

Research Article

Retrospective analysis of surgical outcome in orbital tumour cases

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ABSTRACT

Background: Eyes, being an important sensory organ, plays vital role in Daily life of human beings. No wonder it has been described by writers often as window of the soul or mirror of the mind. The main aim of the study was to study retrospective analysis of surgical outcome in orbital tumour cases.

Methods: This study was carried out in 21 cases of orbital tumours with varied pathology. All patients were subjected to surgical intervention.

Results: Vision improved in 9 out of total 21 cases. Cosmetic appearance improved in 17 out of 21 cases. Only one case of recurrence was noted.

Conclusion: Surgical intervention in orbital tumour cases was very useful in improving cosmesis and improving/maintaining visual function.

Key words: Orbital tumours, Surgical excision of tumours, Meningioma and neurofibroma excision, Eye tumours

INTRODUCTION

Eyes, being an important sensory organ, plays vital role in Daily life of human beings. No wonder it has been described by writers often as window of the soul or mirror of the mind. Any disturbance of orbital structure invariably results in Protrusion of the eyeball, double vision, diminished vision or combination of these signs.

Loss or decrease in vision in any age has grave consequences in social and financial development and particularly in childhood, it affects child's growth and development¹. In earlier days it was treated conservatively but with advance in technology and knowledge of anatomy, surgical intervention at appropriate time has resulted in improved outcome both functionally and cosmetically. In this study, an attempt is made to analyse the outcome of surgical intervention in orbital tumours of varied pathology.

METHODS

This retrospective study was conducted in a tertiary care teaching hospital in Mumbai from June 1994 to May 1996. In all, 21 patients operated for orbital tumours were included in the study.

Age and sex distribution, presentation of the disease, and the surgical outcome in terms of vision, appearance, and recurrence was assessed. Vision assessment was done by visual acuity charts. Fundoscopy was also undertaken in all the patients. The extent of the lesion in the orbit was studied by CT scan.

To gain access to the orbital content, bicoronal incision was used. In cases where only orbital appendage was involved, local part incision was used to treat it surgically. The surgical intervention ranged from excision of the lesion and de-bulking to enucleation of the eyeball.

RESULTS

Patients included in the study ranged from 1.5 years to 58 years of age with 13 male and 8 female patients (Table 1). Majority of the cases were in young age group (<20 yrs) only one case was in 21-40 year age group (Table 2). Most common presenting complaint was Swelling/prominence of the eye followed by double vision, diminished vision, fever and lastly headache (Table 3).

Table 1: Sex distribution.

Sex	Number of patients
Male	13 (61.9%)
Female	8 (38.09%)



Figure 1: Case 1-Hemangioma of left eye pre-operative.

Table 2: Age distribution.

Age in years	Number of patients (n=21)
0-10	11 (52.38%)
11-20	5 (23.8%)
21-40	1 (4.76%)
41-50	3 (14.28%)
51-60	1 (4.76%)

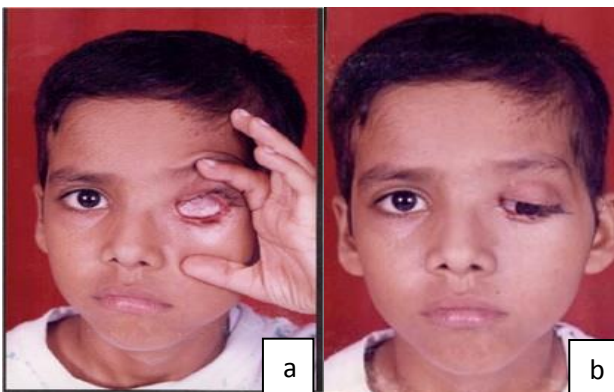


Figure 2: Case 1- a) Hemangioma of left eye post-operative photograph, b) late post-operative photo with prosthesis

Table 3: Presenting symptoms.

Presenting Symptom	Number of patients
Swelling/prominence of eye	14 (66.66%)
Double vision	5 (23.8%)
Diminished vision	1 (4.76%)
Fever	1 (4.76%)
Headache	2 (9.52%)



Figure 3: Case 2- Neurofibroma of Left eye Pre-operative.



Figure 4: Case 2- Post-operative.

Table 4: Pathology of the tumours.

