



A CLINICAL STUDY OF PATIENTS WITH PROPTOSIS IN TERTIARY HEALTH CARE CENTRE

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ABSTRACT

Proptosis, the forward protrusion of one or both eyeballs due to increased orbital volume from intraorbital or intracranial lesions. This study aims to document the etiologies, clinical profiles, and management challenges of proptosis among patients at a tertiary healthcare facility in Central India. **Material And Methods:** Study setting- Department of Ophthalmology, MGM Medical College Indore, (M.P), India. Study duration- October 2023 to October 2024. **Type Of Study-** Prospective study. **Sampling Methods-** Universal sampling method. **Sample Size-** 59 patients presenting with proptosis were included. **Results:** In the present study, out of 59 patients 39 were male and 20 were female with M:F ratio 1.95:1 Most frequent group (14; 23.7%) belonged to 41-50 years of age. 12 patients (20%) were between 21-30 years of age. Unilateral proptosis (58%) was more common than bilateral (42%) and axial (83.05%) was more common than non-axial (16.9 %) proptosis. Thyroid ophthalmopathy was most common (31%) etiology followed by Orbital Cellulitis (20%), Retrobulbar Haemorrhage 10% Mucormycosis and Retinoblastoma 7%, rest by other causes. **Conclusion:** Present study revealed a male-predominant condition, with thyroid eye disease as leading etiologies. The findings advocate for a multidisciplinary approach to manage its complex clinical and etiological spectrum.

KEYWORDS : Proptosis, Thyroid Eye Disease, protrusion

INTRODUCTION

Proptosis, the forward protrusion of eyeballs due to orbital or intracranial lesions, is a critical condition in tertiary care, presenting with bulging eyes, vision issues, pain, and restricted movement.^(1,2,3) Graded as mild (21–23 mm), moderate (24–27 mm), or severe (≥28 mm), it stems from diverse etiologies like orbital pathologies, systemic diseases, or malignancies, risking vision loss or life-threatening outcomes.^(1,2) In Central India, scarce region-specific data highlights the need for targeted research. This study at a tertiary facility aims to document proptosis etiologies, clinical profiles, and management challenges to inform protocols, enhance care, and guide health planning.

MATERIALS & METHODS

This Prospective study was conducted on 59 patients presented at a tertiary care center in Central India between October 2023 to October 2024. Informed consent was obtained from all participants.

Inclusion Criteria - All the patients with Proptosis who come to the Ophthalmology Department and are willing to give consent.

Exclusion Criteria - Patients with not enough physical condition to perform proptosis workup.

METHODOLOGY

Data was collected of the Proptosis Patients starting with recording chief complaints, taking a medical history, conducting a complete ocular exam, performing a proptosis workup, making a clinical diagnosis, and confirming it with blood tests and radiological imaging for a final diagnosis.

RESULTS

Among 59 patients, 39 were male and 20 were female with M:F ratio 1.95:1 Most frequent group (14; 23.7%) belonged to 41-50 years of age. 12 patents (20%) were between 21-30 years of age. Unilateral proptosis (58%) was more common than bilateral (42%) and axial (83.05%) was more common than non-axial (16.9 %) proptosis. Thyroid ophthalmopathy was most common (31%) etiology followed by Orbital Cellulitis (20%), Retrobulbar Haemorrhage 10% Mucormycosis and Retinoblastoma 7%, rest by other causes.

Table 1: Age Distribution Of Patients Included In The Study

Age Group	No. of patients	Percentage of patients
< 1 yrs	1	1.69
1-10 yrs.	9	15.25
11-20 yrs.	6	10.16
21-30 yrs.	12	20.33
31-40 yrs.	7	11.86
41-50 yrs.	14	23.72
51-60 yrs.	7	11.86

>60 yrs.	3	5.08
TOTAL	59	100

Table 2: Sex Distribution Of Patients Included In The Study

Gender	No. of patients	Percentage of patients
Male	39	66.1
Female	20	33.9
Total	59	100

