

ORIGINAL RESEARCH

Middle meatal antrostomy in the management of chronic maxillary sinusitis

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ABSTRACT

Background: FESS emerges as the primary surgical modality for sinus diseases, the most common procedure being middle meatal antrostomy (MMA) for chronic maxillary sinusitis (CMS). The present study was conducted to assess cases of middle meatal antrostomy of chronic maxillary sinusitis.

Materials & Methods: 80 patients of chronic maxillary sinusitis of both genders underwent Middle meatal antrostomy. Patients were followed up till 9 months.

Results: Out of 80 patients, males were 42 and females were 38. Endoscopic appearance score for polyp at baseline was 28, at 6 months was 12 and at 1 year was 1, endoscopic appearance score for oedema at baseline was 56, at 6 months was 10 and at 1 year was 2. Endoscopic appearance score for secretion at baseline was 60, at 6 months was 26 and at 1 year was 4. Radiological score 0 was seen in 20, 1 in 28 and 2 in 30. The difference was significant ($P < 0.05$). Symptoms score at 6 months for nasal blockage was 12, facial pain was 8, headache was 6, epistaxis was 10, post nasal discharge was 8. Symptoms score at 9 months for nasal blockage was 7, facial pain was 4, headache was 1, epistaxis was 3 and post nasal discharge was 2. The difference was significant ($P < 0.05$).

Conclusion: Middle meatal antrostomy is routinely employed methods for management of chronic maxillary sinusitis. It is a safe and effective procedure.

Key words: Maxillary sinusitis, Middle meatal antrostomy, FESS

INTRODUCTION

Sinusitis is more common in cold and wet climate, atmospheric pollution, smoke, dust overcrowded condition. Increased cases are found in people with poor general health, with recent history of exanthematous fever measles, chickenpox, in nutritional deficiencies, systemic disorders like diabetes, immune deficiency syndromes etc. Impairment of drainage of sinuses by inflammatory oedema of the mucosa is an important contributor to the process.¹ Surgery for sinusitis aims to drain purulent secretions either by way of natural ostium or more usually by the creation of an alternative drainage pathway which may be temporary or permanent.² In so doing, complications are avoided and the sinus lining is given opportunity to recover. Antral washout or lavage was a form of conservative surgery done used for draining out the antral secretions through the inferior meatus and for subsequent microbiological study. It has been deemed obsolete in modern times due to its blind nature and limited long-term benefits.³

FESS emerges as the primary surgical modality for sinus diseases, the most common procedure being middle meatal antrostomy (MMA) for chronic maxillary sinusitis (CMS).⁴ Creation of middle meatal antrostomy is also sometimes needed for the following cases: biopsy of an antral mass; resection of a maxillary sinus fungal ball or inverted papilloma; presence of accessory ostia leading to maxillary recirculation; and sometimes to allow for the application of topical medication or outpatient antral lavage in selected cases.⁵ The present study was conducted to assess cases of middle meatal antrostomy of chronic maxillary sinusitis.

MATERIALS & METHODS

The present study comprised of 80 patients of chronic maxillary sinusitis of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. All patients underwent complete otorhinolaryngological examination with nasal endoscopy followed by middle meatal antrostomy. Nasal endoscopy was performed postoperatively. Computed tomography scans (CT) were repeated at 6 months and maxillary sinus grading and scoring was done. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of cases

Total- 80		
Gender	Males	Females
Number	42	38

Table I shows that out of 80 patients, males were 42 and females were 38.

Table II Assessment of parameters

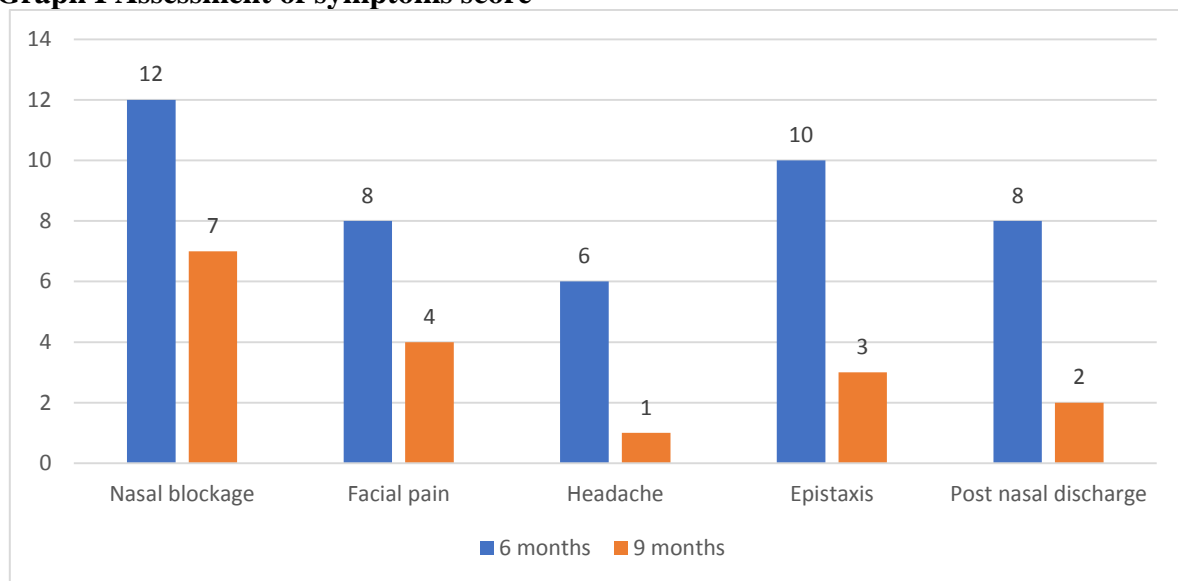
Parameters	Variables	Number	P value
Endoscopic appearance score for polyp	Baseline	28	0.05
	6 months	12	
	9 months	1	
Endoscopic appearance score for oedema	Baseline	56	0.04
	6 months	10	
	9 months	2	
Endoscopic appearance score for secretion	Baseline	60	0.01
	6 months	26	
	9 months	4	
Radiological score	0	20	0.05
	1	28	
	2	30	

