

Clinicopathologic profile of sinonasal diseases in a tertiary hospital in Port Harcourt

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World Journal of Advanced Research and Reviews, 2021, 10(01), 012–018

Publication history: Received on 23 February 2021; revised on 27 March 2021; accepted on 30 March 2021

Article DOI: <https://doi.org/10.30574/wjarr.2021.10.1.0126>

Abstract

Background: In a typical ear nose and throat clinic, disease conditions involving the nose and paranasal sinuses are not uncommon. The aim of this study is to determine the clinicopathologic profile of these diseases as it occurs in university of Port Harcourt teaching hospital.

Methodology: A retrospective descriptive analysis of all patients with diagnosis of sinonasal disease that presented in the ear nose and throat surgery department of university of Port Harcourt teaching hospital within the period of 5years (from 2016 – 2020). Data retrieved were biodata, clinical features, diagnosis and treatment, these were all collated and analysed. Patients without complete records were excluded. The patients recruited had clinical diagnosis which was aided by radiological investigations and confirmed by histology.

Result: A total of 68 patients were studied within the 5year period. There were 35males and 33 females. The mean age was 33.96+/_17.9 years. The age groups 11-20 and 41-50 were more affected. Rhinosinusitis was the commonest condition seen while inflammatory polyp was the commonest histologic diagnosis. Polypectomy with bilateral antrostomy was the commonly done surgery in 26.4% age.

Conclusion: Disease of the nose and paranasal sinuses are commonly seen in ENT practice and rhinosinusitis is the commonest entity encountered with inflammatory polyp as the commonest histopathologic finding. Squamous cell carcinoma was the commonest malignant lesion seen occurring more in males. Age distribution of the diseases was statistically significant.

Keywords: Sinonasal disease; Histology; Rhinosinusitis; Antrostomy; Polypectomy

1. Introduction

Owing to the congruity of the nose and paranasal sinuses, disease conditions affecting one area can extend to the other. This can be due to the fact that the mucosal lining of the nasal cavities are continuous with that of the paranasal sinuses [1]. The nose majorly form the shape of the face and therefore aesthetic functions, pathologies affecting it tend to be immediately obvious [2].

The conditions can primarily arise from the nose and paranasal sinuses but can also be as a result of extensions from surrounding structures especially the orbit, the dental apparatus or the cranium and its contents [3,4,5]. The disease conditions can be inflammatory, infective or neoplastic. Rhinosinusitis an inflammatory and infective condition of the nose and paranasal sinus has been documented to be a commonly occurring condition [6]. While some others like nasal and antrochoanal polyps, foreign bodies in the nose and some malignant lesions have all been documented [7,8]. Benign

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neoplasia of the nose and paranasal sinuses can often be encountered in a typical ORL clinic while the malignant ones are not as common. They constitute <1% of all cancers but 3% of the head and neck cancers [9]. Nasal polyps as a disease entity have been known as far back as in ancient Egypt [10]. it is rare in children [11] and seen more in ages >20years [12].

Some of these diseases are known to have high burden of morbidity and mortality with clinical presentations depending on the site and extension of the disease [13]. The commonly documented features include nasal obstruction, discharge, facial swelling, epistaxis, nasal mass, headaches [14,15,13]. it is also known that these patients tend to present very late to the hospital and hence are seen as very advanced disease [16,17]. Eye/Ocular features such as proptosis, orodontal symptoms are all features of advanced disease [6].The treatment in such advanced cases may require team collaboration with other specialists such as neurosurgeons, ophthalmologists and maxillofacial surgeons [18]. This study therefore is to determine the clinicopathologic profile of these diseases as seen in the ENT surg department of UPTH.

2. Methodology

A retrospective descriptive analysis of all patients with diagnosis of sinonasal disease that presented in the ear nose and throat surgery department of university of Port Harcourt teaching hospital within the period of 5years (from 2016 – 2020). Data retrieved were biodata, clinical features, diagnosis and treatment, these were all collated and analysed. Patients without complete records were excluded. The patients recruited had clinical diagnosis which was aided by radiological investigations and confirmed by histology.

Descriptive statistics (frequency and percentage) was used to present distribution of the data. A cross-tabulation of diagnoses by demographic data was done with the Chi-square statistic. The analyses were with the SPSS v25 software at a 95% confidence interval and a p-value less than 0.05 was considered significant.

