An Evaluation of Sinusitis in Lagos, Nigeria

O.A. Somefun, C. C. Nwawolo, A.E. Mazai,

SUMMARY

Background: **Sinusitis is a common disease and the incidence varies in different populations.. It's complications can lead to serious or life threatening diseases if poorly managed, which can be cranial, intracranial or extracranial. The aim of the study is to determine the prevalence, the clinical types and complications due to the disease in our hospital.**

Materials/Method: **A prospective study carried out at the Otorhinolaryngology unit of Lagos University Teaching Hospital Lagos, over 14 months in patients diagnosed with sinusitis. Data on age, sex, occupation, duration of sinus disease, known predisposing factors to sinusitis and its complication, clinical diagnosis, radiological findings, complications and treatment offered were collected.**

***Results*: A total of 150 patients were seen, 73.3% were in the age group 20 – 49 years and 89.3% came in as a chronic sinus disease. Maxillary sinus was the commonest sinus involved in 53.4%. In 80% of patients, infection, allergy and the combination of the two were responsible for the aetiology. 26.6% of the patients presented with complications of which many had more than one complication. Cranial complications constituted 25.3%, while the life threatening intracranial complications accounted for 1.3% and extracranial complications accounted for 18%.**

Conclusion: **Sinusitis with its attendant complications still constitute a major health problem.***Niger Med. J, Vol 46, No.3, July -Sept., 2005: 53 – 56.*

KEY WORDS: ***Sinusitis, Intracranial infection, Otorhinolaryngology.***

INTRODUCTION

Sinusitis is a common disorder worldwide(1,2). The incidence varies in different populations. It is estimated that 0.5% of cases of common cold which could affect 75% of the population in a life time progresses to sinusitis(3).

Acute sinusitis is an inflammation of the sinuses which last for less than 3 weeks, while subacute sinusitis last from three weeks to three months(4). Chronic sinusitis last longer than 3 months(4,5). Acute sinusitis results from sinus ostia obstruction while chronic or recurrent sinusitis results from poorly treated or untreated acute sinusitis(6).

Sinusitis is a potentially serious and life threatening disease if poorly managed because of its complication(7,8). Sinus infection may spread by direct extension through suture lines, preformed pathways, or hematogenously.(8,9) The management of complications of sinusitis depends on high index of suspicion, availability of medical facilities, specialist manpower and appropriate treatment.(6)

Complications of sinusitis can be cranial, intracranial and extracranial. Cranial complications affect the sinus walls, orbit and the ear. Intracranial complication involves the meninges and the brain. Extracranial complications lead to septicaemia, pharyngitis, laryngitis and chest infections (10,11). Orbital complication is commonly seen in ethmoidal sinusitis and it is said to be commoner in children than in adults (2,11-14) Infections involving the frontal and maxillary sinus can also give orbital complications but not as commonly as in ethmoid sinus disease.[15] Cranial complications like osteitis and osteomyelitis and intracranial complications are commonly seen with frontal sinusitis even though sphenoid, ethrmoid and maxillary sinusitis can also give rise to intracranial complication(15,16).

In the pre-antibiotic era, the outcome of complications of sinusitis were usually fatal. However, great achievements have been made with antibiotics, patient care, surgical techniques in otolaryngology, neurosurgery and ophthalmology stemming down the fatal outcomes.(6,8)

Sinusitis with its attendant complications still constitute a major health problem.The aim of this study is to determine the prevalence, the clinical types and complications of sinusitis as seen in Lagos University Teaching Hospital, Lagos.

MATERIALS AND METHOD

The prospective study was conducted at the Otorhinolaryngology Unit of the Lagos University Teaching Hospital between December 1998 and January 2000.

Patients who were diagnosed as suffering from sinusitis seen in the Clinic or those admitted through the emergency department of the hospital during the study period were enlisted. Data collected include age, sex, occupation, duration of sinus disease, known predisposing factors to sinusitis, clinical diagnosis, radiological findings, complications and treatment offered. Complications of sinusitis were classified as cranial, Intracranial and extracranial. Patients with suspected ocular or intracranial complications were reviewed by an Ophthalmologist and Neurosurgeon.

RESULT

A total of one hundred and fifty patients were seen with a diagnosis of sinusitis between December 1998 and January 2000 out of a total of one thousand and twenty four patients seen in the clinic during the study period giving a hospital based prevalence of 14.6%; Ninety (60%) were males while 40% were females. With a male to female ratio 1:5:1. Figure 1 shows the age groups distribution with the age group 20 – 49 constituting

From: Department of Surgery, College of Medicine
Lagos University Teaching Hospital, Lagos, Nigeria.

