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PATTERN OF CLINICAL FEATURES OF CHRONIC SIMPLE RHINO-SINUSITIS IN PORT HARCOURT.

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ABSTRACT

Objective: To evaluate the symptoms, signs and types of chronic simple rhino-sinusitis.

Patients and Methods: This is prospective work done over a 2-year period. All the patients had symptoms of more than 8 weeks duration. Only patients with symptoms indicative of chronic rhino-sinusitis were included in the study. All the patients had plain x-rays of the paranasal sinuses done and a radiologist reported such.

Results: One hundred and fifteen patients were studied. The male to female ratio was 1:1.4 age range 15 years to 70 years. The mean duration of symptoms was 32.03 months. Rhinorrhoea 100%, stuffy nose 97.4%, sneezing 67.6%, anosmia 54.8% and headache 54.8% were the common symptoms while engorged inferior turbinates 79.1%, anterior nasal discharge 63.5% and postnasal discharge 39.1% were the common findings on examination. The clinical diagnosis was chronic infective sinusitis 72.7%, vasomotor rhinitis 17.4% and allergic rhinitis 10.4%. Engorged turbinate was the commonest radiological comment.

Conclusion: Chronic infective rhino-sinusitis is the commonest type of chronic rhino-sinusitis seen in this study.

Key Words: Clinical features chronic rhino-sinusitis

INTRODUCTION

Chronic rhino-sinusitis is a longstanding inflammatory condition of the nose and paranasal sinuses of more than 8 weeks [1,2,3]. In its simple and uncomplicated form, it usually involves the mucosa, submucosa, the arterioles, capillaries and venules. The symptoms include rhinorrhoea (catarrh), stuffy nose, sneezing, post nasal discharge, anosmia, halitosis, snoring, headache, heaviness of head, itching of the nose, throat and ears, epistaxis, otalgia, hearing impairment, tinnitus, photophobia, eye pain, dental pain, sore throat, cough and hoarseness [1-6]. The symptom complex for each patient is different.

Diagnosis of this disease is done largely on clinical grounds. Serological, immunological and radiological tests are useful for confirmation and determining the extent of the disease. Radiological investigation most commonly done is the plain x-rays of the paranasal, sinuses.The standard views are occipito-mental. Occipito-frontal and lateral. CT-scan, ultra sound scan, tomograms and MRI may also be done but not routinely[4,7-10].Chronic rhino-sinusitis maybe due to infective causes, allergic (atopic) disorders or due to vasomotor rhinitis.

Chronic infective sinusitis maybe due to bacterial or fungal infection. Chronic infection usually followsrepeated acute infection or allergic conditions that get secondarily infected by bacteria. When this is poorly treated or in immuno-compromised persons or in situations of defective mucosal lining or structural defects in the nose such as septal spurs, septal deviation, hypertrophied turbinate or abherrent ethmoidal air cell and polyps, chronicity is established [1,6,11].

Allergic rhino-sinusitis is congestion of the mucous membrane of the paranasal sinuses and the nose. The features are watery rhinorrhoea, profuse sneezing, stuffy nose and itching of nose and eyes. Vasomotor rhinitis is a disorder of the paranasal sinus and nasal mucous membrane due to imbalance or disordered sensitivity of the autonomic nervous system. Increased parasympathetic or decreased sympathetic activity results in vasodilatation, engorgement and mucous production. The inferior turbinate is most affected. This disorder is considered a diagnosis of exclusion. Empirically, treatment of chronic infective rhinitis and allergic rhinitis produce more dramatic response [5]. Response of vasomotor rhinitis to therapy is less dramatic and predictable.
Port Harcourt is a major commercial city in the Niger Delta of Nigeria. It has a tropical climate with high rainfall, high humidity, and high temperatures all year round. The inhabitants of the area are

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predominantly black Africans. Their main occupations are peasant farming, fishing, transporting, clerical work, trading and a few persons in the petroleum oil servicing industry.

