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Case Report

Rare case of nasolacrimal duct opening into face

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ABSTRACT

Congenital anomaly of nasolacrimal duct is mostly obstructive in nature or is seen in oblique facial clefts. Nasolacrimal duct drain into the inferior meatus in the nose in a normally developed face. We report a rare case of aberrant opening of distal end of nasolacrimal duct into the external skin lateral to the ala of nose in an adult patient. The only case reported so far was in an infant. The patient is a 22 year young male presenting with an opening lateral to the left ala of nose with recurrent discharge and conjunctivitis of left eye. The embryology is also discussed.

KEY WORDS

Ectopic opening; nasolacrimal duct; oblique facial cleft

INTRODUCTION

Ectopic opening of nasolacrimal duct in the normal face is so rare that only one such case has been reported in the literature.[1] Congenital disruptions and anomalies of this duct system occur in oblique facial clefts as a result of clefting in this zone.[2]

Other congenital anomalies are mostly obstructive in nature and may vary from partial absence of the canalicular system to alacrima.

CASE REPORT

A 22-year-old male presented with pinkish looking pit lateral to the left ala of nose with history of repeated purulent discharge with intermittent conjunctivitis since birth [Figure 1]. History of intermittent mild pain and tenderness in the left cheek improved with antibiotics. There was no history of excessive lacrimation from left eye. On clinical examination, a pinkish opening about 5 mm in diameter was seen inferolateral to the base of left ala, and on palpation there was no bony indentation or notching on the nasolacrimal and infraorbital region. However on moderate pressure over the lateral wall of nose there was increased discharge from the opening. The patient otherwise had a normally developed face with no evidence of any cleft. Injecting saline into this opening showed exit of saline from the punctum of inferior canaliculus confirming the nasolacrimal duct [Figure 2]. All the routine investigations were within normal limits. CT scan or MRI was not done because of resource constrains and the diagnosis was confirmed by injecting saline into the duct.

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Surgery

The patient was operated under general anesthesia. We cannulated the lower end of the nasolacrimal duct with no. 5 infant feeding tube. The alar facial groove was marked with methylene blue and infiltrated with 1:20000 adrenaline solution. A circular incision was placed around

the swelling which was extended superiorly in the alar-facial groove taking care not to injure the nasolacrimal duct with the feeding tube in place as a guide The lower third of the duct was dissected circumferentially [Figure 3]. The lower part of the incision was deepened till the mucosa lining the lateral wall of nose so as to reach the inferior meatus. The distal opening of the nasolacrimal duct was cut 2 mm on the medial side and sutured with the opening in the nasal mucosa with 4.0 catgut. The incision was closed with 6.0 Prolene [Figure 4]. Patient was on intravenous ceftriaxone 1 g IV followed by oral cefixime for five days, Gentamicin eye drop for two weeks. The stent and the sutures were removed after five days. Patient was asymptomatic three months later when followed up.

DISCUSSION

Aberration of nasolacrimal duct in oblique facial clefts are not uncommon.[1] In these situations the embryological zone is involved and the anomaly is obviously explained. However in non-cleft patients with a normally developed face it is very difficult to explain the anomalous opening of the lower end. The only similar anomaly reported so far has been in an infant, where the nasolacrimal duct had opening into external skin of normal face.[2] This is the first such case presenting in an adult. Embryologically there is a zone of mesenchymal condensation in the naso-optic groove, due to the overriding of nasolacrimal process over the medially growing maxillary process, which is the analog of future nasolacrimal duct.[3] There are conflicting views as to how this chord of mesenchyme canalizes to connect the conjunctival system with nose. Either the epithelization progresses cranially starting from the caudal end or it occurs craniocaudally or due to coalescences of multiple sacs forming within the rod.

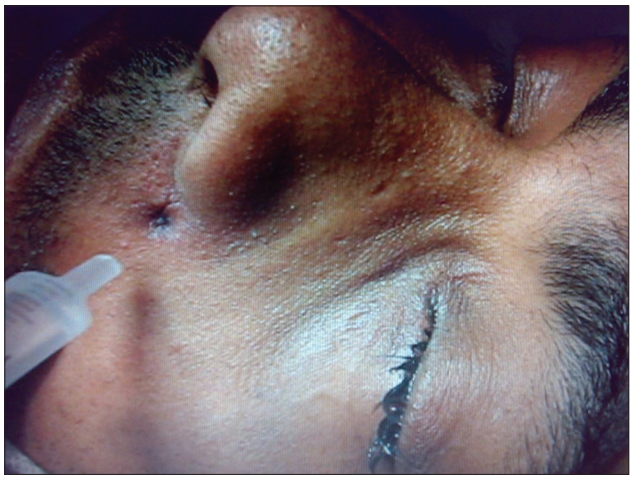

Figure 1: The opening of the nasolacrimal duct located inferolateral to the left ala

