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Modes of Nasopharyngeal Carcinoma Presentation

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A B S T R A C T

Nasopharynx is quite a concealed part of our body. Symptoms of earlynasopharyngeal cancer usually are not obvious. They often appear as stuffy nose, nose bleeding, neck mass, mild ear deafness, headache and tinnitus, which are easy to be neglected. Therefore, many patients fail to have early diagnosis and are found in advanced stage when discovered. This brings great difficulty to treatment. In the present study we evaluated the early and most common presenting symptoms in order to be aware of it and hence early detection of the tumor with the hope of early treatment with good outcome and cure rate

Introduction

Nasopharyngeal carcinoma (NPC) is a rare disease in the Western world, with an incidence in the United States of 0.5–2 per 100,000. However, the incidence of NPC is significantly higher in southern China, southeast Asia and the Middle East/North Africa, where it is one of the most common cancers (Chang *et al*., 2006). With the highest prevalence in Southern China where an average of 80 cases per 100, 000 populations is reported each year (Loong *et al*., 2008). This geographic variation suggests interactions of different factors such as Epstein-Barr virus (EBV) infection (Liebowitz, 1994) genetic predisposition, and environmental factors including diet (Farrow *et al*., 1998), which are more likely to be found in combination in endemicregions. However, an increased incidence of NPC in younger individuals in endemic regions suggests that affected individuals may carry a genetic predisposition towards EBV infection early in life, leading to an increased predisposition to NPC. NPC cells express EBV latent proteins, such as EBNA-1, LMP-1, and LMP-2, as well as Bam HI, a fragment of the EBV genome (Atula *et al*., 1997). It is thought that viral proteins may induce epithelial cellular growth following exposure to EBV, with secondary genetic alterations occurring with exposure to environmental carcinogens later in life (Pathmanathan *et al*., 1995).

However the early diagnosis of nasopharyngeal carcinoma can be a difficult task because the post nasal space is relatively inaccessible to examination 4,5 compounded by the fact that the presentation of nasopharyngeal carcinoma is variable (patients may present with headache, cranial nerve involvement, nasal obstruction, or a neck mass due to nodal metastases), however, patients may remain asymptomatic for a long time, given the often clinically occult site of presentation and patients consult doctors of different specialties who have little experience in managing nasopharyngeal carcinoma. It is, therefore, not surprising that the diagnosis of nasopharyngeal carcinoma is delayed (Indudharam, 1997). It is of concern that only 10% of patients are diagnosed early at stage I (Van Hasselt *et al*., 2008). Early-stage NPC is curable with RT alone, with a 5-year overall survival of close to 90% for stage I disease. Patients with stage II NPC (T1N1, T2N0-1), especially those with node-positive disease, have a substantial rate of distant metastases, and therefore concurrent chemotherapy and radiation therapy is recommended (Chan *et al*., 2010). Although meta-analysis results in the wake of Intergroup 0099 confirm the positive effects of concurrent chemoradiotherapy, the role of chemotherapy in the neoadjuvant or adjuvant setting remains a topic of debate. Diagnosing nasopharyngeal carcinoma (NPC) at an early stage is a difficult task as it usually runs silently or with nonspecific symptoms. A low index of suspicion and the technical challenges of postnasal space examination may also preclude earlier diagnosis, resulting in presentation with locally advanced disease that adversely influences outcome (Leong *et al*., 1999; Al Rajhi *et al*., 2009).

This study was conducted to know the commonest and early presenting features of nasopharyngeal carcinoma and the common presenting age.

Materials and Methods

Twenty patients collected at Al Hussain hospital / Kerbala province /Iraq with postnasal carcinoma from February 2011 to April 2016. A full history and clinical examination including flexible nasal endoscopy was performed. Pure tone audiometry, tympanometry, chest radiography and CT scan of skull base and nasopharynx was done. Further metastatic work-ups (ultrasonography of neck and abdomen) were added for patients who had extensive lymphatic spreador symptoms suggestive of NPC metastasis. Biopsy was taken either under local or general anesthesia and sent for histopathological study.

Results and Discussion

We collected 20 patients, 11 males and 9 females with a ratio 12:1 respectively.

The age of patients range between 20 to 66 years with average 44.45 years, with a distribution as shown in table 1.

Most of patients presented with neck mass, and gradually increased deafness due to otitis media with effusion in equal number, 11 for each (55%). The neck mass is due to lymph node metastases, 8 patients (40%) with unilateral lymph nodes and 3 patients (15%) with bilateral lymph nodes.

Otitis media with effusion was unilateral in 10 patients (50%) and bilateral in one patient (5%). One patient had unilateral chronic suppurative otitis media. Nine patients (45%) presented with nasal complaint, 8 (40%) with nasal obstruction and one with epistaxis. Three patients (15%) had headache and one patient (5%) had

diplopia due to orbital involvement. Most of the patients had multiple symptoms at time of presentation. Table 2 show the most common presenting features.

