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Non-Surgical Management of Orbital Lesions Including Proptosis

Dr.B.Sarath Chandra[1](Junior resident), Dr.G.Hanumantha Rao[2](Professor),
Dr.M. Subrahmanyam[3](Professor)
Department of Ophthalmology, Maharajah Institute of Medical Sciences, Vizianagaram, Andhra Pradesh, India.

Abstract: Aim: *To study the role of nonsurgical management of orbital lesions.*
Material and methods:*This retrospective interventional case series comprises of 56 cases among 104 cases of orbital diseases which were managed non-surgically at the department of ophthalmology of a tertiary care hospital during October 2015 to June 2019. The management strategies included medical management including IV Pulse Steroids for TAO with inflammation or medical optic nerve decompression, Oral steroids, antibiotics, and observation.*
Results: *There was a significant improvement with IV Pulse steroids in TAO patients. Medical management has a significant role in Nonspecific orbital inflammation, IGG4, Cysticercosis, and orbital Cellulitis. The majority of orbital fractures were managed without surgery.*
Conclusions: *More than half the cases of proptosis and orbital fractures were managed without surgery. Nonsurgical management of orbital lesions has a significant role.*
Keywords: Non surgical management, proptosis, orbital fractures, thyroid orbitopathy, steroids

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I. Introduction

Orbital diseases, including proptosis, are considered to be very difficult and challenging to manage by a majority of ophthalmologists.They are of the opinion that the management of proptosis requires very complicated surgery. But in reality, all the cases of proptosis do not require a complicated surgical procedure to manage.A significant proportion of these cases can be managed without surgery

Aim: To study the role of nonsurgical management of orbital lesions

II. Materials and Methods

This retrospective interventional case series conducted on patients with orbital lesions attending the department of ophthalmology and at emergency,Maharajah's Institute of Medical Sciences, from October 2015 to June 2019.
Study Design: Retrospective interventional case series.
Study Location: Department of Ophthalmology, Maharajah's Institute of Medical Sciences, Nellimarla, Vizianagaram.
Study Duration: From October 2015 to June 2019.
Sample Size: 56 consecutive cases of orbital lesions managed non surgically.
Inclusion criteria:
All the cases of orbital diseases who first presented to the Department of Ophthalmology at Maharajah's Institute of Medical Sciences.
Exclusion criteria:
Cases which were treated surgically.

Methodology:
- Detailed history
- Visual acuity
- Colour vision
- Slit-lamp examination
- Intraocular pressure
- Fundus examination
- Ocular motility
- Hertel's exophthalmometry

- Clinical measurements
- Retropulsion test
- Schirmer's test
- Examination of PNS
- Imaging

III. Methodology:

It is a retrospective interventional case series study. Detailed clinical evaluation of all orbital diseases presented to the casualty and department of ophthalmology. Imaging comprising of CT orbit/MRI orbit with contrast (if required) were done.Among the 104 orbital lesions that presented during the study period ,56 cases were managed non surgically including proptosis and orbital fractures.TAO was treated with i.v methylprednisolone/observation based on VISA scoring.Inflammatory and infections were treated systemically.Treatment strategies include observation , i.v.methylprednisolone,oral steroids,ATT,systemic antibiotics.

Iv pulse steroids were given for cases of TAO with compressive optic neuropathy ,TAO with an inflammatory score more than 4(VISA clasiification), and in traumatic optic neuropathy. Oral prednisolone was presecribed for patients with idiopathic orbital inflammation, IGG4 and in myocysticercosis(along with albendazole). Iv antibiotics were prescribed for cases of orbital infections manifesting as orbital cellulitis. Oral antibiotics were prescribed in some of the orbital fractures with echymosis and patients with subconjunctival hemorrhage of orbital lymphangioma. ATT was given for TB granuloma involving the orbit. Oral propranolol at a dose of 1mg/kg body weight was given for capillary haemangioma.