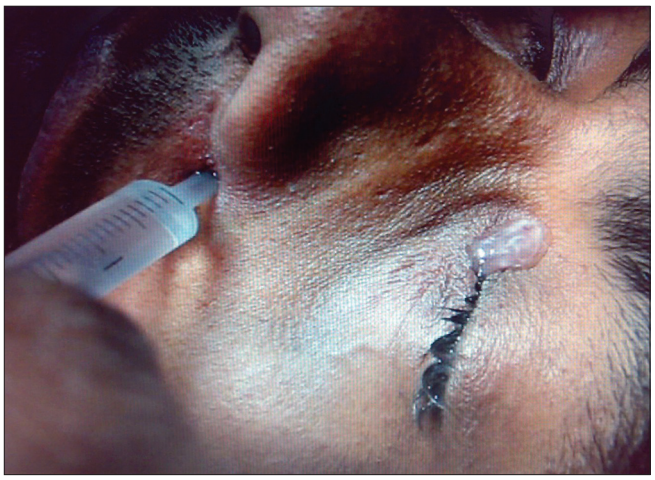

Figure 2: Exit of saline from the lower punctum of left eye after injecting normal saline into the ectopic opening

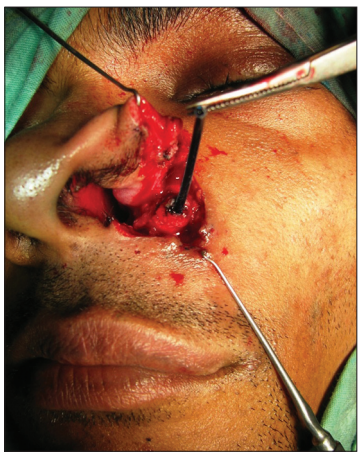

Figure 3: The cannulated aberrant nasolacrimal duct dissected circumferentially in the lower third, rerouted to the inferior meatus through an opening in the lateral wall of nose

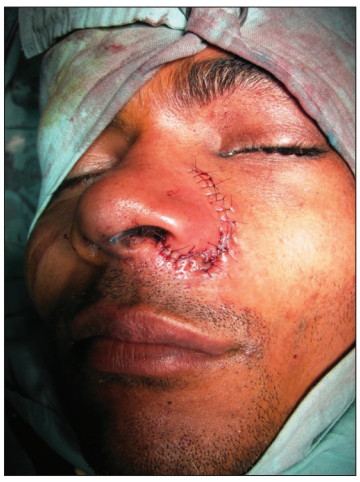

Figure 4: The aberrant nasolacrimal duct rerouted to inferior meatus with a stent *insitu* and closure of the lateral wall

From this case it appears as if the canalization occurs craniocaudally since the last part of canalization was not complete. Recent embryological studies suggest that this anomaly is due to failure of complete separation and migration of the epithelial rod most distal from the surface ectoderm to the inferior meatus of the nasal cavity. This distal remnant of the nasolacrimal duct thus remains juxtaposed to the surface ectoderm of the face on the lateral aspect of the alar nares.[2] However obstructive symptoms of nasolacrimal duct are more common. In Down's syndrome the anomalies are obstructive in nature either due to persistence of Hasner's valve or absence of the apparatus proximal to the lacrimal sac.[4] A study on brachycephalic cats revealed that the shape of skull had a bearing on the course of the nasolacrimal duct which had an angulated course ventral to the sac compared to a smooth curve in its mesocephalic or dolichocephalic counterparts.[5] Though obstructive symptoms are common in children a more severe anomaly is alacrima as in Riley-Day syndrome.[6] This is the only second case with aberrant opening of lower end of nasolacrimal duct into a normal face being reported.

CONCLUSION

This extremely rare condition should be kept in mind when one notices a congenital discharging sinus near the ala with intermittent conjunctivitis. The treatment requires dissection of the lower third of the duct and rerouting it to the inferior meatus.

REFERENCES

1. Lowe D, Martin F, Beckenham E, Williams B. Congenital lower nasolacrimal duct anomaly: A case report. Aust N Z J Ophthalmol 1986;14:65-8.
2. Stretch JR, Poole MD. Nasolacrimal abnormalities in oblique facial clefts. Br J Plast Surg 1990;43:463-7.
3. Datta AK. Essentials of Human Embryology. 6th ed., Kolkata, Current Books international, 2010; p 119-20.
4. Coats DK, McCreery KM, Plager DA, Bohra L, Kim DS, Paysse EA. Nasolacrimal outflow drainage anomalies in Down's syndrome. Ophthalmology 2003;110:1437-41.
5. Breit S, Kunzel W, Oppel M. The course of the nasolacrimal duct in brachycephalic cats. Anat Histol Embryol 2003;32:224-7
6. Moore BD. Lacrimal system abnormalities. Optom Vis Sci 1994;71:182-3.

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