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Clinical assessment of cervical node in head and neck malignancy: case series

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ABSTRACT

Background: Lymph node involvement is well established as an important prognostic factor for head and neck cancer, the spread of carcinoma of head and malignancy to the node levels is probably predictable according to the site of the primary. The appropriate staging of cervical lymph nodes is very important in the management of any head and neck primary carcinoma. Clinical palpation of cervical lymph nodes may yield false negative and false positive results.
Methods: In a prospective study in patients of patients with primary malignancy from larynx, any sub site of pharynx (nasopharynx/oropharynx/hypopharynx) of histologically proven squamous cell carcinoma, the nodal status of primary tumour, the level of lymph node involved and the stage of presentation of the tumor and node were analysed clinically.
Results: 61 cases included in our study, where males were 52 cases and females were 9 cases. The age incidence ranging from 35 years to 76 years noted**.** In the distribution of nodal secondary carcinoma of the nasopharynx was 100% nodal positive followed by hypopharynx, oropharynx, and larynx. 21% of patient presented in the N_0 stage. The remaining 79% were node positive. In nodal secondary by size of primary most of the patients presented with T_3 disease (52%) followed by T_2 disease (26%), T_1 disease (11%) and T_4 disease (11%).
Conclusions: In malignancy of larynx, pharynx, lymph node assessment clinically is an important prognostic factor to determine the staging of tumour. The clinical evaluation may also have false negative, so radiological evaluation will further give a detailed assessment of the nodes for better treatment outcomes to reduce the overall mortality.

Keywords: Clinical assessment, Neck node, Primary tumor, Head and neck

INTRODUCTION

Cancer staging is an important process that helps physicians, patients, and researchers communicate clearly about disease status, prognosis, and treatment options. The most commonly used staging system for head and neck cancer is the American Joint Committee on Cancer (AJCC) system, which stages patients on the basis of TNM staging. AJCC N staging is uniform for all mucosal head and neck cancers except for nasopharyngeal cancers and melanomas. It combines information about the number, size, and laterality of positive nodes into an aggregate measure of nodal disease.[1] Lymph node involvement is well established as an important prognostic factor for head and neck cancer, with the presence of even one positive lymph node being associated with as much as a 50% reduction in overall survival.[2]

The size of cervical lymph node is the guideline for operative procedures. Usually, cervical nodes larger than 10 mm are significant for nodal metastasis and the operation is a radical neck dissection.

However, pathologically identified neck node metastasis occurs in 34%–51% of prophylactic neck dissections and 58%–69% in therapeutic neck dissections.[3,4] One of the most commonly used prognostic factors is the tumor-node-metastasis (TNM) staging system. The TNM staging system classifies lymph nodes status by the number, size, and laterality of positive lymph nodes.[5] Lymph nodes of the neck have been classified into 7 levels. The spread of carcinoma to these levels is probably predictable according to the site of the primary.[6] The appropriate staging of cervical lymph nodes is very important in the management of any head and neck primary carcinoma. Clinical palpation of cervical lymph nodes has many false negative and false positive results.[7,8] It was said to be existed in 20–40% of cases.[9,10]

Aims and objectives

1. Assess the nodal status of primary tumour of pharynx, larynx
2. To analyse the level of lymph node involvement
3. To analyse the stage of presentation of the tumor and node.

METHODS

Prospective study between November 2010-2011, in ENT Department, Government Rajaji Hospital, Madurai.

Inclusion criteria

1. Patients with primary malignancy from larynx, or, any sub site of pharynx (nasopharynx/ oropharynx/hypopharynx)
2. Histologically proven squamous cell carcinoma.

Exclusion criteria

1. Patients of oral cavity malignancy, sino-nasal malignancy, thyroid malignancy
2. Metastasis to lungs/abdomen
3. Synchronous primary

Workup

In all the patients enrolled for the study detailed history was taken, complete physical examination was then carried out including a postnasal examination and an indirect laryngoscopy for characteristics of primary in terms of site, extent, size, macroscopic appearance, degree of local infiltration, presence of synchronous lesion and the T stage. The palpable nodes were considered significant if they were more than 1 cm in size, firm to hard in consistency, spherical and those in the site of drainage of the primary.

