

## FACTORS CONTRIBUTING TO POOR MANAGEMENT OUTCOME OF SINONASAL MALIGNANCIES IN SOUTH-WEST NIGERIA

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### SUMMARY

**Objective:** To describe the clinico-pathologic manifestations of sinonasal malignancies, identify the contributing factors to delay in presentation and recommend ways of preventing them in a resource challenged environment.

**Design:** A questionnaire based cross sectional descriptive study of patients with sinonasal malignancies between 2006 and 2011.

**Setting:** Hospital based study at the Otorhinolaryngology Department, University College Hospital, Ibadan.

**Participants:** 61 patients diagnosed with sinonasal malignancies

**Main outcome measures:** Patients demographic and essential medical data were collected with a structured, interviewer assisted questionnaire and results analysed using descriptive statistics.

**Results:** There were 28(45.9%) males and 33(54.1%) females; mean age 37years. The common presentations were epistaxis, nasal obstruction and facial asymmetry and 96.7% patients with squamous cell carcinoma presented in advanced disease stage (Stage 3 & 4). Over 47% patients presented a year after onset of symptoms. Factors which included self-medication, wrong advice from relations/ friends to consult traditional herbalist or quacks for treatment and traditional & religious beliefs contributed to delay in presentation to hospitals. High cost of medical treatment, unwelcoming attitudes of some hospital staff, lack of confidence in orthodox medicine and proximity to health facilities were reasons given for not considering hospital as the first place to seek medical treatment.

**Conclusion:** Health education to create awareness of sinonasal malignancies and provision of affordable and accessible health facilities especially in rural areas are recommended ways to encourage patients to present early in hospitals. This will improve the management outcome and quality of life of patients with sinonasal malignancies.

**Keywords:** Delayed presentation, Health care services, Outcome, Sinonasal malignancies.

### INTRODUCTION

Sinonasal malignancies are relatively uncommon tumours in the head and neck region. The carcinoma is the most common tumour in the sinonasal region<sup>1,2</sup> and accounts for about 3% of all head and neck malignancies. Tumours of the sinonasal tract commonly manifest with symptoms that are sometimes nonspecific and can mimic those of inflammatory sinus diseases.<sup>3,4</sup> At the early stage of the disease, it may be asymptomatic<sup>5</sup>. These factors contribute significantly to the delay in the diagnosis with advanced disease stage. The hidden nature of paranasal sinuses affected by this tumour also contributes to the late clinical manifestation and diagnosis.

In a resource challenged environment like ours where medical treatment is very costly and unaffordable by an average citizen, routine medical check-up to identify diseases early when cure and improved management outcome would have been possible is still quite difficult. These patients are therefore likely going to present at a late stage of the disease.

The delay in clinico-pathologic manifestations of this disease may have a great influence on the treatment outcomes, rehabilitation and quality of life of the affected patients. The symptoms depend on the site and extent of tumour involvement.

It is the aim of this study to describe the clinico-pathologic manifestations of sinonasal malignancies, identify the contributing factors to delay in presentation and to recommend ways of preventing them in a resource challenged environment. This study is intended to provide information for improvement in management outcome and quality of life of patients with sinonasal malignancies in developing countries.

### SUBJECTS AND METHOD

This is a cross sectional descriptive study of patients diagnosed with sinonasal malignancies at the Department of Otorhinolaryngology, University College Hospital, Ibadan, Nigeria between March 2006 and Febru-

ary 2011. The institution is a tertiary health institution and manages patients referred from primary, secondary and other tertiary health institutions in Nigeria and some West Africa Countries. Ethical approval was obtained from University of Ibadan/University College Hospital ethical review committee and an understood informed consent was obtained from the patients or their caregivers for the conduct of the study.

The data collected with a structured questionnaire included demographic data (Age, Sex), occupation, socio-economic class, duration of presenting symptoms, clinical symptoms and signs, previous treatment received on the present ailment, reason(s) for the delay in presentation, tumour characteristics (Tumour site and TNM stage) and treatment outcome. The reports of the histologic subtypes were retrieved from patients' medical records. Patients less than 15 years of age were categorized as children. All the data were entered into the SPSS version 17.0 computer software for descriptive analysis and results presented in tables and figures. Level of significance was considered at  $p < 0.005$  at 95% Confidence Interval.

