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Management of nasal polyps in Calabar, South-South Nigeria

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ABSTRACT

Objectives: Nasal polyps are the commonest intranasal masses. It has a worldwide distribution and significantly reduces the productivity of affected individuals. Early diagnosis and treatment can lead to better treatment outcomes. The aim of the study were: To study the occurrence, types, associated co-morbidities, and management of polyps in Calabar, Nigeria.

Materials and Methods: A retrospective study of all nasal polyps seen between January 2009 and January 2019. Records of all intranasal masses seen during the period including age, sex, aetiopathological profile, and histopathology results were obtained from the records department, theater, and the wards. Patients who had nasal polyps either had nasal polypectomy with/without antral lavage, or Caldwell Luc operation.

Results: One hundred and eighty-two intranasal masses were seen during the study period. One hundred and thirty-four of them (73.625%) were nasal polyps; 62.6% were inflammatory polyps, 14.7% had chronic rhinitis, 9.7% inverted papilloma, and 2.24% squamous cell carcinoma. About 31.3% of the polyps were right-sided, 31.3% bilateral, 26.9% left-sided, and 10.44% antrochoanal polyps. About 97% of the patients presented with nasal blockage, 53.23% with rhinorrhoea, 41.79% signs of anosmia, and 29.85% sneezing. Comorbidities seen include diabetes mellitus 1.6%, hypertension 4.5%, allergy 70%, and asthma 25%.Squamous cell carcinoma was the most common malignancy found and inverted papilloma was the most common benign tumor present.

Conclusion: Nasal polyps occur globally. They are the most common intranasal masses. They seem to occur more in males and occurrence increases with age. Not all nasal polyps turn out as polyps histologically as this study shows; we had chronic rhinitis, inverted papillomas, squamous cell carcinomas, etc. The comorbidities found were diabetes mellitus, hypertension, allergy, and asthma. Diabetes and hypertension may have been incidental but the number of patients with asthma and allergy shows a definite link between these two and allergy. Treatment for nasal polyps may be medical or surgical and the best form of surgery is endoscopic sinus surgery. However, financial constraints could prevent patients access to FESS.

Keywords: Nose, Polyps, Comorbidities

INTRODUCTION

Nasal polyps are soft painless benign greyish-white growths occurring along the mucosa lining of the nasal passages and the paranasal sinuses. Nasal polyps affect all races.[1] They result from chronic inflammation of the mucous membrane and are associated with allergy, asthma, recurrent infections, cystic fibrosis, and aspirin sensitivity. The most commonly involved sinuses are: Ethmoids, maxillary, sphenoid, and frontal sinuses in that order. They may affect the middle turbinate and middle meatus.[2] The symptoms may include nasal stuffiness, rhinorrhea, nasal

congestion, anosmia, sneezing, and breathing through the mouth.[3] Clinically, they appear as multiple greyish-white masses, not sensitive to touch in the roof of the nasal cavity or its side; sometimes occupying the whole cavity on one side (Whitney Stevens). Nasal polyps are the most common intranasal masses seen in clinical practice and also the most common benign or malignant intranasal masses in children.[4,5]

More of these nasal masses occur bilaterally and any unilateral polyp especially in the elderly should be suspected for malignancy.[6] Furthermore, when nasal polyps occur in children younger than 5 years, it may be a pointer to cystic fibrosis.[7] The prevalence of nasal polyps worldwide is in the region of 1–4%.[4,5]

Nasal polyps are said to be commoner in males and more in adults than in children, usually occurring in patients above 20 years. The prevalence increases in both sexes with age and the peak age varies from 30 to 50 years.[3,5,8]

It has been shown that eosinophil dominated inflammation plays a role in the development and progress of the disease.[9]

More recent evidence suggests that chronic rhinosinusitis and nasal polyposis is an inflammatory disease associated with dysregulated interaction between the sinus epithelium and the innate lymphoid epithelium.[5]