3. Results

The study comprised of 68 patients with age range from 3years to 70years and a mean age of 33.96+/- 17.9years. There were 35males and 33females with male: female ratio of 1:1.06. The age group 11-20 years and 41-50 comprised the majority of the population studied. (Table1).

Table 1 Demographic Distribution of participants.

Demographics	Frequency (n = 68)	Percentage (%)
Gender		
Male	35	51.5
Female	33	48.5
Age groups (years)		
1 - 10	6	8.8
11 - 20	14	20.6
21 - 30	10	14.7
31 - 40	13	19.1
41 - 50	14	20.6
51 - 60	5	7.4
61 - 70	6	8.8
Mean Age	33.96 ±17.9	

Majority of the patients commonly had nasal blockage and rhinorrhea as main complaints; 52.3% and 19.2% respectively and epistaxis in 10.1%. (Table 2) The commonest sinonasal disease in the study was rhinosinusitis in 32.4% followed by 26.5%. The nasal and nasopharyngeal tumor were 3rd and 4th commonly recorded and fungal sinusitis was

seen in 4.4%. (Table 3) Different surgeries were performed within the period of study. The commonest was nasal clearance with either right or left intranasal antrostomy (45.5%). Polypectomy with bilateral intranasal antrostomy was done in 26.4% and was the second commonly performed surgery. However nasal clearance and BINA was carried out in 11.8% (table 4). Histologic distribution showed inflammatory polyp as the commonest in 54.4% followed by squamous carcinoma in 17.65% with adenocarcinoma and fungal sinusitis in 8.82% respectively. (Table 5) squamous cell carcinoma was seen more in the males; 22.86% while inflammatory polyps was seen more in females; 63.64% however, the distribution of sinonasal diseases according to gender was not significant statistically; $p=0.211$. (table 6) The age distribution showed adenocarcinoma was commoner in the ages 31-70 years; inflammatory polyp was seen more in ages 11-50 years. Squamous carcinoma was seen more among the older age groups. The distribution was significant statistically. $P=0.032$ (Table 7).

Table 2 Distribution of Symptoms

Symptoms	Frequency (n)	Percent (%)
Nasal blockage	57	52.3
Rhinorrhoea	21	19.2
Epistaxis	11	10.1
Facial asymmetry	7	6.4
Nasal mass	4	3.6
Proptosis	2	1.8
Rhinolalia clausa	2	1.8
Sneezing	2	1.8
Discharge from side of eyebrow	1	0.9
Neck swelling	1	0.9
Ulcer in the nose	1	0.9
Total	109	100.0

*Multiple responses apply

Table 3 Distribution of Diagnoses

Diagnosis	Frequency	Percent
Rhinosinusitis	22	32.4
Sinonasal tumor	18	26.5
Nasopharyngeal tumor	9	13.2
Nasal mass	8	11.8
Fb in the nose	3	4.4
Fungal sinusitis	3	4.4
Nasal synechae	2	2.9
Ethmoidal mucocele	1	1.5
Frontoethmoidal fistula	1	1.5
Inverted papilloma	1	1.5
Total	68	100

Table 4 Distribution of Surgery

Surgery	Frequency	Percent
Nasal Clearance +Rt/Lt Ina	31	45.5
Polypectomy +Bina	18	26.4
Nasal Clearance+Bina	8	11.8
Caldwel-Luc	4	5.9
Fb Removal	3	4.4
Adhesiolysis +Stenting	2	2.9
External Frontoethmoidectomy	1	1.5
External Ethmoidectomy	1	1.5
Total	68	100

Table 5 Distribution of Histology

Distribution of Surgery	Frequency (n)	Percent (%)
Inflammatory polyps	37	54.41
Squamous cell carcinoma	12	17.65
Adenocarcinoma	6	8.82
Invasive fungal sinusitis	6	8.82
Fungal sinusitis	2	2.94
Lymphoma	2	2.94
Papilloma	2	2.94
Mucoepidermoid carcinoma	1	1.47
Total	68	100

Table 6 Distribution of Histology by Gender.

Histology	Male	Female	Chi-square (p-value)
Squamous cell carcinoma	8(22.86)	4(12.12)	9.62 (0.211)
Papilloma	2(5.71)	0(0)	
Mucoepiemoid carcinoma	0(0)	1(3.03)	
Lymphoma	2(5.71)	0(0)	
Invasive fungal sinusitis	3(8.57)	3(9.09)	
Inflammatory polyps	16(45.71)	21(63.64)	
Fungal sinusitis	0(0)	2(6.06)	
Adenocarcinoma	4(11.43)	2(6.06)	

The distribution is not statistically significant ($p > 0.05$)

Table 7 Distribution of Histology by Age Group.

