

Frequency of Lymphnode Metastasis in Supraglottic Ca Larynx

Mohammad Rokan Uddin Bhuiyan^{*1}, Mohammad Idris Ali², Balayet Hossain Siddiquee³,
Fatema Johora⁴, Mohammad Kamal Hossain⁵

Abstract

Introduction: To observe the association between the level of lymph node metastasis and the T- stage and to evaluate the N- stage in supraglottic carcinoma of larynx. **Materials and Methods:** A prospective cross-sectional study was carried out on 80 consecutive cases of supraglottic carcinoma larynx in three tertiary level hospital in Dhaka during July'2009 to March 2011. **Results:** The highest number of patients were in the age group 5th and 6th decades. Male to female ratio was 9:1. Topographically 70 cases (87.5%) had lesions involving epiglottis, 5 cases (6.25%) in aryepiglottic fold and 5 cases (6.25%) had lesions at false cord. Majority cases were histopathologically confirmed squamous cell carcinoma (95%) and among them 46 cases (57.5%) had well differentiated. Cervical metastatic lymph nodes were found 40% (32 cases) where level-II was most common. This was most frequent in early supraglottic(T1&T2) carcinoma of larynx (86.25%), $P=0.008$. A positive correlation was found between the T stage of primary tumours and frequency of cervical lymphadenopathy. Lymph node metastasis were 4.77% in T1, 37.50% in T2, 71.43% in T3 and 91.67% in T4. In early stage lymph node involved 93.75% in Level- II, 6.25% in Level- III & in advanced stage 100% in Level - II, 62.5% in Level - III and 25.0% in Level - IV. Distribution of study cases (31.25%) in stage-II, 25% in stage-I, 22.50% in stage-III and 21.25% were in stage-IV. **Conclusion:** Result of this study may help the clinician for planning of treatment of this malignant diseases as well awareness.

Keywords: Supraglottic carcinoma, Neck node metastatic.

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*1. Corresponding Author:

Dr. Mohammad Rokan Uddin Bhuiyan
MBBS, FCPS, MS
Assistant Professor
Kurmitola General Hospital, Dhaka.

2. Dr. Mohammad Idris Ali

MBBS, MS
Consultant
Department of ENT
Bangabandhu Sheikh Mujib Medical University, Dhaka.

3. Prof. Balayet Hossain Siddiquee

Professor
Department of ENT
Bangabandhu Sheikh Mujib Medical University, Dhaka.

4. Dr. Fatema Johora

MBBS, MPhil, MMed
Associate Professor
Department of Anatomy
Sir Salimullah Medical College, Dhaka.

5. Lt Col Mohammad Kamal Hossain

Assistant Professor
Department of ENT
Arms Forces Medical College, Dhaka.

malignancy in men⁴. Which is the 11th most common cancer in men worldwide⁵. There is a steady rise in the incidence of cancer of the larynx during the past decades⁶. A higher incidence of laryngeal carcinoma has been reported from Asian population. In the western Asia and India, laryngeal cancer account for more than 6% of all cancers among men.

Carcinoma larynx is not uncommon in Bangladesh. Laryngeal cancer is one of the 10 most common cancers in Bangladesh⁷. Study in our country showed that the number of patients suffering from carcinoma larynx is increasing gradually^{1,3}. One study in this country had shown 35.32% of all cancer was in head and neck region and the commonest head and neck malignancy was laryngeal carcinoma 31.58%³. In a recent study shows the overall incidence of Head and Neck Squamous cell carcinoma was 150 person in 1,00,000 population (0.15%). This study also revealed that incidence of carcinoma of the larynx was 25.22%. Highest incidence was found in the 6th decade of life in both sexes with male female ratio was 4.5:1⁸.

