



## Ophthalmology

## THE EYES DIDN'T SEE IT COMING-OPHTHALMIC COMPLICATIONS OF AN OTORHINOLARYNGOLOGY SURGERY

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**ABSTRACT** The close proximity of the medial and inferior wall of the orbit with the nasal cavity and sinuses makes it imperative to intervene post surgeries when complications occur. We hereby present a case of a 55-year-old female who was referred from the Oto-rhino-laryngology department one day post functional endoscopic sinus surgery with septoplasty in view of Diplopia. The patient was subjected to a nasal septal block during the surgery. On ophthalmic evaluation, the extra-ocular movements of the patient were restricted in the right eye. The anterior segment and fundus otherwise appeared within normal limits. Until now, it has been known that the medial rectus gets commonly injured during such surgeries due to the close proximity of the orbit with the nasal cavity and adjoining sinuses. But affection of all the extra ocular muscles is a rare finding.

**KEYWORDS :** Functional Endoscopic Sinus Surgery, Ophthalmic Complications, Diplopia

## INTRODUCTION

Functional endoscopic sinus surgery (FESS) is done commonly in patients with rhino sinusitis and nasal polyposis. Most orbital complications tend to occur when the suction cutting tip of the powered instrument unintentionally directed into the orbit. Most commonly in functional endoscopic sinus surgery entry site into the orbit was through the lower medial orbital wall followed by the inferior orbital wall.

Orbital trauma post surgery is rarely seen but can cause various morbidities like retrobulbar hematoma, optic neuropathy, retinal vascular occlusion, complete vision loss. Acute diplopia following surgery can be due to direct injury to the ocular muscles. Most commonly injured muscle is the medial rectus muscle. Superior oblique and inferior rectus affection have also been reported in certain cases.

The close anatomical relation of the medial wall of the orbit which comprises of the maxillary bone, ethmoidal bone and the lacrimal bone also contribute to the lateral relations of the nasal cavity. The posterior ethmoidal cells also lie in close relation to the optic nerve.



**Figure 1: 9 Gaze Photographs of the Patient on Postoperative Day 1 of Functional Endoscopic Sinus Surgery**

## Case Study

A 55-year-old female presented to the ophthalmology outpatient department with chief complaints of diplopia one day after functional endoscopic sinus surgery was performed. On ophthalmological evaluation.

**Table 1: Ophthalmic Testing**

|                  | Right eye | Left eye |
|------------------|-----------|----------|
| Vision (unaided) | 6/9       | 6/9      |

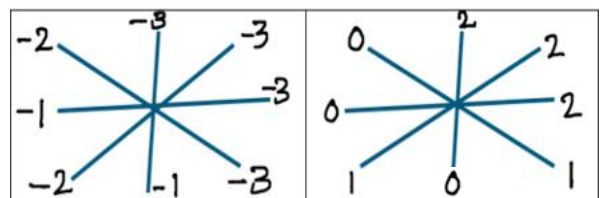
|               |              |              |
|---------------|--------------|--------------|
| Aided         | 6/9          | 6/9          |
| Colour vision | 17/17 plates | 17/17 plates |
| Amsler        | Normal       | Normal       |

**Table 2: Ophthalmic Evaluation**

|                               | Right eye                                          | Left eye                              |
|-------------------------------|----------------------------------------------------|---------------------------------------|
| Eyelids                       | Normal                                             | Normal                                |
| Conjunctiva                   | Mild congestion                                    | Normal                                |
| Adnexa- lacrimal apparatus    | Blood stained fluid regurge from the lower punctum | Normal                                |
| Cornea                        | Clear                                              | Clear                                 |
| Anterior chamber              | Normal depth                                       | Normal depth                          |
| Pupil                         | Sluggishly reactive to light                       | 3mm regular, round, reactive to light |
| Lens                          | Early Immature cataract                            | Early Immature cataract               |
| Extra ocular muscle movements | Restricted in all gazes                            | Free, full painless in all gazes      |

**Table 3: Extra-ocular Muscle Movement According to 5 Scale Grading**

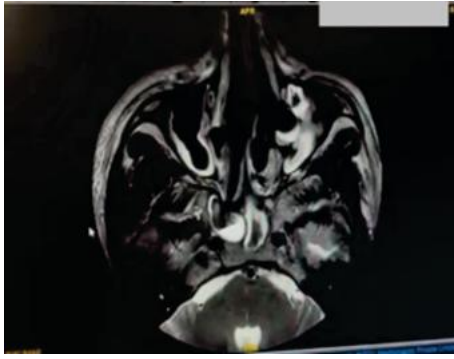
| RIGHT EYE | LEFT EYE |
|-----------|----------|
|-----------|----------|



**Table 4: Cranial Nerve Assessment**

| Muscle & Nerve supply                    | Function                | Right eye |
|------------------------------------------|-------------------------|-----------|
| Superior rectus (III nerve)              | Elevation in abduction  | Affected  |
| Inferior oblique (III nerve)             | Elevation in adduction  | Affected  |
| Medial rectus (III nerve)                | Adduction               | Affected  |
| Inferior rectus (III nerve)              | Depression in abduction | Affected  |
| Levator palpebrae superioris (III nerve) | Elevation of eyelid     | Normal    |
| Superior oblique (IV nerve)              | Depression in adduction | Affected  |
| Lateral rectus (VI nerve)                | Abduction               | Affected  |

On MRI reporting of bilateral orbits, a suboptimal axial scan was obtained due to motion artifacts. A defect involving the right lamina papyracea was seen. A T2 hyper-intense structure extending from ethmoid sinus into right orbit was identified. Right medial rectus muscle was oedematous. Edema in the right extraconal compartment was observed.



**Figure 2: MRI Suboptimal Axial Scan (Plain) of Bilateral Orbits Showing a Defect in the Right Lamina Papyracea**

## DISCUSSION

ENT Surgeries most commonly are done under general anaesthesia and with a large amount of estimated blood loss, a hypo perfused state is maintained to reduce bleeding which in turn causes hypo perfusion of ocular nerves. Post surgery, accidental trauma to the medial wall of the orbit can injure the medial rectus and the superior oblique muscle. Post surgical peri neural edema can cause paralysis of ocular muscles. In this case the powered probe could have possibly inadvertently hit the superior orbital fissure leading to superior orbital fissure syndrome along with trauma to the nasolacrimal duct leading to blood stained fluid regurge.

## CONCLUSIONS

Understanding the clinical anatomy of the orbital walls, nasal cavities and the cranial fossa become an essential need while performing functional endoscopic sinus surgery. Despite advances in FESS, in the technique and instrumentation, accidental ocular complications tend to occur. Limitations in extraocular movements can significantly hinder an individual's ability to perform tasks required for their livelihood.

The objective of this report is to highlight the special dangers of powered instrumentation near the orbit.

## Conflicts of Interest

Nil

## REFERENCES

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