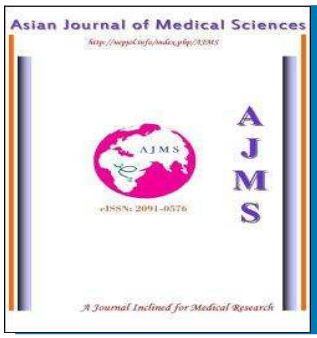


AGGRESSIVE NASOPHARYNGEAL CARCINOMA PRESENTING AS DIMINUTION OF VISION: A CASE REPORT

CASE REPORT, Vol-5 No.2

Asian Journal of Medical Science, Volume-5(2014) http://nepjol.info/index.php/AJMS

[1]Kaleem Ahmad, [2] Sajid Ansari, [3]Kanchan Dhungel, [4]Mukesh Kumar Gupta, [5]RK Rauniyar, [6]Mohammad Azfar Siddiqui. [1,3,4] Associate Professor, [2]Assistant Professor, [5]Professor, Department of Radiodiagnosis, B.P. Koirala Institute of Health Sciences, Dharan, Nepal. [6]Assistant Professor, Assistant Professor, Department of Radiodiagnosis, J. N. Medical College, AMU, Aligarh, India.

CORRESPONDENCE:

Dr. Kaleem Ahmad
Associate Professor,
Department of Radiodiagnosis,
B.P. Koirala Institute of Health Sciences,
Dharan, Nepal.
Mail ID:drkalim17@yahoo.co.in
(M): +977-9842064270.

"Extensive nasopharyngeal carcinoma can invade the orbital apex and may present with diminution of vision. Imaging has vital role in early detection, staging, lymph nodal involvement, response to therapy, recurrence and post radiation changes in patients of nasopharyngeal carcinoma."

ABSTRACT

Nasopharyngeal carcinoma is a malignant disease and is more common in males than in females with M:F ratio of 3:1. It has a bimodal peak at 16-20 and 46-50 years of age. Orbital involvement is seen in 3.2% and bilateral orbital invasion occurs in 0.7% of patients with nasopharyngeal carcinoma. Imaging has significant role in detecting the early nasopharyngeal carcinoma, tumor staging, involvement of lymph node, monitoring the patients after the therapy, to detect recurrence and radiation associated changes in the soft tissue and bone. We report a case of aggressive nasopharyngeal carcinoma in 22 years old male who presented with rapidly progressive diminution of vision.

Keywords: Nasopharyngeal carcinoma, Orbital apex, Cavernous sinus, CT scan.

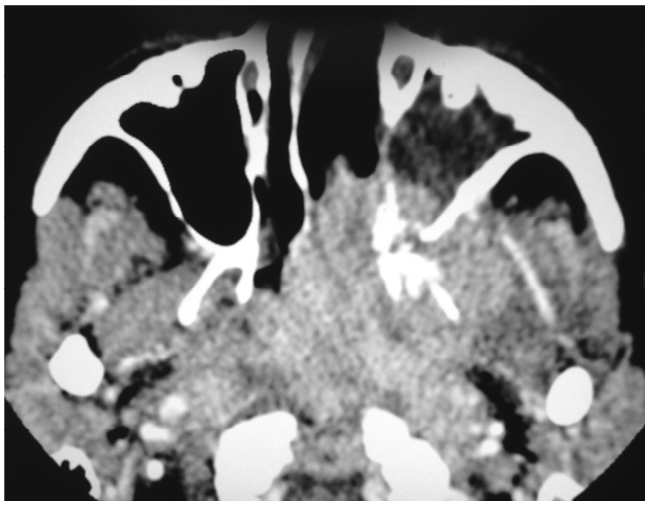
INTRODUCTION

Nasopharyngeal carcinoma is a malignant disease and is commonly seen in southern China, Southeast Asia, Arctic and Middle East/North Africa. It accounts for 15-18% of malignancies in southern China. Its incidence is 2 to 3 fold higher in males than in females with M: F ratio of 3:1.[1,2] It has a bimodal peak at 16-20 and 46-50 years.[1-5] Nasopharyngeal carcinoma is caused by the interaction of genetic susceptibility, environmental factors (e.g. exposure to chemical carcinogens) and infection with Epstein-Barr virus. Patients often present with local symptoms such as epistaxis and blocked nose, but may also present with hearing loss, otalgia, headache or cranial nerve involvement. Since the nasopharynx is relatively a clinically silent region; therefore, the first presentation may be with cervical nodal or distant metastasis.[2-5,7] Orbital involvement is seen in 3.2% of cases [8,9] and bilateral orbital invasion occurs in 0.7% of patients with nasopharyngeal carcinoma.[10] We report a case of aggressive nasopharyngeal carcinoma in a patient who presented with rapidly progressive diminution of vision.

