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### RESEARCH ARTICLE

#### PROSPECTIVE STUDY OF ENT CAUSES OF PROPTOSIS.

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#### Manuscript Info

#### Abstract

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#### Key words:-

Proptosis, Fungal sinusitis, Carcinoma  
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#### Introduction:-

Anatomically the orbit is closely related to the paranasal sinuses and the nasal cavities. Because of this close anatomical relations and the fragile boundary walls, the orbit and its contents are liable to be involved in the diseases of the nose and paranasal sinuses. So orbit is the area of definitive interest to otorhinolaryngologists.

The primary signs and symptoms of some of the ENT diseases may be ophthalmic such as Proptosis, Ptosis and Ophthalmoplegia.

The most common cause of unilateral proptosis in children is sinus infection. Sinus infection is the 3<sup>rd</sup> most common cause of proptosis in adults after Graves disease and Pseudotumour. Of all the ophthalmic signs caused by ENT diseases proptosis is very common and this study is to analyse the ENT cause of proptosis.

#### Aims and Objectives:-

- I. A comprehensive study of Etiopathology of Proptosis due to ENT diseases.
- II. To study the Response of the treatment for the disease on Proptosis

#### Materials and Methods:-

All patients with proptosis who attended the ENT outpatient department at Government Rajaji Hospital attached to Madurai Medical College between 2005 to 2006 were taken up for this study. They were subjected to all relevant clinical examination and investigation at the department of ENT and department of ophthalmology CT scans were taken whenever possible. Hertel exophthalmometry were used most of the time and Ludde's exophthalmometry when bilateral proptosis is present. Diagnostic nasal endoscopy was done in almost all cases, and endoscopic biopsy was taken wherever necessary. Endoscopic sinus surgery remains the main mode of treatment for all cases of fungal polyposis and mucocoeles

**Observation:-**

Thirty cases were taken up for this study. The male female ratio was 1:1.4 Maximum number of cases were between 41-50yrs (30%) followed by 21-30 yrs (23.3%) The youngest case was that of sinusitis with CVT (11 months) and the oldest being a case of fungal polyposis (65 yrs)

