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Lacrimal Sac Diverticulum: A Rare Case Report

Sunday Nnamdi Okonkwo, Ernest Ikechukwu Ezeh
Department of Ophthalmology University of Calabar and University of Calabar Teaching Hospital, Calabar, Cross River State, Nigeria.

Abstract
Diverticulum of the lacrimal sac is a rare condition characterized by an outpouching of the lacrimal sac. It could be congenital, inflammatory or post-traumatic. Herein management of a case of a 13 year old boy who presented with 8 months history of swelling in the left lacrimal region associated with epiphora diagnosed as lacrimal sac diverticulum is reported. The need for careful evaluation of masses arising from the lacrimal region and consideration of rare conditions such as lacrimal sac diverticulum as a differential diagnosis is highlighted.

Key words
Lacrimal sac, diverticulum, epiphora

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I. Introduction

Diverticulum of the lacrimal sac is a rare condition characterized by an outpouching from the lacrimal sac [1,2]. It mostly stays asymptomatic unless infected secondarily. Inflammatory engorgement of vessel wall may interfere with the drainage resulting in epiphora and recurrent dacryocystitis [1,3,4]. Connection may or may not exist between the diverticula and sac [3]. Herein we report successful management of a rare case of lacrimal sac diverticulum in our centre.

II. Case Report

A 13 year old boy presented to our centre with 8 months history of painless slowly progressive swelling on the left lacrimal region. Initially the swelling was associated with mucopurulent discharge from the eye but over time it became watery and intermittent. He also had recurrent episodes of catarrh. There was no preceding history of trauma or associated fever. He was referred to our centre from a peripheral hospital as a case of chronic dacryocystitis for treatment.

Examination revealed an ovoid swelling on the left lacrimal sac region causing displacement of the medial third of the lower eyelid superiorly with narrowing of the palpebral aperture (Figure 1). It measured 35mm in its widest diameter. The swelling was tense, non tender and adherent to deep tissues. The overlying skin appear normal. There was no reduction on the size of the swelling on digital compression and regurgitation could not be elicited. Syringing of the left naso-lacrimal passages revealed fairly easy patency without alteration in the size of the swelling.

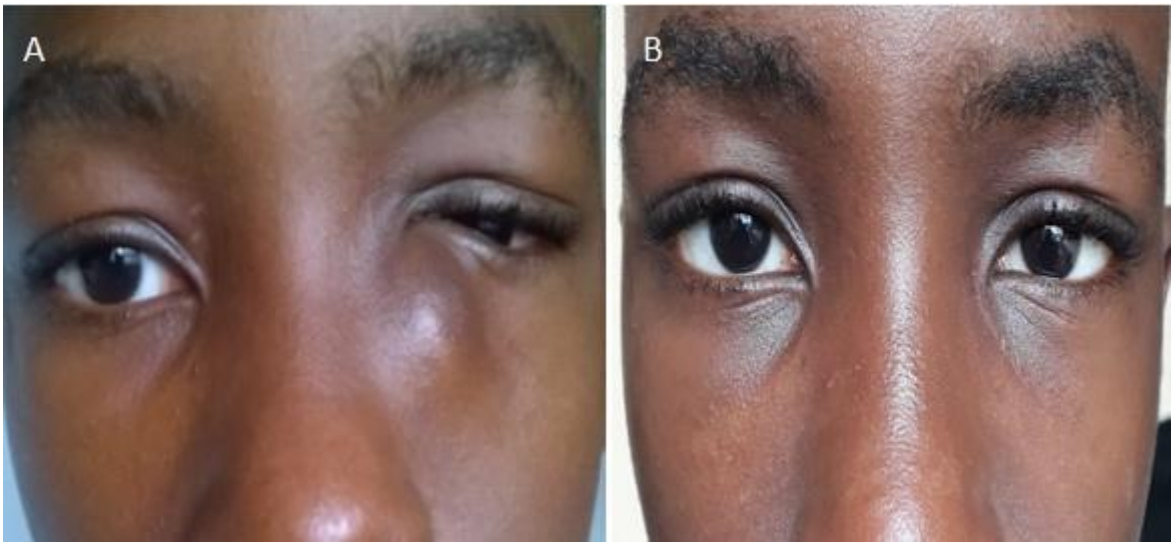

Figure 1. (A) Preoperative photograph showing swelling in the left lacrimal region (B) Post operative photograph at three months

