

Case Report

Gastroenteric Cyst in the Posterior Mediastinum: A Case Report

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Kuwait Medical Journal 2002, 34 (1): 47-49

ABSTRACT

Gastroenteric cysts in the posterior mediastinum have been rarely reported. Airway or oesophagus obstruction is the most common symptom. We report a case of

gastroenteric cyst in posterior mediastinum causing life threatening events, severe airway obstruction that was successfully treated with complete excision of the cyst.

KEY WORDS: Airway obstruction, mediastinum

INTRODUCTION

Posterior mediastinal cysts have been reported in about 7% of all posterior mediastinal masses^[1]. Gastroenteric cysts, which are reduplication cysts of the foregut consisting of gastric tissue located within the thorax have been rarely reported^[2]. The first reference describing the cyst lined by gastric tissue in a seven-week-old infant was in 1929 by Mixter and Clifford.

CASE REPORT

A four-month-old infant is the product of a full-term normal delivery following an uneventful pregnancy. The birth weight was 3 kg. He started to have difficulty in breathing, bouts of coughing with tachypnoea and hoarseness at one month of age. He was admitted many times for this problem to different hospitals. On 14 October 2000, he presented with severe respiratory distress and cyanosis which did not respond to the ordinary supportive measures given in the casualty. The patient was transferred to the PICU where he was intubated and connected to a mechanical ventilator for low parameter mechanical ventilation to maintain his oxygen saturation. A chest X-ray (Fig. 1) showed a shifting of the trachea and the nasogastric tube to the right side with upper right lobe consolidation. Barium swallow (Fig. 2) showed right lateral displacement of esophagus at upper thoracic level.

Due to the patient's recurrent illness, and the abnormalities noticed on the chest X-ray and barium study, the existence of a congenital pulmonary anomaly was suspected. Hence, a Computerized Tomography (CT) scanning for the chest (Fig. 3) was performed. It revealed a mid-mediastinal cyst, 3.5 x 2 x 1.9 cm, at the level of TH

1-4-5 with enhancing capsule, dislocating the trachea and esophagus to right, and a mal-segmentation vertebrae C7-TH 1-2.

On the 7th day of hospitalization, a left thoracotomy was performed. The surgeon found a cystic mass, about 2 x 3 x 1.5 cm in size with thick wall, in the left posterior mediastinum surrounded by fibrous tissues. It was isolated and had no relation to the trachea, esophagus or the spinal cord. A total excision of the cyst was done. Histopathology examination (Fig. 4) section of the cyst revealed a well-developed mucularis propria. Ganglion cells were identified covered by gastric mucosa. These features are indicative of a dorsal gastroenteric cyst. The patient had an uneventful postoperative period. On follow up examination, six months after surgery, the child was found to be completely asymptomatic.

DISCUSSION

Enterogenous cysts are thought to be arising from the dorsal foregut destined to become the alimentary tract^[3]. It has been postulated that they are intrathoracic vestiges of the ductus omphalomesentericus^[4] and that they arise from sequestrations of nodules of foregut in the developing embryo^[5].

The most agreed upon theory, reported by Veeneklass^[6], is that the entrodermal tube adheres focally to the notochord, and during the development of the embryo, a "traction diverticulum" forms, which later separates to form the gastroenteric cyst. This theory gives a constant relationship of these cysts to vertebrae and high incidence of associated vertebral malformation^[7]. The intravertebral extension of the foregut can disrupt vertebral body development induce a

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Fig. 1: Chest radiograph showing shifting of trachea and NGT to the right with right upper lobe collapse.



Fig. 2: Barium swallow (a) A-Pview (b) Lat. View, showing displacement of the upper part to the right.



Fig. 3: Chest CT scan showing posterior mediastinal cyst with malsegmented vertebra.

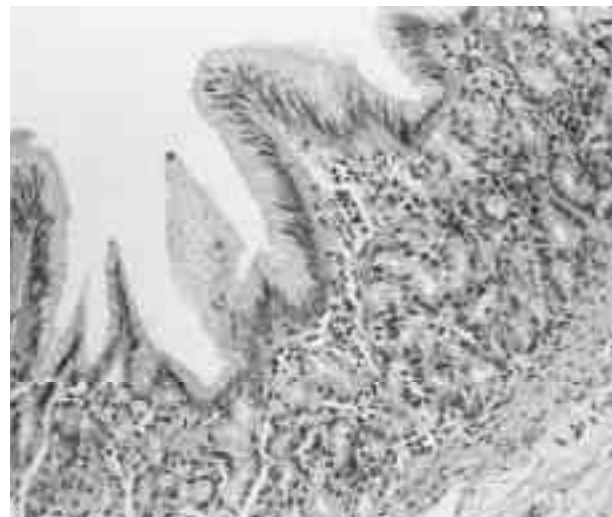


Fig. 4: Histopathological examination, section of the cyst revealed gastric mucosa lining. Haematoxilin-Eosin staining x 200 magnification.

sagittal cleft defect or more vertebral anomalies⁸¹. An estimated 50% of enterogenous cysts are associated with cervical and thoracic vertebral anomalies, such as scoliosis, anterior spina bifida, hemivertebrae, or vertebral fusion. Because of the cephalic growth of the notochord and caudal growth of the foregut, associated vertebral defects are typically superior to the mediastinal cyst⁸¹.

Two-thirds of patients eventually develop symptoms, most commonly airway or esophageal obstruction¹⁰¹. Infants and children commonly present with symptoms of severe airway obstruction or pneumonia. The cyst may communicate with the lumen of the respiratory tract giving respiratory symptoms¹¹¹, or may be associated with neural defects responsible for cord compression¹¹². The majority of the cysts are recognized in infancy, 60% of patients are less

than 1 year, and male predominance has been noted.

CT scan is a useful modality in defining the exact anatomic location of the cyst. The extent of involvement of vital structures also aids in determining the respectability¹³¹. The preferred treatment is complete excision of the cyst. The prognosis following complete excision is excellent.

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