

Case Report

Successful Treatment of Pyogenic Granuloma Complicating Motility Peg Hydroxyapatite Orbital Implant using Topical Steroids Alone - A Case Report

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ABSTRACT

Pyogenic granuloma is a known complication of motility peg hydroxyapatite orbital implants. Treatment options including invasive surgical procedures and topical applications of mitomycin C have been reported in the literature. We present a

case of pyogenic granuloma involving the base of motility peg hydroxyapatite orbital implant, that was successfully treated using topical steroids alone.

KEYWORDS: hydroxyapatite, peg, pyogenic granuloma

INTRODUCTION

Pyogenic granuloma (PG) is a hemangioma of granulation tissue^[1]. Hartzell first used the term granuloma pyogenicum in 1904^[2]. PG may involve many areas pertinent to the ocular and adnexal structures including eyelids, palpebral and bulbar conjunctiva, limbus, cornea, socket, motility peg implant, and along surgical incisions^[3,4]. It may occur following infection^[5] mechanical irritation^[3,6], and trauma including surgery^[3]. It may also present in the conjunctiva without any preceding incident^[2,7]. PG may present as sessile or pedunculated growth ranging from few millimeters to greater than 3 cm in diameter^[2,8]. Its rate of growth is often fast and its surface may show superficial ulcerations^[2,8]. It easily bleeds after trauma due to its vascularity. Clinically and histopathologically, PG may resemble Kaposi's sarcoma, a malignant condition common in patients with AIDS. It may be mistaken for rare benign conditions including intravascular papillary endothelial hyperplasia and angiolymphoid hyperplasia with eosinophilia (ALHE). A chronic lesion may thicken and resemble capillary hemangioma or may shrink into a fibrous nodule^[2].

The standard treatment for PG is simple excision combined with or without cautery to the base of the lesion^[7]. We present a case of PG involving the base of motility peg hydroxyapatite (HA) orbital implant which was treated successfully using topical steroids alone.

Case Description

A 49-year-old woman had an uneventful right eye evisceration and a primary HA orbital implant. Eleven months later, drilling and motility peg placement was performed without complications. Prosthesis was coupled to the peg six weeks later. Post-operatively, the patient remained satisfied and comfortable for a period of 23 months when she started to complain of mucoid discharge that persisted for two months. The patient lately complained of difficulty in placing the prosthesis.

On examination, the patient was not wearing the ocular prosthesis and was keeping it in its pack. A pinkish circular mass measuring 16 mm in diameter centered on the motility peg was seen (Fig. 1). The mass was a thick, vascularized granulation tissue that was partly covering the peg head. The peg was not displaced. The surrounding conjunctiva looked normal with no signs of infection. The ocular prosthesis appeared adequately polished and free from any damage or deposits.

Culture swabs taken from the mass lesion, the conjunctiva and the mucoid discharge showed no growth. Because the patient was reluctant to go for surgery, it was decided to treat the PG conservatively. The patient was treated with topical prednisolone acetate 1% eye drops four times daily.

The patient reported significant improvement in her symptoms with noticeable reduction of the mucoid discharge a week after starting the treatment.

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Fig. 1: Pyogenic granuloma mass pre-treatment



Fig. 2: Pyogenic granuloma mass two weeks post treatment



Fig. 3: Total resolution of pyogenic granuloma after six weeks of treatment

Examination after two weeks showed a dramatic regression in the size of the PG (Fig. 2). The same treatment was continued for a period of four weeks and was gradually tapered over the next two weeks and then stopped. Both the PG and the mucoid discharge totally resolved after six weeks of initiating the treatment (Fig. 3). The patient was eventually able to wear her ocular prosthesis normally. She was followed for a period of 14 months with no signs of recurrence.

DISCUSSION

The complication rates of peg related HAorbital implants are numerous, and range from 37.5 to 48.0%^[9,10]. They include discharge, conjunctival edema, PG, peg falling out, poor transfer of movement, clicking, conjunctiva overgrowing peg, poor-fitting sleeve, exposure of sleeve shaft, angled peg drilling, exposure of HA implant around peg hole, off-center peg drilling, popping peg, excess peg movement, and implant infection^[9].

PG as a complication of motility peg HA orbital implants has been reported by Jordan *et al* to be the second commonest complication, and by Lin *et al* as the third commonest complication. Its frequency

ranges from 16.7 to 30.6%^[9,10]. It can occur with both peg systems (*i.e.* peg alone and peg with sleeve). It may occur within the peg hole or around the peg hole^[9]. Microscopically, the lesion contains granulation tissue with prominent radiating capillaries that spread from the base of the lesion toward the surface. Its cellular component consists predominantly of proliferating fibroblasts and endothelial cells as well as mononuclear cells particularly lymphocytes, plasma cells, and scattered polymorphs^[11].

Apart from surgical excision, other treatment modalities include topical applications of mitomycin C^[11], argon blue laser^[9], combination of carbon dioxide laser and topical steroids^[12] and topical steroids alone^[13]. Although topical steroids as a primary regimen in the treatment of PG complicating motility peg HAorbital implants was mentioned in the literature, its efficacy has not been previously demonstrated in detail. Only two reports have mentioned successful use of topical steroids in the treatment of PG complicating motility peg HAorbital implants. In one report, two cases were treated using a combination of carbon dioxide laser and topical steroids^[12]. In the second report, four cases were treated by excision or topical steroids^[13]. Additional details including the name of steroid, the concentration, the frequency of instillation, and the total duration of treatment were not mentioned. The mechanism of steroid action in ocular inflammation is well known. They inhibit phospholipase A2, resulting in inhibition of arachidonic acid degradation and subsequent synthesis of prostaglandins and leukotrienes by cyclooxygenase and lipoxygenase pathways. Steroids suppress the proliferation of fibroblasts, constrict blood vessels, and inhibit vascular permeability and thereby minimize the leakage of fluids, proteins and inflammatory cells in to the target site^[12]. Based on such properties, and due to its safety as well as the patient's reluctance to undergo any surgical procedures, we initiated

topical steroid therapy. Both the patient's symptoms and the PG mass resolved within a period of six weeks without untoward complications. No recurrence was noted during a follow up period of 14 months duration.

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