Section: Otorhinolaryngology

Original Research Article

A HOSPITAL BASED PROSPECTIVE STUDY OF OPHTHALMOLOGICAL PRESENTATIONS IN EAR, NOSE AND THROAT DISEASES AT A TERTIARY CARE CENTER

Gaurav Kataria[1], *Vipul Kumar Nagar*[2]

[1]*Associate Professor, Department of Otorhinolaryngology, Government Medical College, Pali, Rajasthan, India.*
[2]*Associate Professor, Department of Ophthalmology, Government Medical College, Pali, Rajasthan, India.*

Received *: 30/01/2025*
Received in revised form *: 23/02/2025*
Accepted *: 18/03/2025*

Corresponding Author:
Dr. Gaurav Kataria,
Associate Professor, Department of Otorhinolaryngology, Government Medical College, Pali, Rajasthan, India.
Email: dr.gauravkats@gmail.com

DOI: 10.70034/ijmedph.2025.2.37

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (2); 218-220

ABSTRACT

Background: ENT disorders can manifest with varied ocular symptoms due to involvement of orbit and its content. Early diagnosis and treatment help in reducing the mortality associated with it. The aim of this study is to evaluate the causes of various ophthalmological presentations in relation to primary ENT diseases at a tertiary referral centre.

Materials and Methods: The present prospective study was carried out in Department of otorhinolaryngology of Government Medical College, Pali, Rajasthan, India during one-year period and comprised of 30 cases. Data regarding age, gender, clinical profile, etiology and management were collected and statistical analysis was done.

Results: The greatest number of patients were in the age group 51 to 60 years (7; 23.33%) followed by 41 to 50 years (20%). There were 14 (46.66%) males and 16 (53.33%) females. Most common ophthalmological symptom among the study population was periorbital oedema (50%) followed by epiphora (46.66%). The most common aetiology was infective or granulomatous (10, 33.33%), traumatic (8, 26.66%) and neoplastic (8, 26.66%).

Conclusion: Rapid diagnosis and treatment is necessary for preserving vision and life in these patients. Teamwork between ophthalmologist and the otolaryngologist is required for the appropriate management of such lesions.

Keywords: Ophthalmologic Presentations, ENT Diseases, Proptosis, Periorbital Oedema.

INTRODUCTION

Eye lies in close anatomical relation to ear, nose and throat due to which it is liable to get involved secondary to ENT disorders. The proximity of the eye to the nose, paranasal sinuses and skull base makes it vulnerable to be involved in the diseases of this area.[1] Anatomical knowledge is essential in understanding the spread of ENT pathology and to prevent complications during surgery.[2]

Etiopathogenesis and clinical presentation guides in early diagnosis and effective management to reduce the mortality.[3]

Around seven percent of orbital tumours have been found to be of paranasal in origin. Involvement of the orbit has been found to be the initial presentation in a large majority of paranasal sinus tumours. Ophthalmological manifestations associated with primary ENT diseases are common presentations which can lead to serious complications. Importance of clinical examination in preventing complications including permanent blindness following orbital complications resulting from sinusitis has been recognised across the world.[4,5]

It requires team effort of an otorhinolaryngologist, ophthalmologist and neurologist for limiting further spread of pathology and efficient management.[6]

The aim of this study is to evaluate the causes of various ophthalmological presentations in relation to primary ENT diseases at a tertiary referral centre.

MATERIALS AND METHODS

The present prospective study was carried out in Department of Otorhinolaryngology of Government Medical College, Pali, Rajasthan, India during one year period and comprised of 30 cases. The cases were selected from IN and OUT patients of the Department, who had orbital complications due to various ENT diseases and ENT surgical procedures. The patient was made comfortable and a detailed history of his /her complaints was taken. Patients with ocular manifestations secondary to allergic rhinitis, primary ocular and central nervous system pathology were excluded in the present study. The standard procedure of otolaryngological and ophthalmic examination was carried out on each patient.

Initial clinical examination of orbit was done in ENT department then referred to ophthalmology for further assessment. Beside routine hematological investigations, thyroid function test, radiological investigations like x ray skull, PNS, orbit, CT SCAN of head and neck, FNAC and biopsy for histopathology were done. After making diagnosis the proper management was done. Descriptive statistical analysis was done using Microsoft Excel version 22.0v.

