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RESEARCH ARTICLE

A PROSPECTIVE STUDY EVALUATING THE MOST COMMONLY ASSOCIATED CLINICAL PRESENTATIONS OF INFLAMMATORY SINONASAL DISEASE

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ABSTRACT

Background: Chronic headache is one of the most common symptoms which are distressing to both patients and physicians. Due to the nagging nature of patients and inability of the physician to diagnose and problems of self-medications, nature of headache remains undiagnosed in spite of many elaborated battery of tests. The aim of the present study is to determine the most commonly associated clinical features of sinusitis. **Materials and methods:** The present prospective study was conducted in the department of ENT JSS medical college and hospital. The study was conducted from a period of Nov 2012 to June 2014. The study included a total of 50 patients with clinically proven inflammatory sinonasal diseases not responding to medical line of treatment. A complete detail about their signs and symptoms was also recorded in a tabulated form. Data was expressed as percentage of the total information and analysis was done using SPSS software. **Results:** The most commonly associated symptom was nasal obstruction, it was seen in 40 patients (80%). The next most commonly associated symptoms were headache and nasal discharge seen amongst 74% (n=37) and 72% (n= 36) subjects respectively. There were 36% (n=18) subjects having congested and normal nasal mucosa respectively. The nasal septum was central in 42% (n=21) subjects. Approximately 38% (n=19) subjects had mucoid discharge. **Conclusion:** Purulent nasal discharge was seen to be the most predominant sign seen in all the patients which was one of the commonest sign seen in cases.

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INTRODUCTION

Sinusitis is defined as inflammation of one or more paranasal sinuses. Based on the causative organism it can be bacterial or viral. Viral sinusitis takes around 7-10 days to resolve6 whereas bacterial sinusitis is generally persistent (Piccirillo, 2004). The various bacterial pathogens responsible for causing bacterial sinusitis include haemophilus influenza, streptococcus pneumonia and moraxella catarrhalis (Anon *et al*., 2004). In cases of chronic sinusitis there is variation of anaerobic species from 80% to 100% in case of children (Brook *et al*., 2000) to only 0 to 25% in case of adults (Rontal *et al*., 1999; Klossek, 1998). Chronic headache is one of the most common symptoms which are distressing to both patients and physicians. Due to the nagging nature of patients and inability of the physician to diagnose and problems of self-medications, nature of headache remains undiagnosed in spite of many elaborated battery of tests. The major symptoms include facial pressure or pain, nasal obstruction, discharge or purulence, and hyposmia or anosmia. The minor symptoms include fever, halitosis, fatigue, and dental pain.

Microorganisms play a significant role in the persistence and origination of the inflammatory process, although the exact role of these organisms in the pathogenesis of inflammatory sino nasal diseases is unclear (Lanza, 2004). The diagnosis relies on clinical judgment based on a number of subjective symptoms and few findings in physical examination. Surgical clearance of these chronically infected sinuses while maintaining their ventilation and drainage is the treatment of choice. To achieve this goal there should be some diagnostic modality which guide as towards exact diagnosis and safe intervention. Over the past decade, both CT and nasal endoscopy have been used successfully as diagnostic modality in sinus disease. The aim of the present study is to determine the most commonly associated clinical features of sinusitis.

MATERIALS AND METHODS

The present prospective study was conducted in the department of ENT JSS medical college and hospital. The study was conducted from a period of Nov 2012 to June 2014. The study included a total of 50 patients with clinically proven

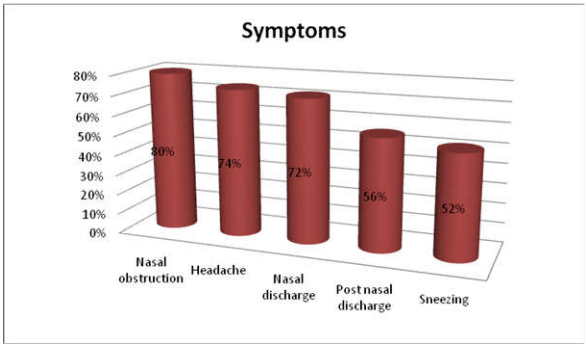
inflammatory sinonasal diseases not responding to medical line of treatment. Both males and females aged between 18- 60 years were included in the study. Patients with acute attack of ISD, malignancies, any previous paranasal surgery or granulomatous disease of nose and paranasal sinus were excluded from the study. All the subjects were informed about the study and a written consent was obtained from all. The study was approved by the institutional ethical board. A detailed history and demographic details of all the subjects was obtained and a complete blood analysis of all the patients was performed. It included estimation of haemoglobin method, total and differential leukocyte count, platelet count and bleeding and clotting time. All the patients were prescribed a suitable course of antibiotics, nasal decongestants and anti histaminics. A complete detail about their signs and symptoms was also recorded in a tabulated form. Data was expressed as percentage of the total information and analysis was done using SPSS software.

