



FESS IN GERIATRIC PATIENTS- AN INSTITUTIONAL BASED OBSERVATIONAL STUDY

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ABSTRACT

The 6th most common chronic condition in geriatric patients is rhinosinusitis. The recent treatment modality for chronic rhinosinusitis in adults failing maximum medical therapy is FESS (Functional endoscopic sinus surgery). It has gained importance over the last 2-3 decades. The aim of this study was investigating the efficacy and safety of FESS in the elderly population as compared to the adult population. A retrospective review of outcomes was done in thirty-eight in patients over age of 60 years who underwent FESS and they were evaluated preoperatively and postoperatively at 3, 6, and 12 months with a rigid nasal endoscopy scoring system, and the SinoNasal Outcome Test-20 (SNOT-20) questionnaire. Data analysis was performed using the Student's *t* test to compare mean scores. All complications were noted. And it was concluded that FESS in the geriatric population is a safe and effective treatment modality for rhinosinusitis which is refractory to medical therapy.

KEYWORDS

FESS, Geriatric, Observational study

INTRODUCTION

As the size of the geriatric population has grown in developed countries, the illnesses of older people have become a more important part of medicine. Previous survey data ranks sinusitis the sixth most common chronic condition of elderly persons, occurring more frequently than cataracts, diabetes, and general visual impairment.²

The most common clinical manifestations of chronic sinusitis in older persons are nasal stuffiness, postnasal drip, impaired olfactory function, sore throat, and fever of unknown origin.¹ Adequate antibiotic therapy with other auxiliary treatment is the first step in the management of geriatric sinusitis.¹ If the patient fails to respond to medical management, surgical treatment might be indicated.⁷

The predisposing factors in elderly include nasal and paranasal mucosal changes like mucosal atrophy, decreased mucus production, excess crusting, and decreased mucociliary clearance. The supporting fibro-fatty tissues of the nose atrophy, with potential loss of support of nasal structures (narrowed nasal valve) and associated nasal obstruction. There is also an increased incidence of epistaxis and olfactory impairment in the elderly.³⁻⁵

Over the last 30 years a functional endoscopic operative approach to chronic sinus disease has developed and become a widely accepted treatment modality. Endoscopic sinus surgical techniques focus on minimizing removal of normal mucous membrane and critical paranasal sinus structures, thereby minimizing trauma and preserving mucociliary function.⁶

In the current study, nasal endoscopic exam scores and sinus symptom scores were obtained preoperatively in geriatric patients undergoing FESS and compared to follow up postoperative scores. The objective is to determine the safety and effectiveness of FESS in elderly patients with sinus disorder.

PATIENTS AND METHODS

Data were collected retrospectively in patients presenting to Kalinga Institute of Medical Sciences, with complaints of chronic rhinosinusitis. Thirty-eight patients with sinus disease who underwent primary FESS, aged more than 60 years, presenting from July 2016 to June 2018, were included in the study. At the time of presentation, a careful history and physical examination, including a rigid nasal endoscopy, were performed. Patients were identified with persistent

sinus disease by history, physical exam and CT scan despite at least 3-4 weeks of medical therapy for rhinosinusitis. Therapy included nasal steroid spray and mucolytic agents. At least 10 days of broad-spectrum antibiotics were prescribed when there was evidence of purulent discharge on endoscopy. All patients had their CT scans done for diagnosis. Those who failed this medical therapeutic regimen and had evidence of radiologic rhinosinusitis underwent FESS and were followed postoperatively with intervals at 3, 6, and 12 months postoperatively. The study population was composed of 23 males and 15 females with an average age of 68 years.

The subjects were evaluated with the Sino-Nasal Outcome Test-20⁸ (SNOT-20). These test forms were completed preoperatively, and at 3, 6, and 12 months postoperatively.