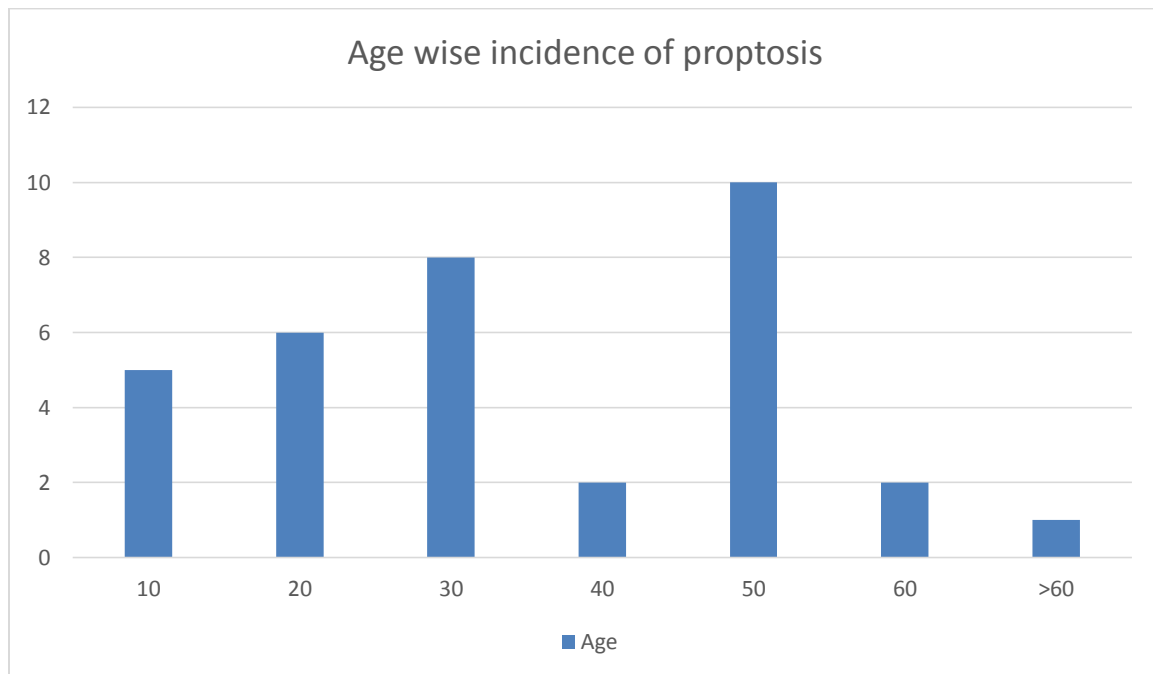
Right eye was involved in 53.3%

Left eye was involved in 33.3%

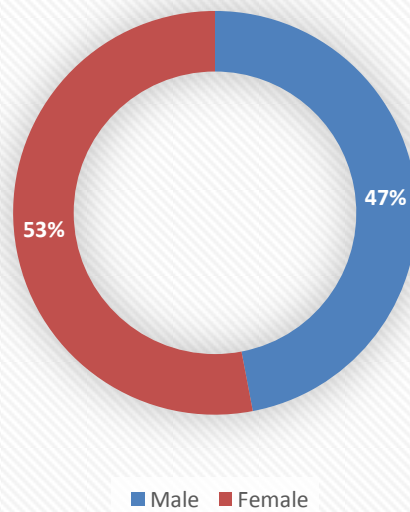
Bilateral involvement was seen in 13.3%

30% of cases had 2mm of proptosis, 20% had 3mm of proptosis while 26.7% had 4mm proptosis. Exophthalmometry could not be done for 3 patients as 2 were children and one patient was having severe chemosis and protrusion of the eye ball Of the total cases maximum number of cases were that of fungal polyposis (33.3%) followed by malignancies (26.7%)

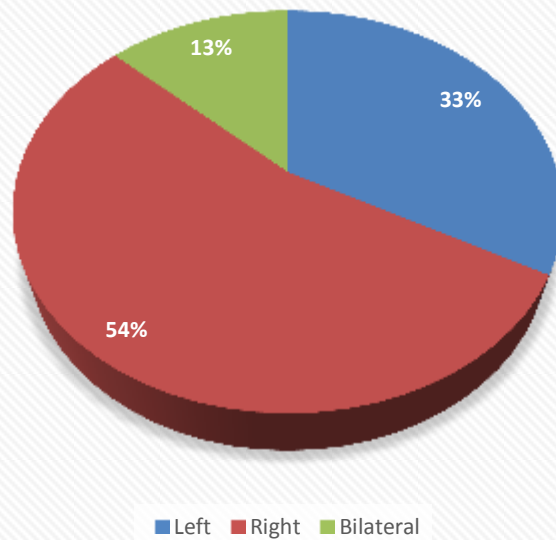
Mucocoele and granulomatous disease formed 10% of cases each. 90% of the fungal polyposis cases were female while 87.5% of malignant cases were male CT scan or MRI were taken for 26 out of 30 cases. All cases of fungal polyposis showed dehiscence of lamina papyracea and encroachment of orbit by fungal material causing proptosis, irrespective of the degree of proptosis. Similar is the case in malignancy which showed erosion of one or other wall.

