

Case Report

Infected conjunctival pyogenic granuloma at strabismus surgery site mimicking conjunctival abscess



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Abstract

We present a rare case of infected pyogenic conjunctival granuloma mimicking a conjunctival abscess as complication of strabismus surgery in a Saudi girl with exotropia. Despite administration of local antibiotics following strabismus surgery, a patient presented with localised redness and discharge after three weeks. The patient was afebrile with no signs of pre-septal or orbital cellulitis. After culture (*Staphylococcus aureus*) sensitivity testing the patient was prescribed oral Amoxicillin and Clavulanate and reviewed under general anaesthesia. A 55 mm² conjunctival pyogenic granuloma was noted. A punch biopsy specimen indicated inflammatory and histiocytic cells. The addition of steroid to the medical therapy resulted in a quiet eye after three weeks.

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Introduction

Strabismus surgery is an effective treatment with minimum complications.¹ Although rare, complications such as cellulitis and sub-Tenon abscess have been reported after strabismus surgery.² Strict aseptic precautions and procedures have reduced these complications.³ If these complications occur, generally appropriate antibiotic minimize the need for abscess drainage. Ophthalmic surgeries may cause an iatrogenic stimulus for conjunctival and other benign tissue growth such as pyogenic granuloma.⁴ However, inflammation is unusual in these cases. Strabismus surgery in children is performed under general anaesthesia to reduce the risks of an uncooperative patient. In the event of postoperative complications, further surgical interventions should be avoided due to the additional risk related to general anaesthesia. Therefore, postoperative vigilance and prompt diagnosis and management of complications reduce the risk of visual morbidity. This case report documents the presentation and management of a rare case of infected pyogenic con-

conjunctival granuloma after strabismus surgery in a young Saudi female.

Case report

A 4-year-old girl was diagnosed with exotropia and was scheduled for strabismus surgery. The eyes were prepared in a sterile fashion with 1% povidone-iodine solution and instillation of one drop of povidone iodine, the surgery was performed under general anaesthesia. The patient underwent 7.00 mm bilateral lateral rectus muscle recession. The muscle was approached through a limbal incision. The muscle ends were sutured using double-armed 6-0 Coated Vicryl (polyglactin 910) suture using a modified hang-back technique. Two interrupted 8-0 Coated VICRYL (polyglactin 910) sutures were used to close the conjunctiva. A combination of tobramycin and dexamethasone ointment was applied after surgery at bedtime for both eyes. Combination tobramycin and dexamethasone eye drops were instilled four times daily in both eyes for two weeks. After three weeks, the patient

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presented with complaints of localized redness and mild discharge from the left eye. Slit lamp examination (Topcon Corp., Tokyo, Japan) indicated localized conjunctival injection with large conjunctival abscess at the surgical site of the left eye with profuse mucopurulent discharge (Fig. 1). She was afebrile, with mild local tenderness but without any other signs of pre-septal or orbital cellulitis. Conjunctival swab was obtained for culture sensitivity testing. The patient was uncooperative for examination and hence pus could not be drained at that time. She was given Amoxicillin and Clavulanate syrup 350 mg twice daily for two weeks and Moxifloxacin eye drops for two weeks three times daily in the left eye. She was scheduled next day for incision and drainage of the abscess under general anaesthesia. The examination under anaesthesia revealed that there was no pus but a large conjunctival granuloma measuring 11 mm × 5 mm was present at the site of lateral rectus insertion in the left eye (Fig. 2). A specimen was obtained using a punch biopsy. Macroscopic evaluation suggested that it was diffuse pyogenic granuloma without any discharge. B-Scan ultrasonography did not reveal collection of pus in eye or orbit.



Fig. 1. Left eye with mucopurulent discharge three weeks after performing lateral rectus recession.



Fig. 2. Conjunctival granuloma measuring 11 mm × 5 mm at the insertion of lateral rectus of left eye.



Fig. 3. Left eye three weeks after starting topical steroids.

Conjunctival swab revealed *Staphylococcus aureus* organisms and histopathology showed inflammatory cells and histiocytes. Tobramycin and dexamethasone eye drops 4 times daily for ten days was added to the existing medical therapy of oral and topical antibiotics. After three weeks, the eye was quiet with mild localised redness and pyogenic granuloma had completely resolved (Fig. 3).

Discussion

In the era of a battery of investigative tools and enhanced knowledge, a surprising finding on the operating table in ophthalmology is unusual but possible. This case was being treated as a postoperative infection and surprisingly turned out to be a benign tumour possibility of an iatrogenic nature. This case indicates that unusual conditions should be considered if the eye is unresponsive to conventional treatment. A critical approach to the diagnosis would avoid surprises and mitigate the risk of a long and protracted course of treatments, some of which may be not be appropriate.

Presence of inflammation in and around the eye usually suggests infection.⁵ Infection in sub-Tenon space and the orbit have been documented following strabismus surgery.^{6,7} However infection after eye surgery under aseptic precautions and without systemic symptoms such as fever, is rare. Daudi et al.⁸ noted that in nearly 50% of cases fever was not present but local signs of inflammation existed and patients responded to both local and systemic antibiotics.

In the current study, culture sensitivity testing allowed specific antibiotics to be initiated. Antibionoma (localised abscess) was suspected and removal of sterile pus was planned. Formation of granuloma could be due to the infectious organisms.⁹ Foreign materials used in eye surgery has resulted in non-infective granulomas.¹⁰ Suture material can also cause delayed complication including granuloma after ophthalmic surgery.¹¹ In our study, new sterile sutures were used and they were probably not responsible for the granuloma because the interval between surgery and granuloma formation was short. Eye ointment has also been implicated in granuloma formation.¹²

In the present case, we believe that despite the unexpected findings during surgery, exploration was the correct strategy. Instead of abscess drainage, tumour biopsy for histopathological assessment and management accordingly benefited the patient.

Conflict of interest

None of the authors have any proprietary interests or conflicts of interest related to this submission.

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