CASE PRESENTATION

A 22 year old male presented in ophthalmology out-patient department with rapidly progressive diminution of vision of left eye and retro-orbital pain. There was no significant medical history in the past. On ophthalmological examination, both pupils were reactive. Fundoscopy revealed normal retina with no papilloedema or vessel engorgement. The ocular movements were normal.

Computed tomography (CT) of the orbit was advised for any orbital lesion. CT scan revealed a large heterogeneously enhancing soft tissue density mass occupying almost whole of the nasopharynx predominantly the left side along with obliteration of fossa of Rosenmuller with widening of the pterygopalatine fissure (Figure 1a and 1b). The mass was involving bilateral cavernous sinuses, sphenoid and ethmoid sinuses and left nasal cavity (Figure 1a, 1b and 2). bilateral cavernous sinuses, sphenoid and ethmoid sinuses and left nasal cavity (Figure 1a, 1b and 2). There was extensive destruction of anterior skull base, sella, anterior and posterior clinoid processes, clivus, pterygoid plates with extension of the mass into the



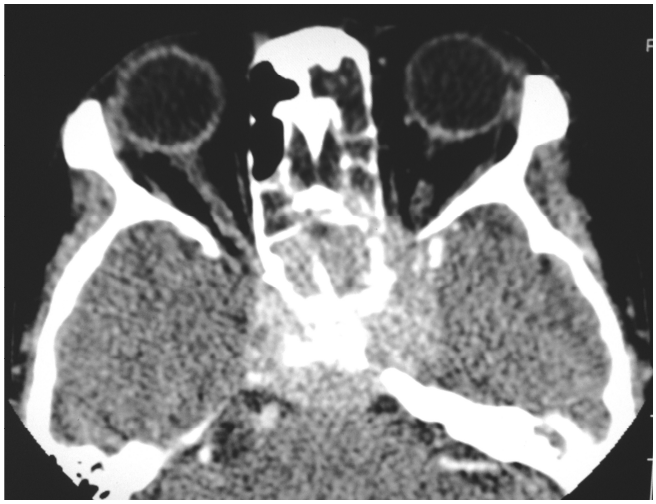


Figure 1a and 1b: Axial CT image showing a heterogeneously enhancing mass in the nasopharynx (on left side) with obliteration of fossa of Rosenmuller, extending in infratemporal fossa, bilateral cavernous sinuses, ethmoid sinuses and left nasal cavity. The mass is also involving the left orbital apex including the optic nerve.

the infratemporal fossa and bilateral middle cranial fossa (Figure 3a and 3b). The mass was also involving the left orbital apex along with optic nerve (Figure 1b) with bony destruction around the left optic canal. The imaging findings were suggestive of nasopharyngeal carcinoma. Nasopharyngoscopic examination revealed soft tissue mass occupying almost whole of the nasopharynx and also in the ethmoid sinuses. Endoscopic biopsy from the nasal cavity and sinuses

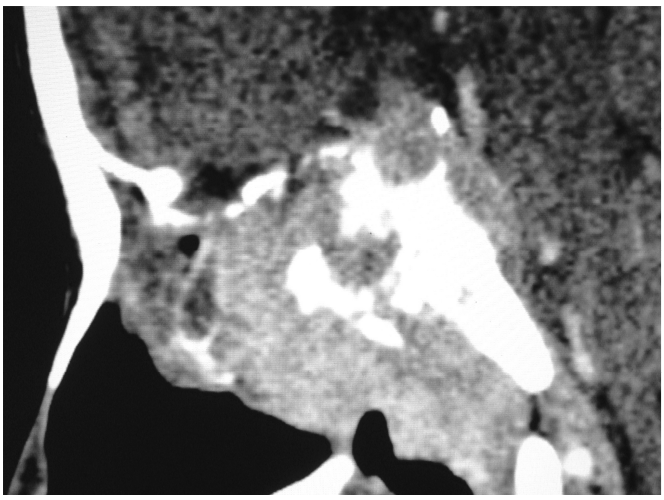
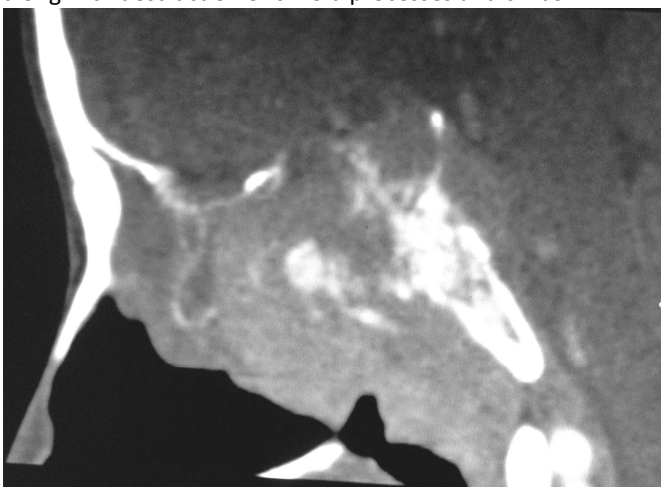