RESULTS

Most number of patients were in the age group 51 to 60 years (7; 23.33%) followed by 41 to 50 years (20%) closely followed by the age group 11 to 20 (16.66%). The youngest patient was 5 years old, and the oldest patient was 72 years old. There were 14 (46.66%) males and 16 (53.33%) females.

Most common ophthalmological symptom among the study population was periorbital oedema (50%) followed by epiphora (46.66%). 26.66% had proptosis, 23.33% had blurring of vision, 20% had pain and redness around eyes suggestive of cellulitis and 10% had diplopia (Table I).

Most common diagnosis among patients in this study was sinusitis (46.66%) which mostly presented as either orbital cellulitis or abscess. This was followed by mucocele (20%), 13.33% of patients had Allergic Fungal Rhinosinusitis (AFRS). 4 (13.33%) patients had carcinoma. The detailed distribution of diagnosis of patients presenting with ophthalmological symptoms are given in Table II.

The ENT pathology with eye involvement were categorised into idiopathic (1, 3.33%), infective or granulomatous (10, 33.33%), traumatic (8, 26.66%), iatrogenic (2, 6.66%), neoplastic (8, 26.66%) and miscellaneous (1, 3.33%) (table 3).

Table 1: Distribution of total study population according to presenting ophthalmological symptoms

Ophthalmological symptoms	No. of patients	Percentage
Periorbital Oedema	15	50%
Epiphora	14	46.66%
Proptosis	8	26.66%
Blurring of vision	7	23.33%
Pain and redness around eyes/ orbital infection	6	20%
Diplopia	3	10%

Table 2: Distribution of total study population according to diagnosis

Diagnosis	No. of patients	Percentage
Paranasal Sinusitis	14	46.66%
Mucocele	6	20%
Allergic Fungal Rhinosinusitis	4	13.33%
CA Maxilla	2	6.66%
CA Ethmoid	1	3.33%
Adenocystic Carcinoma	1	3.33%
Dacryocystitis	1	3.33%
Lacrimal Sac Tumour	1	3.33%
TOTAL	30	100%

Table 3: Etiology distribution of study population.

Etiology	No. of patients	Percentage
Idiopathic	1	3.33%
Infective or granulomatous	10	33.33%
Traumatic	8	26.66%
Iatrogenic	2	6.66%
Neoplastic	8	26.66%
Miscellaneous	1	3.33%

DISCUSSION

Many ENT diseases & various ENT procedures have ophthalmic manifestations, as anatomy of orbit and head & neck is closely related. The orbit is surrounded by paranasal sinuses. As walls between them are thin, infections and tumors can travel from either direction, moreover bony walls have various channels for nerves and blood vessels, all of which provide potential routes of invasion into the orbit. The venous system in this area is valveless due to

which there is increased chance of cross infection between orbit, nasal cavity and paranasal sinuses.

The maximum incidence was in middle aged group of patients (51-60 years of age accounting to 7 (23.33%). This is similar to Kumar et al according to which most common age group was 41-50 years of age.3 This age distribution is quite similar to the findings reported by other Indian studies.[7] The female to male ratio was 1.14:1. There has been no consistency in gender distribution across studies of this nature. This is in accordance with Malik et al in which male predominance was noted.[8]

The most common aetiology was infective or granulomatous (10, 33.33%), traumatic (8, 26.66%) and neoplastic (8, 26.66%). This is similar to Goodwin et al study according to which 75% of orbit involvement is secondary to infections.[9] In Sayed et al most common orbital involvement was due to infective etiology.[10] According to Jubina et al study the infection in dangerous area of face can spread to orbit and intracranial due to valveless nature of facial veins.[11]

As far as ophthalmological symptoms associated with ENT disorders are concerned, patients in this study presented with multiple complaints. General symptoms like periorbital oedema (50%) and epiphora (46.66%) were the commonest. Similar prevalence of watering from the eyes was reported by others as well.[12]

Most frequent diagnosis among patients with epiphora was mucocele in this study. 26.66% patients had proptosis as the presenting ophthalmological symptom in this study. Another study, which was done in Telangana also reported that proptosis had a prevalence rate of 31% though it was the commonest ophthalmo- logical symptoms among their patients.[13] The prevalence of proptosis was somewhat comparable to that of a similar Indian study which reported that among 62 patients, 30.64% patients had lagophthalmos and 20.96% had proptosis.[6]