## RESULTS

There were 61 patients who were managed for histological diagnosed sinonasal malignancies during the study period. There were 28(45.9%) males and 33(54.1%) females with gender ratio of 1: 1.2. Their ages ranged from 4 years to 72 years with a mean age of 37.0 years (SD  $\pm$  19.4). There were 11(18%) children and 50(82%) adults. Thirty-nine (63.9%) patients were married. Fifty three percent of the patients were Christians, 47% were Muslims and less than 1% had other religion.

There was no significant correlation between the patients' religion and perspective about their disease ( $p=0.17$ ,  $r=0.36$ ). Thirty-four (55.7%) patients live in the rural area of the country. Forty (65.6%) patients had no post secondary school education. There was significant correlation between the level of education and patients' perception about their disease ( $p=0.0001$ ,  $r=0.88$ ). Most of the patients (80.3%) belonged to low socioeconomic class while 4.9% belonged to high socio-economic class. There was a significant difference in the influence of socio-economic class on the patients' choice of initial treatment ( $p < 0.05$ ).

The duration of symptoms before presentation to hospital was between 1 months and 4 years with mean duration of 9 months. Twenty nine (47.5%) patients presented more than a year after the onset of symptoms. The factors responsible for delay in presentation at hospitals included self-medication in 9 (14.8%) patients, wrong advice in 20 (32.8%) patients {Patients' visits to

quacks in 9 (14.8%) and traditional healers in 11 (18.0%)}, traditional and religious beliefs in 17 (27.9%) patients. The contributing factors to delay in seeking medical treatment in hospitals at the inception of the ailment included high cost of medical treatment (11 patients), attitude of hospital staff (9 patients), lack of confidence in orthodox therapy (7 patients) and proximity to health facility (5 patients). Some patients had more than one contributing factor.

The right sinonasal region was involved in 30 (49.2%) patients and left sinonasal region in 24 (39.3%) patients, while seven (11.5%) patients had bilateral involvement. All the patients presented with epistaxis, progressive nasal blockage and facial asymmetry. The site of origin of the tumour within the sinonasal region could not be determined because at presentation, the tumour had spread to involve more than one anatomic site of the paranasal sinuses and nose in all the cases. Thirty-nine (63.9%) of the 61 patients were squamous cell carcinomas of which 77.1% and 19.6% of the patients were stage 3 and 4 respectively at the diagnosis while none presented at stage 1. The histological types of the malignant sinonasal tumours seen in this study are shown in Table 1.

**Table 1** Histologic types of the Sinonasal malignancy

| Types                    | Frequency | Percentage |
|--------------------------|-----------|------------|
| Epithelial               | 47        | 77.1       |
| Squamous cell carcinoma  | 39        | 63.9       |
| Mucoepidermoid           | 4         | 9.8        |
| Adenocarcinoma           | 2         | 1.6        |
| Adenoid cystic carcinoma | 2         | 1.6        |
| Non Epithelial           | 14        | 22.9       |
| Rhabdomyosarcoma         | 5         | 8.2        |
| Osteogenic sarcoma       | 4         | 6.6        |
| Lymphoma                 | 2         | 3.2        |
| Basal cell carcinoma     | 1         | 1.6        |
| Olfactory neuroblastoma  | 1         | 1.6        |
| Haemangiopericytoma      | 1         | 1.6        |

The time interval between making clinical diagnosis and definitive treatment varied from 2 weeks to 7 months. Surgery (which ranged from total Maxillectomy to extended Maxillectomy with reconstruction) was performed in all the 41 patients with epithelial sinonasal tumours and 9 patients with non-epithelial tumours. All the patients had adjunct chemo radiation. The patient with basal cell carcinoma had tumour excision with wide free margin and nasal reconstruction. Chemotherapy and/or radiotherapy alone were administered on the remaining patients and 6 of the patients had unresectable tumour due to its extent. Post treatment, the patients were followed up at variable period till date. Nineteen patients (31.1%) were lost to follow-up, 16

(26.2%) patients died within first 2 years of follow-up and 14 (23%) patients died after 2 years of definitive treatment.

## DISCUSSION

This study evaluated the patient with sinonasal malignancy. The predominance of female seen in this study is not in agreement with the findings from a previous study from this center<sup>6</sup> and other similar studies.<sup>4,7</sup> It is not impossible that this gender reversal might be due to chance as a result of the relative small sample size used. Nevertheless, the fact that recently more females were engaged in similar occupation with their male counterparts which exposed them to the risk factors of sinonasal tumours like wood work, leather work and textile work might have contributed to this observation.<sup>8,9</sup>

In our environment, cooking is still being considered as women's job and more than 55% of the patients in this study were from the rural community where they use firewood for cooking. The smoke from these firewoods may contain some carcinogenic agents which may predispose them to developing sinonasal tumours. In addition, the increasing social habits of cigarette smoking and alcohol consumption among women may be important risk factors.

