

ORIGINAL RESEARCH

Assesment of Complications Following Chemoradiation in Nasopharyngeal Carcinoma: A Hospital based Study

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ABSTRACT

Introduction: Nasopharyngeal carcinoma is a rare condition and has been linked to ethnicity and poor socio-economic condition. Meanwhile, there has been a change in its management protocol and though the complications have reduced the post-management complications have increased. We present a study of our experience in the management of out-patient department presenting with nasopharyngeal carcinoma. The aim of the study was to know the complications of nasopharyngeal carcinoma after chemo-radiation.

Material and Method: It was a retrospective study of 14 patients presenting with Nasopharyngeal Carcinoma between the study period of one and a half year (Jan 2014 – Jun 2015) in the, Department of Otolaryngology and Head and Neck Surgery, Assam Medical College, Dibrugarh, Assam, India. Fourteen patients were treated in the study period. Different approaches like chemotherapy, radiotherapy and chemoradiation were used.

Results: Nasopharyngeal carcinoma can present with a varied way of complications both before and after treatment. Complications due to chemoradiation can be very distressing and painful.

Conclusion: Bimodal peak occurrence of the disease should be emphasized and different complications should be previously taken note of.

Keywords: nasopharyngeal carcinoma, Chemoradiation and complications

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INTRODUCTION

Nasopharyngeal carcinoma is a rare disease all over the world. It has often been less evaluated, misdiagnosed, partially treated, most commonly recurred and prognostically poor carcinoma. Presently the incidence of nasopharyngeal carcinoma is low in most parts of the world. The rates are twice as high in males as in females.¹ There has been higher incidence of disease in certain parts of the world mainly south east Asia and southern China. Highest incidence has been reported among people of Guangdong province and Guangxi region of China where the incidence is around 50 or more per 100000 people per year.² Although the disease is more in southern Asia it has less relation with ethnicity rather than food habits and environmental set-up. The Naga people with an incidence of 4.3 per 100000 people in the upper-Assam and nearby region has been the main concern of the various studies.³ Most of patients present with mass in the neck, nasal obstruction, hearing disorders, bleeding from nose. The most common presenting symptoms are severe, recurrent epistaxis with persistent nasal obstruction. As the disease progresses, facial pain and deformities, and cranial nerve palsies may occur. The diagnosis of nasopharyngeal carcinoma is essentially based on a careful history and nasal endoscopic examination, supplemented by imaging studies using computed tomogram (CT) and Magnetic Resonance Imaging (MRI). Communities having the same cultural practices are now having a rise in the incidence of the disease. This is mainly due to the increase in the populated households and ill-ventilated houses, practicing of salted food- habits and the risk of EBV which is still in research. The present treatment is primarily radiation therapy followed by chemotherapy with cisplatin and other chemotherapy groups mainly docetaxel and 5FU. Nasopharyngeal carcinoma can present with a varied way of complications both before and after treatment. So the present study was aimed to

study the complications following chemo-radiations in nasopharyngeal carcinoma patients.

MATERIALS AND METHODS

14 patients aged 18-75 years were selected from the patients visiting the Department Of Otolaryngology And Head And Neck Surgery, Assam Medical College, Dibrugarh, Assam, India based on the inclusion and exclusion criteria. Informed consent from the individual patient and the approval from institution ethical reviewer board was taken. Study was done in between january 2014 – june 2015.

Exclusion criteria: Patients with the pre-existing associated sinonasal diseases of similar complications were excluded from the study.

The study was a retrospective study. The main objective was to highlight the complications of the condition. Although the study period was short but it was important and a note should be taken about the actual scenario. In a span of one and a half year (Jan 14th- Jun 15th) there has been alarming reporting of fourteen cases in the department of ENT, Head And Neck Surgery, Assam Medical College And Hospital, Dibrugarh, Assam. The post-management complications were very cumbersome for the patients.

Out of 585 diagnosed cases of head and neck neoplasms 14 cases were of nasopharyngeal carcinoma. It was a study of 14 patients in a period of one and a half year. There was a bimodal peak of occurrence mainly 2nd and 5th decades.

