

Research Article

Aetiology, diagnosis and treatment of chronic rhinosinusitis: a study in a teaching hospital in Telangana

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ABSTRACT

Background: Chronic rhinosinusitis is one of the common problems in ENT Department which can be caused due to infections or anatomical blockage or allergy. We performed this study to assess the cause, clinical features and the effect of treatment on rhinosinusitis.

Methods: 60 patients of chronic sinusitis with symptoms persisting beyond three months, Nasal Endoscopic findings with Polyps/Discharge/edematous mucosa were included in the study. A detailed clinical history, with complete Ear, Nose, Throat, and Head and Neck examination, blood tests like complete blood picture, Blood sugar levels, ESR and Hepatitis profile. X ray of paranasal sinuses, (water's view) and lateral view, Chest x-ray –PA View and CT scan of paranasal sinuses (axial and coronal section with 3mm cuts at OMC) was done for all patients. Diagnostic Nasal Endoscopic examination (DNE) for detection of polyps / discharge / edematous mucosa in middle meatus was also done for the patients where it was necessary. The patients were given medical or surgical treatment according to the symptom and followup was done for 3 months for all patients.

Results: Over 75% of the patients had incidence of sinusitis in the age group of 16 – 45 years. The most common etiology was sinusitis caused by infections (26 – 44%) followed by anatomical obstruction (22 – 36%). Of the 22 anatomical obstruction the most common was Deviated nasal septum in 14 (62%) of the cases followed by 4 (19%) CB, 3 (15%) praxial MT and 1 (4%) prominent agger nasi. The most common sign and symptom was headache and polypoidal changes observed in 36 patients each (60%), followed by nasal obstruction in 35 patients (50%). 12 (20%) of the patients were treated with polypectomy + FESS while 14 (23%) of them were treated with septoplasty + FESS. 34 (57%) were treated with only FESS.

Conclusions: Chronic sinusitis does not affect a particular age or sex and is more common among patients with an upper respiratory tract infection. CT scan of the paranasal sinuses is the most useful tool in diagnosing the disease and FESS is the treatment of choice.

Keywords: Chronic rhino sinusitis, Etiology, Polyps, Nasal discharge

INTRODUCTION

Sinusitis is a very common problem in ENT practice. It is the chronic or acute, unilateral or bilateral inflammation of mucous membrane of nose and one or more of paranasal sinuses. When the symptoms and signs persist for 12 or more weeks with no complete resolution it is said to be chronic.¹⁻⁴

Chronic rhino sinusitis is characterized by two or more symptoms like nasal blockage / congestion, anterior or posterior nasal discharge, facial pain / pressure, reduction or loss of smell plus either endoscopic signs of polyps / discharge / edematous mucosa in middle meatus and/or Computer tomography scan showing mucosal changes within osteomeatal complex and/or sinuses.^{2,4,5}

Acute rhinitis is the most common cause of non-infective sinusitis, which could be caused by swimming and diving resulting in the direct spread of bacteria from nose through the ostium into paranasal sinuses. Dental infections or extraction of tooth may also cause infection of maxillary antrum. Nasal obstruction from any cause viz. DNS, obstruction of sinus ostium by polyp, swelling of nasal mucosa and tumours of nasal fossae, infection of the adenoids and tonsils can predispose to sinusitis.

With the increase in incidence of HIV/ AIDS, diabetes and various other immune suppressive disorders, the incidence of bacterial and especially fungal rhino sinusitis is becoming a challenging problem to an ENT surgeon.

The symptom complex for the clinical evaluation includes major and minor criteria. Major criteria include the purulent drainage, facial pain or pressure, nasal congestion /blockage, decreased smell sensation. Minor criteria consist of halitosis, fever, headache, weakness, dental pain, ear full ness and pain, cough and in the children irritability.^{2,18,19}

METHODS

This study was conducted in the Department of ENT & Head & Neck Surgery, Mallareddy Medical College for Women for a period of two years. 60 patients of chronic sinusitis with symptoms persisting beyond three months, nasal endoscopic findings with polyps/discharge/edematous mucosa were included in the study. Patients with chronic sinusitis with complications (viz orbital cellulitis, osteomyelitis, meningitis, mucocoeles) were excluded from the study.

A detailed clinical history, with complete Ear, Nose, Throat, and Head and Neck examination was done for all patients. All the patients were subjected to blood tests like complete blood picture, Blood sugar levels, ESR and Hepatitis profile. X ray of paranasal sinuses, (water's view) and lateral view, chest x-ray –PA View and CT scan of paranasal sinuses (axial and coronal section with 3mm cuts at OMC) was done. Diagnostic nasal endoscopic examination (DNE) for detection of polyps / discharge / edematous mucosa in middle meatus was also done for the patients where it was necessary.

