



CLINICAL PROFILE OF PATIENTS OF PROPTOSIS PRESENTING TO THE TERTIARY HEALTH CARE CENTRE

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ABSTRACT

Methods- This was a prospective observational study that involved 25 patients with proptosis complaining of protrusion of eyeball, diminished vision, diplopia, diminished motility, epiphora, pain, redness, chemosis, swollen eyelids and ptosis. **Results-** There were 10 males and 15 females and the age group taken was 25 to 65 years. 5 patients belonged to the age group of 25 to 35 years, out of which 3 were males and 2 were females. 6 patients belonged to age group of 36 to 45 years, out of which 2 were males and 4 was female. 9 patients belonged to the age group of 46 to 55 years, out of which 3 were males and 6 were females. 5 patients belonged to age group of 56 to 65 years, out of which 2 were males and 3 were females. The etiologies of the proptosis in our study were TED in 9 cases (36%), orbital cellulitis in 7 cases (28%), Frontal mucocele in 1 case (4%), Mucormycosis in 3 cases (12%), Trauma in 02 cases (8%), Orbital apex syndrome in 1 case (4%), Retrobulbar Cystic mass in 02 case (8%) **Conclusion-** proptosis is a relatively frequent symptom that can reveal several diseases, some of them can be life threatening.

KEYWORDS : Proptosis, Diplopia, Chemosis, TED, Ptsis.

INTRODUCTION

Proptosis is described as an abnormal protrusion of eyeball⁽¹⁾, and in relation to skull, proptosis is measured from corneal apex to outer orbital margin of the orbit, with eye looking straight⁽²⁾. Proptosis is of two types axial and eccentric. The bony orbit is virtually a closed socket for the eyeball. It is the cavity, or socket, of the skull in which the eye and its appendages are situated. It is enclosed from all sides except anteriorly. Incidentally, the term 'orbit' can also imply the contents of the bony structure. Another term related to proptosis is 'exorbitism', a condition in which there is a decrease in the capacity of the bony orbit, with the angle between the lateral orbital walls being more than 90 degrees. This leads to a shallow orbital depth but normal orbital content volume. Such a situation causes proptosis in certain congenital disorders of the orbit.^(3,4)



Figure 1: Showing eccentric proptosis of right eye

Because of the relatively small amount of space between the orbital walls and the eyeball, an expanding lesion within the orbit, or a shallow bony orbit, as often seen in congenital disorders, causes protrusion of the eyeball forwards. Due to inherent weaknesses in the walls of the orbit, diseases of surrounding structures may extend into the orbital cavity easily. Thus, depending upon the location of the lesions impinging upon the orbit, the eyeball may get displaced from its normal position. The term 'dystopia' indicates the displacement of the eyeball in the coronal plane. A number of conditions may lead to this situation, including extraconal masses, craniofacial scoliosis complex, uncorrected unilateral or asymmetric bilateral coronal craniosynostosis, facial clefting syndromes and trauma^(5,6)



Figure 2: showing proptosis and chemosis in left eye

Proptosis in TED is axial and frequently permanent. It can be symmetrical or asymmetrical in bilateral cases⁽⁶⁾. Restrictive myopathy is seen in 30–50% of patients. During the active stage, it occurs due to inflammation and muscle enlargement, and in the quiescent stage, due to fibrosis. Diplopia occurs in about 17% of patients. The order of involvement of muscles is usually inferior rectus, followed by medial rectus, superior rectus, and finally lateral rectus.

A misleading impression of proptosis can occur either due to a false appearance of proptosis, or a true asymmetry between the two eyes, but excludes displacement of the globes by any extraocular lesions. Conditions leading to pseudo-proptosis include facial asymmetry, lid retraction (as in facial nerve palsy), asymmetric orbital size (seen in congenital disorders such as Crouzon's syndrome), enlargement of the globe (myopia or buphthalmos), ipsilateral lid retraction, iatrogenic pseudo-proptosis (following misuse of phenylephrine eyedrops) or contralateral enophthalmos, ptosis or a small-sized eye^(6,7).