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CLINICAL FEATURES

The clinical features of the patients reported to the department can be broadly classified into

Symptoms	Signs	
Nasal obstruction	100%	Nasopharyngeal mass 100%
Recurrent epistaxis	50%	Nasal cavity and nasopharyngeal mass 75%
Headache	40%	Conductive deafness 25%
Speech defects	50%	Purulent ear discharge 25%
Snoring	40%	
Deafness	75%	

INVESTIGATIONS

All the cases were diagnosed first by diagnostic nasal endoscopies and then by radiological investigations

mainly CT and MRI. In figure-1,2. We can see that an ill defined soft tissue density growth showing heterogeneous post-contrast enhancement is noted in the posterior nasopharynx involving the torus tubaris, fossa of rosenmuller, prevertebral muscles. Superiorly the lesion is eroding the posterior aspect of left greater wing of sphenoid, left clinoid process, left petrous apex and infiltrating into the left cavernous sinus. Laterally the lesion is involving the pterygoid muscles and infiltrating into left infratemporal fossa and causing widening of the left stylomandibular foramen.

Routine blood examinations and other systemic laboratory examinations for the chemotherapy and radiotherapy were also performed in every case. In fig 3 we can see histopathologically that the malignant cells are arranged in small groups and syncytial sheets. Large numbers of lymphocytes and eosinophils leukocytes are also present.

TREATMENT MODALITIES

All the cases were treated by chemo-radiation primarily radiation in 8 cases followed by chemotherapy and chemotherapy first followed by radiation in other 6 cases. Cisplatin based chemotherapy in a dose of 100mg/m² IV in 1 hour and Docetaxel in a dose of 100mg/