Nasopharyngeal carcinoma has a distinct epidemiological pattern. Its incidence among Chinese and other South East Asians is about 10 to 50 times higher than that of other countries. In the present study we focused on the clinical presentation of patients with nasopharyngeal carcinoma, to know the common and early presenting mode so that an early diagnosis can be made, treatment started in time and the late poor outcome avoided. The variable signs and symptoms are confusing and difficult to diagnose until the disease has reached advanced stages. In a study by Kamals in 1999, 91 cases were studied. The most common single presenting symptom was neck swelling (45.5 %). Indudharan *et al.*, (Indudharam *et al*., 1997) studied 122 patients and noted the neck swelling as the commonest complaints (54%). Imad *et al.*, (11) studied 50 patients were 38 patients (76%) had neck mass, in 32 (64%) unilateral and 6 (12%) had bilateral neck masses, most of these were due to cervical metastases and only two cases of neck lumps were due to lateral extension of the tumor. In our study 11 patients (55%) had neck mass, 8 (40%) had unilateral and 3 (15%) had bilateral neck masses, all were due to lymph node metastases and no one due to lateral extension of the tumor. Though neck swelling was the frequent finding but it was not the single complaint in most cases.

The second common presenting mode was unilateral hearing loss. Shan *et al.*, (1992), recognized otitis media with effusion as one of the early features in patients with nasopharyngeal carcinoma. They studied 271 patients, ninety-eight patients (36%) had otitis media with effusion. Seven of these had bilateral involvement and the rest unilateral 77 (28.4%) patients had related symptomssuchas tinnitus and deafness. Indudharan 1997 reported 22 (18%) patients with otological presentations mainly hearing loss with 15 (12.3%) complaining of tinnitus. Imad *et al.*, found 20 patients (40%) complained of unilateral deafness, all of them were found to have otitis media with effusion none complained of bilateral hearing loss, 5 patients (10%) had associated otalgia and 3% tinnitus. In our study 11 patients (55%) had OME, 10 (50%) with unilateral, and only one patient (5%) had bilateral otitis media with effusion.

Nasal obstruction and blood stained nasal discharge and/or epistaxis has also been reported in patients with nasopharyngeal carcinoma. Imad *et al.*, (2005) found fourteen patients (28%) complained of off-on blood stained nasal discharge, and 13 patients (26%) had associated unilateral nasal obstruction and 3 (6%) patients complained of post-nasal drip. In our study we found 8 patients (40%) had nasal obstruction, and one patient (5%) gave history of epistaxis and blood stained nasal discharge.

As shown from the data above that the presentation of nasopharyngeal carcinoma is usually related to the neck or to the ear, i.e far away from the nasal cavity and to less extent related to the nose, this is usually due to the relatively wide postnasal space (4 -3-3 cm) that makes lymphatic metastases and pressure effect on Eustachian tube is the most common presenting feature and one may put a different diagnostic possibilities which will lead to delay of the correct diagnosis. This brings to light the importance of a high index of suspicion and early examination and assessment of the postnasal space of a vast importance to detect the tumors early.

Many patients present with headache. This may be due to nasal obstruction or intracranial extension of the tumor. Ten patients (10.9%) out of 91studied by Kamal *et al.,* complained of headache.

Table.1 Age of patients

	Age of patients	No.	%
1	20 - 29	4	20%
2	30 - 39	3	15%
3	40 - 49	5	25%
4	50 - 59	5	25%
5	60 - 69	3	15%

Table.2 Presenting features of nasopharyngeal carcinoma

Complaints	No. of patients	%
Neck mass	11	55%
unilateral	8	40%
Bilateral	3	15%
Otitis media with effusion	11	55%
unilateral	10	50%
Bilateral	1	5%
Nasal obstruction	8	40%
Headache	3	15%
Epistaxis	1	5%
Diplopia	1	5%

This is usually generalized and associated with sensation of heaviness. In this study 3 patients (15%) gave history of headache.

Cranial nerves involvement were reported but to less extent in many studies, Tumour spreading upward to the foramenlacerum causes V,VI, III & IV cranial nerve paralysis, another mode of presentation poster lateral spread causes paralysis of IX, X, XII cranial nerves and carotid space. Chong and Fan (Chong *et al*., 1996) in 1996 reported cases of nasopharyngeal carcinoma with jugular foramen involvement causing paralysis of IX, XI cranial nerves. Imad *et al.,* found 4 patients (8%) complained of diplopia due to VI nerve paralysis. We had only one patient (5%) presented with

diplopia which cannot be assessed fully whether due to direct orbital extension or due to other cranial nerves involvement.

In conclusion, presentation of the nasopharyngeal carcinoma is variable. Patients can present with otological, neck mass, nasal, or neurological features. Majority of the cases presented with unilateral or bilateral neck masses and/or deafness.

The study stresses on the importance of full ENT examination in cases of persistent middle ear disease, recurrent or persistent nasal symptoms, headache or neck swelling. A high index of suspicion with awareness of the disease is required to detect early tumors.

Flexible endoscopic examination with documentation of the nasopharynx is a valuable procedure. This facility should be provided to the physicians and surgeons involved in the management of nasopharyngeal carcinoma, especially in areas where the disease is thought to be more prevalent.

Health education and training for primary care physicians can also be of great help in early diagnosis of these cases.

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