

# MODIFIED LATERAL ORBITOTOMY APPROACH IN THE MANAGEMENT OF LARGE LACRIMAL GLAND TUMOUR – A CASE REPORT

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## Abstract

*Pleomorphic adenoma is the most common benign tumour of the lacrimal glands. A case of pleomorphic adenoma of the lacrimal gland is reported in a 35 years old male who presented with a long history of drooping of left upper eyelid, gradual progressive diminution of vision with a slowly progressive swelling over left upper outer orbit. On examination, irregular, lobulated swelling present in the supero-lateral orbit & on ophthalmoscopy, disc edema, macular edema & retinal striations were seen. CT Scan & histopathology confirmed the diagnosis. Patient was managed by modified lateral orbitotomy and showed postoperative uneventful recovery.*

**Key Words :** *Pleomorphic adenoma, Modified lateral orbitotomy.*

## Introduction

Most authorities report that almost half of all tumours of the lacrimal gland are epithelial in origin.<sup>[1,2]</sup> Just less than half of all epithelial tumours are pleomorphic adenomas (benign mixed cell tumours) which is derived from the ducts, stroma & myoepithelial element. The typical age at presentation of patient with pleomorphic adenoma is 30-40 years. Usually there is fullness of the upper eyelid with gradual inferonasal displacement of the globe and sometimes causing diplopia.

The tumour is firm in consistency with a lobulated surface. The orbital lobe of the gland is most commonly involved. The tumour tends to extend backwards & may cause proptosis, ophthalmoplegia, choroidal folds. Less commonly the tumour arises from the palpebral

lobe. It tends to grow anteriorly, does not displace the globe & produces early visible swelling of the upper eyelid. The crucial aspect of management of all lacrimal gland tumours is to suspect pleomorphic adenoma. Radiographic findings often show demonstrable enlargement of the lacrimal fossa without any bony destruction.

Although this tumour is histologically benign, incomplete excision is likely to result in recurrences leading to the increased orbital dysfunction & even malignant transformation<sup>[2]</sup> Therefore, when pleomorphic adenoma is suspected, a lateral orbitotomy is mandatory.

## Case report

A thirty-five year old male patient reported to Ophthalmology OPD with history of drooping of left eyelid since 3 years, associated with diminution of vision in left eye since 3 years which was gradual, progressive and painless. About six months later, patient noticed a swelling in the left eyelid. Initially, the swelling was very

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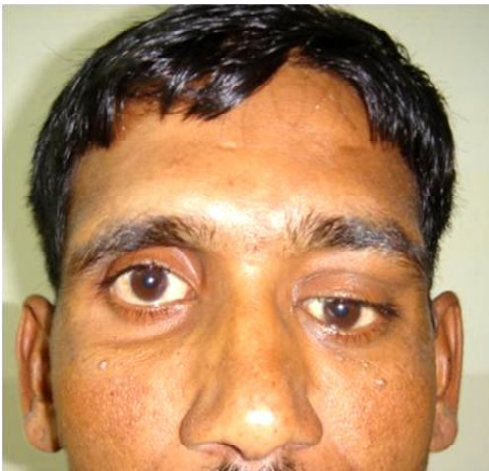
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small and painless, but gradually over a period of one year, it increased to the size of an almond. He consulted a local practitioner for the same and was advised CT scan head and orbit ,after which patient was referred to Pravara Rural Hospital for further management.

On general examination, he was averagely built and nourished, afebrile, BP was 120/90 mm of Hg, pulse was 78/min. Systemic examination was within normal limits.

### Ocular examination

Right eye was within normal limits. Best corrected vision of the left eye was one metre finger counting. The size of the swelling was 3x3cm, irregular, firm to hard in consistency, nontender, present in the superolateral orbit. Overlying upper eyelid was free from the mass below. The left eyeball was deviated downwards and medially with drooping of the upper eyelid, covering more than 4mm of clear cornea (Fig.1). Movements of the left eye were restricted in levelevation and levoversion.



**Figure 1: Photograph showing left eye ptosis with inferomedial displacement of the eyeball**

Fundus examination showed disc pallor, blurred margins of the disc, arteriolar attenuation, horizontal striations stretching across the whole of the retina including macula along with macular edema.

### Laboratory investigations

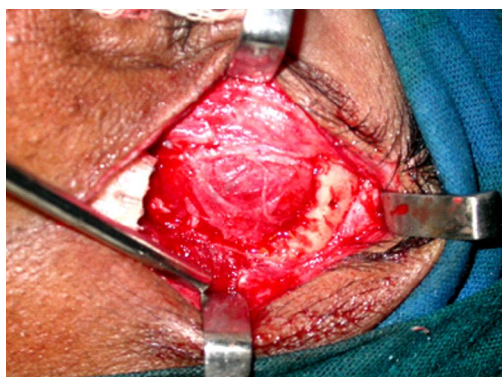
Hb: 14.1 gm/dl, TLC -6,700/cu.mm. Renal function tests, Liver function tests, Fasting blood sugar were within normal limits. CT scan head and orbit shows soft tissue mass of uniform consistency in the lacrimal fossa, free from the globe, muscles and the bone, with no bony erosion.

