Pyogenic granuloma post OSSN excision: A case report and review of literature

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Abstract

Introduction: Pyogenic granuloma is an excessive fibroproliferative tissue occurring on the ocular surface after any minor injury or surgery. It is not often reported after Ocular surface squamous neoplasia (OSSN) excision.

Case Report: We report a case of OSSN in a 38-year-old patient that was managed by excision biopsy and post –op mitomycin C. While on treatment patient presented with a rapidly developing fleshy mass. On excision biopsy the mass was revealed to be fibro-proliferative granulation tissue and diagnosed as pyogenic granuloma. We did a pubmed literature search for pyogenic granuloma on ocular surface and reviewed all the articles.

Conclusion: Pyogenic granuloma occurring post excision of OSSN poses difficulty in diagnosis and needs an aggressive management regime to rule out recurrence of OSSN before diagnosing it as a more benign pyogenic granuloma.

Keywords: OSSN, Ocular surface squamous neoplasia, Pyogenic granuloma, Post excision recurrence.

Introduction

Pyogenic granuloma is an exaggerated proliferation of fibrous tissue following minor trauma or surgery. They are commonly reported on the ocular surface following squint[1] and eyelid surgeries. Pyogenic granuloma occurring over the limbal region have been misdiagnosed as invasive carcinoma and diagnosed as benign granuloma only after enucleation.[2] Ishijama K[3] et al have reported a case of pyogenic granuloma occurring after OSSN excision, which they successfully diagnosed with brush cytology and managed appropriately.

We report such a case of pyogenic granuloma occurring rapidly after excision of OSSN, which was challenging to diagnose, and the patient was subjected to a repeat extensive excision biopsy. The case emphasizes the dilemma encountered in the management of such cases and the need to adopt an aggressive approach.

We did a pubmed search for pyogenic granuloma of ocular surface and reviewed all the articles.

Case Report

A 38-year-old male patient agriculturist by occupation, non-smoker noticed a small pinhead sized mass in the temporal side of his left eye since 7 years. He noticed a sudden increase in the size of the mass since 6 months, which reached the size of a peanut. The patient was seen at a local hospital and underwent needling following, which the mass further increased in size. The patient was then referred to a tertiary centre. The patient underwent a shave biopsy there and was diagnosed as amelanotic melanoma and counselled for poor prognosis and referred for radiotherapy. The patient came to us for a second opinion. On examination the patient had 6/6 vision OD, 6/9 OS, His right eye he had a pinguecula 2mm in size on his nasal conjunctiva. Posterior segment examination was normal. His left eye showed (Fig. 1) an elevated pinkish mass 7 × 4 mm in size near the temporal limbus not extending into the cornea. The mass had prominent feeder blood vessels. Anterior chamber was normal. Gonioscopy was normal. Posterior segment was within normal limits. B scan ultrasonography was also normal. The patient was diagnosed to have ocular surface squamous neoplasia. There was no evidence of preauricular or submandibular lymphadenopathy. HIV and HBs Ag test was negative. Patient underwent an excision biopsy following the standard protocol of "no-touch technique", dry dissection and double freeze thaw technique of cryotherapy for the conjunctival margin. The biopsy revealed squamous cell carcinoma with margins free of the tissue but extension upto the base (Fig 2). The patient was started on mitomycin C topical drops 0.04% four times a day for one week with NLD obstruction. The block of previous excision was re-examined in our institute and found to have Squamous cell carcinoma. The patient was wrongly reported as amelanotic melanoma.

The patient reported after 10 days with a rapidly growing mass in the area of excision, which had increased significantly in size (Fig. 3) while he was on mitomycin C. On examination patient had a pinkish nodular mass 4X6 mm in size 4 mm away from the limbus at the operated site. There were no feeder blood vessels. Vision was 6/6. No diplopia. Posterior segment was normal. A differential diagnosis of pyogenic granuloma or recurrence of OSSN was made and patient underwent a re-surgery conforming to the standard protocol. The mass had some fibrous extension to the lateral rectus muscle sheath which was removed but the muscle was spared. The mass was firm to palpate. Amniotic membrane transplantation was done to cover the conjunctival defect (Fig. 4). Histopathology examination revealed a fibro-collagenous tissue with few lymphoid cells and no

evidence of malignancy (Fig. 5). Patient was given two more cycles of mitomycin C topical chemotherapy.

Follow-up examination patient had vision 6/6 OS no diplopia, amniotic membrane well attached extra-ocular movements were normal. Gonioscopy normal 6 months follow-up patient was disease free.

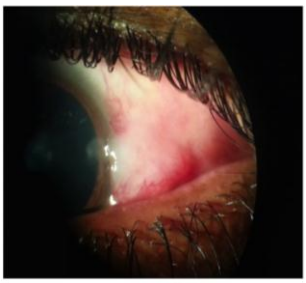

Fig. 1: Pre-op presentation

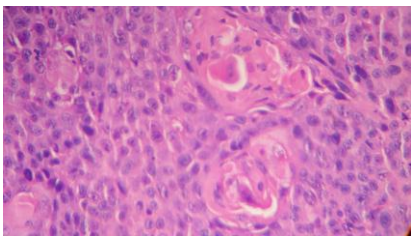

Fig. 2: Histoplathology showing squamous cell carcinoma

Fig. 3: Pyogenic granuloma

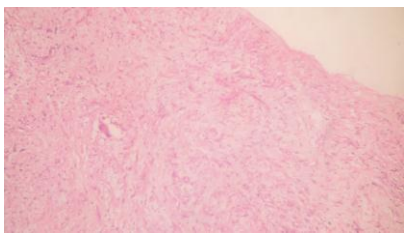

Fig 4: Post pyogenic granuloma excision with AMT

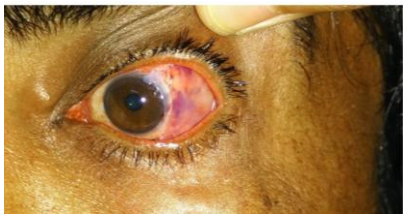

Fig 5: Histopathology showing fibrocollagenous tissue suggestive of pyogenic granuloma