Figure 2: Sagittal CT image showing mass in nasopharynx extending into the sphenoid sinus, sella and suprasellar region along with destruction of clinoid processes and clivus.



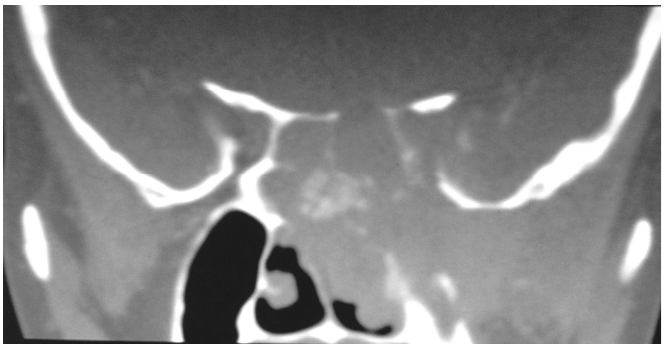


Figure 3a and 3b: Sagittal and coronal CT images (bone window) showing destruction of anterior skull base, sella, anterior and posterior clinoid processes, clivus, pterygoid plates and left optic canal.

revealed poorly differentiated squamous cell carcinoma. The patient was referred for radiotherapy/chemotherapy but the patient didn't turn-up for follow-up.

DISCUSSION

The usual presentation of nasopharyngeal carcinoma is neck mass, blood-tinged sputum or rhinorrhea, headache, diplopia, hearing loss or facial pain. 95% of patients present with cervical lymphadenopathy, nasal, aural or neurological symptoms. Orbital involvement of nasopharyngeal carcinoma in the early stage is less common. The orbital manifestations are proptosis, diplopia, optic neuritis, choroidal metastases and endophthalmitis[11] and are seen in 3.2% of cases. Optic nerve compression from direct extension of the tumor leads to blindness.[12] The orbital involvement may occur through contiguous spread from cavernous sinus to the orbital apex, paranasal sinuses and most commonly via the pterygopalatine fossa and inferior orbital fissure.[5,6,12] Bilateral orbital and cranial nerves involvement are seen in advanced disease which indicates poor prognosis.

After ophthalmological examination, if proper diagnosis is not obtained then imaging plays an important role in making proper diagnosis. If on nasopharyngeal examination, any mass is seen in nasopharynx and biopsy reveals malignancy, then for staging and extent of the mass imaging is mandatory.

The role of magnetic resonance imaging (MRI) in nasopharyngeal carcinoma mass is to assess the early parapharyngeal spread, involvement of skull base, fat planes, paranasal sinus, middle ear effusion and cervical lymph nodes. Contrast-enhanced MRI in axial and coronal planes are used to detect tumor extent, including perineural spread and intracranial extension. [3-6,13] Diffusion-weighted MRI aids in differentiating nasopharyngeal carcinoma from lymphoma and characterizing the cervical lymphadenopathy. MR spectroscopy is used for differentiating the nasopharyngeal carcinoma with metastatic nodes.[10]

Computed tomography (CT) has been used for staging, for detection of skull base involvement with lytic or sclerotic lesions (6,7). CT is used for radiotherapy planning and also used together with PET (positron

emission tomography) which helps in staging of nasopharyngeal carcinoma, where the main advantage is for the detection of distant metastasis, monitoring patients after therapy and detecting recurrence.[8]