The causes of proptosis are numerous and varied. Broadly, they can be classified into vascular, inflammatory, traumatic, autoimmune, metabolic, iatrogenic, neoplastic, congenital and endocrine. Vascular causes include infantile haemangiomas, cavernous vascular malformations and direct or indirect carotid-cavernous fistulas. Orbital cellulitis is a type of inflammatory aetiology of proptosis. In at least two studies it was the most common cause of proptosis^(2,8). Trauma leads to retrobulbar haemorrhage and haematoma formation, which can cause rapid onset of proptosis and affect visual acuity from pressure on the optic nerve. Autoimmune disorders causing acute proptosis can range from idiopathic orbital inflammatory syndrome to immunoglobulin G antibody-mediated inflammatory disease. Aggressive intravenous rehydration therapy can cause orbital compartment syndrome, regarded as a metabolic cause of proptosis. Less common causes include iatrogenically induced proptosis through orbital implants and fillers. Benign, malignant and metastatic neoplasms are also frequently reported in some studies^(8,9,10)

Congenital causes of proptosis include dermoid cysts and encephaloceles; the latter often show expansion on Valsalva

manoeuver. TED is the most common cause of endocrine and autoimmune proptosis in adults and children^(11,12) It leads to slowly progressive development of eye signs, including proptosis.

MATERIALS AND METHODS

This was a prospective observational study that involved 25 patients presenting with proptosis. Patients were recruited from M.L.B. Medical College, Jhansi, Uttar Pradesh and were followed from 15th June 2021 - 14th December 2021. It was performed under the Helsinki Declaration of 1975, as revised in 2000. The necessary permission from the Ethical and Research Committee was obtained for the study.

Inclusion Criteria

- All patients between the age group 25 years to 65 years who presented to MLB medical College Jhansi with the complaint of protrusion of eyeball, diminished vision, diplopia, diminished motility, epiphora, pain, redness, chemosis, swollen eyelids and ptosis

Exclusion Criteria

- Patients outside the age group of 25 to 65 years.
- Patients with any other corneal pathology.
- Patients with other conjunctival diseases.
- Patients with recent intraocular surgery.
- Patients with any other ocular pathology.
- Mentally or physically unfit patients.

All patients were subjected to a detailed history taking, complete ophthalmic examination in diffuse and focal light and slit lamp examination and simple/plastic ruler was used to measure proptosis. Difference between both the eyes more than 2mm or reading more than 21 mm in one eye was also considered significant.

Clinical presentation, investigations and treatment details were noted. Fundus examination had been done in few cases X-rays, B-scan, CT scan, MRI orbit were performed to confirm the diagnosis.

RESULTS:

Table 1:

DISCUSSION:

In our study the etiologies of the proptosis were TED in 9 cases (32%), orbital cellulitis in 7 cases (28%), Frontal mucocele in 1 case (4%) ,Mucormycosis in 3 cases (12%) , Trauma in 02 cases (8%) ,Orbital apex syndrome in 1 case (4%) , Retrobulbar Cystic mass in 02 case(8%) . Dysthyroidism is the most frequent cause of the proptosis⁽¹³⁾. In our study, characteristics of thyroid orbitopathy are the same in the literature⁽¹⁴⁻¹⁶⁾. In about a quarter of the cases, proptosis can be unilateral and sometimes precedes the dysthyroidism⁽¹⁷⁾, a situation which could lead to misdiagnosis. In our study we have found 8% of cases of unilateral exophthalmos linked to dysthyroidism.

The clinical features of TED include proptosis, eyelid retraction, soft tissue signs, restrictive myopathy, and optic neuropathy. Eyelid retraction (unilateral or bilateral in around 90% of individuals at some point) and proptosis (unilateral or bilateral in up to 60% of individuals) are the most common features of TED⁽¹⁸⁾.

Orbital cellulitis was the second common cause of proptosis in our study with 28% of cases. In our practice, orbital cellulitis reveals a problem of early consultation and diagnosis with the risk of complications such as cavernous sinus thrombophlebitis, brain abscess and sometimes deaths⁽¹⁹⁻²⁰⁾.

CONCLUSION

Proptosis is forward protrusion of eyeball. It can occur due to

different ocular or systemic disorder like TED. Some patients were treated with medical treatment like injectable antibiotics as in orbital cellulitis and antithyroid drugs and surgical intervention had also been done in some like orbital decompression. Exenteration had been done in cases of mucormycosis cases with signs of orbital apex syndrome with intraorbital extension along with sinus removal by ENT surgeon and patient were showing good response after treatment. Some of the patients were referred to higher centre for further management.

Proptosis is a multidisciplinary problem and requires collaboration of different specialties [21] of an ophthalmologist along with an otorhinolaryngologist, neurosurgeon, oncologist, and radiotherapist. A thorough ENT examination and consultation is mandatory in proptosis. In patients with proptosis, however small the bulge, malignancy has to be ruled out. The commonest cause is malignancy in other studies; our study showed more of an inflammatory origin. CT scan and MRI was valuable in evaluating a case of proptosis, but histopathological examination provides a definitive diagnosis of the exact aetiology in benign or malignant and inflammatory etiology

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