Tumour Pathology	Number of patients (21)
Vascular Malformations	7 (33.33%)
Cysts	3 (14.28%)
Optic nerve glioma	2 (9.52%)
Retinoblastoma	2 (9.52%)
Neurofibroma	2 (9.52%)
Meningioma	2 (9.52%)
Basal Cell Carcinoma	1 (4.76%)
Osteoma	1 (4.76%)
Lymphangioma	1 (4.76%)

Most common pathology in the cases included was vascular malformations and hemangiomas (Figure 1 and 2) followed by dermoid cyst (Figure 6), optic nerve glioma, meningioma, retinoblastoma, neurofibroma

(Figure 3 and 4), basal cell carcinoma (Figure 5) osteoma and lymphangioma (Table 4). Most commonly performed surgery in the study was excision of the tumour mass(14) followed by enucleation (4) and lastly exenteration (3).



Figure 5: Case 3-a) Basal cell carcinoma of right eye pre-operative, b) and c) post-operative.



Figure 6: Case 4- a) Orbital Cyst Pre-operative and b) post-operative Photo

In the post-operative period, visual assessment by visual acuity, cosmetic improvement, recurrences were studied. Vision was improved as compared to that prior to surgery mainly in vascular malformations and hemangiomas, and neurofibromas. In other cases vision was maintained at the pre-operative level. Cosmetic appearance was improved in all the cases as compared to the pre-operative appearance. Except in case of a hemangioma, recurrence was not observed in any of the cases (Table 5).

Table 5: Outcome assessment chart.

Tumour Pathology	Vision	Appearance	Recurrence
Vascular Malformations	Improved	Better	In 1 of 7 cases
Cysts	same	Better	No
Optic nerve glioma	same	Better	No
Retinoblastoma	same	Better	No
Neurofibroma	Improved	Better	No
Meningioma	same	Better	No
Basal Cell Carcinoma	NA	Better	No
Osteoma	same	Better	No
Lymphangioma	same	Better	No

DISCUSSION

Orbital tumors and tumorlike lesions cover a wide range of different types of tumors. The histopathological characteristics of these tumors are critical to their biologic behaviour, line of management, outcome and prognosis.

Bantisch often referred to as the father of German ophthalmology, described his methods for complete removal of the eye in cases of protruding eye. This is comparable to modern subtotal orbital exenteration. He was the first to describe such a bold and radical approach.²

Tumor and tumorlike lesions of orbit in children represent a different histologic spectrum than in adults; both benign and malignant masses of the orbit can have bone destruction and can lead to deformity and vision loss, that's why it is very important to diagnose early for these intraorbital tumors in children.³

Results of the present series are compared with other series reviewed earlier. Variable incidence of primary orbital tumors has been reported by different workers in their series. Similar to our experience, Silva D reported that amongst the primary orbital tumors the pseudotumors followed by dermoids occurs most frequently.⁴ Hemangioma was found to be the commonest by Ingalls and Reese. On the contrary meningioma was reported to be the commonest by Dandy and pleomorphic adenoma of lacrimal gland topped the list of primary orbital tumors in the studies of Forrest, Dass and Mohan et al. In the Nath K et al study pseudotumors (23.33%) and orbital dermoids (21.64%) were the commonest primary orbital new growths. These were followed by vascular (15.85), optic nerve (11.67%), mesenchymal (10.0%) peripheral nerve (9.16%) and epithelial tumors (8.33%).⁵

The most common clinical features at presentation included mass in 51 patients (26%), proptosis in 36 (18%), and pain in 30 (15%).⁶

In the study by Nath K et al, primary orbital tumors are seen to be more common during the second (37 cases) and first (32 cases) decades and slightly less frequently in third fourth and fifth decades.

In present study we found that orbital tumours were commonest in first decade. Ingallas reported the first whereas Silva reported both second and third decades as the commonest age for the orbital tumors.⁷ In present study dermoid is the most common benign tumor like study by Saha S et al.⁸

Dermoid in present study falling more numbers in childhood, first decades of life compares favorably with study by Chung EM et al.⁹ The limitation of the study was relatively small number of cases. The surgical treatment of orbital processes occupies a border area between different surgical specialties, including ophthalmology, plastic surgery, otorhinolaryngology, and neurosurgery.

The spectrum of pathology is broad, and the potential operative approaches are numerous. A good understanding of the variety of disease processes in the orbit, and of the available interdisciplinary approaches, is needed so that the optimal mode of treatment can be determined. Collaboration across specialties improves the chances of successful treatment.

CONCLUSION

Orbital tumours are common in first decade and timely surgical intervention may help in improving vision, cosmesis and avoid further deterioration.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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