This prospective work has been done to evaluate the pattern of symptoms and radiological findings patients presenting with chronic simple rhino-sinusitis in the out patient unit of the Oto-Rhino-Laryngology department of the University of Port Harcourt Teaching Hospital and Ebenezer Ear, Nose and Throat Clinic, Port Harcourt.

PATIENT AND METHODS

This is a prospective study. The study was done between August 2002 and July 2004. The patients for the study were recruited from the out patient clinics of the Ear, Nose and Throat department of University of Port Harcourt Teaching Hospital and Ebenezer Ear, Nose and Throat clinic, Port Harcourt. Patients with symptoms considered to be chronic simple (uncomplicated) sinusitis had their clinical history well documented in a questionnaire. The questionnaire sought information about the age, sex, occupation and presenting complaints. Physical findings were also noted. All the patients had plain x-rays of the paranasal sinuses done consisting of occipito-mental, occipito-frontal and lateral views. The x-rays were interpreted on all occasions by the same consultant radiologist. Skin tests for allergy and immunological tests for antibodies to allergens were not done because of cost. There were no exclusion criteria.

Features suggestive of chronic infective rhino-sinusitis were purulent rhinorrhoea, purulent postnasal discharge, facial pain, dental pain, eye pain, halitosis, sore throat and headache [1,6,11]. Rapid paroxysm of sneezing, stuffy nose, watery rhinorrhoea, itching of eyes, throat, nose ears, and enlarged, pale and congested inferior turbinate were considered features of allergic rhinitis [2,3,4]. Allergy was strongly suggested if the symptoms were seasonal or were associated with a particular agent provocateur [2,3,4].

Stuffy nose, less severe bouts of sneezing, mucoid rhinorrhoea, mucoid postnasal discharge and hypertrophied turbinates were considered as features suggestive of vasomotor rhino-sinusitis [5,6]. Vasomotor rhino-sinusitis was seen as a diagnosis of exclusion[5].

The results are presented in descriptive and tabular form.

RESULTS

A total of 115 patients were seen with diagnosis of chronic simple sinusitis. There were 48 males (41.7%) and 67 (58.3%) were females. The male to Female ratio was 1:1.4. The ages of the patients ranged from 15 years to 72 years (fig 1). The mean age was 34.2 years. The duration of symptoms ranged from 2months to more than 10 years with a mean duration of 32.03 months.

The commonest symptom in this study was anterior nasal discharge, which occurred in all 115 patients. Seventy three patients (63.5%) described their nasal discharge as yellowish to brownish at various times. Other common symptoms include stuffy nose (97.4%), sneezing (67.6%), postnasal drip (67.6%), anosmia (54.8%), headache (54.8%), facial pain (36.5%), eye pain (30.4%) and halitosis (20.9%). See table 1.

Table 1. Presenting Symptoms. Hypertrophied inferior turbinate (79.1%), rhinorrhoea (63.5%), postnasal discharge (39.1%), reduced nasal patency (15.7%), tenderness of face (6.1%), otorrhoea (3.5%), septal deviation (2.6%) and septal spurs (0.9%) were the findings on physical examination of the nose and paranasal sinuses.