Nasal endoscopic exam scores were obtained at the same time intervals.⁹ The nasal endoscopy was graded for presence of discharge, scarring, edema, polyposis, and crusting. For nasal polyps, 0 was given for absence of polyps, 1 for polyps present within the middle meatus, and 2 for polyps beyond the middle meatus. For edema, scarring, and crusting, 0 was given if the finding was absent, 1 if it was mild, and 2 if it was severe in extent. For discharge, 0 was given if there was no discharge; 1 for clear, thin discharge; and 2 for thick, purulent discharge. Each side was graded separately and the scores from each side were then added to the overall endoscopy score. Data analysis was performed using the Student's *t* test to compare mean postoperative scores at 3, 6, and 12 months to preoperative scores. Statistical significance is achieved when *P value* is less than or equal to 0.05.

RESULTS

Thirty-eight consecutive patients over the age of 60 were evaluated by history and physical examination, including rigid nasal endoscopy. The average age was 68 years (range, 61-75). Twenty-three patients in our study were male and fifteen were female. Patients with findings consistent with chronic rhinosinusitis were treated with medical therapy and a CT scan was obtained after 3-4 weeks of treatment.

All of the patients studied reported postoperative symptomatic improvement. Sino-Nasal Outcome Test-20 (SNOT-20) scores were obtained preoperatively, and at 3, 6, and 12 months postoperatively. The mean preoperative SNOT-20 symptom score was 29.7. Mean postoperative symptom scores at 3, 6, and 12 months were 10.6 (*P* 0.001), 8.0 (*P* 0.001), and 7.4 (*P* 0.001), respectively, (Table 1)

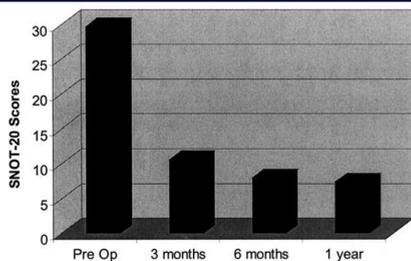


Fig 1. Preoperative and postoperative SNOT-20 outcomes in outpatient population. SNOT-20, Sinonasal outcomes test.

Endoscopic exam scores were obtained preoperatively, and at 3, 6, and 12 months postoperatively. The mean preoperative endoscopic score was 4.9. The mean postoperative scores at 3, 6, and 12 months were 1.2 (P 0.001), 1.7 (P 0.001), and 1.2 (P 0.001), respectively, (Table 1)

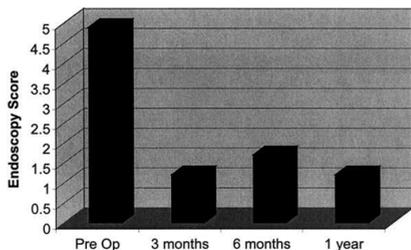


Fig 2. Preoperative and postoperative rigid nasal endoscopy scores.

Postoperative complications included 2 patients having intranasal crusting seen by follow-up endoscopic exam. This was controlled using nasal saline irrigations. One patient experienced lateralization of the anterior portion of the middle turbinate without associated symptoms of obstruction of the osteomeatal complex. Follow-up rigid nasal endoscopic exams revealed healthy appearing nasal mucosa. The patient did well symptomatically. There were no episodes of postoperative epistaxis, orbital complications, or cerebrospinal fluid (CSF) leaks. No revision FESS has been necessary to date.

Table 1. Comparison between pre-operative post-operative results at 3, 6 and 12 months with P value

	SNOT-20 score	Endoscopic score
Pre operative	29.7	4.9
Post operative	10.6	1.2
P value	0.001	0.001
3 months post operative	10.6	1.2
6 months post operative	8.0	1.7
1 year post operative	7.4	1.2
P value	0.001	0.001

DISCUSSION

Within this rising percentage of elderly persons there will also be an increase in the average age.

