Primary Bilateral Tubercular Dacryocystitis: A Case Report

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Abstract:

Tuberculosis is a communicable disease caused by Mycobacterium tuberculosis. It spreads mainly via air droplet infection and pulmonary tuberculosis is the most common form. Extra-pulmonary tuberculosis accounts for 15–20% cases.[1] The most common type of ocular tuberculosis is tubercular uveitis. Tubercular dacryocystitis is rare[2] with just 18 cases of tubercular dacrocystitis reported world-wide; and no published data was found on bilateral cases. Considering the rarity, high suspicion is required for its diagnosis. We report a case of primary bilateral nasolacrimal sac tuberculosis in a 17-year-old boy who presented with epiphora.

A 17-year-old boy presented with bilateral epiphora for one year. There were no other ocular or nasal complaints. Patient did not have any past and family history of prior surgery or any chronic illness. Regurgitation test was positive and syringing done from both upper and lower puncta showed nasolacrimal duct block on both sides. Nasal endoscopy was normal. Complete blood count, kidney, liver function tests and chest X-ray were normal. The diagnosis of chronic dacryocystitis was made and patient was taken up for left endoscopic dacryocystorhinostomy (DCR) surgery.

During surgery, after raising mucosal flap, part of frontal process of maxilla overlying the lacrimal sac was found partially eroded and lacrimal bone was friable, walls of the lacrimal sac were inflamed and granulations were present. On incising the lacrimal sac, it was filled with white cheesy necrotic material (Figure 1). Biopsy was taken from the sac and overlying eroded bone and further surgery was aborted.

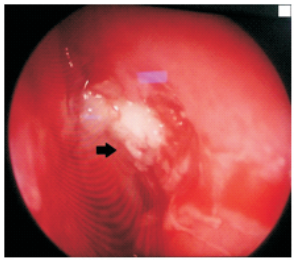

Figure 1 : Nasal endoscopic picture (left nostril) showing white caseous material inside lacrimal sac.

Histopathology showed multiple caseating granulomas with epithelioid cells suggestive of tuberculosis (Figure 2).

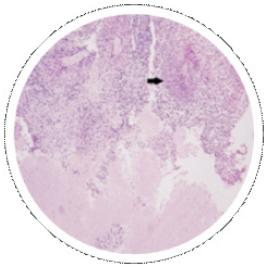

Figure 2 : Histopathologic picture showing caseating granulomas (arrow) H&E stain, 100×.

Patient was further investigated. Mantoux test was positive (15mm x 18mm induration). Erythrocyte sedimentation rate (ESR) was raised (54 mm). Category I anti-tubercular therapy (ATT) according to Revised National Tuberculosis Control Program (RNTCP), was started. The patient completed six months of therapy and responded well. Epiphora resolved and on syringing, patency was established on both sides. Tuberculosis of lacrimal sac was thus established retrospectively on the opposite side as well.

Discussion

Extra-pulmonary tuberculosis involves head and neck region in 10% of cases. The order of occurrence is tubercular lymphadenitis (73.3%), laryngeal tuberculosis (14.5%), tuberculous otitis media (2.4%), parotid (1.8%), oral cavity (5%), nose (1%) and temporo-mandibular joint (1%).[1] Ocular tuberculosis can affect uvea, sclera, cornea, choroid, lacrimal gland adnexa and periorbital cutaneous tissue having variable prevalence of 5.6–10.13% in India.[2] Tuberculosis of lacrimal sac is very rare. Review of English literature revealed 18 cases of tuberculosis of lacrimal sac to the best of our knowledge. Bilateral afflictions have not been yet reported.

Konstam and Meynell referred to tuberculosis of lacrimal sac as a primary tuberculous "chancre".[3] Tubercular infection may reach the lacrimal sac via haematogenous route, direct inoculation, and contiguous spread from nasal cavity, via skin or through tears in cases of conjunctival exposure. Tuberculosis of lacrimal apparatus may occur as primary form or in association with nasal/paranasal sinus tuberculosis, periorbital, and lupus vulgaris or with cervical lymphadenitis. Tubercular dacryocystitis can ensue at any age particularly in endemic countries. In our review of 18 cases, age group ranged from 14 months to 60 years. There were 11 females and 7 males.

Clinical attributes of dacryocystitis are epiphora and medial canthus swelling. It is essential to ask for any nasal complaints as 8 out of 18 reported cases were associated with nasal tuberculosis.[5–9,12,13] Two cases had associated cutaneous tuberculosis and one had peri-ocular tuberculosis.[12,16] Three patients had lacrimal fistula at presentation.[3,6,15] History of failed lacrimal surgeries should raise suspicion and patients need to be investigated for underlying cause. Six out of 18 cases had failed drainage procedures.[5,6,8,12,13,16] Family history of tuberculosis should be sought as a possible source of infection.[3]

Examination should comprise of regional lymph node evaluation, nasal endoscopy, and any local swelling or ulcer should be carefully examined apart from lacrimal apparatus. Lymph node tuberculosis was found to be associated with two cases in the review.[9,15] The importance of detecting an enlarged lymph node is that it may provide valuable clues for the cause of dacryocystitis on subsequent aspiration cytology.[15] Nasal endoscopy is an essential tool for detecting any suspicious lesion in nasal cavity. Any granulations or congested friable mucosa in inferior meatus or middle turbinate should prompt for pre-operative biopsy and confirming diagnosis.