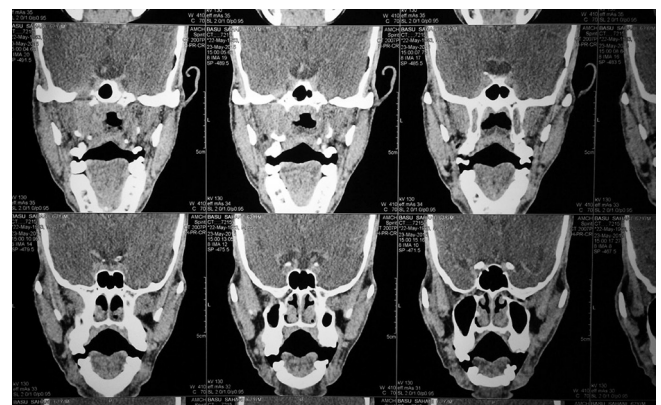


Figure-1: CT Scan of head and neck

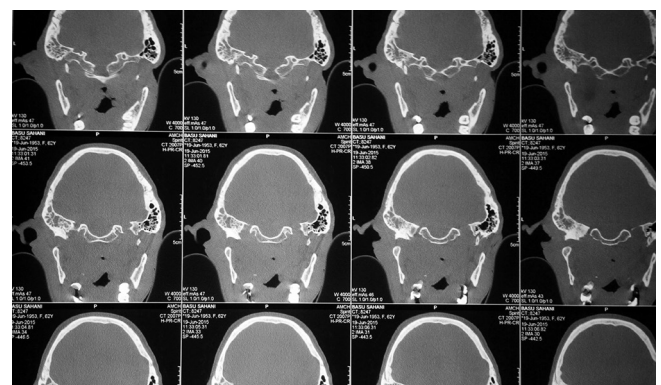


Figure-2: CT Scan of head and neck

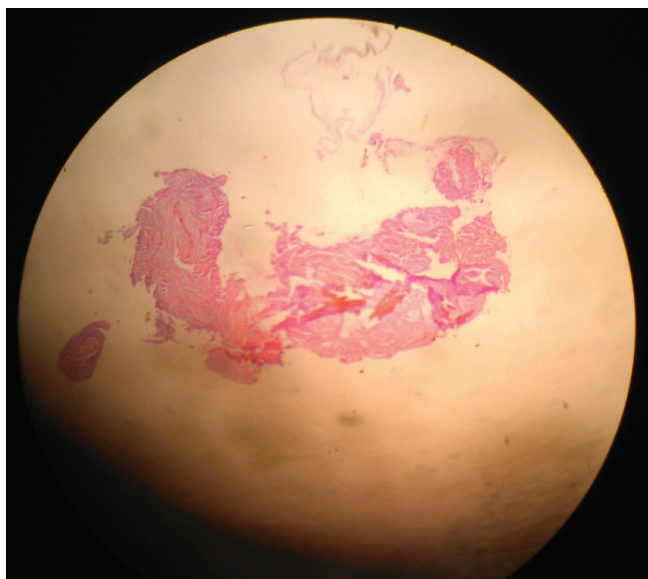


Figure-3: HPE of nasopharyngeal carcinoma

m² IV in 1 hour on day 1 followed by Cisplatin chemotherapy in a dose of 100mg/m² IV in 1 hour on day 2 was given. Radiation in a dose of 66 Gy -72 Gy on weekdays for six weeks was given. Only one patient was treated by surgery and post-operative radiotherapy was used.

STATISTICAL ANALYSIS

Tables were prepared with the help of SPSS version 21. Descriptive statistics were used to generate results.

RESULTS

As we can see in table-1, there has been significant change after treatment but still there are some residual complications which cannot be ignored.

Complications	Before treatment	After treatment
Conductive deafness	25%	21.5%
Ear discharge	25%	21.5%
Epistaxis	50%	7.05%
Speech defect	50%	28.6%
Snoring	40%	14.28%
Headache	40%	28.6%

Table-1: Decrease in the rate of complications

POST TREATMENT COMPLICATIONS

Most of the complications occurred due to radiotherapy and were very distressing. Almost all of them had similar complaints and clinical findings. Bone marrow dys-

function seemed to be the most common complications and it was seen in almost all the patients (Table-2).

A fall in the number of blood cells	85.71%	12 persons
Feeling sick	85.71%	12 persons
Diarrhoea	28.57%	04 persons
Sore mouth and mouth ulcers	71.42%	10 persons
Hair loss or thinning	85.71%	12 persons
Feeling tired and run down	85.71%	12 persons

Table-2: Newer complications post-management

DISCUSSION

Patients with nasopharyngeal carcinoma have a higher incidence of nodal involvement and bilateral nodal disease at presentation, and overall (80% to 90%) nodal metastasis, as compared with patients with other malignancies of the head and neck. In addition, patients with nasopharyngeal carcinoma have a higher overall incidence of systemic metastasis than patients with tumors in other head and neck sites.⁴ In some areas of the world, namely, southern China, Southeast Asia, North Africa, the Middle East, Alaska, and Greenland, nasopharyngeal cancer is more common. In these areas, incidence may be as high as 25 to 50 per 100,000 people.⁵ Nasopharyngeal carcinoma is the most common malignant tumour of the nasopharynx. Microscopically, it is of three types

- 1) Keratinising squamous cell carcinoma
- 2) Non-keratinising differentiated carcinoma
- 3) Non-keratinising undifferentiated carcinoma

Many nasopharyngeal carcinoma also contain lots of immune system cells, especially lymphocytes. The non-keratinising undifferentiated carcinoma may contain many lymphocytes among the cancer cells and hence also known as lymphoepithelioma. It may be due to body’s own immune mechanism. There is generally no change in the treatment protocol for the different types of carcinoma however the stage is more important than its type for predicting the prognosis. Radiotherapy has been the traditional, standard form of therapy for all patients with local and locoregional disease. However, many a times there has been a lot of post-treatment complications.

Nasopharyngeal carcinomas are highly sensitive to chemotherapy. Single agents identified as being active in this disease include methotrexate, bleomycin (Blenoxane), doxorubicin, cisplatin (Platinol), carboplatin (Paraplatin), and, more recently, paclitaxel (Taxol), and to a lesser extent, fluorouracil (5-FU) and the vinca al-

kaloids.^{6,7} In addition, the survival of the nasopharyngeal carcinoma patients treated with concurrent cisplatin and radiotherapy was significantly better than the survival of historical matched controls treated with the same dose of radiotherapy alone.⁸⁻¹⁰

Complications mainly include a fall in the number of blood cells, feeling sick, diarrhea, sore mouth and mouth ulcers, hair loss or thinning and feeling tired and run down.

CONCLUSION

Nasopharyngeal carcinoma although rare, should not be misdiagnosed as the available treatment is rewarding and different complications should be previously taken note of. Complications can be very distressing to the patient as well as the doctor also. The outcome of chemoradiation and its complications should always be properly weighted.

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