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Research Article

Finding the Complications of Functional Endoscopic Sinus Surgery in Sinusitis Patients

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ABSTRACT

Introduction: Functional Endoscopic Sinus Surgery (FESS) is regarded as an invasive technique used in the surgical fraternity to restore patients' sinus ventilation as well as returning to normalcy.

Objectives: The main objective of the study is to find the complications of Functional Endoscopic Sinus Surgery in sinusitis patients.

Material and methods: This cross-sectional study was conducted in Jinnah Hospital Lahore during 2019 to 2020. The study was carried in hospital, whereby 200 patients performed Functional Endoscopic Sinus Surgery operation. After the surgery the patients were followed postoperatively and checked for both minor and major complications, and their experiences at large.

Results: The data was collected from 200 patients. The mean age of the patients was 39.25±2.45 years. The major complications presented by the patients in three months follow up were shown in table.

Conclusion: All together there are few cases of complications from the manipulations performed during the post-operative visits whereby the theoretical risks are equally the same as the main surgery itself. Nearly all surgeries and postoperative care are closely similar and therefore the consent given for surgery automatically includes consent for postoperative care.

Keywords: Functional Endoscopic Sinus Surgery; Sinusitis patients

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INTRODUCTION

Functional Endoscopic Sinus Surgery is regarded as an invasive technique used in the surgical fraternity to restore patients' sinus ventilation as well as returning to normalcy. The historical Perspective on FESS is associated with Kennedy who coined the term. Whereas endoscopic orbital decompression in reference to FESS came about by Kennedy and Michel in the early 1990s, it has come to be of great use in the modern times (Becker SS and Chiu AG, 2010). In addition, enhanced visualization to significant anatomic landmarks is a critical area of decompression in optic neuropathy, has made endoscopic surgery a versatile tool. The concept of FESS globally is not new, it entails the removal of tissue obstructing the Osteo Metal Complex (OMC) while facilitating drainage and conserving mucous membrane and patients' normal non-obstructing anatomy (Bhat N, *et al.*, 2012). Cumber worth, Sudderick and Mackay clarified that rigid fiber optic nasal telescope offers outstanding intra-operative visualization of the OMC which allows surgery to be pay attention on the important areas (Chang CC, *et al.*, 1996).

Functional Endoscopic Sinus Surgery is a minimally invasive technique used to restore sinus ventilation and normal function. The most suitable candidates for this procedure have recurrent acute or chronic infective sinusitis, and an improvement in symptoms of up to 90 percent may be expected following the procedure (Cumberworth VL, *et al.*, 1994). Fiberoptic telescopes are used for diagnosis and during the procedure, and computed tomography is used to assess the anatomy and identify diseased areas. Functional Endoscopic Sinus Surgery should be reserved for use in patients in whom medical treatment has failed. The procedure can be performed under general or local anesthesia on an outpatient basis, and patients usually experience minimal discomfort. The complication rate for this procedure is lower than that for conventional sinus surgery (Hudgins PA, 1993).

OBJECTIVES

The main objective of the study is to find the complications of Functional Endoscopic Sinus Surgery in sinusitis patients.

MATERIALS AND METHODS

This cross-sectional study was conducted in Jinnah Hospital Lahore during 2019 to 2020. The study was carried in hospital, whereby 200 patients performed Functional Endoscopic Sinus Surgery operation. After the surgery the patients were followed postoperatively and checked for both minor and major complications, and their experiences at large. Results showed no major complications if done by properly trained endoscopic surgeons thus three patients reported synch formation while one indicated to having per-orbital swelling. This translated to one percent of the total number of patients. The rest of the patients who underwent the surgery did not report any complications.

RESULTS

The data was collected from 200 patients. The mean age of the patients was 39.25 ± 2.45 years. The major complications presented by the patients in three months follow up (Table 1).