### Management

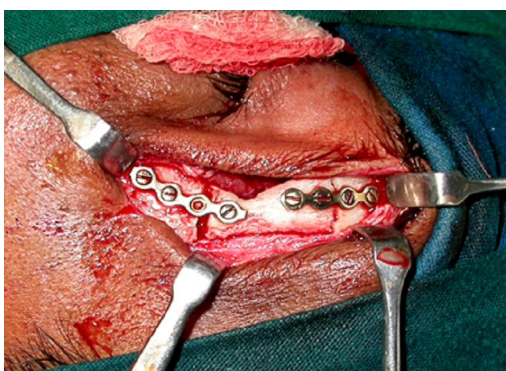
The current technique involves a modified incision in a vertical plane along the lateral orbital rim upto the junction of lateral and inferior orbital margin. Dissection was carried out through the various subcutaneous layers including the orbicularis muscle to the level of the periosteum along the frontal process of zygomatic bone. Then about 40mm segment of the frontal process of the zygomatic bone (Fig.2) was removed using electric saw to make horizontal cuts in the superior and inferior bony margins, performed by oro-maxillo-facial surgeons. This approach provided us with a better exposure of the surgical field (Fig.3), which helped us in removal of the advanced case of lacrimal gland tumour in an encapsulated form. The frontal process of zygomatic bone was repositioned by drilling holes in the adjacent stable facial bone, using titanium plating with multiple screws, performed by oro-maxillo-facial surgeons(Fig.4). Soft tissue and skin was sutured in layers with a surgical drain in place.



**Figure 2: Marking over the frontal process of zygomatic bone**

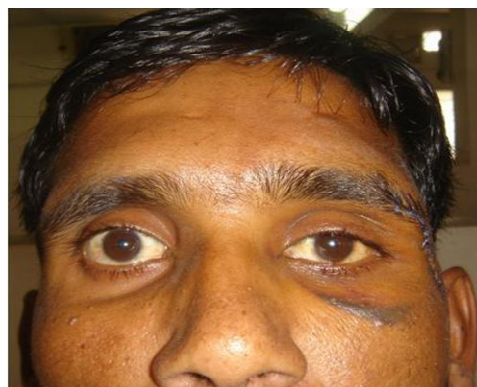


**Figure 3: Exposed lacrimal gland after surgical removal of the frontal process of zygomatic bone**



**Figure 4: Frontal process of zygomatic bone repositioned using titanium plating with multiple screws**

Post-operatively ptosis corrected to near normal, deviation of the eye completely resolved (Fig.5). Ocular movements were initially restricted. Vision improved to 4/60 after 2 weeks. Fundus showed reduced disc edema, reduced macular edema, other changes persisted. Further vision improved to 6/24 after 2 months and ocular movements were full & free in all directions of gaze. After one year, patient regained 6/6 vision. We followed up the patient upto 2 years with no sign of tumour recurrence. Multi-disciplinary surgical approach made the surgery easier with no recurrence upto 2 years of follow-up.



**Figure 5: Postoperative photograph showing resolution of ptosis & deviation of eyeball**

## Discussion

Tumours of the lacrimal gland are relatively rare. The incidence in various studies has been found to be between 5 to 7%. Pleomorphic adenoma accounts for approximately 12-25% of all lacrimal glands tumours.<sup>[3,4]</sup> Pleomorphic adenoma is most common benign tumour of the lacrimal glands. There may be cystic areas within the mass & lesions of long standing may erode adjacent bone. Although pleomorphic adenomas commonly involve the orbital lobe of the lacrimal gland, they can involve the palpebral lobe in about 10% of cases.

The palpebral lobe tumours are freely movable, non-tender & present within a shorter duration. They do not produce proptosis or bony changes. Pleomorphic adenomas usually occur in the fourth & fifth decade of life & incidence for both genders is same. However, the tumour has been reported in children as young as 6 yrs old. Even in pleomorphic adenomas of the lacrimal gland, the calcification is rarely found & suggests an old tumour.<sup>[5]</sup>

Various hallmarks of pleomorphic adenoma have been described for their diagnosis like symptoms present for more than 1 yr & an absence of pain are suggestive of this tumour.<sup>[6]</sup> On USG studies, pleomorphic adenomas

are medium to highly reflective, with a regular structure & moderate sound attenuation.<sup>[7]</sup>

When biopsy is done after excision, the 5 yr recurrence rate is estimated to be 32% & many of these recurrences undergo malignant transformation.<sup>[8]</sup> Font & Gamel have emphasized the high recurrence rate following incomplete excision or incisional biopsy. The 5yr recurrence rate was 3% for completely excised lesions & 32% for incompletely excised tumours. Recurrent pleomorphic adenoma can undergo malignant change. Font & Gamel reported that about 10% of adenomas undergo malignant change by 20 yrs after 1<sup>st</sup> treatment & 20% by 30 yrs.<sup>[8]</sup>

The lateral approach was 1<sup>st</sup> proposed by Kronlein in 1889, and it was later modified by Berke.<sup>[9]</sup> Wirtschafter et al. also described preservation of the lateral rim in lateral orbitotomy.<sup>[10]</sup> The best management is complete excision of the tumour within its pseudo-capsule via a lateral orbitotomy. To minimize any tumour seeding from microscopic extensions through the pseudocapsule, an adequate margin of the surrounding lacrimal gland & the adjacent periorbital should be removed in the extirpation<sup>[11]</sup> Some advocate additional removal of the palpebral lobe of the lacrimal gland with excretory ductules to reduce the recurrence rate.<sup>[12]</sup> However, preservation of the palpebral lobe greatly reduces the incidence of postoperative dry eye & the need for topical lubricants. In our case, removal of the frontal process of zygomatic bone using electric saw and repositioning the bone, using titanium plating with multiple screws, both performed by oro-maxillo-facial surgeons helped us in removal of large lacrimal gland tumour in an encapsulated form.

Combined approach in this particular patient proved to be unique and highly rewarding.

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