The patients were treated according to the symptoms by one of the following methods:

- **Medical treatment:** By antibiotics, anti histamines and/or decongestants, or Steroids (topical or systemic).
- **Surgical:** Functional endoscopic sinus surgery with or without septal correction/turbinate reduction and treated postoperatively by a course of antibiotic with antihistamine, topical decongestants & topical steroids (when indicated).

All the patients were followed up to a period of three months, for once in a week for 4 weeks thereafter, once in 15 days. Endoscopic suction clearance at the time of each visit, and the results were documented carefully, while looking for the recurrence of the disease.

RESULTS

Over 75% of the patients had incidence of sinusitis in the age group of 16 – 45 years (Figure 1). 25 patients (41.7%) in the 16-30 age group and 22 patients (36.7%) in the 31-45 age group had chronic sinusitis.

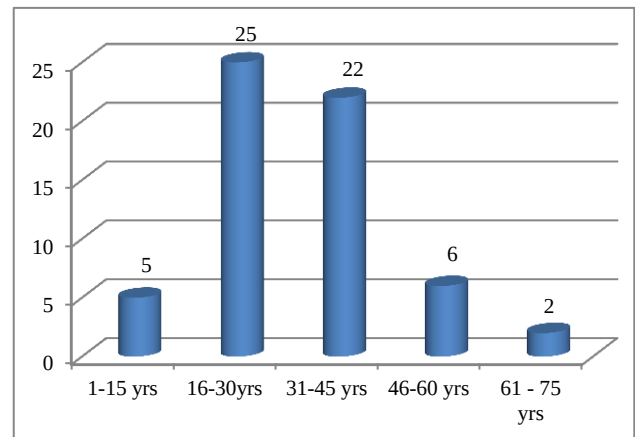


Figure 1: Age wise distribution of incidence of sinusitis.

60% of the patients were males and 40% were females. The most common etiology was sinusitis caused by infections (26 – 44%) followed by anatomical obstruction (22 – 36%) (Figure 2).

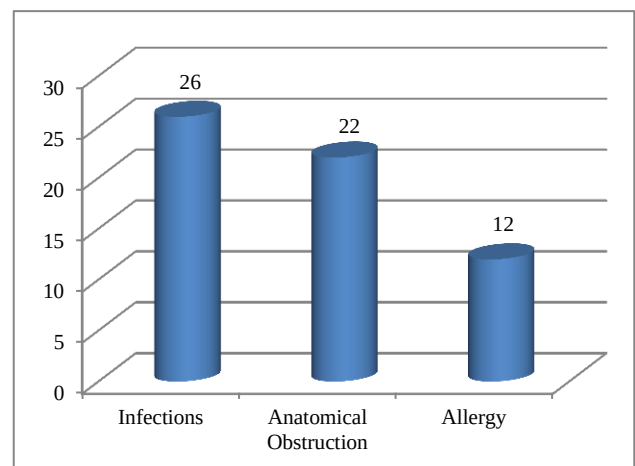


Figure 2: Etiology of sinusitis.

Of the 22 anatomical obstruction the most common was Deviated nasal septum in 14 (62%) of the cases followed by 4 (19%) CB, 3 (15%) paranasal MT and 1 (4%) prominent agger nasi.

Of the signs and symptoms, the most common one was headache and polypoidal changes observed in 36 patients each (60%), followed by nasal obstruction in 35 patients (50%) Other symptoms were nasal discharge in 25 patients (42%) and allergic symptoms like sneezing and itching in 13 patients (22%) and mucopurulent discharge was seen in 26 cases (43%) (Figure 3).

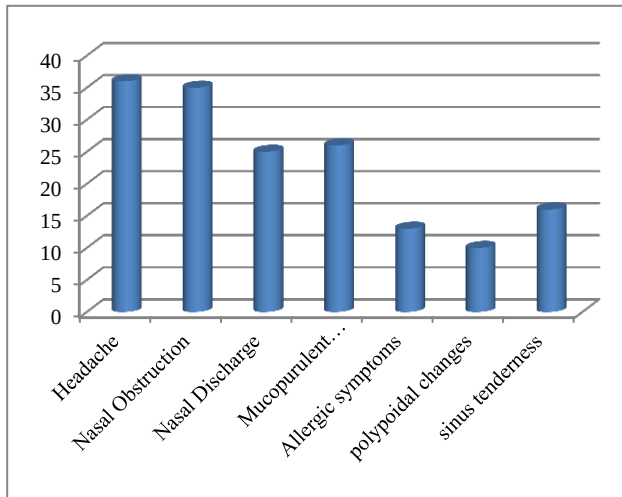


Figure 3: Signs and symptoms.

Only 1 sinus was involved in only 1 case among all the patients, more than 1 sinus in unilateral position was observed in 11 patients (18%) and 48 (80%) patients had more than 1 sinus with bilateral involvement (Figure 4).