The investigation includes fine needle aspiration cytology from medial canthus/facial swelling, or any suspicious lymph node. Routine blood investigations may detect lymphocytosis, raised ESR or positive tuberculin test. Chest X-ray is important in detecting any pulmonary tuberculosis. It is interesting that no case had associated pulmonary tuberculosis in the present study. Granulations in nasal cavity or skin lesion over the lacrimal sac should be sent for histopathology and culture. Histopathology may reveal caseating granulomas with epithelioid, Langerhans giant cells along with tubercular bacilli. Culture is gold standard for diagnosis. Other tests such as QuantiFERON, TbFERON, polymerase chain reaction (PCR) and nucleic acid amplification test (NAAT) help in detecting tuberculosis in shorter duration. Computed tomography is helpful in detecting soft tissue density in lacrimal sac and associated nasal and paranasal sinus involvement. Bone erosion or osteomyelitic changes in bones forming lacrimal fossa should prompt for further investigations. This is important for primary cases of tubercular dacryocystitis which accounted for 5 cases out of 18 apart from the present case.[4,10–12,14] Intra-operative findings such as thick inflamed lacrimal sac, granulations over sac, bone erosion and white caseous material should persuade surgeon to take tissue for biopsy and culture. Whitish caseous material and thinned bone were the only findings in the present case report which arose suspicion of tuberculosis. Treatment of tubercular dacryocystitis is ATT with surgery reserved for cases who remain epiphoric after medical treatment. Standard four drugs (isoniazid, rifampicin, pyrazinamide and ethambutol), Category I regimen according to RNTCP, India are applicable. However, defaulters and drug-resistant forms may require category II treatment. To summarise, primary lacrimal sac tuberculosis is very rare. History of failed surgeries, tubercular contact and lacrimal fistula are valuable clues. Nasal endoscopy is helpful in detecting cases of associated nasal tuberculosis. Regional lymph node examination is essential. ATT is mainstay of treatment. Endoscopic DCR should be reserved for persistent epiphora after ATT.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References:

1. Prasad KC, Sreedharan S, Chakravarthy Y, Prasad SC. Tuberculosis in the head and neck region: experience in India. J Laryngol Otol. 2007;121(10):979–985.
2. Kumar A, Chawla R, Sharma N. Ocular Tuberculosis. Switzerland: Springer; 2017.
3. Konstam PG, Meynell MJ. Tuberculosis of nasolacrimal duct. Lancet. 1951;1(6652):443–444.
4. Sigelman SC, Muller P. Primary tuberculosis of the lacrimal sac. Arch Ophthalmol. 1961;65(3):450–452.
5. Al- Malki AF, Issa TM, Riley F, Karcioglu ZA. Nasolacrimal tuberculosis in a patient with conjuctivodacryocystorhinostomy. Ophthal Plastic Reconstr Surg. 1999;15(3):213–216.
6. Wong SC, Healy V, Oliver JM. An unusual case of tubercular dacryocystitis. Eye. 2004;18:940–942.
7. Tosun F, Tozkoparan E, Erdurman C, Ors F, Deniz O. Primary nasolacrimal tuberculosis diagnosed after dacryocystorhinostomy. Auris Nasus Larynx. 2007;34 (2):233–235.
8. Jablenska L, Lo S, Uddin J, Toma A. Nasolacrimal duct tuberculosis: case report highlighting the need for imaging in identifying and managing it effectively. Orbit. 2010;29(2):126–128.
9. Varley CD, Gross ND, Mrax DP, Winthrop KL. Tuberculosis of the nasolacrimal duct. OphthalPlasReconstr Surg. 2011;27(5):e129–31.
10. Soares MT, Coutinho I, Da Silva AR, Oliveria L,Montalvao P, Magalhaes M. Tuberculosis of the lacrimalsac. Vis Pan Am. 2016;15(1):28–29.
11. Gupta D, Gulati A. Tubercular dacryocystitis: a quirkydiagnosis!! Otorhinolaryngol Clinics Int Journal. 2016;8 (2):65–67.
12. Mohindra S, Chauhan N, Bal A, Gupta N. Tuberculousdacryocystitis: short series reporting spectrum of involvement.Ann OtolaryngolRhinol. 2016;3:1100.
13. Gupta N, Janaki RV, Ali MJ. Primary nasal tuberculosiswith lacrimal drainage involvement. IntPediatrOtorhinolaryngol Extra. 2017.
14. Narsani AK, Jatoi SM, Kumar M, Dabir SA, Gul S,Khanzada MA. Periocular tuberculsosis. JLUMHS.2008;7:37–40.
15. Abrol R, Nagarkar NM, Mohan H, Srivastava M.Primary bilateral tuberculous dacryocystitis with preauricular lymphadenopathy: a diagnostic difficulty ofrecent times. Otolaryngol Head Neck Surg. 2002;126(2):201–203.
16. Bansal S, Sahoo B, Garg VK, Singh S. Periocular lupusvulgaris secondary to lacrimal sac tuberculosis: a rare presentation with emphasis on magnetic resonanceimaging in localizing the primary focus of infection.Indian J Dermatol VenereolLeprol. 2013;79(3):425–427.