Fig. 1. **Age Range in years**

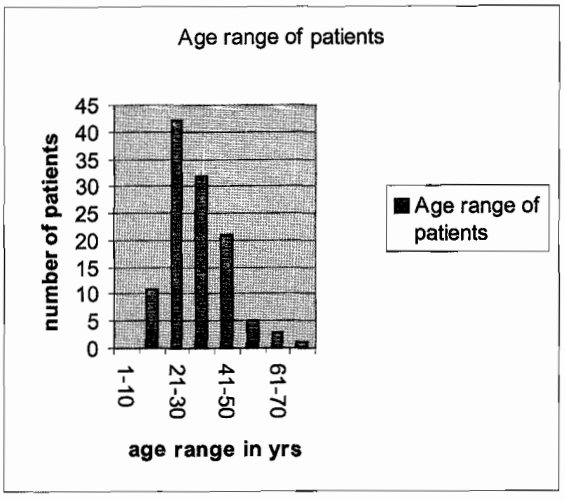

Fig. 2. **Clinical Diagnosis**

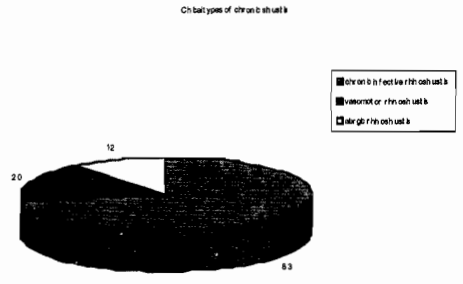

Table 1 **Presenting Symptoms**

Symptoms	No. of patients	%
Anterior nasal discharge	115	100%
Stuffy nose	112	97.4%
Sneezing	80	69.6%
Post nasal drip	80	69.6%
Anosmia	63	54.8%
Headache	63	54.8%
Itching of nose	52	45.2%
Facial pain	42	36.5%
Eye pain	35	30.4%
Halitosis	24	20.9%
Epistaxis	18	15.7%
Ptyalism	18	15.7%
Dental pain	18	15.7%
Cough	14	12.2%
Snoring	11	9.6%
Impaired hearing	11	9.6%
Tinnitus	8	7.0%
Photophobia	8	7.0%
Sore throat	8	7.0%
Facial swelling	4	3.5%

Table 2 **Physical Examination Findings**

Signs	No. of patients	%
Engorged turbinate	91	79.1%
Rhinorrhoea	73	63.5%
Post nasal discharge	45	39.1%
Tenderness of face	7	6.1%
Otorrhoea	4	3.5%
Septal deviation	3	2.6%
Septal spurs	1	0.9%

Table 3 **Radiological Findings**

Findings	No of patients	%
Engorged inferior turbinate	104	90.4%
Opacity	46	40.0%
Mucosal thickening	31	27.0%
Clear sinuses	27	23.5%
Hypoplastic sinuses	10	8.6%
Air fluid level in antrum	5	4.3%

Table 4 **Sinus Involvement**

Sinus	No of patients	%
Maxillary	84	73.0%
Ethmoids	27	23.5%
Frontal	27	23.5%
Sphenoid	8	7.0%

DISCUSSION

The inflammation of the nose and paranasal sinuses has been treated as a single disease because morphologically, phylogenetically and pathologically, there is no clear-cut delineation between the nose and paranasal sinuses [1,2,3,10,12].

It is understandable that the common features of chronic simple rhino-sinusitis seen in this study are anterior rhinorrhoea, stuffy nose, sneezing and postnasal drip (table 1). In making a diagnosis with a view to treat, one has to evaluate the nature of the discharge from the nose. The intensity and agent provocateur of sneezing and stuffiness of nose is also important. For the non-specialist, less common symptoms like tinnitus, photophobia, impaired hearing, dental pain, sore throat and snoring may prove a diagnostic dilemma especially when the symptoms are few.

Based on the symptoms and signs, the 3 types of rhino-sinusitis were chronic infective rhino-sinusitis (72.7%), vasomotor rhinitis (17.4%) and allergic rhino-sinusitis (10.4%) (Fig.2). It is clear that chronic infective rhino-sinusitis is by far the commonest type of chronic simple rhino-sinusitis seen in this study. The reasons for this is not clear but it is known that poorly treated acute infective sinusitis, living in over crowded and poorly ventilated rooms, suppressed immunity, septal spurs and septal deviations are factors associated with chronic rhino-sinus infections.

