Case Report

Tubercular Granuloma Arising from Floor of Orbit : A Rare Occurrence

Lubna Khan[1]
[1]*All India Institute of Medical Sciences, Chhattisgarh, India*

ABSTRACT

Introduction: Tuberculosis of the orbit is a unilateral entity commonly involving the bony wall, periosteum or soft tissue in left orbit. It is a rarity.

Case: A fifty seven years old female presented with a localised mass near inferior orbital margin. Owing to its small size and superficial location in orbit, there was no soft tissue displacement or motility disturbance.

Observations: Dissection revealed a localised firm mass attached to periorbita covering the orbital floor. The mass was excised and on histopathological analysis it was found to be composed of multiple granulomas containing abundant Giant cells. Considering such a picture at cellular level, ELISA for tuberculosis was done. Values were suggestive of recent infection. The patient was put on antitubercular multidrug regimen for six months one week after excision of mass, with a follow up of four years, having no recurrence till date.

Conclusion: Though orbital tuberculosis is much more common in childhood, it should always be considered in the differential diagnosis of orbital mass in adults also. At times, even in an otherwise healthy individual, tuberculosis might be diagnosed because of an orbital mass.

Ophthalmologists should have a high index of suspicion since orbital tuberculosis has been underdiagnosed in the past.

Key words: Giant cell granuloma, Orbital granuloma, Orbital tuberculoma.

INTRODUCTION

Tuberculosis of orbit is rare (Duke et al, 1952; Agrawal PK et al, 1977). Even in endemic areas it is infrequent. It is usually unilateral, the left eye being more commonly involved. The predominant features include involvement of bony wall, periosteum, lacrimal gland and soft tissue inflammatory mass in orbit. Involvement of bony medial wall is due to contiguous spread from nearby paranasal sinus, while lateral wall is involved due to hematogenous spread.

Financial Interest : Nil
Conflict of Interest : Nil

Received : 02.05.2021
Accepted : 23.03.2022

Corresponding Author
Dr Lubna Khan
Additional Professor, Department of Ophthalmology,
All India Institute of Medical Sciences,
Raipur, Chhattisgarh, India.
E-mail: lubnakhan65@yahoo.co.in

Access this article online
Website: www.nepjol.info/index.php/NEPJOPH
DOI: https://doi.org/10.3126/nepjoph.v14i2.36837
Copyright © 2022 Nepal Ophthalmic Society
ISSN: 2072-6805, **E-ISSN:** 2091-0320
This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND).

CASE REPORT

A fifty seven year old female presented on an outpatient basis with a palpable nodule in left orbit. On examination it was barely visible (Figure 1). On palpation it was felt as a soft round mass just above the inferior orbital rim. It was painless and had developed to the existing size over a period of four months. There was no history of fever, malaise or ailment pertaining to ear, nose or larynx. The only medical attention she sought was for painful growths on two occasions for which surgical excision was done twice. Excision of firm mass from the ankle region was done thirteen years back and thereafter from the lower part of the forearm near the wrist was done nine years back. No records were available with the patient, nor was biopsy done. On examination anterior segment was normal bilaterally and best corrected visual acuity was 20/20.

Routine blood counts, urinalysis routine and microscopic, MRI brain and orbits and abdominal ultrasound were done. All were normal. The mass was excised under local anaesthesia. During dissection it was noticed that the mass was attached to periorbita over the floor of orbit near an inferior orbital margin. When severed from this attachment a gritty feel was noticed. It measured 7mm x 8mm x 6mm, was sessile and multilobulated. Histopathological study of the specimen showed multinucleated giant cells in plenty (Figure 2).

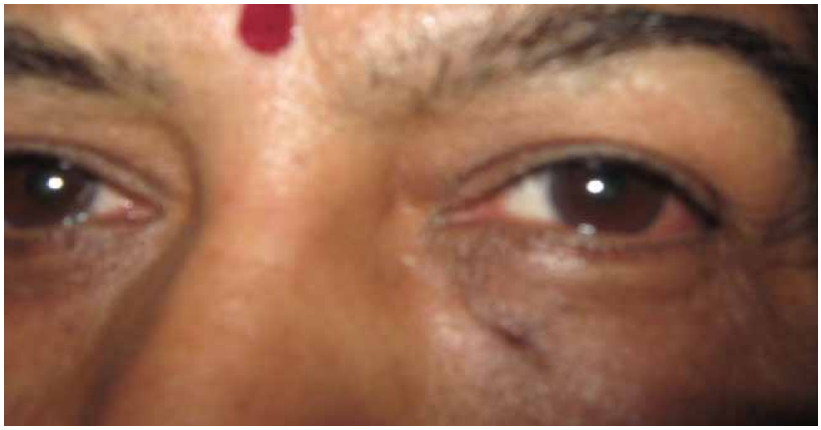

Figure 1: Barely visible lesion at inferior orbital margin.