Images:

CAPILLARY HEMANGIOMA

ORBITAL CELLULITIS

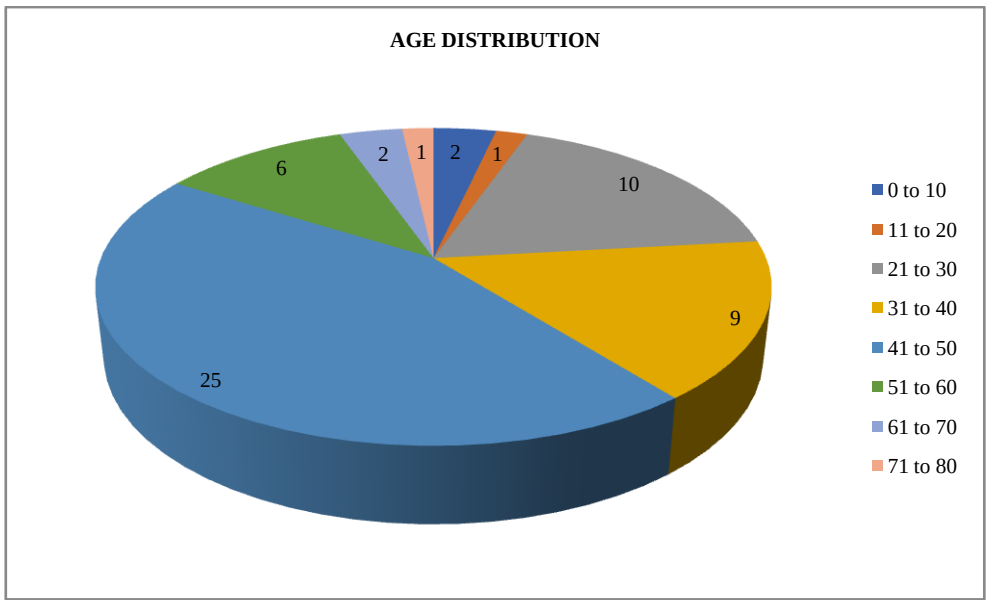
IV. Results

Table 1: Management of orbital diseases

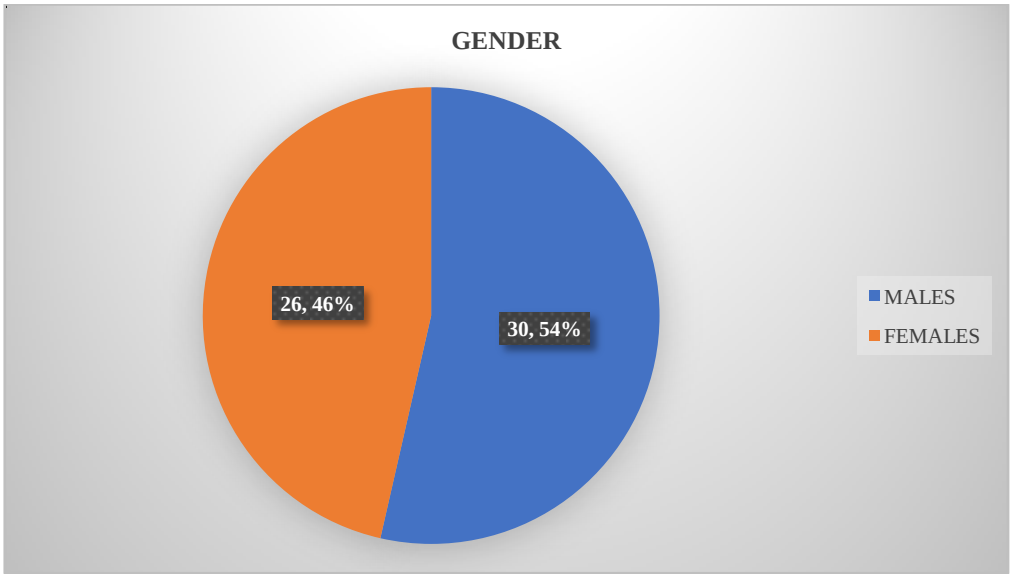
Total number of cases	104
Number of cases managed surgically	48 (46.15%)
Number of cases managed non surgically	56 (53.84%)