The general observation of the patients' occupational classes showed that there were more patients in lower occupational classes than those in the upper classes. Generally, it is believed that people in upper socio-economic classes are more literate, have healthier lifestyles and behaviour than people in lower classes.<sup>10</sup> This might contribute to the reason for this observation in this study. However, lack of time to visit hospitals by corporate ladder-climbers, business managers, company directors, professionals and civil servants who constitute the upper occupational classes cannot be ruled out as an important factor contributing to this pattern of presentation. The clinic-pathologic presentation of the patients conformed to the previous study in this region.<sup>6, 8, 11</sup>

In this study, the average duration of symptoms before presentation to hospital was nine months. The natural hidden location of the tumour at the early disease stage within the paranasal sinuses and its non-specific presentation masquerading as chronic inflammatory disease (Rhinosinusitis) contribute to the delay in diagnosis of the disease.<sup>3,4,8</sup> However, the socio-cultural beliefs and practices of the people in this environment are important contributing factors to the delay in presentation to hospitals. This might have contributed to having 37 (96.7%) patients with squamous cell carcinoma

presenting in advanced disease stage (Stage 3 & 4).

Twenty nine (47.5%) patients presented more than a year after the onset of symptoms. Brent et al documented six month as the average delay between first symptom and diagnosis of sinonasal malignancy.<sup>12</sup> Self medication, wrong advice from relations and friends to consult traditional herbalist and quacks for treatment as well as traditional & religious beliefs (i.e. that the sinonasal disease was due to spiritual attack) were factors identified from this study as the reasons for the delay in presentation. The clinical presentations of the patients were similar to earlier reports in the literature from this region.<sup>1,2</sup>

There is high level of poverty in our resource-challenged environment hence; most patients in the rural communities cannot afford to travel to urban health centres or hospitals for treatment. They therefore resort to folk remedies like oracle or quack consultations, use of herbs and over-the-counter drugs to manage their illnesses. Traditional medicine is undoubtedly an alternative approach to health care delivery in Nigeria because it is considered cheap, easily accessible, and efficacious.<sup>13</sup>

In some communities, it is traditionally believed that bleeding from the nose/ nasal cavity shows that the afflicting evil spirit is departing from the individual. Epistaxis is one of the early clinical presentations of sinonasal malignancy and all the patients in this study presented with it. It is a common traditional practice in some rural communities to drop juice from a special local leaf called 'Efirin' (*Ocimum basilicum*) in the nasal cavity when an individual develops epistaxis. In the event of torrential nasal bleeding, the burnt powder of the leaf mixed with other substances to form a local concoction is applied into the nasal cavity.

Although it may stop nasal bleeding in some cases, the herbal concoction may contain injurious substances which can further worsen the patient's general health condition. This temporal relieve of cure evidenced by nasal bleeding stoppage may contribute to the delay in presentation in the hospital. In addition, those who visit quacks due to their low literacy level<sup>14,15</sup> often have momentary relieve of symptoms after therapy.

They usually end up wasting their limited money and time during the period of visits to quacks due to their ignorance and loyalty to these practices. The associated high levels of financial expenses due to treatment by quacks potentially made patients and their households to incurring catastrophic costs, which can lead to financial hardship.<sup>16</sup>

In the event of real tumour manifestation, when the quack can no longer manage their symptoms, these patients have to begin sourcing for funds to treat themselves in the hospitals thereby causing further delay in presentation.

Health education is required to raise the level of understanding of these people about the risk associated with self-medication, the havoc being caused by the quacks and the risk of delay in presentation to hospitals so as to seek appropriate treatment early. Prompt diagnosis of diseases by qualified health personnel and institution of appropriate treatments are important measures in achieving good outcome and improved quality of life in patients with sinonasal tumour.

There is no available data on the financial burden of sinonasal malignancy on patients, relations and other caregivers. However, the disease being a chronic condition will not only incur financial burden but also psychosocial burden on these people. The decision on where to receive treatment or what treatment to receive is left with his/ her caregivers because he /she is now too ill to work and earn money to take care of himself/herself in the hospital.

Advice from relations and friends to consult quacks and traditional healers for treatment also add to the menace of delay in the patients' presentation at hospitals and this demonstrates the influence of family and social networks in decision-making regarding where patients should seek treatment.<sup>17</sup> Health education should therefore be directed towards everyone in the community since the decision of where to seek treatment involves patients, relatives and their caregivers. They should be educated on the benefits of attending hospitals where there are competent health personnel's that can make proper diagnosis and institute appropriate treatment.