Correspondence: O.A. Somefun

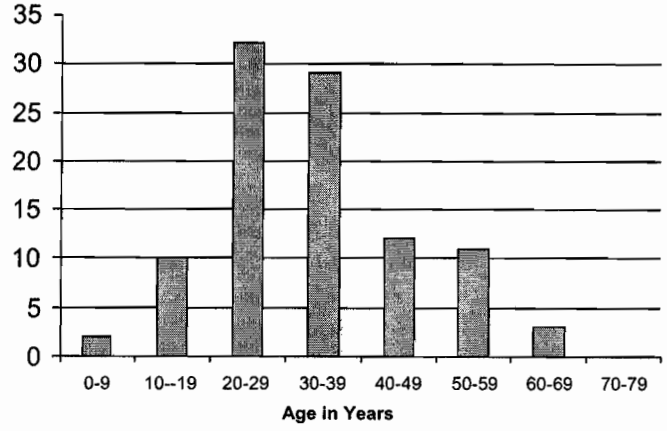

***Figure 1*: Age Group Distibution of Patients With Sinusitis.**

over 70%. The peak age group for sinusitis was in 20 – 29 accounting for 34%.

Majority 132 (88%) of patients that presented to us came in as chronic sinusitis with a duration more than 3 months. Fifteen (10%) as subacute and three (2%) as acute sinusitis. Forty-six (30.6%) were students, 15.3% were civil servants/ administrator, 22% were unskilled workers, 7.3% skilled workers 20.7% were professionals and 4% were unemployed.

The predisposing factors to sinusitis were seen in 26 (17.3%)patients. Eighteen (12%) with history of asthma, 2% with septal deviation, 2% with history of fracture involving the sinuses. HIV positivity and odontogenic infection as a predisposing factor was seen in 0.6% respectively. Among patients with a positive predisposing factor, only 3.3% developed complications of cranial type. Table 1 shows the aetiological type of sinusitis seen.Forty-six (30.7%) were of infective origin, allergic sinusitis 28%, infective/allergic sinusitis 27.3%, vasomotor rhinosinutis 10.6%, and vasomotor/infective 3.3%.

Table 1: Aetiological Types of Sinusitis.

Aetiologic Type	Number of Patients	%
Infective	46	30.7
Allergic	42	28
Infective/Allergic	41	27.3
Vasomotor/Infective	5	3.3
Vasomotor	16	10.5

Sixty (40%) presented with mucosal thickening of more than 4mm on X-ray. Fifty-seven (38%) presented with sinus opacity, 4.7% with air fluid level, 15.3% had haziness of the sinus and 2% had normal X-ray findings. Table 2 shows the frequency of involvement of individual sinuses. Maxillary sinus alone was involved in 53.4% from radiological findings. The

Table 2: The Frequency Of Sinus Involment

Sinus	Frequency	%	
Maxilary (Alone)			
Right	13	8.7	
Left	12	8	53.4%
Bilateral	55	36.7	
Ethmoid (Alone)	Nil		
Frontal (Alone)			
Bilateral	1	0.7	
Sphenoid	Nil		
Maxilary/Ethmoid			
Left	4	2.7	8.7%
Bilateral	9	6	
Maxillary/Sphenoid			
Bilateral	10	0.7	
Ethmoid/Frontal			
Bilateral	1	0.7	
Pansinusitis			
Right	1	5	
Left	35	0.7	
Bilateral	3.3	23.3	27.3%

right antrum in 8.7%, the left in 8% and bilateral involvement in 36.7%. Frontal sinus alone was involved in 6.7%. Maxillary and ethmoidal sinuses were involved in 8.7%, of which the left was involved in 2.7% and bilateral involvement in 6%. Maxillary and frontal sinuses were involved bilaterally in 6.7%, ethmoidal and frontal sinuses were involved in 0.7% bilaterally, while maxillary/sphenoid were involved in 0.7%.Pansinusitis

Table 3: The Complications Of Sinusitis

Complication	Frequency	%
Cranial		
1. Sinus Wall		
(a) Sinus Polyposis		
Antral	18	12
Ethmoidal	6	4
(b) Mucocele		
Frontal	2	1.3
1. Orbital		
Orbital Cellulitis	2	1.3
Optic Atrophy	3	42
2. Ear		
Otitis Media With Effusion	7	.7
(A) Intracranial		
Meningitis/Brain Abscess	2	1.3
(B) Extracranial		
Rec. Tonsillitis/Pharyngitis	24	16
Laryngitis	3	2

was seen in 27.3% of which 23.3% were bilateral, 3.3% were on the left side and 0.7% on the right side.