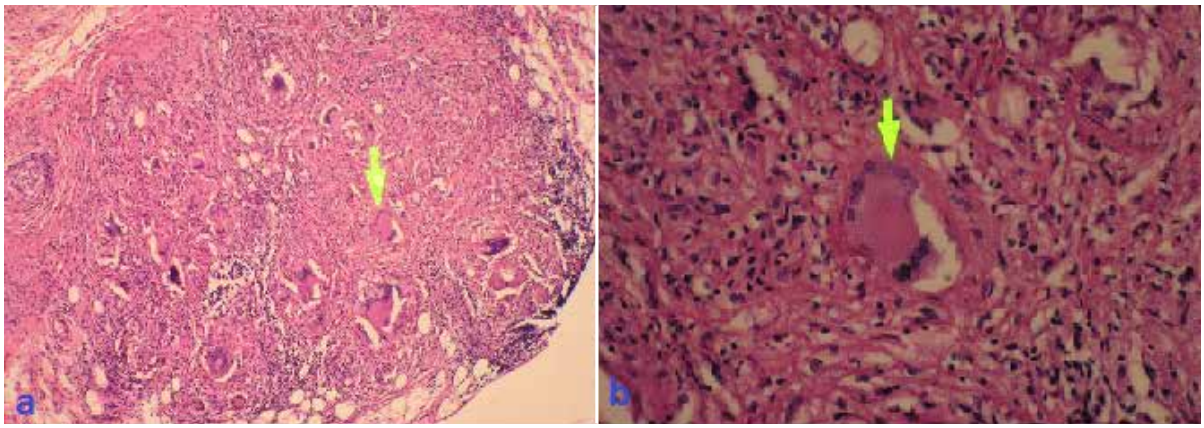

Figure 2(a): Gross histopathological appearance of granuloma; (b): Enlarged view of granuloma showing giant cell (marked with yellow arrow).

A histological picture dominated by Langerhans giant cells but no epitheloid cells can be met with in varying clinical conditions: Browns tumour of hyperparathyroidism, non ossifying fibroma, benign fibrous histiocytoma, aneurysmal bone cyst, giant cell reparative granuloma, metastatic carcinoma with giant cells and Osteosarcoma with giant cells. However, based on normal values of serum calcium, potassium, phosphate, alkaline phosphatase and serum parathormone level, Browns tumour was excluded. Histologic features also excluded metastatic carcinoma, Osteosarcoma, aneurysmal bone cyst and fibrous histiocytoma. Presence of ten or more nuclei within the giant cell led us to diagnose our case clinically as one of Giant cell tumour or Osteoclastoma usually occurring in epiphysis of long bones, more so as there was history of excision done twice from ends of long bones. Seeing such a picture at cellular level, Elisa for tuberculosis was requested. Serum Ig G and Ig M were 1000 IU and 0.7 IU respectively. The excised mass was also subjected to RT PCR (Real Time Polymerase chain reaction) for mycobacterium at the time of grossing for histopathology and it was positive.

Multidrug regime was given for six months. The patient has been followed for a period of four and a half years with no recurrence till date.

DISCUSSION

Giant cell tumour is usually found in the epiphysis of long bones in the third to fifth decade. There is a slight female predominance (Dahlin DC et al, 1986). It rarely affects sphenoid, temporal and ethmoid bones with a primary orbital site reported only in one case (Abdalla MI et al, 1966). Occasionally a giant cell tumour may display clinical and histologic evidence of malignancy, in which case metastasis occurs to lungs (Blodi FC et al, 1996). It classically affects patients in the age group twenty five to forty years. It uncommonly involves the paranasal sinuses and can secondarily impinge upon the orbit (Fu YS et al, 1974). Since our patient gave a history of growths from long bones, we had this possibility in mind and thought of this orbital mass as a secondary.

Clinically they can manifest with cranial nerve palsies, diplopia and headache. This is a friable tumour composed of uniformly distributed osteoclast like giant cells. Rate of recurrence is reviewed to be 30% to 50% after curettage so complete excision should be the goal. This might be difficult if the tumour is at a relatively inaccessible location, then we have to give radiotherapy.

Giant cell granuloma is a benign granulomatous proliferation of unknown cause. It has also been called a reparative granuloma. Cases with orbital involvement have been reported rarely, commonly it arises from maxilla, mandible and phalanges (Hirschl S et al, 1974). Nine patients are reported in the literature so far between the age group five to fifty four, male to female ratio being 3 : 2 (Sood GC et al, 1967). This holds true for giant cell granuloma elsewhere in skeletal bones presenting generally in first two decades of life

with equal male to female ratio (Friedberg SA et al, 1969). The histopathological picture consists of stroma showing oval to spindle shaped plump fibroblasts and giant cells clustered around foci of haemorrhage. Relatively greater degree of fibrosis is a hallmark and stromal features are not only diagnostic, but help to differentiate this condition from Giant cell tumour. Our specimen did not show these stromal features. An identical picture at the cellular level is seen in Browns Tumour also. We looked for other features of hyperparathyroidism.