About 28% of the patients in this study attributed the cause of their disease to spiritual attack or supernatural causes. Alternative sources of orthodox health care delivery are source in our environment due to negative perceptions and ignorance of the disease pathology among patients and their relatives. Magico-religious origin of human ailments is an important belief among most patients in Nigeria and this contributes to delay in their seeking orthodox medical treatment.<sup>18</sup>

It is when there is no improvement in their clinical condition that they finally resort to consulting qualified medical personnel at a regrettably advanced diseased stage. Unfortunately, the outcome is usually poor at late stages. Therefore, there is a need for community health education which is directed towards creating

positive attitudes in the people to make use of the available hospital services and to disabuse their mind of the magico-religio-cultural belief of supernatural cause of disease which impact negatively on their health. They should be encouraged to visit hospital at an early stage of their disease for treatment.

In this study, high cost of medical treatment, unwelcoming attitudes of some hospital staff, lack of confidence in orthodox medicine and non-proximity to health facilities were reasons given by patients for not considering hospitals as the first place to seek medical treatment even though they were aware of their existence and importance in health care delivery. High cost of medical treatment is also a big problem in our community and this contributes to delay in presentation at hospitals for appropriate medical treatment.

A relatively small payment can result in a large financial burden on poor households, forcing them to reduce other basic expenses such as food, shelter or their children's education.<sup>16</sup> Similarly, large healthcare payments can lead to financial catastrophe and bankruptcy even for the rich.<sup>16</sup> The level of poverty among Nigeria's huge population is still high and the available health resources, including man power are unevenly distributed<sup>19,20</sup> and about 70% of the available health facilities are still located in urban areas.<sup>15</sup>

Unlike in developed countries, majority of people in Nigeria still pay directly from their pockets for health services and where there is health insurance, it covers mainly the civil servants in the federal government employments and those in corporate organizations like banks, communication companies, oil companies etc. In this study, 34(55.7%) patients lived in the rural areas where they are either self employed and/or were engaged in unskilled jobs.

A study reported that only 0.6% of rural dweller in Nigeria present in hospital when they develop disease.<sup>15</sup> The high level of economic burden of diseases like sinonasal malignancy coupled with high expenditures and paying mostly through out-of-pocket spending (OOPS) may prevent people from seeking and obtaining needed care in the hospital because they cannot afford to pay the charges levied for diagnosis and treatment. Most patients in the rural communities cannot afford to travel to modern health centres or hospitals in urban centres.

This indicates that the prevalence of sinonasal tumour as found in this study may be under-reported. In addition, most rural areas have no functional hospital and lack good road network to urban areas where hospitals are located thereby contributing to none attendance or

delay in presentation.<sup>14,20,21</sup> This might have also contributed to the 19 (31.1%) patients lost to follow-up in this study even though unreported cases of death might be a possibility. It is therefore important that health care services should be made readily available and affordable to people in rural areas so that they can have improved quality of life. Provision of road infrastructure will ease movement to medical centres.

It would be helpful if government upgrades the health centres in the rural areas where most of these patients reside to the standard obtainable in hospitals located in urban areas. This will make patients to develop better confidence in the health facilities. The health insurance scheme should also be expanded to incorporate people of low socioeconomic classes who constitute greater percentage of Nigeria's population and people suffering with sinonasal tumour in this study. It is also important for health workers to create a welcoming environment that is conducive for patients so as not to increase the burden of their diseases.

## CONCLUSION

The common presentations of sinonasal malignancy include epistaxis, nasal obstruction and facial asymmetry. 96.7% patients with squamous cell carcinoma presented in advanced disease stage (Stage 3 & 4) and over 47% patients presented a year after onset of symptoms. The factors that contributed to delay in presentation to hospitals included self-medication, wrong advice from relations and friends to consult traditional herbalist and quacks for treatment as well as unfavorable trado-religious beliefs.

Factors such as high cost of medical treatment, unwelcoming attitudes of some hospital staff, lack of confidence in orthodox medicine and non-proximity to health facilities were reasons given for not considering hospital as the first place to seek medical treatment. These factors are preventable through health education and appropriate attitudinal changes. Health education to create awareness of sinonasal malignancies and provision of affordable and accessible health facilities especially in rural areas are recommended ways that will encourage patients to present early in hospitals.

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