

Pathological Assessment of Nasopharyngeal Malignancy in Adult Saudi Patients with Soft Tissue Mass in the Nasopharynx

Mazyad Al Enezi,^a Abdullah N. Al Rasheedi,^a Khalid Al Qahtani,^b

^aDepartment of Otolaryngology, Head and Neck Surgery, King Saud University, King Abdulaziz University Hospital, Kingdom of Saudi Arabia

^bMedical Director King Abdulaziz University Hospital, Associate Professor and Consultant of Otolaryngology, Consultant of Advance Head & Neck Oncology, Skull Base and Microvascular Reconstructive Surgery, College of Medicine, King Saud University

Correspondence to Mazyad Al Enezi
Tel: 00966506119621
e-mail: dr.mazayed@yahoo.com

Received 1 November 2014
Accepted 2 December 2014
PAN Arab Journal of Rhinology
2015, 2:80-83

Introduction: Nasopharyngeal malignancy is one of the most frequent head and neck cancers in adults, most often developing as an epithelial carcinoma, and is invariably present by the time cervical lymphadenopathy develops. In this review, we document the frequency, features, risk factors and histopathology of nasopharyngeal malignancy in adult Saudi adults attending the Otolaryngology clinic.

Methods: Clinical history was taken from 100 individuals attending the Otolaryngology clinic. This was followed by an examination, a CT scan and fiber-optic rhinoscopy to assess these patients. When a nasopharyngeal mass was found, it was removed and sent for histopathology and tissue diagnosis.

Results: 24% of the patients tested positive for a nasopharyngeal mass, resulting in a frequency of 1.4 % in individuals with a nasopharyngeal mass with all sufferers being male. Nasal obstruction, nasal discharge, headache/facial pain and enlargement of cervical lymph nodes were most common clinical features

Conclusions: Nasopharyngeal malignancy was revealed in 6% of nasopharyngeal mass sufferers with preponderance for the male gender.

Keywords: nasopharyngeal carcinoma, Saudi Arabia, Nasopharyngeal soft tissue mass

INTRODUCTION

The nasopharyngeal space being hidden allows for significant spread of nasopharyngeal cancer before any useful medical intervention is carried out. Ignorance of the peculiar clinical features of nasopharyngeal cancer allows for the spread of this disease to advanced stage before presentation to the Otolaryngologist. [1]

Nasopharyngeal cancer (NPC) is very common in some parts of the world. [2-4] its highest incidence has been reported in an Asian country where it is the third most common malignancy among men with an incidence rate of between 15-50% in the general population. [4,5]

Among the Middle East countries, NPC is common in Saudi Arabia, being ranked as most common head and neck cancer and the 17th most common form of cancer. [6] Another study from Saudi population revealed that 22.5% of head and neck cancer was the nasopharyngeal malignancy. [7] This is of great concern as the secluded nature of the nasopharyngeal space and practitioner ignorance of this aspect of the cancer allows for significant cancerous spread before it is found and any medical intervention can be carried out. The

majority of NPC in adults is epithelial cancer, with poorly differentiated squamous cell carcinoma, undifferentiated nasopharyngeal carcinoma (also known as lymphoepithelioma) and well-differentiated squamous cell carcinoma. [8] Malignant lymphoma, which is common in nasopharyngeal masses in children, is rare in adults. [9] The current study was performed to document the frequency, presenting features, risk factors and histopathology of nasopharyngeal malignancy in adult patients having nasopharyngeal mass.

PATIENTS AND METHODS

It was a prospective study involving Adult patients > 20 years of age, attending the otolaryngology department for their first visit were studied over a 2 years period as nasopharyngeal mass below 20 years of age is of little or no significance. [4] Those presenting a nasal obstruction and undergoing an F.O. scope (for the first time) and CT scan were included in the study. Clinical history was taken and all F.O and CT scan findings were documented so as to assess the presence or severity of the nasopharyngeal mass. These scans were followed by surgery to remove the mass and a sample of which was

sent to a histopathology lab for tissue examination and final diagnosis.

All demographic data, F.O. scope and CT scan findings were analyzed with the help of Statistical Package for Social Sciences (SPSS) version 17.0 by IBM Inc.,(USA).

Continuous variables were represented as a mean \pm standard deviation (SD) and were tested via a Chi

Square test or Fisher's exact test. A t-test was used to test independent variables.

RESULTS

Of the 100 patients seen, 24 were diagnosed with nasopharyngeal mass. Of these, 6 also had a nasopharyngeal malignancy, giving a total frequency for the condition of 6%. All 6 sufferers were male with a mean age of 70.33 years as shown in Table 1.