The important features noted regarding the nodes during palpation include the location, level of the node, size, consistency, number of nodes and the group to which they belong, as well as signs of extra capsular spread such as invasion of the overlying skin, fixation to deeper tissues or paralysis of cranial nerves. The presence of contra lateral nodes and the N-stage was also determined. A fine needle aspiration cytology of the nodes was then done. Biopsy from the primary site was done in all cases to know the nature and degree of differentiation of the primary.

RESULTS

There were 61 cases included in our study, where males were 52 cases and females were 9 cases. The age incidence ranging from 35 years to 76 years was noted, with about 79% of patients being in the age group of 41-65 with highest incidence in the 6th decade.

Majority of the patients presented within the first year of developing symptoms. There were 2% of patients with positive family history. Most of the patients had tobacco or alcohol abuse in men and women in the form of tobacco chewing.

In the distribution of nodal secondary, carcinoma of the Nasopharynx was 100% nodal positive followed by Hypopharynx, Oropharynx, and Larynx is shown in Table 1.

Table 1: Nodal presentation with level of involvement.

Site	Node negative	Node positive	Level
Nasopharynx	0	2	II,III,IV,V
Hypopharynx	4	20	III,IV,II,V
Oropharynx	2	9	II,III
Larynx	7	17	II,III

Table 2: Stage of nodal presentation.

Stage			Percentage (%)
N_0			21
N_1			14.8
N_2	N_{2a}	23	57.6
	N_{2b}	24.6	
	N_{2c}	10	
N_3			6.6

In distribution of patients according to nodal status, 21% of patient presented in the N_0 stage. The remaining 79% were node positive. The frequency of each stage category of nodal presentation is shown in table 2. While the nodal secondary by size of primary most of the patients presented with T_3 disease (52%) followed by T_2 disease (26%), T_1 disease (11%) and T_4 disease (11%) Figure 1-4.

Figure 1: Level II, III, IV, V nodes.

Figure 2: Growth nasopharynx.

Figure 3: Level II, III nodes.

Figure 4: Growth oropharynx.

DISCUSSION

Lymphatic spread is the most important mechanism in the spread of head and neck squamous cell carcinomas. The rate of metastases probably reflects the aggressiveness of the primary tumor and is an important prognostic factor.[11] The purpose of a staging system is to group patients into similar categories of survival and potentially identify patients who would be better candidates for treatment intensification.

Out of the 61 patients selected for the study, males predominate over females with a male to female ratio of 5.8:1, while western literature quotes a male to female ratio of 5:1 with a decreasing trend due to an increase in female tobacco use in a study by Shear et al.[12] The age incidence is identical to that seen in the west with the maximum incidence in the sixth decade. There were 110 males and 7 females. The median age was 51 years, with a range from 34–74 years in the study by Chien et al.[13]

In the study by Safaan et al, clinical palpation provided false positive results of about 12.3% and false negative results of about 47.6%.[14] In our study 21% of patient presented in the N_0 stage. The remaining 79% were node positive.

Our patients tend to present late in the course of their disease and this is reflected in the high incidence of N_2 (about 57%) neck among those with palpable cervical metastasis.

The overall highest incidence of metastasis was in the middle deep cervical lymph node (mid jugular), the level of nodes involved was level III (mid jugular group) in our study, unlike where it was reported as level II (upper jugular group) in Lindberg series.[15]

Localized tumours that do not metastasize have the best prognosis. Cancers that have metastasized usually indicate a later stage disease and treatment becomes more complicated, with poorer outcomes.

CONCLUSION

In malignancy of larynx, Pharynx, lymph node assessment clinically is an important prognostic factor to determine the staging of tumour. The clinical evaluation may also have false negative, so radiological evaluation will further give a detailed assessment of the nodes as clinically not palpable nodes could also be documented. The treatment of primary as well as the lymph node metastasis should be carefully evaluated for treating according to the stages of malignancy for better treatment outcomes to reduce the overall mortality.

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