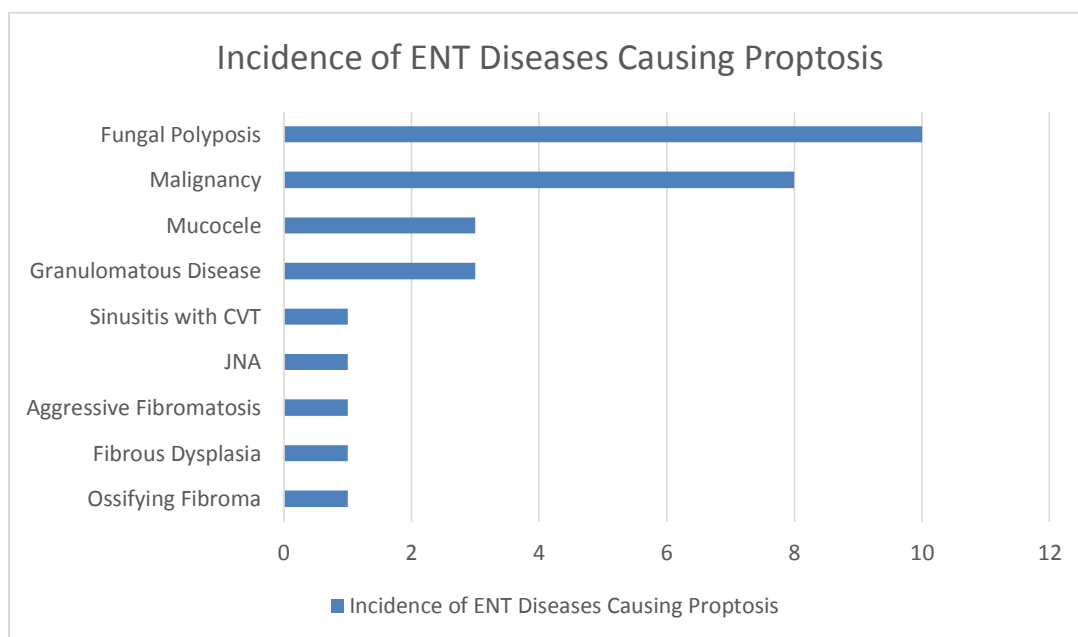
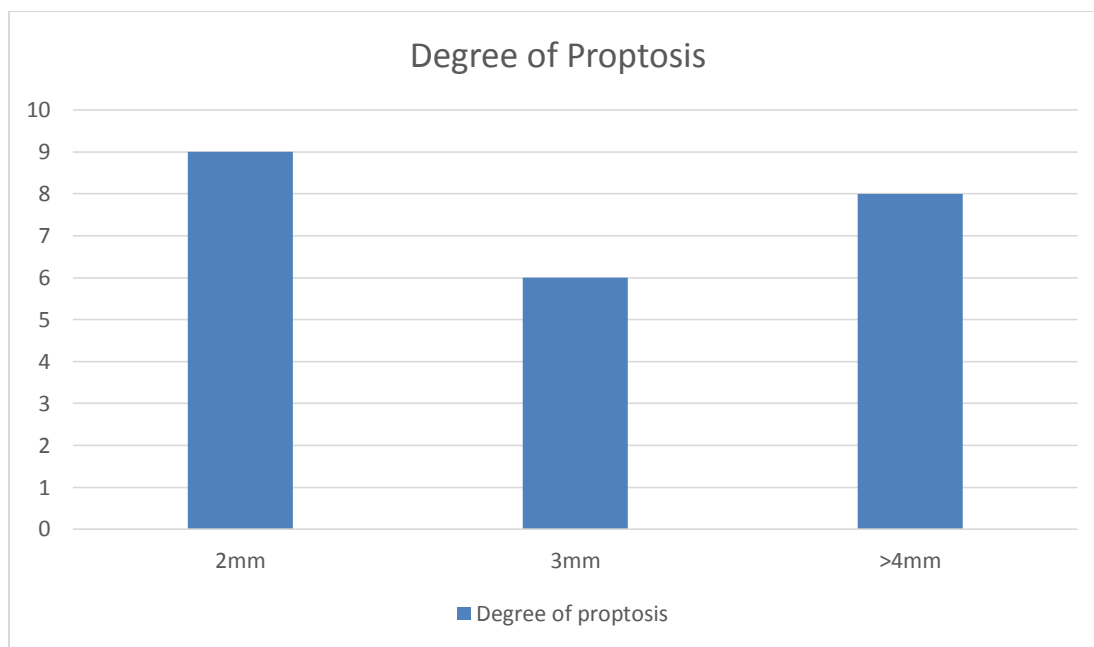


### Incidence of proptosis



### Laterality of proptosis



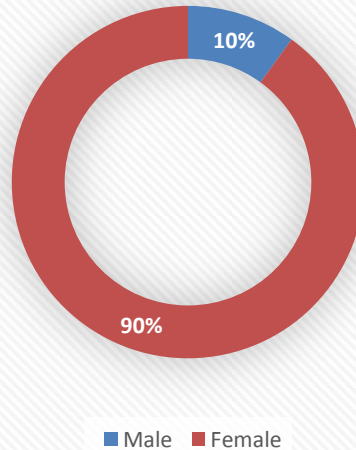


The incidence of ENT diseases that caused proptosis in this study are as follows:-