Table 3 shows the complications seen.Forty (26.7%) of the patients presented with complications of which infective sinusitis was responsible for 55%, allergic sinusitis 22.5%, combination of allergic and infective sinusitis 15% and vasomotor rhinosinusitis account for 7.5%. One hundred and ten (73.3%) were uncomplicated. Some of the patients presented with more than one complications.

The commonest cranial complication was sinus polyposis in 16%, of which 12% was in maxillary sinus and 4% in ethmoid. Orbital complication was seen in 3.3%, mainly orbital cellulitis in 1.3% following ethmoiditis and optic atrophy 2% in patients with allergic ethmoiditis with attendant visual loss. Otitis media with effusion was seen in 4.7%. Intracranial complications were not that common, but in 1.3% that were seen, it was fatal. Extracranial complication seen were recurrent tonsillitis/pharyngitis in 1.6% and laryngitis in 2%. Some of the noted morbidity seen in the patients were anosmia in 2%, hyposmia in 7.3%, visual loss in 2%. Mortality was recorded in 1.3% and this was attributed to intracranial complication due to infective sinusitis.

Medical intervention applied were antibiotics, anti-allergic drugs and in some cases nasal spray-containing steroid in cases of allergic and vasomotor rhinosinusitis.

Surgical intervention employed in the management of these patients were antral washout in 31.3%, intranasal polypectomy with bilateral intranasal antrostomy in 10.7%. Caldwell Luc procedure in 2.3%, bilateral antrostomy only in 3.3%, frontoethmoidectomy in 0.6% and intraturbinal steroid injection in 2%.

DISCUSSION

Many years ago, chronic suppurative otitis media formed the bulk work of Otolaryngological practice in West Africa subregion (17,18). With the advent of widespread use of antibiotic, the prevalence of otitis media is on the decline giving rise to inflammatory sinus disease as the commonest presenting disease in our outpatient clinic.

The male preponderance of sinusitis of 1:5:1 is in consonant with other similar studies (19,20). The suggested reasons for this was better immunological competence in females than males (21,22). It is also worth noting that majority of the patients with sinusitis were in their second and third decade of life and complications were commonly seen in the age group 20 – 49 years. The reasons for this like in other studies (14,19) remain unclear.

Majority of our patients 132 (88%) like in Ogunleye (19) and Okafor (20) series presented as chronic sinusitis either as infective, allergic or combination of the two. This reflects the position of the study centre as a tertiary institution, because most of the acute cases would have been treated by the General practitioner or at primary health centres. On the other hand it also reflect the management problem associated with chronic sinusitis since most of the sinuses are poorly vascularized so drugs permeation is poor. Occupational predisposition to sinusitis is a well-know phenomenon. 66% of our patients were students, civil servants and professionals, and sinusitis bears no relationships to them. The only probable explanation is the Lagos environment which is noted for its polluted air from smoking, refuse wastes, fumes, industrial fumes and dust. The same reason also explained the prevalence of infective, allergic or the combination of the two as the commonest type of sinusitis in Lagos. The most common sinus involved with sinusitis in this study like in other studies (19,23,24) is maxillary sinus, which is often bilateral. This was attributed to its large volume and its non-dependent natural draining ostium.

Forty (26.6%) presented with complications, the commonest cranial sinus wall complication was polyposis. This can be attributed to the chronicity of the disease due to combined effect of allergy and bacteria infection in many of the patients. Perennial nasal allergy with chronic irritation by aeroallergens can lead to sinus mucosal edema and subsequently to polyp formation.

Life threatening intracranial complication and severe morbid orbital complications accounted for 4.6%. This can be adduced to very few occurrence of ethmoidal and frontal sinusitis that are noted for such complications in this study. Extracranial complications accounts for 18% mainly pharyngitis, tonsillitis and laryngitis. This brings to mind the importance of sinus evaluation in patients presenting with tonsillopharnygitis and laryngitis in whom the primary focus of infection might be in sinus or nose.

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