Primary ENT disorders especially of sinonasal origin presenting as proptosis has been studied in detail by several researchers. Proptosis reflects encroachment of disease into the orbit. This causes an increase in the orbital volume. Early treatment can often result in complete recovery. Evaluation of proptosis by otorhinolaryngologists is important as it could be an early and sometimes the only manifestation of nasal or paranasal sinus pathology. Proptosis is commonly secondary to inflammatory disease in nose and paranasal sinuses.[14]

In neoplastic etiology, sinonasal malignancy showed highest incidence of ocular involvement similar to Conley et al study.[15]

CONCLUSION

A variety of ENT diseases & surgical procedures can present with orbital complications due to anatomical association of orbit with the surrounding head and neck structures. Orbital involvement must be ruled out whenever an ENT patient presents with orbital complaints like proptosis, ophthalmoplegia, neurologic dysfunction of eye, chemosis, or epiphora. Rapid diagnosis and treatment is necessary for preserving vision and life in these patients. Teamwork between ophthalmologist and the otolaryngologist is required for the appropriate management of such lesions.

REFERENCES

1. Akinsola FB, Somefun AO, Oguntoyinbo OS. Ophthalmological complications of nasal, paranasal sinus diseases and head and neck tumours. East Afr Med J. 2006; 83(12):674-8.
2. Jones HM. Some orbital complications of nose and throat conditions. J Royal Societ Med. 1981;74(6):409-14.
3. Kumar A, Chauhan JPS, Bhadouriya SKS, Bharti B, Narain P, Singh J. Orbital complications of ENT diseases. Int J Otorhinolaryngol Head Neck Surg. 2018;4(1):210-6.
4. Patt BS, Manning SC. Blindness resulting from orbital complications of sinusitis. Otolaryngology, Head and Neck Surgery 1991; 104(6):789-95.
5. Nwaorgu OGB, Awobem FJ, Onakoya PA, Awobem AA. Orbital cellulitis complicating sinusitis: A 15 year review. Nigerian Journal of Surgical Research 2004; 6(1):14-6
6. Ghosh D, Khanna S, Baruah DK. Ophthalmological manifestations of ENT diseases: an overview. Indian J Otorhinolaryngol Head Neck Surg. 2013;65(3):197-202.
7. Chavan SS, Deshmukh SD, Pawar VG, Vaibhav G. Kirpan VG, Khobragade SW. Orbital Complications of Sinogenic Origin: A Case Study of 20 Patients. World Articles in Ear, Nose and Throat 2010; 3(2).
8. Malik TG, Farooq K, Rashid A. Paranasal Sinuses and Nasal Cavity; The Notorious Neighbours of Orbit. Profession Med J. 2011;18(1):154-9.
9. Goodwin WJ. Infectious and inflammatory diseases of the orbit. Otolaryngologic Clinics North Am. 1988;21(1):65-75.
10. Sayed YEl. Orbital involvement in sinonasal disease. Saudi J Ophthalmol. 1995;9(1):29-37.
11. Purayi JP, Sangole V, Kumar KR. A rare case of nasal vestibulitis complicating as bilateral preseptal cellulitis. IOSR J Dent Med Sci. 2018;17(10):04-6.
12. Venugopal M, Sagesh M. Proptosis: The ENT Surgeon's Perspective. Indian Journal of Otolaryngology and Head & Neck Surgery 2013; 65(Suppl 2)247-50.
13. Novshaba, Bhushan IP, Reddy LS, Divya J. A prospective study of ocular involvement secondary to ear, nose and throat disorders in a tertiary care centre, Telangana. Int J Otorhinolaryngol Head Neck Surg. 2019; 5:1593-600
14. Williamson-Noble FA. Diseases of the orbit and its contents, secondary to pathological conditions of the nose and paranasal sinuses. Ann R Coll Surg Engl. 1954 Jul;15(1):46-64. PMID: 13189324
15. Conley J, Baker DC. Management of the eye socket in cancer of paranasal sinuses. Arch Otolaryngol. 1979;105(12):702-5.