Differential diagnosis of nasopharyngeal carcinoma includes lymphoma, adenoid cystic carcinoma, extramedullary plasmacytoma, pleomorphic adenoma, tuberculosis, etc. The most common site of extranodal non-Hodgkin lymphoma in the head and neck region is nasopharynx; lymphoma is often located in the midline while nasopharyngeal carcinoma arises laterally and bone invasion is uncommon in lymphoma. Adenoid cystic carcinoma usually affects patients during middle age and rarely present with cervical lymphadenopathy and the incidence of perineural spread of the tumor is more in adenoid cystic carcinoma than nasopharyngeal carcinoma. Nasopharynx is a common site for extramedullary plasmacytoma although it is a rare malignant tumor and presents in sixth and seventh decades of life. Nasopharyngeal tuberculosis is rare and sometimes mimics nasopharyngeal carcinoma.

Radiotherapy is the primary treatment for nasopharyngeal carcinoma, but the combination of radiotherapy with induction chemotherapy is sometimes used in some patients. If there is suspicion of tumor recurrence or development of radiation-induced complications, follow-up scans are advised. Any soft tissue mass after treatment or any new lesion could suggest recurrence.[2,3]

CONCLUSION

In conclusion, imaging has vital role in detecting the early nasopharyngeal carcinoma, tumor staging, lymph node involvement, response to therapy, to detect recurrence and radiation associated changes in the soft tissue and bone. Imaging also plays an important role in distinguishing nasopharyngeal carcinoma from other simulating lesions.

REFERENCES

1. Chong VF, Ong CK. Nasopharyngeal carcinoma. Eur J Radiol 2008; 66:437-447.
2. Glastonbury C. Nasopharyngeal carcinoma: the role of magnetic resonance imaging in diagnosis, staging, treatment, and follow-up. Top Magn Reson Imaging 2007; 18:225-235.
3. King A, Bhatia KS. Magnetic resonance imaging staging of nasopharyngeal carcinoma in the head and neck. World J Radiol 2010; 2:159-165.
4. Dubrulle F, Souillard R, Hermans R. Extension patterns of nasopharyngeal carcinoma. Eur Radiol 2007;17:2622-2630.
5. Chin S, Fatterpekar G, Chen C, Som P. MR imaging of diverse manifestations of nasopharyngeal carcinomas. AJR 2003; 180:1715-1722.
6. Weber AL, al-Arayedh S, Rashid A. Nasopharynx: clinical, pathologic, and radiologic assessment. Neuroimaging Clin N Am 2003; 13:465-483.
7. Ahmed Abdel, Khalek Abdel Razek, Ann King. MRI and CT of Nasopharyngeal Carcinoma. AJR 2012; 198:11-18.
8. An Unusual Presentation of Nasopharyngeal Carcinoma. L Mowatt, N Mathew, E Craig. West Indian Med J 2009; 58(4):386.
9. Hsu W, Wang AG. Nasopharyngeal carcinoma with orbital invasion. Eye 2004; 18:833-8.
10. Luo CB, Teng MM, Chen SS, Lirng JF, Guo WY, Chang T. Orbital invasion in nasopharygeal carcinoma: evaluation with computed tomography and magnetic resonance imaging. Zhonghua Yi Xue Za Zhi 1998; 61:383-8.
11. Tsai CC, Ho HC, Kau HC, Kao SC, Hsu WM. Optic neuritis: a rare manifestation of nasopharyngeal carcinoma. Eye 2002; 16:501-503.
12. Kao LY, Chuang HC, Liang YS. Visual loss as the initial presentation of nasopharyngeal carcinoma. J Clin Neuroophthalmol 1993; 13:24-26.
13. Goh J, Lim K. Imaging of nasopharyngeal carcinoma. Ann Acad Med Singapore 2009; 38:809-816.

Authors Contributions:

KA, SA RKR: Concept and Design of the study, analysis and Interpretation, manuscript preparation, critical revision of the manuscript, data collection, statistical analysis, and literature search.

KD: Manuscript preparation, critical revision of the manuscript, statistical analysis, and literature search.

MKG: Critical revision of the manuscript and data collection.

MAS: Analysis and interpretation, manuscript preparation, critical revision of the manuscript, statistical analysis, and literature search.

Conflict of Interest: None

Date of Submission: 1.7.2013
Date of Peer review: 16.7.2013
Date of submission of revised version: 18.8.2013
Date of peer review: 25.9.2013
Date of Acceptance: 25.9.2013
Date of Publication: 10.1.2014