The portion of those 85 years of age and the geriatric portion of the population is growing and is expected to plateau in the middle of this older is expected to rise otolaryngologic physiology and disorders of the elderly is needed.¹⁰

Rhinosinusitis is the sixth most common chronic condition of those aged 65 and older.² Physiologic changes related to mucus membrane function, nasal structure, and immune function likely have a role in the high prevalence of sinus disease in the elderly.^{3,5} Medical and precise surgical approaches to treating rhino-sinusitis in this population must address these factors. Also, the surgeon should be aware of the higher rates of iatrogenic injury in geriatric patients that have been ascribed to the increased rates of comorbid illnesses and longer lengths of hospitalization.² While the majority of geriatric patients do well during surgery and postoperatively, higher rates of adverse postoperative complications have been reported. A thorough history and physical examination with particular attention to neurologic and cardiopulmonary preoperative status is imperative.¹¹ The surgeon should also pay particular attention to the increased use of anticoagulants in this patient population. Discontinuation of anticoagulant therapy should be performed carefully, taking into

account the patient's relative risk for a thromboembolic event.¹² In our practice we endeavor to ensure proper communication among the surgeon, anesthesia, and the primary and secondary physicians to ensure proper perioperative management of the patient's surgical and comorbid medical issues

The safety and effectiveness of FESS for treatment of chronic sinusitis in adults has been shown and well documented. In their review of the literature, Terris and Davidson showed that in 1713 patients undergoing FESS, 63% experienced very good results, 28% experienced good results, and 9% had poor results. They reported CSF leaks in 0.6% of patients, postoperative epistaxis in 1.5% of patients, and minor complications in 2% of patients. Using symptom questionnaires, Senior et al followed 66 patients that had undergone FESS over 7.8 years. They noted that 98.4% noted improvement postoperatively. These authors also noted that the degree of improvement per patient increased over time from 68% (average improvement at 1.5 years) to 71% (average improvement at 7.8 years); however, this was not statistically significant. Damm et al utilized quality-of-life (QOL) assessment questionnaires to evaluate their postoperative results in patients followed an average of 31.7 months. They noted an amelioration of QOL in 85% of patients, no change in 12%, and a decline in 3%. They did not report the degree of improvement of QOL scores in this patient population.

In this study postoperative outcomes were analyzed in patients over the age of 60 who underwent FESS. The Sino-Nasal Outcomes Test questionnaires and nasal endoscopy scores were used to analyze postoperative outcomes. The postoperative degrees of improvement noted over the 3, 6 and 12-month time periods for each of the scoring systems are all statistically significant (P 0.001). Patients evaluated by the SNOT-20 scoring system experienced 65% improvement of symptom scores at 3 months, 75% improvement at 6 months, and 75% improvement at 12 months. The SNOT-20 questionnaire system is a statistically valid as a quality-of-life and rhinosinusitis health status assessment tool as shown by Piccirillo et al. Therefore, the degree of improvement noted in this study by the SNOT-20 evaluation method is statistically significant and a valid outcome measure in this population.

Studies suggest that postoperative follow-up with nasal endoscopic examination provides prognostic information with regard to potential future episodes of sinusitis and need for revision FESS. Rigid nasal endoscopy scores improved by 77% at 3 months, 66% at 6 months, and 78% at 12 months, respectively, as compared to preoperative scores elderly population accounted for 15.6% of all endoscopic surgeries in their population, which included children (9.9%) and adults. Although they reported a slightly increased complication rate as compared to their adult and pediatric group, they noted a greater improvement rate with FESS in the elderly as compared to non-elderly adults. In this series of 38 patients there were 5 very minor complications and no major complications.

CONCLUSIONS

Rhinitis and sinusitis are troublesome and often unrecognized medical conditions in the geriatric population. Signs and symptoms may be subtle and are often overlooked. Changes in anatomy and physiology associated with ageing potentiate the occurrence and severity of these entities.

The purpose of this study was to investigate functional endoscopic sinus surgery in the geriatric population. The statistically valid SNOT-20 scoring method and an endoscopic scoring method were used to evaluate patients preoperatively and postoperatively at 3, 6, and 12 months, respectively. There was symptomatic improvement in our geriatric population after FESS and this result is comparable to that of other age groups presented in the literature. Also, the complication rate in geriatric FESS was very low in this series and comparable to that of nongeriatric FESS. To date, our experience with FESS in those over the age of 60 reveals that it is a safe and effective treatment method to address chronic rhinosinusitis that is refractory to medical therapy.

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