Treatment of nasal polyps could be medical or surgical, surgery is reserved for cases where polyps cause severe obstruction, and recurrent sinusitis, and for patients who have failed medical therapy. There is good evidence for the use of corticosteroids – Oral and topical as primary treatment and as post-operative prophylaxis against recurrence.[1,4]

MATERIAL AND METHODS

This is a retrospective study of all cases of nasal polyps that were presented at the University of Calabar Teaching Hospital from January 2009 to January 2019. Data for this study were obtained from patients' folders in the records department, theater records, and histopathology results from the pathology laboratory. Information obtained from these sources included age, sex, etiopathological profile, duration of symptoms, association with rhinosinusitis, X-ray findings, and histology results. Patients were separated into those who required medical treatment or surgery or both.

Study setting

University of Calabar teaching hospital. This is a tertiary health facility that receives patients from general hospitals and private clinics around Cross river state as well as neighboring Akwa Ibom state, Benue state, and the nearby republic of Cameroon.

Records of all patients with intranasal masses were obtained and the information required was retrieved as stated. Patients with simple nasal polyps had simple nasal polypectomy with or without antral washout. Patients with antrochoanal polyps had a Caldwell Luc operation. All tissues removed were sent to the histopathology lab for analysis.

RESULTS

There were 17,280 patients seen in the 10 years at UCTH, Calabar. One hundred and eighty-two of them were intranasal masses (1.05%) of the intranasal masses, and there were 134 confirmed cases of nasal polyps (73.62%). There were 70 males and 64 females giving a male: female ratio of 1.1:1. Age range of the patients was between 8 and 72 years with a peak age of 21 and 30 years. The age distribution of patients is shown in [Table 1]. Forty two patients (31.3%) had right-sided polyps, 42 patients (31.3%) had bilateral polyps, and 36 patients (26.9%) had left nasal polyps. Fourteen patients had antrochoanal polyps (10.44%); [Table 2] shows the side-by-side distribution of the polyps.

The most common symptom was nasal obstruction (97%), rhinorrhea (52.23%), sneezing (29.85%), anosmia (41.97%), acute rhinosinusitis (26.86%), and epistaxis (2.98%). The distribution of signs and symptoms is shown in [Table 3]. The notable comorbidities found were: Three patients had diabetes mellitus (1.6%), and six had hypertension (4.5%). Thirty-eight were allergic (70%) and twelve were asthmatic (25%). The distribution of comorbidities is shown in [Table 4]. The histopathology profile showed that 62.68% of the biopsies were inflammatory polyps, 14.17% chronic rhinitis, 9.70% inverted papilloma, and 2.24% squamous cell carcinoma [Table 5]. Malignant tumors accounted for 5.22% of the histopathology results and 14.7% of the patients had benign tumors. [Table 6] shows the malignant tumors found in some of the histology results. The most common malignant tumor found was squamous cell carcinoma and the most common benign tumor was inverted papilloma [Table 7].

Table 1: Age and sex distribution in years.

Age/Yrs	0–10	11–20	21–30	31–40	41–50	51–60	61–70	71–80	Total
Male	1	8	27	8	14	7	3	2	70
Female	-	21	16	10	11	4	2	-	64
	1	29	43	18	25	11	5	2	134

Table 2: Laterality of nasal polyps.

Polyp side	No.	Percentage
Rt. Nasal	42	31.3
Lt. Nasal	36	26.9
Bilateral	42	31.3
Antrochoanal	14	10.44

Table 3: Frequency of symptoms and signs

Symptoms/signs	*n*	%
Nasal obstruction	130	33.85
Rhinorhoea	70	18.23
Anosmia	56	14.60
Sneezing	40	10.41
Acute rhinosinusitis	36	9.37
Facial pain	30	7.80
Headache	18	4.70
Epistaxis	4	1.04
Total	384	100

Table 4: Distribution of co-morbidities seen.