Table 1 Demographic characteristics of study groups

	Nasopharyngeal Malignancy		P value
	Present	Absent	
Age	70.33 \pm 7.09	37.87 \pm 13.94	0.0001
Gender			0.0380
- Male	6	52	
- Female	0	42	

The most common clinical features were nasal obstruction (100%), nasal discharge (83.33%), headache/facial pain (66.67%), enlargement of cervical lymph nodes (50%) and nose bleeds (33.33%) as shown in Table 2.

Table 2 Clinicopathological characteristics of patients with nasopharyngeal malignancy

	Frequency	Percent
Clinical presentation		
• Nasal obstruction	6	100
• Nasal discharge	5	83.33
• Nasal bleed	2	33.33
• Headache / facial pain	4	66.67
Neck Examination		
• Cervical lymphadenopathy	3	50
CT Scan		
• Nasopharyngeal fullness	6	100
• Infiltrating tumour	1	16.67
F.O. scope		
• Nasopharyngeal mass	6	100
Histopathology		
• Nasopharyngeal carcinoma	4	66.67
• Malignant Lymphoma	2	33.33

CT scans only identify infiltrating tumor with bony erosion in 1 of the 6 patients suffering from the malignancy (16.67%) and fiber-optic posterior rhinoscopy could only detect the presence of a soft tissue mass in the nasopharynx in all the six.

Histopathology tests diagnosed nasopharyngeal carcinoma in 4 of the individuals (66%) and malignant lymphoma in 2 (33%).

DISCUSSION

Cancer is usually considered to be a disease of the industrialized world, whereas infectious diseases are the main disease burden of the developing world [10] The increase in life expectancy in most developing countries, even in the least developed ones, together with drastic changes in life style are expected to lead to an epidemic of cancer in developing countries by the next century. [11] The Middle East has witnessed changes in the past 25 years. Rapid modernization and its accompanying urbanization and westernization have also been associated with changes in the pattern of diseases, especially the incidence of cancer cases. [10]

NPC forms an important component of the head and neck tumors although it is an uncommon cancer worldwide [12] In Saudi Arabia, nasopharyngeal cancer is the most common head and neck cancer, having an approximate prevalence of 33%. [13] In the present study we concentrated on the clinicopathological presentation of nasopharyngeal carcinoma, to try and determine the early signs of presentation so that diagnosis and treatment can be made in a prompt and efficient manner.

Results showed that all patients were male in their 60's and 70's. This gender bias was not entirely unexpected as male preponderance has been reported in various studies [2,14,15] However it is also worth noting that there have been studies that found a bimodal gender distribution for nasopharyngeal carcinoma, but these tended to be in younger sufferers, which were not present in our study. [16]

Concerning the symptoms, some studies have shown neck swelling to be the most common symptom of the disease [15,16] but others, including ours, showed nasal obstruction as the single most prevalent symptom. [17]

Epistaxis is also reported to be a common symptom, as a result of blood vessel erosion by the growing tumor, [18] as is cervical lymphadenopathy but again the prevalence varies. One study in Malaysia found roughly 33% of sufferers exhibited these symptoms, [19] which is in agreement with our results. But another such study in Nigeria showed a prevalence of over 90% for these symptoms. [12] This serves to exemplify why the variable signs and symptoms associated with nasopharyngeal carcinoma are confounding and make

diagnoses difficult until the disease has reached an advanced stage.

Globally, about 50-90% of patients present with cervical lymphadenopathy followed by nasal symptoms such as epistaxis and nasal obstruction, otologic symptoms, and neuro ophthalmic symptoms. [17,18]

Some rare manifestation for nasopharyngeal carcinoma like dermatomyositis, pseudo hypertrophicosteoarthropathy and diffuse lymphatic infiltration has also been reported in literature. [19] Due to the variable presentation of the disease and the difficulty of access to the post nasal, the diagnosis of nasopharyngeal is usually delayed or may be missed. As early cases carry an excellent prognosis, attempts should be made to make an early diagnosis so that untoward complications can be avoided.

CONCLUSION

Nasopharyngeal malignancy constitutes 6% of nasopharyngeal mass with its peak incidence in 6th and 7th decade and preponderance for male gender. Nasal symptoms are most common presentation and histopathology is mandatory in all cases. Cervical lymphadenopathy followed by nasal symptoms such as epistaxis, nasal obstruction, otologic symptoms, and neuro ophthalmic symptoms are some of important manifestations of NPC Some rare manifestation for nasopharyngeal carcinoma like dermatomyositis, pseudo hypertrophicosteoarthropathy and diffuse lymphatic infiltration should also be kept in mind while diagnosing NPC.