Chart 1: Age distribution

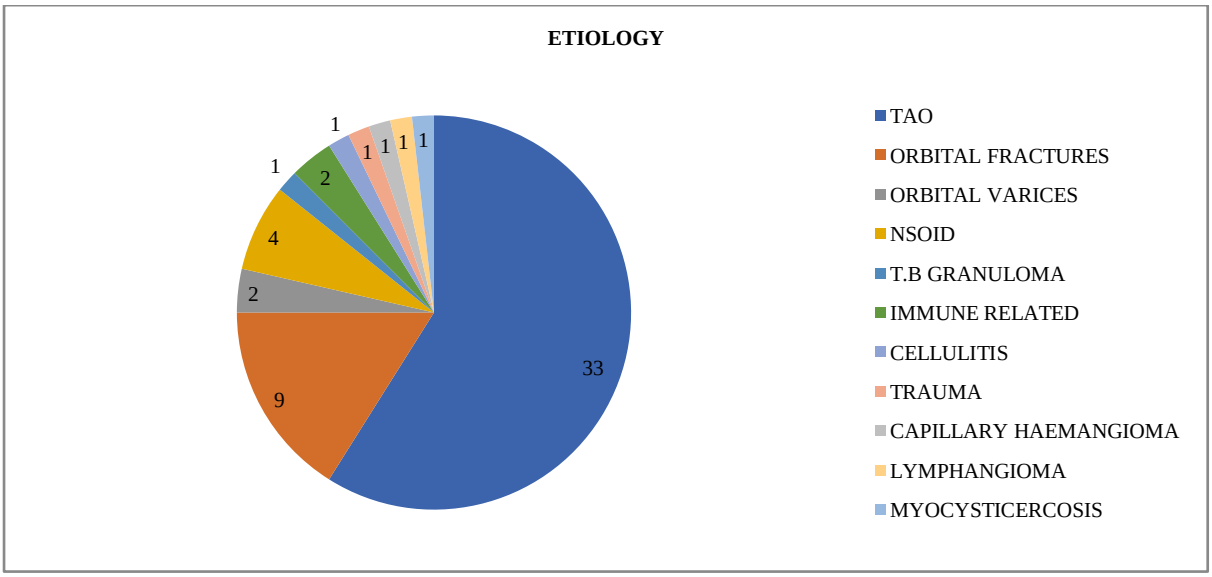
AGE: The majority of the cases are seen in the 5th decade, i.e., 25 cases (44.64%)followed by the 3rd decade, i.e., 10 cases(17.85%).



GENDER: There is a slight preponderance of males (53.57%) when compared to females (46.42%) at a ratio of 1.1:1.



ETIOLOGY: Among the various orbital diseases treated non surgically **,**proptosis due to thyroid associated orbitopathy was found to be the leading cause(58.92%) followed by orbital fractures(16.07%).The spectrum of diseases managed non surgically was wide.



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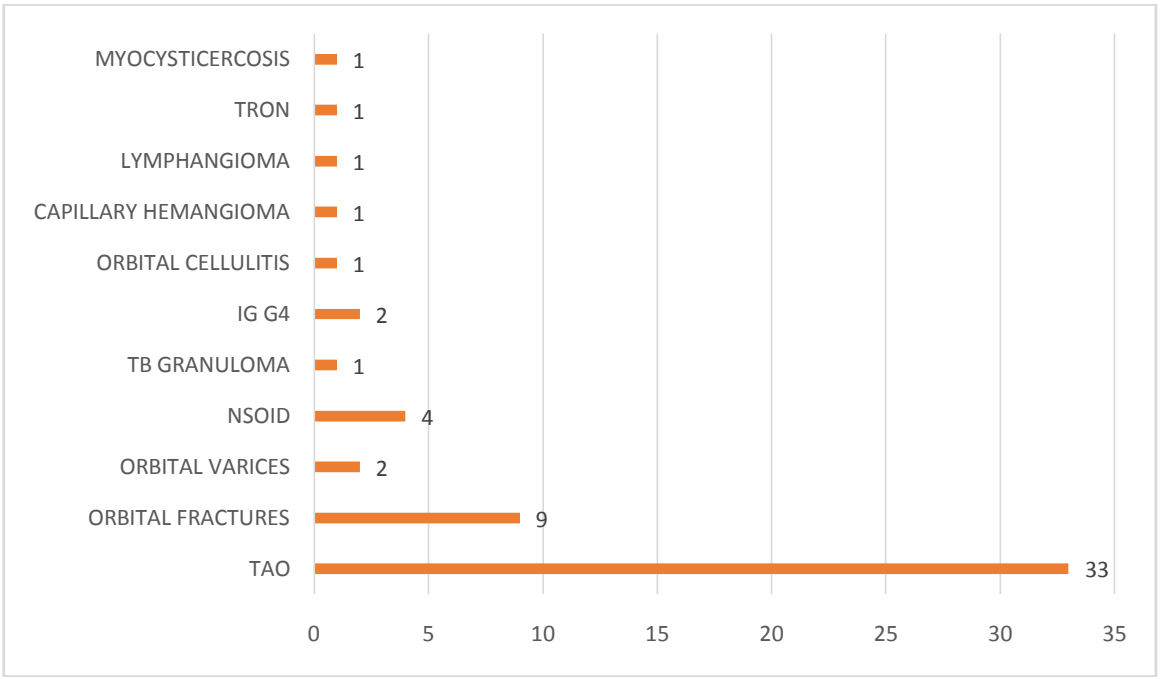