	Rt/Lt polyps	Antrochoanal polyps	Bilateral polyps	%
Hypertension	6	-	-	4.5
Diabetes mellitus	-	-	3	1.6
Allergy	38	8	48	70
Asthma	12	-	16	25

Table 5: Histopathologic findings.

Pathology	No.	Percentage
Inflammatory polyp	84	62.68
Chronic Rhinosinusitis	19	14.17
Inverted papilloma	13	9.70
Squamous cell carcinoma	3	2.24
Nasopharyngeal carcinoma	2	1.49
Epidermoid cyst	2	1.49
Adenosquamous carcinoma	1	0.74
Burkitt's lymphoma	1	0.74
Capillary hemangioma	1	0.74
Fibrous dysplasia	1	0.74
Angiofibroma	1	0.74
Trichoepithelioma	1	0.74
Nerve sheath tumor	1	0741
Cellular schwannoma	1	0741
Epidermoid cyst	1	0.74
Wegener's granulomatosis	1	0.74
Rhinoscleroma	1	0.74
Fibrous dysplasia	1	0.74
Total	134	100

In our study, all the patients had corticosteroids either preoperatively or postoperatively. One hundred and twenty patients had simple nasal polypectomy with or without antrostomy (89.5%) 14 (10.5%) patients had Caldwell Luc operation. At the time of this study, FESS was not commonly performed because of a lack of functional C-T scans. Therefore, all patients had simple nasal polypectomy or Caldwell Luc or both. The few who were offered FESS frowned at the cost. But in recent time, FESS is being done for patients that can afford it.

DISCUSSION

In our study, (62.68%) of the intranasal masses that were presented within the study period were polyps; This figure agrees with those of similar studies done in Nigeria, which had 83.7% and 61.9% respectively.[10,11] Furthermore, 14.7% of the intranasal masses came out as rhinosinusitis, comparable with another study in India where 18.2% of their biopsies were reported as allergic rhinitis.

We observed a delay in presenting at the hospital because allergic symptoms in our patients were not incapacitating. The duration of symptoms was from 3 months to several years. Iseh *et al.* in Sokoto, Nigeria observed a duration of a few days to 10 years. It appears that poverty and ignorance play a part in keeping patients so long at home in the midst of this illness. Patients usually present late with large polyps.[10,12,13]

Nasal polyps have been said to have a male preponderance.[3,7,14] Our study as well as others in Nigeria do not clearly demonstrate that in our study, the male: female ratio was 1.1:1; Chukwuezi had no sex difference; Olajuyin *et al.* had a Male: Female ratio of 1:1.4; Ogunleye had 1.5:1, Bakari-1:1.4.6.[6,11,14]

However, many studies outside Nigeria have confirmed a male preponderance.[3,5,7,8] Different factors such as environment and sample size may account for the differences observed. More studies are needed in this direction.

Although, polyps are said to occur more in other people, were recorded peak aged 21-30 years. This may be attributed to Calabar's weather; a coastal town that rains almost 9 months in a year. Also, the cold weather encourages allergy, which is a strong associate of nasal polyps.[15] In our study, the peak age was 20–30 years; Chukwuezi in Eastern Nigeria 31–40 years, Bakari and Olushola in Northern Nigeria worked with a mean age of 33.3 years; other studies by Banhawy *et al.*, 30–60 years and Jahromi *et al.*, 31–40 years.[3,5,6,10] Nasal polyps are said to be rare in children and any case of nasal polyp in children should arouse a suspicion of cystic fibrosis.[6,7] Our study had just one case of cystic fibrosis. In our study, 31.3% of polyps were right-handed; 26.9% were left-handed, 10.4% antrochoanal polyps, and 31.3% were bilateral. This compares with other studies which had 41% and 44.7% bilateral polyps, respectively.[6,14]

Fourteen patient had antrochoanal polyps. Three of the antrochoanal polyps occurred in children below the age 17 years. This seems to agree with a report by Maharjan *et al.*

Table 6: Frequency of malignant tumor.