REFERENCES

1. Iseh KR, Abdullahi A, Malami SA. Clinical and histological characteristics of nasopharyngeal cancer in Sokoto, north-western, Nigeria. *West African journal of medicine*. 2009;28(3):151-5. PubMed PMID: 20306729. Epub 2010/03/24. eng.
2. Iseh K, Abdullahi A, Malami S. Clinical and Histological Characteristics of Nasopharyngeal Cancer in Sokoto, North Western, Nigeria. *West African journal of medicine*. 2009;28(3).
3. Jia WH, Luo XY, Feng BJ, Ruan HL, Bei JX, Liu WS, et al. Traditional Cantonese diet and nasopharyngeal carcinoma risk: a large-scale case-control study in Guangdong, China. *BMC Cancer*. 2010;10:446. PubMed PMID: 20727127. Epub 2010/08/24. eng.
4. Katak AC, Simons MJ, Das AK, Sharma K, Mehra NK. Nasopharyngeal carcinoma in the Northeastern states of India. *Chin J Cancer*. 2011;30(2):106-13. PubMed PMID: 21272442. Epub 2011/01/29. eng.
5. Ruan HL, Qin HD, Shugart YY, Bei JX, Luo FT, Zeng YX, et al. Developing genetic epidemiological models to predict risk for nasopharyngeal carcinoma in high-risk

- population of China. *PLoS One*. 2013;8(2):e56128. PubMed PMID: 23457511. Epub 2013/03/05. eng.
6. Geara FB, Nasr E, Tucker SL, Brihi E, Zaytoun G, Hadi U, et al. Nasopharyngeal cancer in the Middle East: experience of the American University of Beirut Medical Center. *Int J Radiat Oncol Biol Phys*. 2005;61(5):1408-15. PubMed PMID: 15817344. Epub 2005/04/09. eng.
 7. Al-Herabi AZ. Head and neck oncology experience in Makkah, Saudi Arabia. *Saudi medical journal*. 2009;30:1316-22.
 8. Abuidris DO, Elgaili EM, Elhaj AH, Elmustafa OM. Histopathological patterns of nasopharyngeal carcinoma in Sudan. *Saudi medical journal*. 2008;29:962-5.
 9. Al-Salam S, John A, Daoud S, Chong SM, Castella A. Expression of Epstein Barr virus in Hodgkin lymphoma in a population of United Arab Emirates nationals. *Leukemia & Lymphoma*. 2008 2014/09/27;49:1769-77.
 10. Bener A, Ayub H, Kakil R, Ibrahim W. Patterns of cancer incidence among the population of Qatar: a worldwide comparative study. *Asian Pac J Cancer Prev*. 2008;9:19-24.
 11. Organization WH. *The World health report: 1997: conquering suffering, enriching humanity: executive summary*. 1997.
 12. Alabi B, Badmos K, Afolabi O, Buhari M, Segun-Busari S. Clinico-pathological pattern of nasopharyngeal carcinoma in Ilorin, Nigeria. *Nigerian journal of clinical practice*. 2010;13(4).
 13. Laramore GE, Clubb B, Quick C, Amer MH, Ali M, Greer W, et al. Nasopharyngeal carcinoma in Saudi Arabia: a retrospective study of 166 cases treated with curative intent. *International journal of radiation oncology, biology, physics*. 1988;15:1119-27. PubMed PMID: 3182344. Epub 1988/11/01. eng.
 14. Wei K, Xu Y, Liu J, Zhang W, Liang Z. No incidence trends and no change in pathological proportions of nasopharyngeal carcinoma in Zhongshan in 1970-2007. *Asian Pacific journal of cancer prevention: APJCP*. 2010;11:1595-9. PubMed PMID: 21338202. Epub 2011/02/23. eng.
 15. Bhatia KS, King AD, Vlantis AC, Ahuja AT, Tse GM. Nasopharyngeal mucosa and adenoids: appearance at MR imaging. *Radiology*. 2012;263:437-43. PubMed PMID: 22403169. Epub 2012/03/10. eng.
 16. Bray F, Haugen M, Moger TA, Tretli S, Aalen OO, Grotmol T. Age-incidence curves of nasopharyngeal carcinoma worldwide: bimodality in low-risk populations and aetiologic implications. *Cancer epidemiology, biomarkers & prevention: a publication of the American Association for Cancer Research, cosponsored by the American Society of Preventive Oncology*. 2008;17:2356-65. PubMed PMID: 18768504. Epub 2008/09/05. eng.
 17. Anim JT. Nasopharyngeal carcinoma in Accra. *West African Journal Of Medicine*. 1991;10(2):121-6. PubMed PMID: 1654999.
 18. He JH, Zong YS, Luo RZ, Liang XM, Wu QL, Liang YJ. [Clinicopathological characteristics of primary nasopharyngeal adenocarcinoma]. *Ai Zheng*. 2003;22:753-7. PubMed PMID: 12866970. Epub 2003/07/18. chi.
 19. Zaatari GS, Santoianni RA. Adenoid squamous cell carcinoma of the nasopharynx and neck region. *Arch Pathol Lab Med*. 1986;110:542-6. PubMed PMID: 3518653. Epub 1986/06/01. eng.