk factor – hazardous alcohol use – requires an additional investment as low as $US 0.20 per person per year.

People with mental disorders are stigmatized and are subject to neglect and abuse. “The proper care of mental, neurological and substance use disorders should not only be evidence based but also value based,” said Dr Benedetto Saraceno, Director of WHO’s Mental Health and Substance Abuse Department. “We need to ensure that people with these disorders are not denied opportunities to contribute to social and economic life and that their human rights are protected.”

The programme sets out a number of cost-effective strategies to tackle the treatment gap for mental, neurological and substance use disorders. These include: assessing countries needs and resources; developing sound mental health policy and legislation; and increasing human and financial resources. The programme relies on partnerships to scale up services with the objective of reducing the burden of mental, neurological and substance use disorders.

For more information contact: Iqbal Nandra
Communications officer, Chronic diseases and health promotion WHO, Geneva, Telephone: + 41 22 791 5589,
Mobile: +41 79 509 0622, E-mail: nandrai@who.int

5. WHO LAUNCHES NEW HIV/AIDS GUIDE TO HELP COUNTRIES REACH UNIVERSAL ACCESS

At the XVII International AIDS Conference in Mexico City in August 2008, the World Health Organization (WHO) launched a package of priority interventions designed to help low- and middle-income countries move towards universal access to HIV/AIDS prevention, treatment, care and support.

Priority Interventions: HIV/AIDS prevention, treatment and care in the health sector is a compilation of WHO-recommended priority HIV/AIDS health-sector interventions. It includes everything from how to expand condom programming to the latest in treatment recommendations, guidelines and standards. The publication is designed to be a ‘living’ web-based document that will be periodically updated with new recommendations based on the rapidly evolving experience of the health-sector response.

“This document responds to a long standing country need,” says WHO HIV/AIDS Department Director, Dr Kevin M. De Cock. “In one place it captures WHO’s best guidance on what the global HIV/AIDS health-sector response needs to deliver”.

To that end, WHO has developed this package to promote the more efficient use of existing recommendations specifically aimed at resource-limited settings. This, its authors state, will help enable countries to meet their commitment made two years ago at the United Nations General Assembly High-Level Meeting on AIDS to provide universal access to HIV prevention, treatment, care and support by 2010.
The purpose of Priority Interventions is to:
- describe priority health-sector HIV/AIDS interventions that are needed to achieve universal access to HIV prevention, treatment and care;
- guide the selection and prioritization of interventions for HIV prevention, treatment and care; and,
- direct readers to key WHO resources and references containing the best available information on the health-sector response to HIV/AIDS.

The scale-up of HIV treatment in the world’s poorest countries is greatly strengthening the health sector in many ways such as the establishment and expansion of infrastructure, including labs and clinics, a stronger health workforce, more efficient procurement and supply management systems and sustained financing.

WHO is initially launching the document on a CD-Rom but will make it available in several formats, including in hard copy and on the web. The intent is to share information and allow partners to learn from, and contribute their expertise to, the health-sector response to HIV/AIDS.

For more information contact: The WHO’s HIV/AIDS Department website (http://www.who.int/hiv) or Patricia Leidl, Head, Advocacy and Communications, HIV/AIDS Department, WHO, Geneva Tel: +41 22 791 5876, Mobile: +41 79 619 8525, E-mail: leidlp@who.int

6. WORLD HEALTH ORGANIZATION PROVIDES UPDATED MALARIA SITUATION

A new report released in September 2008, by the World Health Organization (WHO), finds that the global burden of malaria remains enormous, but that access to malaria control interventions, especially bed nets, increased sharply between 2004 and 2006, the period covered in the report.

“With dramatic increases in funding and intense momentum towards reducing the malaria burden in recent years, we have a greater need for reliable information and analysis,” said WHO Director General Margaret Chan. “This report begins to answer that need. Progress in malaria control has accelerated dramatically since 2006, especially in the wake of the UN Secretary General’s call for universal malaria control coverage by the end of 2010. We expect these expanded efforts to be reflected in future reports.”

The WHO’s World Malaria Report 2008, which draws upon data collected through 2006, paints a complex picture. Some highlights:
- New methods* estimate the number of malaria cases is 247 million for 2006.
- Small children remain by far the most likely to die of the disease.
- Malaria deaths have declined in several countries, and a few nations in Africa have managed to cut malaria deaths in half by following recommended measures.
- As of 2006, increases in funding resulted in accelerated access of malaria interventions including bed nets and effective medicines
- Access in Africa to artemisinin-based combination therapy (ACT), which is recommended by WHO, reached only 3% of children in need.

Bed Net Coverage Accelerating

The report finds that recent increases in malaria funding were beginning to translate to coverage of key malaria interventions, especially bed nets, by 2006. The percentage of children protected by insecticide-treated nets increased almost eightfold, from 3% in 2001 to 23% in the 18 African countries with surveys in 2006. Procurement of antimalarial medicines also increased sharply between 2001 and 2006. Approximately 100 million persons were protected by indoor spraying of insecticide, including 22 million in Africa.

However, much more work remains to be done. In Africa only 125 million people were protected by bed nets in 2007, while 650 million are at risk.

“Malaria is a primary cause of child mortality, said Ann M. Veneman, Executive Director of the United Nations Children’s Fund (UNICEF). “If the availability of bed nets and other key interventions can be increased, lives can be saved.”

Positive Impact

For the first time, three African countries reported dramatic reductions in malaria deaths by 50% or more nationwide. Eritrea, Rwanda and Sao Tome and Principe achieved this result between 2000 and 2006/2007 through a mix of bed net distribution, indoor spraying, improved access to treatment and advances in disease surveillance. Furthermore, significant improvements were observed in other African countries and areas such as Madagascar, Zambia, and Zanzibar (United Republic of Tanzania).

An additional six countries showed that the numbers of malaria deaths had fallen nationwide by 2006: Cambodia, Lao People’s Democratic Republic, the Philippines, Suriname, Thailand and Viet Nam.
“We know that malaria control interventions work and that we can make rapid progress towards ending malaria deaths,” said Ray Chambers, the United Nations Secretary-General’s Special Envoy for Malaria. “Now is the time to expand these results to all of Africa and the rest of the world.”

Increase Investment
According to national malaria control programme data, Africa had a larger increase in funding than any other region between 2004 and 2006, led by investments from the Global Fund to Fight AIDS, Tuberculosis and Malaria, bilateral and multilateral organizations, and national governments.

In other regions sources of funding were highly variable, but national governments provided the bulk of monies. While funding for malaria was higher than ever before in 2006, it is not yet possible to judge which countries have adequate resources and there are still significant gaps.

For further information, contact WHO’s News Team Leader, Dick Thompson at +4122 791 1492 or mobile +4179 475 5534 or email thompsond@who.int. Or, Fadela Chaib at +4122 791 3228 or mobile +4179 475 5556
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Kuwait Medical Journal (KMJ) 2008; Volume 40


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