RESULTS

The present study enrolled 50 subjects, out of these there were 21 females and 29 males. Table 1, Graph 1 shows the frequently associated symptoms of inflammatory sinonasal disease. The most commonly associated symptom was nasal obstruction, it was seen in 40 patients (80%). The next most commonly associated symptoms were headache and nasal discharge seen amongst 74% (n=37) and 72% (n= 36) subjects respectively. Post nasal discharge was seen amongst 56% (n=28) patients and sneezing was the least common symptom.

Table 1: The frequently associated symptoms with Inflammatory sinunasal disease

Symptoms	No. of patients	Percentage
Nasal obstruction	40	80
Headache / facial pain	37	74
Nasal discharge	36	72
Post nasal discharge	28	56
Sneezing	26	52



Graph 1. The frequently associated symptoms with Inflammatory sinunasal disease

Table 2: signs associated with inflammatory sinonasal disease

Signs	No. of Patients	Percentage
Nasal Mucosa: pale	14	28
Nasal Mucosa: congested	18	36
Nasal Mucosa: normal	18	36
Septum : central	21	42
Septum : deviated	29	58
IT: hypertrophy	23	46
MM: mucoid	19	38
MM: purulent	31	62
Nasal polyp	17	34

Table 3. The commonly associated diagnosis with the cases

Diagnosis	No. of the Patients	Percentage
Chronic sinusitis	28	56
Sinu nasal polyposis-ethmoidal polyp	15	30
Antrochonal polyp	7	14
	50	100

Table 2 shows the commonly associated signs with inflammatory sinunasal disease. Majority of the subjects (58%) had deviated septum. There were 62% (n=31) subjects having purulent mucous discharge. There were 34% (n=17) having nasal polyp. There were 36% (n=18) subjects having congested and normal nasal mucosa respectively. The nasal septum was central in 42% (n=21) subjects. Approximately 38% (n=19) subjects had mucoid discharge. Table 3 shows the commonly associated diagnosis with the cases. 56% (n=28) cases were diagnosed as with chronic sinusitis, 30% (n=15) cases were diagnosed with ethmoid polyposis and 14% (n=7) were diagnosed with antrochonal polyp in this study.

DISCUSSION

Sinusitis can lead to chronic debilitating conditions like chronic obstructive lung disease, angina and pain in back (Glikilich *et al*., 1995).[7] The diagnosis of sinusitis is based on history, clinical examination, physical examination and certain diagnostic modalities. In the present study nasal obstruction and headache are the commonest symptoms which are present in 80 %(40) and 74 %(37) cases respectively. The next frequently occurring complaint is nasal discharge present in 72 %(36) cases. The other symptoms are postnasal discharge 56 %(28), sneezing 52 %(26). In majority of the cases the duration of symptoms is more than 4 weeks and is not responding to medical line of management. In the study conducted by Sheetal D *et al*(2011) the commonest complaints was headache in 90% followed by nasal discharge in 80%. The other complaints such as sneezing are seen in 9% of the patients. The average duration of symptoms varies from 1-5 years (Sheetal *et al*., 2011). In the study conducted by Zojaji *et al*. (2008) nasal obstruction is the most common symptom with 51 patients and headache is noted in 37(72.5%) patients and nasal discharge in 46(90.1%) patients and other related complaints such as hyposmia is seen in 15 cases, cough in 11 and asthma in 6 (Zojaji *et al*., 2008). The results of the present study are comparable with all of these studies. In the present study by anterior rhinoscopic examination the commonest clinical sign, seen is purulent middle meatal discharge 62% (31) patients. Next most common sign is followed by deviated nasal septum seen in 58 %(29) and hypertrophied inferior turbinate in23 46% (23) of patients. Other signs like congested mucosa in36% (18) and pale mucosa in28% (14).Normal mucosa is seen in 21.6% (18) of the patients. In the study conducted by Venkatchalam V.P, *et al* (March 2000), clinical findings are hypertrophied inferior turbinate (10%), hypertrophied middle turbinate (17.14%), congested mucous membrane (15.71%), sinus tenderness (7.14%) and ethmoidal polyps (12.8%). In the present study all the signs are present in more significant percentage of our patients compared to Venkatchalam's study (Venkatachalam, 2000). Arun Kumar *et al* in 2012 conducted a study on a total of 92 patients to study functional endoscopic sinus surgery in patients of sinus headache. The preoperative evaluation showed mucopurulent discharge in middle meatus in 58 (63.4%) cases and ethmoidal polyp was seen in 10 cases and antrochonal polyp in 10 cases.

Other variations like concha bullosa, paradoxical middle turbinate, hypertrophied middle turbinate was also evaluated (Arunkumarpatel, 2012). In the present study 56 % (28) patients had chronic sinusitis while 44 % (22) patients had sinonasal polyposis. In the study conducted by Chaudhary *et al*. march 1999 60.8 % patients had chronic sinusitis and 21.7 % patients had diffuse polyposis (Chaudhary *et al*., 1999).

Conclusion

Both acute and chronic sinusitis is very common diseases worldwide and these lead to significant number of visits to healthcare office. Purulent nasal discharge was seen to be the most predominant sign seen in all the patients which was one of the commonest sign seen in cases. Majority of the patients had septal deviation but majority of the cases were asymptomatic for the deviation.

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