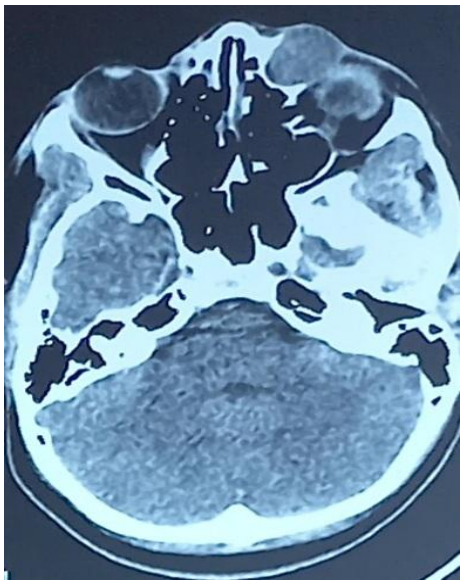

Figure 2. CT scan showing the dilated left bony lacrimal fossa with a well defined lacrimal sac lesion extending into the orbit.

Routine haematological and biochemical tests were within normal range. X ray of paranasal sinuses showed engorgements of the nasal turbinates bilaterally worse on the right with narrowing of the nasal airways. The Nasal septum was intact and no deviation was seen. Computerized tomography (CT) scan showed enlargement of the left lacrimal fossa with large lacrimal sac extending into the inferomedial orbit (Figure 2).

Surgical exploration of the lesion under general anaesthesia revealed lacrimal sac diverticulum arising from the lateral wall extending into the orbit. The mass was filled with mucopurulent materials. The outpouching was excised. There was a fibrotic tissue between the lateral wall of the lacrimal sac and the diverticulum. Irrigation of the lacrimal passage following excision of the outpouching did not reveal leakage on the lacrimal sac and the exposed superior portion of the nasolacrimal duct. Histologic features of the wall of the mass was consistent with diagnosis of lacrimal sac diverticulum. The patient did not exhibit any tearing or recurrence of the swelling after 12 months follow up.

III. Discussion

Diverticula of the lacrimal sac can be congenital, inflammatory or post-traumatic [2,3]. It arises mostly from the inferior lateral wall of the sac as seen in this case because resistance to any expansion is least in this region as compared to other walls which have support of the periosteum and orbicularis muscle [5]. The diverticula may or may not be connected with the sac [3]. Given the clinical presentation of this patient, it seems

reasonable to postulate that the following sequence of events occurred. First there was a congenital diverticulum of the lacrimal sac; then followed intermittent obstruction of its drainage by vascular engorgement or chronic inflammation, with retention of secretion and increase in size and pressure on the adjacent lacrimal sac producing epiphora. Lastly, closure of the connection between the diverticulum and the lacrimal sac occurred.

For the diagnosis of a cystic diverticulum arising from the lacrimal sac, it is necessary that the pathological examination of the cyst wall should show it to be identical with the wall of the lacrimal sac [3]. However, clinically lacrimal sac swelling in the presence of a patent syringing should raise the suspicion of a diverticulum. Imaging studies (e.g. dacryocystography) are also very helpful in the diagnosis [4].

Treatment of Lacrimal sac diverticulum usually consist of excision of the outpouching with or without dacryocystorhonostomy [2]. In the present case excision of the outpouching alone sufficed.

IV. Conclusion

Lacrimal sac diverticulum is a rare condition that can manifest as recurrent dacryocystitis. Lacrimal sac swelling in the presence of patent syringing may be a diverticulum. Any mass arising in the lacrimal region should be carefully evaluated and rare conditions such as lacrimal sac diverticulum considered in the differential diagnosis.

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