Malignant tumor	No.	Percentage
Squamous cell carcinoma	3	2.94
Nasophharyngeal carcinoma	2	1.96
Adenosquamous carcinoma	1	0.01
Burkitt's Lymphoma	1	0.01
Total	7	5.22

Table 7: Frequency of benign tumors.

Benign tumor	No.	Percentage
Inverted papilloma	13	68.42
Capillary hemangioma	1	5.26
Fibrous dysplasia	1	5.26
Angiofibroma	1	5.26
Trichoepithelioma	1	5.26
Nerve sheath tumor	1	5.26
Cellular schwannoma	1	5.26
Total	19	14.17

that 30% of the antrochoanal polyps in their study occurred in children under the age of 20 years, but at variance with an earlier study by Chukwuezi which stated that most of the unilateral polyps were antrochoanal.[10,15] Any unilateral polyp occurring in adults, especially above the age of 40 years should be investigated for malignancy.[5,8] Seventy five percent of our samples were inflammatory polyps; this compares with Chukwuezi's study where 71.5% were simple nasal polyps. Furthermore, 18.62% of them were reported to be rhinosinusitis and one study had suggested that chronic rhinosinusitis with or without nasal polyps presents a different group of chronic inflammatory disease, or they may be the same disease.[16] Cases of inverted papilloma were 12.74% and those of squamous cell carcinoma were 2.94%. Dasgupta *et al*. have said that squamous cell carcinoma is the most common malignant tumor associated with nasal polyps.[17]

The most frequent clinical presentation of patients in this study was nasal blockage (97%), followed by rhinorrhoa (52.23%). This pattern is seen in many other studies,[3,14,16] but a study in Sokoto, Nigeria rather has rhinorrhea as the most common presenting symptom. This may be related to the extremes of weather in that part of the country.[12]

We observed a recurrence rate of 13% occurring between 4 months and 5 years; Chukwuezi had a recurrence rate of 17.5%, and another study in India had 10%.[4,10]

The treatment for nasal polyps could be medical or surgical. Vegetations of polyps seen early in the clinic are easier to treat by medical means. There is good evidence for the use of corticosteroids (oral and topical) both as primary treatment and as post-operative prophylaxis against recurrence.[1]

Steroids are useful in the treatment of polyps especially when the patients present early. We could not assess the benefits of the steroid treatment. Our patients usually arrive late and none came earlier than 6 months from commencement of symptoms. Surgical treatment is reserved for cases that are refractory to medical treatment and the current standard is endoscopic sinus surgery.[4,18] The aim is to restore ventilation and drainage of the sinuses Surgery in this study was by simple nasal polypectomy with or without antral lavage, or Caldwell Luc.

The majority of patients with chronic rhinosinusitis with nasal polyps have both upper and lower airway co-morbidities such as allergic rhinitis, asthma, hypertension, and gastroesophageal reflux disease (GERD),[19,20] For our study, of the 84 patients that had inflammatory nasal polyps, 38 had allergic rhinitis; (45%), 12 had asthma (14%), 6 had hypertension (7%), 3 patients were diabetic (3 %), and other workers have observed an association with GERD; we found none.

CONCLUSION

Nasal polyps occur globally. They are the most common intranasal masses. They seem to occur more in males and occurrence increases with age. Not all nasal polyps turn out as polyps histologically as this study shows; we had chronic rhinitis, inverted papillomas, squamous cell carcinomas, etc. The comorbidities found were diabetes mellitus, hypertension, allergy, and asthma. Diabetes and hypertension may have been incidental but the number of patients with asthma and allergy shows a definite link between these two and allergy. Treatment for nasal polyps may be medical or surgical and the best form of surgery is endoscopic sinus surgery. However, financial constraint could prevent patients to assess FESS.

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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