Table II shows that endoscopic appearance score for polyp at baseline was 28, at 6 months was 12 and at 1 year was 1, endoscopic appearance score for oedema at baseline was 56, at 6 months was 10 and at 1 year was 2. Endoscopic appearance score for secretion at baseline was 60, at 6 months was 26 and at 1 year was 4. Radiological score 0 was seen in 20, 1 in 28 and 2 in 30. The difference was significant ($P < 0.05$).

Table III Assessment of symptoms score

Symptoms score	6 months	9 months	P value
Nasal blockage	12	7	0.01
Facial pain	8	4	
Headache	6	1	
Epistaxis	10	3	
Post nasal discharge	8	2	

Table III, graph I shows that symptoms score at 6 months for nasal blockage was 12, facial pain was 8, headache was 6, epistaxis was 10, post nasal discharge was 8. Symptoms score at 9 months for nasal blockage was 7, facial pain was 4, headache was 1, epistaxis was 3 and post nasal discharge was 2. The difference was significant ($P < 0.05$).

Graph I Assessment of symptoms score

DISCUSSION

Sinusitis refers to a group of disorders characterized by inflammation of the mucosa of the paranasal sinuses. Categories based on duration as acute sinusitis, defined as symptoms of less than 4 weeks' duration. Subacute sinusitis is defined as symptoms of 4 to 8 weeks' duration and Chronic sinusitis, defined as symptoms lasting longer than 8 weeks. Recurrent acute sinusitis, often defined as three or more episodes per year, with each episode lasting less than 2 weeks.⁶ Sinusitis is more common in cold and wet climate, atmospheric pollution, smoke, dust overcrowded condition. Increased cases are found in people with poor general health, with recent history of exanthematous fever measles, chickenpox, in nutritional deficiencies, systemic disorders like diabetes, immune deficiency syndromes etc. Impairment of drainage of sinuses by inflammatory oedema of the mucosa is an important contributor to the process.⁷ Current thinking supports the concept that chronic rhino sinusitis (CRS) is predominantly a multifactorial inflammatory disease.⁷ Confounding factors that may contribute to inflammation are persistent infection (including biofilms and osteitis), allergy and other immunologic disorders, intrinsic factors of the upper airway, super antigens, colonizing fungi that induce and sustain eosinophilic inflammation, metabolic abnormalities. Functionally active L-selectin ligands guiding leukocyte traffic into maxillary sinus mucosa have been suggested preferentially in patients with severe findings of chronic maxillary rhino sinusitis. Endoscopic sinus surgery was developed in continental Europe in the 1970s and

1980s.^{8,9} The present study was conducted to assess efficacy of middle meatal antrostomy in the management of chronic maxillary sinusitis.

Out of 80 patients, males were 42 and females were 38. Jacob et al¹⁰ compared the effectiveness of endoscopic middle meatal antrostomy and Caldwell-Luc's surgery in the management of Chronic Maxillary Sinusitis. This was a prospective randomized comparative study based on the analysis of eighty patients who were diagnosed to have chronic, unilateral, maxillary sinusitis and underwent surgery, after a failed trial of conservative management. One year after surgery 44% of the C-L patients and 89% of the FESS patients reported distinct improvement of their symptoms. Both are effective in the management of chronic sinusitis. Endoscopic middle meatal antrostomy is superior to Caldwell Luc in intraoperative and postoperative parameters.

We found that endoscopic appearance score for polyp at baseline was 28, at 6 months was 12 and at 1 year was 1, endoscopic appearance score for oedema at baseline was 56, at 6 months was 10 and at 1 year was 2. Endoscopic appearance score for secretion at baseline was 60, at 6 months was 26 and at 1 year was 4. Radiological score 0 was seen in 20, 1 in 28 and 2 in 30. Anderson et al¹¹ assessed efficacy of middle meatal antrostomy in the management of chronic maxillary sinusitis. Only 8 patients had concomitant antrochoanal polyps and maxillary sinusitis. 7/8 cases had unilateral polyps (4 on left, 3 on right and 1 case bi lateral). All the polyps were histo-pathologically confirmed. Nearly 40% cases were unilateral (on radiographs) .7 out of the 25 cases of uni lateral maxillary sinusitis presented with antrochoanal polyps. One case of 35 bilateral cases presented with bilateral antrochoanal polyps. Patient symptoms were not necessarily limited to the side of sinus involvement.

We found that symptoms score at 6 months for nasal blockage was 12, facial pain was 8, headache was 6, epistaxis was 10, post nasal discharge was 8. Symptoms score at 9 months for nasal blockage was 7, facial pain was 4, headache was 1, epistaxis was 3 and post nasal discharge was 2. Crusts in middle meatus was the most common postoperative complication followed by nasal synechiae and cheek oedema. The reason could be attributed to the hot and dry climate of the region. Crusts were managed by nasal douching as well as removal under direct vision. Synechiae were released in the earliest postoperative visit with intranasal X ray plating or merocel pack.¹²

CONCLUSION

Authors found that middle meatal antrostomy is routinely employed methods for management of chronic maxillary sinusitis. It is a safe and effective procedure.

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