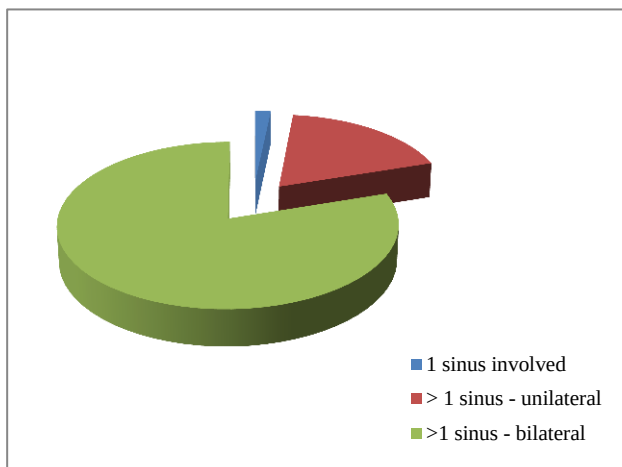


Figure 4: Involvement of sinuses.

12 (20%) of the patients were treated with polypectomy + FESS while 14 (23%) of them were treated with septoplasty + FESS. 34 (57%) were treated with only FESS (Figure 5).

Out of 60 patients in the study, 8 patients didn't show up after 1st visit, during which they were found to be free of symptoms, except for minimal crusting which were cleared endoscopically. Rest of the 52 patients were

followed up for 3 months for weekly once and once in a fortnight thereafter. Endoscopic suction clearance was done at the time of each visit. Only 12 patients out of the remaining 52 patients had adhesions (between the inferior or middle turbinate and the septum) without any recurrence of symptoms, which were removed endoscopically. All the other patients were free of symptoms and there were no recurrences observed in any of the patients.

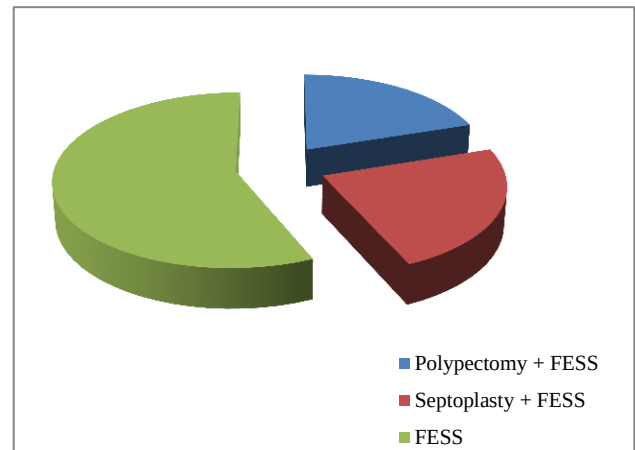


Figure 5: Treatment.

DISCUSSION

Rhinosinusitis is an extremely prevalent disorder that has a significant impact on the quality of life of affected individuals. Symptoms lasting longer than 12 weeks are classified as chronic. Fewer than 2% of colds in adults and up to 30% of colds in children progress to bacterial RS. The causes of chronic rhinosinusitis are multiple and include infectious (viral, bacterial, and fungal), allergic, anatomic, mucociliary, (e.g., cystic fibrosis, primary or acquired ciliary dyskinesia), and systemic disorders.

In the present study, the most common age group observed was 16 - 30 years (41%). Similar results was reported in another study by Aliyu et al⁶ where the most common affected age group was 21 – 40 years (65.3%) and mean age group was 44 years in a study by Stallman et al.⁷

We showed a slight preponderance of males (60%) over females (40%), which was observed in other similar studies by Dua et al (66%),⁸ Iseh et al (57.5%),⁹ Aliyu et al⁶ (52%), Tsutomu et al,¹⁰ while a female dominance was observed in a study by Stallman et al.⁷

The most common anatomical in our study was deviated nasal septum which was corroborated by other workers.^{7,8,11-17} The mere presence of a septal deviation does not suggest pathology. However, a marked deviation can force the middle turbinate laterally, thus narrowing the entrance to the middle meatus and can predispose to recurrent sinusitis.

In a study by Iseh et al,⁹ 67.1% of the cases had sinusitis due to infection similar to our study where we found infection to be the most common cause with 44%. The signs and symptoms in our study were corroborated by other studies where in headache and nasal obstruction was most common.¹⁰⁻¹⁵

CONCLUSION

We observed in our study that chronic sinusitis is not a disease affecting a particular age or sex group and is more common in patients who are suffering from recurrent upper respiratory tract infection and in patients with anatomical variations.

CT scan of the paranasal sinuses is the investigation of choice to note the disease, anatomical abnormality and integrity of nasal bony structures, while diagnostic nasal endoscopic examination is the clinical guide to the surgeon to evaluate the disease and the severity of the anatomical abnormality. We found that functional endoscopic sinus surgery was the treatment of choice. Post operative DNE was necessary to assess the condition of the patient post surgery and any recurrence of the disease.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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