Allergic rhino-sinusitis occurs when there is immunological sensitivity to an allergen and a continued exposure to it. This is mediated by specific IgE antibodies. This reaction may occur seasonally as in hay fever due to pollen. It may also occur perennially in some persons due to what is ingested, inhaled or contacted. The agents' incriminated in these include house dust mite, mold spores, animal dander, fumes and animal products. This disease has a strong family propensity and association with other allergic disorders. Skin tests, immunological tests and nasal smears have proven to be useful tools in the diagnosis of this problem [2,3,4,6,11].

In vasomotor rhinitis, there is an imbalance between the parasympathetic and sympathetic activities. Parasympathetic stimulation produces vasodilatation that results in engorgement of the nasal tissue. Mucous production is also increased. Sympathetic stimulation gives rise to vasoconstriction, which results in dryness of nasal mucosa and increased nasal patency. Vascular atony due to chronic infections and allergic conditions can produce this condition of imbalance. Because of the view that autonomic imbalance and vascular atony arise in both chronic infective rhino-sinusitis and allergic rhino-sinusitis, it is thought that in majority of chronic rhino-sinusitis, there is an underlying vasomotor rhinitis [5,6].

This is significant when the average duration of the symptoms (32.3months) is taken into consideration. Other causes of imbalance include anti-hypertensives, nasal drops and sprays, steroids, pregnancy hormones, hypothyroidism, emotional states, temperature changes, recumbency, compensatory hypertrophic rhinitis, eosinophilic and basophilic non-allergic rhinitis syndromes. A few cases are idiopathic [3,5,6,11].

In this study infective causes formed the majority of cases of chronic sinusitis. This is at variance with an earlier study from Enugu and other centres that reported allergy as the commonest cause of chronic sinusitis [6,10,13]. The reason for this difference may be geographic as Port Harcourt is at a lower altitude, with higher humidity and is less dusty. Dietary factors are not considered important, as the same staple meals are common in both areas even though fish is consumed more in Port Harcourt. Seasonal variation of weather in this part of the world is not as marked as it is in the temperate climate. This means that seasonal allergy is less marked and less common. Perennial allergy co-existing with chronic infective changes of the nose and paranasal sinuses does constitute a diagnostic and therapeutic dilemma especially in the absence of skin tests and immunological studies.

This study shows that chronic rhino-sinusitis is a disease commonest in the age range of 15 years to 45years with 82.6% of patients in that age bracket [4,5]. Even though allergic rhinitis may start at any age, it usually starts well before the age of 15years [4]. In this study, the cases seen before the age of 15 years were very few with no cases seen before the age of ten years (fig.1). There was a female preponderance with a male to female ratio of 1:1.4. The significance of this is not clear [8,9,10,13]. All the patients had plain radiological examination done. In 90% of the cases, the turbinate was described as engorged (table 3). Clinically, the inferior turbinate was engorged in 78.8% of cases (table 2). This is hardly surprising as the mean duration of symptoms was 32.3 months. 66.7% of the radiographs were reported to show opacity of the sinus space and mucosal thickening. In 23.3% of cases, the x-ray films showed that the paranasal sinuses were clear (table 3). Other workers have also reported this [9,10,14]. However, in the presence of positive clinical symptoms and signs, a negative radiological finding does not negate the clinical conclusion [7,9,15]. The lesson is that plain radiographs are useful to the extent that they are an ancillary tool for diagnosing the extent of disease [7]. The maxillary sinus was the most involved sinus in this study (table 4) as other studies have shown [8,10,13]. The common findings in the maxillary antra were mucosal thickening and opacity of the sinus.

All the cases of air-fluid level were seen in the antrum. The antrum was also hypoplastic in some cases. The frontal and ethmoidal sinuses were equally involved. The changes in the ethmoidal sinuses were described as opacity while the frontal sinus was in some cases opaque, hypoplastic or showed mucosal changes. The sphenoid was the least involved sinus. Septal spurs, septal deviations and engorged middle turbinates were remarkably low or absent.

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