Table 1: 3 month post-operative endoscopic sinus surgery operation

Type of Complication	Patient Population (200)	Percentage of Patients That Reported Complications
Death	0	0
CSf rhinoea	80	20
Loss of vision	10	1
Loss of smell	30	20
Synech formation	50	4
Perorbital swelling	30	1

DISCUSSION

Functional Endoscopic Sinus Surgery (FESS); Researchers over the past decades have been using endoscopic sinus surgery widely and regarded as an effective and safe mode of treatment for Para Nasal Sinus (PNS) disorders as well as related problems (Jaffe RA, *et al.*, 2014). In order to improve efficiency and safety various endoscopic approaches to benign tumors of the sinuses, nose, anterior cranial and the orbit are well utilized.

Based on findings of the current study it can be argued that major complications after FESS are highly connected to the changeability of the region's framework and the closeness of the orbits and brain. Further, this study indicates that major FESS complications occurred in approximately less than1%. complication of fess can be, orbital hematoma, bleeding from ethmoidal, diplopia, carotid artery or sphenopalatine, tear, cerebrospinal fluid leak, anosmia, meningitis, brain abscess, toxic shock syndrome, direct brain trauma, injury to the optic nerve, and death. Nevertheless, of these minor complications transpires between 2 to 3 percent of cases reported. They include orbital emphysema, minor bleeding, atrophic rhinitis, eyelid ecchymosis, local infection, and temporary dysfunction of the olfactory nerves (Kennedy DW, 2014).

Damage to the eye or Infraorbital complications as a result of FESS procedure can be associated with loss of eye sight. In spite of direct impact to the internal eye tissues, it also affects the surrounding tissues. The location of human eye is directly next to numerous paranasal sinuses which separated by a thin bone layer. The proximity which rarely happens may cause bleeding into the orbit before the performance of initial surgery hence requiring treatment before the surgery. In addition, cases of blindness and visual loss have been reported although it is extremely rare. Also, there is damage to eye movement muscles which lead to double vision Another uncommon problem is damage to the muscles that move the eye, leading to double vision, which may occur permanently or temporary (Kennedy DW, *et al.*, 2001). However, sometimes changes may occur in the function of the tear ducts leading to excessive tearing. The closeness of the eye to sinuses presents a possibility of a major orbital complication. To others it may cause blindness all together without undergoing any surgery for individuals with refractory sinus and related infections.

The other notable complication is the presence of impaired sense of smell or taste or smell. As per Krouse and Christmas argument, sense of smell tends to improve after the surgery main reason being that airflow is restored. Further, Bhat, Meghanadh, Sethi and Elsevier Clinical Advisory Board stated that in sporadic cases it could move to the worse situation depending on how patients' infection, swelling or allergic status is. Despite all these the state of patients' impairment can be upheld in temporary bases but with the help of professionals can be extended to (Krouse JH and Christmas DA, 1997).

Cerebral Spinal Fluid (CSF) leakage can be attributed to all surgeries on the sphenoid, frontal sinuses and ethnocide which carries cerebrospinal fluid. CSF surrounds the brain and therefore any dispruption to the barrier may cause leakage to the nose, as result of patients' disease or surgical manipulation. Whenever this complication occurs there is high chances of creation a potential pathway for infections which in turn may spread from sinuses and nose to the patients' brain (Stammberger H, *et al.*, 1991).

CONCLUSION

All together there are few cases of complications from the manipulations performed during the post-operative visits whereby the theoretical risks are equally the same as the main surgery itself. Nearly all surgeries and postoperative care are closely similar and therefore the consent given for surgery automatically includes consent for postoperative care. In modern times CSF leaks are catered for by doing regular repairs by use of nasal telescopes. However, whenever these leakages occur, surgery or additional hospitalization is recommended to patients. FESS like other surgeries dealing with sinus is regarded as the most successful to patients having recurrent chronic sinus infections. In fact, patients having predominant symptoms towards nasal blockages, sense of smell and facial pain responds well after surgical process. All in all, if surgeries are undertaken by properly trained endoscopic surgeons the possibilities of any major complications are very minimal.

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