Discussion

Poncet and Dor first described the occurrence of pyogenic granuloma.[4] Contrary to its name pyogenic granuloma is an exorbitant proliferation of fibrous tissue with neither an evidence of inflammatory cells nor granulation tissue.

It is an exaggerated fibrovascular response to tissue insult that could be either trauma or any surgery. It can be round to oval, usually pedunculated but can present as broad based mass and can occur anywhere on the ocular surface. The varied manifestations add on to the difficulty of diagnosis. The characteristic feature of pyogenic granuloma is that it is a rapidly developing tumor that achieves its maximal size within few weeks.[1]

Ferry[1] reported a hundred cases of pyogenic granuloma in 1989. Of the 40 cases occurring on the ocular surface in his series, there were cases occurring after scleral buckling for retinal detachment,[10] strabismus surgery,[8] excision of pterygium/ pinguecula,[8] plastic surgery of eyelids,[7] nasolacrimal system surgery,[4] enucleation[1] and resection of conjunctiva for Mooren's ulcer.[1] In all these cases only 3 cases were diagnosed accurately preoperatively thus emphasizing on the difficulty in diagnosis.

Pyogenic granulomas have been described on the cornea after infectious keratitis,[5] snake-oil[6] fall into the eye, keratoplasty[7] and following trauma.[8-11] These case reports also stress upon the fact that diagnosis is difficult and the need for the treating ophthalmologist to be aware of such occurrence in instituting the appropriate management.

Pyogenic granulomas occurring at the limbus[12,13] pose an unique challenge in their management. The limbus is the most common site for ocular surface squamous neoplasia and the ophthalmologist is in a dilemma in differentiating it from the pyogenic granuloma. There has been a report of misdiagnosis as recurrent aggressive tumor and patient been subjected to enucleation to be diagnosed as pyogenic granuloma only on histopathology.[2] Ishijima K et al[3] in 2010 reported a case of pyogenic granuloma developing rapidly after excision of OSSN which they successfully diagnosed by brush cytology and hence appropriately managed the case. The disadvantage of using brush cytology is the availability, the need for a trained pathologist and also the sensitivity in accurately diagnosing, as OSSN is low.

The treatment of pyogenic granuloma has also been debated widely, as is its diagnosis. Duke Elder[1)] suggested a radical excision followed by cauterization of the base with silver nitrate stick and fulguration by diathermy. He also described that excision is usually accompanied by severe hemorrhage. However Ferry in his series of 100 cases reported that pyogenic granuloma requires a 'simple' excision and good diathermy controls the bleeding.

If pyogenic granuloma is diagnosed early, only topical steroids are sufficient in regressing the tumor.[4]

There has also been a report of spontaneous resolution of pyogenic granuloma.[14] However the standard treatment remains excision, as this proves to be both diagnostic and therapeutic in view of the difficulty that we face in pre-op diagnosis. Low dose plaque brachytherapy is also advised for exorbitant recurrences.[4]

When pyogenic granuloma occurs after excision of OSSN the challenge of diagnosis and management is exemplified. In our case the patient had undergone prior multiple procedures of needling and shave biopsy, which are procedures not to be adopted in cases of OSSN. We had followed the standard surgical protocol along with cryotherapy. The margins were reported as free from cancer tissue on histopathological examination. To reduce the recurrence rate patient was started on mitomycin C drops. While the patient was under the treatment we noticed a very rapidly growing mass that increased to a pea head size within three days. Clinically it looked fleshy pink mass and with the history of mismanagement earlier, led to a dilemma in diagnosis. The patient was also apprehensive and insisted on enucleation. We convinced the patient and performed extensive excision biopsy and since the defect was large we used amniotic membrane to cover the defect. The patient was a non -smoker, had undergone excision biopsy with wide margins along with adjuvant cryotherapy and post op chemotherapy. All these are shown to have reduced recurrence rates for OSSN according to a study reported by Galore A et al.[15] Despite these, occurrence of a mass at the site of excision posed a diagnostic challenge.

There has been a rise in cases of OSSN over the years with many cases being reported from Sub-Saharan countries[16] and also the Indian subcontinent.[17] The ophthalmologists need to be aware of the occurrence and need to be trained to differentiate these conditions. As thumb of rule "Anything that grows rapidly is not OSSN and is more likely to be a benign lesion".[18] Pyogenic granuloma is pinkish, firm, has a smooth surface and firm to palpate and grows rapidly.

When there is a mass developing at the site of previous excision of OSSN, an aggressive approach is justifiable. Wide excision biopsy is the treatment of choice and requires careful handling of tissue following the standard protocol of no-touch technique and cryotherapy to the conjunctival margins.

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