A picture with Giant cells is seen in Sarcoid granuloma also, but has the characteristic intracytoplasmic inclusions within the Giant cells which were not seen in our case. Orbital involvement is common in paediatric age groups, more common in girls than boys. Left eye is more commonly affected than the right (Sen DK 1980). Tuberculous affliction secondary to hematogenous spread from a primary focus or contiguous spread from paranasal sinus may affect the orbit (Khalil M et al, 1985). Bony thickening, sclerosis or osteolysis can be seen on orbital radiographs. Ocular tuberculosis involves orbital wall (Maria DL et al, 1981), orbital plate of frontal bone,zygomatic or sphenoid. Tubercular periostitis is the usual manifestation of tuberculous infection and affects the outer margin of orbit (Duke ES 1974). Though more common in childhood (Raina UK et al, 2004), orbital tuberculosis should always be considered in the differential diagnosis of orbital masses in adults also. Patients presenting with isolated granuloma anywhere in orbit need to be investigated for presence of local disease and any underlying systemic tubercular focus. At times in an otherwise healthy individual, tuberculosis might be diagnosed primarily because of an orbital mass.

The clinician should have a high index of suspicion as orbital tuberculosis has been underdiagnosed in the past.

In keeping with all three investigations namely, IgG and IgM values denoting recent infection, Elisa for tuberculosis and excised granuloma subjected to RT PCR for mycobacterium both tested positive; hence it being a case of EPTB it was considered appropriate to put the patient on antitubercular multidrug regimen. This was done under supervision of chest and TB specialists after radiogram of chest was seen, Mantoux test and sputum for acid fast bacillus done including complete medical check up.

CONCLUSION

This case report highlights the presence of an orbital granuloma which was barely visible and the patient was asymptomatic. In such a clinical scenario the entity would have been easily missed especially as there were no features to arouse suspicion for the presence of systemic tuberculosis. However, clinicians need to have a high index of suspicion as orbital tuberculosis has been underdiagnosed in the past. Though much more common in childhood, orbital tuberculosis should always be considered in the differential diagnosis of orbital mass in adults also. Prompt diagnosis and initiation of multidrug therapy early will prevent recurrence.

REFERENCES

Abdalla MI, Hosni F (1966). Osteoclastoma of the orbit, Case Report. Br J Ophthalmol;50(2):95-8. doi: 10.1136/bjo.50.2.95; PMID: 4952464

Agrawal PK, Nath J, Jain BS (1977). Orbital involvement in tuberculosis. Indian J Ophthalmol;25:12-6. PMID: 614266.

Blodi FC (1996). Pathology of orbital bones. Am J Ophthalmol;122:444-5.

Dahlin DC , Unni KK (1986). Bone tumours: General aspects and data on 8,542 cases. 4th Ed. Springfield IL: Charles C Thomas

Duke ES (1974). In System of Ophthalmology vol 13 London; Henry Kimpton ; The Ocular adnexa : Lacrimal, Orbital and paraorbital diseases; pp. 902-5, part 2.

Duke-Elder S (1952). "Text Book of Ophthalmology", 5, p. 5459, Kimpton, London

Friedberg SA, Eisenstein R, Wallner LJ (1969). Giant cell lesions involving the nasal accessory sinuses. Laryngoscope;79:763–76. doi: 10.1288/00005537-196905000-00001; PMID: 5770038

Fu YS, Perzin KH (1974). Non-epithelial tumors of the nasal cavity, paranasal sinuses, and nasopharynx: A clinicopathologic study. II. Osseous and fibro-osseous lesions, including osteoma, fibrous dysplasia, ossifying fibroma, osteoblastoma, giant cell tumor, and osteosarcoma. Cancer;33(5):1289-305. doi: 10.1002/1097-0142(197405)33:5<1289; PMID: 4207295

Hirschl S, Katz A (1974). Giant cell reparative granuloma outside the jawbone. Diagnostic criteria and review of the literature with the first case described in the temporal bone. Hum Pathol;5(2):171–81. doi: 10.1016/s0046-8177(74)80064-x; PMID: 4590573

Khalil M, Lindley S, Matouk E (1985). Tuberculosis of the orbit. Ophthalmology;92(11):1624-7. doi: 10.1016/s0161-6420(85)33818-6; PMID: 4080333

Maria DL, Mundada SH (1981). Sub-periosteal tuberculoma of left lateral wall of orbit. Indian J Ophthalmol;29(1):47-9; PMID: 7287126

Raina UK, Jain S, Monga S, Arora R, Mehta DK (2004). Tubercular preseptal cellulitis in children: A presenting feature of underlying systemic tuberculosis. Ophthalmology;111(2):291-6. doi: 10.1016/j.ophtha.2003.05.028; PMID: 15019377

Sen DK (1980). Tuberculosis of orbit and lacrimal Gland: A Clinical Study of 14 cases. J Pediatr Ophthalmol Strabismus;17(4):232:8. doi: 10.3928/0191-3913-19800701-09; PMID: 7411335

Sood GC, Malik SR, Gupta DK, Kakar PK (1967). Reparative granuloma of the orbit causing unilateral proptosis. Am J Ophthalmol;63(3):524–7. doi: 10.1016/0002-9394(67)90259-0; PMID: 6019544