Histology	Age-Group (years)							Chi-square (p-value)
	1 – 10 n, (%)	11 – 20 n, (%)	21 – 30 n, (%)	31 – 40 n, (%)	41 – 50 n, (%)	51 – 60 n, (%)	61 – 70 n, (%)	
Adenocarcinoma	0(0.0)	0(0.0)	0(0.0)	1(7.69)	1(7.14)	1(20)	3(50)	60.54 (0.032)*
Fungal sinusitis	0(0.0)	1(7.14)	0(0.0)	0(0.0)	1(7.14)	0(0.0)	0(0.0)	
Inflammatory polyps	2(33.33)	8(57.14)	9(90)	7(53.85)	7(50)	3(60)	1(16.67)	
Invasive fungal sinusitis	3(50)	0(0.0)	1(10)	1(7.69)	1(7.14)	0(0.0)	0(0.0)	
Lymphomas	1(16.67)	1(7.14)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
Mucoepidermoid carcinoma	0(0.0)	1(7.14)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
Papilloma	0(0.0)	2(14.29)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
Squamous cell carcinoma	0(0.0)	1(7.14)	0(0.0)	4(30.77)	4(28.57)	1(20)	2(33.33)	
Total	0(0.0)	0(0.0)	0(0.0)	1(7.69)	1(7.14)	1(20)	3(50)	

*The distribution is statistically significant (p<0.05)

4. Discussion

In the present study, the age range was 3years to 70years and it was found that there was almost equal representation of both males and females contrary to other researchers that found males more than females [8] while a study in Kaduna Nigeria found females more affected than males, however the study was on sinonasal masses only [7]. There appear to be a double peak in the age group affection. The first peak is in the age 11 -20 years with incidence of 20.6% and after age 30years, the incidence increased again across the ages peaking at age 41-50 years before tapering down to 7.4% differing from other similar works that have older age groups being more affected [7,8].

In this study the commonest disease conditions found were rhinosinusitis followed by sinonasal and nasopharyngeal tumors similar to other findings [6,7]. The commonly seen clinical features of sinonasal diseases in the present study were nasal blockage, rhinorrhea and epistaxis as was also documented by other works [13]. In addition those with advanced disease extending to congruent structures such as the eye/orbit had features such proptosis and facial asymmetry [14,18,19] Majority of the tumours/ masses were seen in advanced stages as already documented by others and some of the factors deduced for this included; self- medication, quackery, poverty and fact that the sinonasal region is an area that appears hidden [13,16,17].

Most of the patients had surgical management and nasal clearance with intranasal antrostomy was commonly done.it was usually the preliminary surgical procedure often as a form of biopsy prior to definitive surgery. Polypectomy with bilateral antrostomy was the second commonest surgery and this was similar to the findings in some earlier works [6,8].

Histological diagnosis was carried out in all the patients with masses including the rhinosinusitis complicated with polyps. Inflammatory polyps were the commonest histology returned while squamous cell carcinoma was second but the commonest malignant lesion recorded in agreement with other works [19]. When the histologic diagnosis was correlated with sex, it was found that squamous carcinoma was commoner in males while inflammatory polyps were commoner in females. However, this difference was not found to be significant statistically. The age distribution however showed inflammatory polyp to be more among the ages 11-50 years while the malignant lesions such as adenocarcinoma was found more in ages 31-70 years more commonly. The age distribution of the histologic forms of these diseases was found to be significant statistically. This is not different from that already documented [19,20].

5. Conclusion

Disease of the nose and paranasal sinuses are commonly seen in ENT practice and rhinosinusitis is the commonest entity encountered with inflammatory polyp as the commonest histopathologic finding. Squamous cell carcinoma was the commonest malignant lesion seen occurring more in males. Age distribution of the diseases was statistically significant.

There is need therefore to create public health awareness that it is not every nasal congestion and blockage that is “simple cold” so as to encourage early presentation thereby decrease rate of complications.

Compliance with ethical standards

Acknowledgments

We acknowledge the help of the outpatient staff of the ENT Surgery department and theatre staff as well for their help with the registers and records which were our source of data

Disclosure of conflict of interest

None declared.

Statement of informed consent

Owing to the fact that study was retrospective and data was from records and not directly from the patients.

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