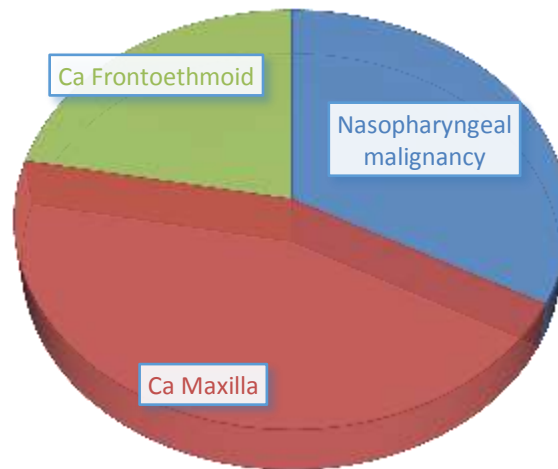
Total number of cases- 30

Cases	Number	Percentage
Fungal Polyposis	10	33.3
Malignancy	8	26.7
Mucocele	3	10
Granulomatous Disease	3	10
Sinusitis with CVT	1	3.3
Juvenile Nasopharyngeal Angiofibroma	1	3.3
Aggressive Fibromatosis	1	3.3
Fibrous Dysplasia	1	3.3
Ossifying Fibroma	1	3.3

### Incidence of Fungal Polyposis in Male and Female



### INCIDENCE OF MALIGNANCY IN PARANASAL SINUS



Follow up:

Of the 30 cases 19 cases were followed up regularly and exophthalmometry were done after one month of completion of the treatment. All case of fungal polyposis showed complete regression of proptosis. Malignancy showed very good regression of proptosis after radiotherapy so did mucocele after surgery

#### Discussion:-

In this study of the major ENT cause of proptosis was fungal infection or fungal polyposis. Bacterial infection which was once a common ENT cause of proptosis is not so now may be due to the advent of potent newer generation antibiotics. But now fungal sinusitis and malignancies seen to the common cause. And in both these conditions proptosis is often a prominent feature since they erode the orbital wall and find their way into the orbit usually

through lamina papyracea as observed by vereis. B Malik; Tayeb AA et al who finds proptosis as a prominent feature in Aspergillosis and Yohia, Bullock, Aziretal who observed 15% of Pt with Rhinocerebral or mycosis develop proptosis.

The study by Zadhi S H also showed fungal sinusitis as a commonest cause of proptosis. Fungal sinus infection is endemic in areas like India where there is dry and warm climate as observed by Chakrabarthi A Sharma s C., Chander J Malignancies of paranasal sinuses present with ocular symptoms in 25% of patients and in 5% of patients it is the presenting symptom as observed by Larson and Martenson and so does Nasopharyngeal malignancies which may present with proptosis.

Though many studies show tumour as the main ENT cause of proptosis, the larger number of fungal sinusitis in this study may be correlated to the higher incidence of fungal sinusitis in this region and also due to the larger number of endoscopic sinus surgeries performed for nasal polyposis in this center. CT scans which were taken for most of the patients definitely showed the erosion of orbital wall and proptosis in almost all of the cases, even though the exophthalmometry showed just 2mm of proptosis. So it is worth subjecting the patients for CT scan investigation rather than depending an exophthalmometry for diagnosis of proptosis diseases. However exophthalmometry can be used as a tool measuring the degree of proptosis.

After the advent of nasal endoscopy the treatment for the common causes like fungal polyposis becomes easy and less traumatizing to the patient when compared to the conventional surgeries like lateral rhinotomy, Caldwell Luc procedures etc. Endoscopic sinus surgery also plays an important role in the follow up of the patients as a diagnostic endoscopy can be done of an outpatient procedure and cleaning can be done periodically which greatly decreases the chances of recurrence. As polyposis of the nasal cavity is known for its recurrence, endoscopic sinus surgery is a better option to treat the recurrence with good patient compliance and satisfaction but this was not the case in surgeries.

### Conclusion:-

A patient coming with proptosis as a presenting complaint to ENT OPD may be rare but it is necessary to look for proptosis in all cases with pathology confined around the orbit. This gives a valuable information about the lesion extending in to the orbit. It is also important for ophthalmologist to look for ENT diseases as an important cause for proptosis. Proptosis due to ENT cause usually regress with treatment for the underlying disease as in endoscopic sinus surgery for fungal sinusitis, radio therapy and chemo therapy for malignancy and surgery for benign tumours. □□□□

Degree of proptosis is not a good guide for the severity of the disease as it is related only to the close proximity of the disease to the orbit.

CT scan of the PNS and orbit is a valuable tool in the investigation for ENT causes of proptosis and it is must for all cases of proptosis.

Regarding the treatment of fungal polyposis with endoscopic sinus surgery there are some polypoidal sinus diseases in which none of the currently available surgical techniques can provide definite cure, however in these cases even radical procedures do not assure a better long term result, we feel confident in using the Messerklinger technique, which produces at least similar results with much less morbidity and less intra and postoperative stress on the patient.

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