Table 3- MRI Findings With Diagnosis

Findings	Diagnosis	No. of Pts.
Extra Ocular Muscle Enlargement with increased Orbital Fat	Thyroid eye disease	18
Periorbital soft tissue swelling	Orbital cellulitis	12
Retrobulbar fluid or blood products collection	Mucormycosis	4
Enlarged Eye Globe	Orbital varix	1
Retro orbital heterogeneous lesion	Retrobulbar haemorrhage	6
Extraconal lesion extending paranasal sinus	Lymphoma	1
Orbital masses, soft tissue infiltration	Neurofibroma	1
Mass in the nasal cavity/sinuses, with extension into the orbit	Parasitic infection	1
Orbit mass, soft tissue infiltration, with irregular enhancement.	Schwannoma	1
Well-defined, enhancing orbital mass, along optic nerve	Leukemia	2
Extraconal Lesion	Nasal tumor	2
Extra and intra-conal lobulated, enhancing mass with intracranial extension	Staphyloma	3
Homogeneous, enhancing orbital mass,	Retinoblastoma	4
Dilated, tortuous vascular lesion in the orbit	Metastatic	2
Cystic/solid orbital mass, with surrounding inflammation, edema and calcification	Lymphangioma	1
	TOTAL	59

DISCUSSION

Our study revealed the 41–50 age group as the most affected (23.72%), followed by the 21–30 group (20.33%), with paediatric cases (1–10 years, 15.25%) and infants (<1 year, 1.69%) also represented. Inflammatory causes (30.5%) and thyroid ophthalmopathy (27.1%) were the primary etiologies, reflecting diverse age and cause profiles. Similarly, **Senthilkumar et al. (2019)** found thyroid ophthalmopathy dominant in those over 40 (45%) among 50 patients, with rare paediatric cases.⁽⁴⁾ In contrast, **Sharma et al. (2020)** reported that among 70 patients, inflammatory causes like cellulitis prevailed in the 21–30 age group, with paediatric cellulitis cases noted, highlighting varying etiological trends.⁽⁵⁾

Our study identified a male predominance, with 39 males (66.1%) and 20 females (33.9%), yielding a male-to-female ratio of 1.95:1. Similarly, **Dsouza et al. (2017)** analyzed 25 patients, finding 14 males (56%) and 11 females (44%), showing a slight male predominance.⁽⁶⁾ **Kayoma et al. (2017)** also aligned with our results, evaluating 60 patients with 39 males (65%) and 21 females (35%), reflecting a strong male predominance at a 1.86:1 ratio, consistent across these studies.⁽⁷⁾

Our study found inflammatory causes (30.5%) as the most

common etiology for proptosis, with thyroid ophthalmopathy (27.1%) being the leading specific diagnosis, especially in unilateral (57.6%) and axial (83.05%) cases. Similarly, **Senthilkumar et al. (2019)** identified thyroid ophthalmopathy as the primary cause in 50 patients in Tamil Nadu.⁽⁴⁾ Conversely, **Kayoma et al. (2017)** found trauma as the leading cause in 60 Nigerian patients, highlighting regional differences in etiology.⁽⁷⁾

Our study of 59 proptosis patients showed unilateral presentation (57.6%, 34 patients) slightly surpassing bilateral (42%, 25 patients), with inflammatory causes (30.5%) and thyroid ophthalmopathy (27.1%) as leading etiologies. Similarly, **Patel et al. (2021)** found unilateral proptosis predominant in 45 patients, mainly due to orbital tumours.⁽⁸⁾ In contrast, **Senthilkumar et al. (2019)** reported thyroid ophthalmopathy in 50 patients, predominantly bilateral, aligning with its systemic nature, though unilateral cases were noted.⁽⁴⁾

CONCLUSIONS

Our study highlights the diverse etiological and clinical nature of proptosis in a tertiary care setting, identifying thyroid eye disease, inflammatory conditions, and malignant tumors as primary causes. It emphasizes the importance of a multidisciplinary approach, combining expertise from ophthalmology, endocrinology, and oncology. Early diagnosis through advanced imaging and lab testing is critical, especially for severe or neoplastic cases, to improve outcomes. By detailing proptosis's demographic, clinical, and etiological profiles, the study enhances clinical decision-making and sets the stage for future research to address unmet needs in managing this complex condition.

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