MANAGEMENT STRATEGIES:

TYPE OF MANGEMENT	NUMBER OF CASES
MEDICAL MANAGEMENT	56
I V pulse steroids	11
Oral prednisolone	7
I V antibiotics	1
Oral antibiotics	1
Oral albendazole	1
Oral propranolol	1
ATT	1
Observation	34

V. Discussion

In the present study, out of 104 patients presented with orbital lesions, 56 patients who were managed non surgically were included in the study out of which 4 cases were diagnosed as non-specific orbital inflammatory lesions, and all of them were treated with oral steroid therapy with a good outcome. This result

was comparable with the study conducted by Sonia J et al[1]where 65 patients were studied, out of which 45 were treated with steroids alone, 6 were treated with steroids and NSAIDS and 2 were treated with NSAIDS alone.

In the present study, 36 patients were diagnosed with thyroid associated orbitopathy, of which 33 were treated non surgically. 10 patients were treated with IV methyl prednisolone along with oral prednisolone since they have compressive optic neuropathy/severe inflammatory score and 23 patients were observed. Remaining 3 were treated surgically by orbital decompression. Wen y et al[2] studied on the effect of iv steroids on 79 patients with dysthyroid opticneuropathy and out of which 51 showed improvement in vision and reduction in the inflammatory signs, remaining patients were subjected to orbital decompression surgery who were refractory to iv steroid therapy.

In the present study, 2 cases of orbital varix were encountered who were managed by counseling and observation.Youn-jeongkim et al[3] studied 8 cases of orbital venous anomaly presenting with ocular hemorrhage,in six patients,spontaneous resolution of the hemorrhage ocurred following which an orbital venous anomaly was detected with a CT scan.

9 out of 14 cases of orbital fractures were treated with NSAIDS and oral antibiotics.They showed spontaneous improvement eventually. Remaining 5 patients were treated surgically by placing a polypropylene plate. In some studies, a conservative approach was supported[4,5,6,7]and some studies advocating more aggressive surgical intervention[8,9,10,11].

1 case of orbital lymphangioma presented with proptosis and recurrent subconjunctival hemorrhage. It resolved on treatment with NSAIDS and oral antibiotics. In another study by Wilson ME et al[12] 6 cases of orbital lymphangioma were studied, out of which 5 were treated conservatively without any surgical intervention.

In our study, 1 case of the capillary hemangioma was encountered involving the right of face and orbit which was treated with oral propranolol 1mg/kg body weight for 3 months. Follow up was done for every 6 months and complete resolution of the lesion was found. In a similar study by Maryam Aletaha et al[13] significant improvement was noted in 3 infants with a periocular capillary hemangioma on treatment with oral propranolol solution.[14,15]

In one case, each of orbital cellulitis and TB granuloma were encountered in our study. Orbital cellulitis was successfully treated with intravenous antibiotics[16].TB granuloma responded well to ATT.In the present study, One case of Traumatic optic neuropathy was treated with i.v. methyl prednisolone, and the patient showed significant improvement in visual acuity and colour vision.[17] One case of myocysticercosis was reported and it was treated with oral prednisolone and oral albendazole.

VI. Conclusion

1. Nearly half the cases of orbital diseases, including proptosis, can be managed non surgically. Medical management was effective in 23 cases and counseling and observation was employed in 34 cases.
2. IV methyl prednisone was a significant role in the management of compressive eoptic neuropathy or active TAO with an inflammatory score of more than 4.
3. Orbital cellulitis responds well to intra venous antibiotics.
4. Nearly 65% of orbital fractures could be managed non surgically.

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