One of the most important significant prognostic factors in head and neck cancer is the presence or absence, level and size of metastatic neck disease. A single ipsilateral cervical lymph node metastasis decreases 5- year survival rate by 50% patients with squamous cell carcinoma of the supraglottis of larynx. This survival rate decreases according to the number and level of the metastatic neck node involved and presence of capsular rupture⁹. Nodal metastasis is also associated with a high rate of regional recurrence¹⁰. This study tries to correlate the metastatic neck node in different stage of supraglottic carcinoma. In this study it has tried to find out significance of frequency of neck node metastasis in different stage of supraglottic laryngeal carcinoma. So far it is known, comparative study on this

Introduction

The larynx is the most common site for primary malignant tumour in head and neck region^{1,2,3} which accounts for 25 -30% of Head and neck malignancy. It represents 1-2% of all

subject was not carried out previously in our country. The result of the study will provide some knowledge about the incidence and pattern of neck nodal metastasis of the supraglottic laryngeal carcinoma with their presentation and association factors, which may help in the early and appropriate diagnosis of the diseases and choice of treatment modalities.

Materials and Methods

This cross sectional study which was carried out in the department of otolaryngology–Head & Neck Surgery BSMMU, DMCH, SSMC Hospital during this period of July 2009 to March 2011. A total 80 patients of supraglottic carcinoma admitted in the department of ENT Head-Neck Surgery, BSMMU, DMCH, & Mitford Hospital during the study period. All the patients of supraglottic carcinoma admitted in the respective department diagnosed and confirmed by clinical examinations, endoscopic biopsy and histopathology. After taking informed consent and matching the inclusion criteria were included in this study. A Standardized structured data collection instrument was used to collect necessary information of the study subject, which includes-particulars of the patient, demographic profiles, History, clinical examination, laryngoscopic finding, cytological and histological findings, and relevant radiological findings.

Results & Observations

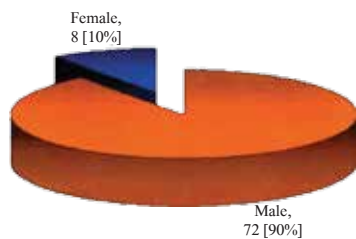


Figure-1: Sex distribution of the Patients (n=80).

Table-I: Age distribution (n=80).

Age	No of Patients	Percentage (%)
40 -49 Years	16	20.0%
50 -59 years	38	47.5%
60 -69 years	20	25.0%
70 -79 years	4	5.0%
80 + years	2	2.5%
Total	80	100.0%

Table-II: Site of involvement of growth supraglotticcarcinomalarynx (n=80).

Distribution of cases	No. of cases	Percentage
Aryepiglottic folds and Arytenoids with Epiglottis	40	50.00%
Epiglottis with Vestibule	19	23.75%
Epiglottis	11	13.75%
False cord	5	6.25%
Aryepiglottic folds	5	6.25%

Table-III: Histological grading of carcinoma larynx (n=80).

Grading	Degree of differentiation	Number	Percentage
I	Well differentiated	46	57.50%
II	Moderately differentiated	24	30.00%
III	Poorly differentiated	06	7.50%
IV	Undifferentiated	04	5.00%

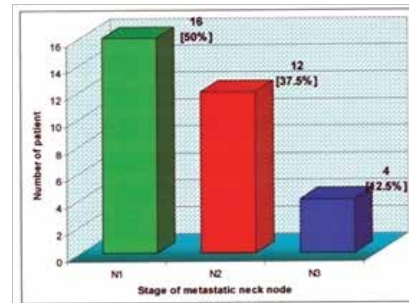


Figure-2: Stage [N] of metastatic neck nodes [n=32].

Table-IV: Distribution of Level of Neck node in different tumor stage (n=32).

Tumour Stage [T]	Level of neck node		
	II	III	IV
Early Stage [T ₁ & T ₂] (n=16)	15 (93.75%)	1(06.25%)	0
Advance Stage [T ₃ & T ₄] (n=16)	16(100.00%)	10(62.5%)	6(37.51%)
Total (n=32)	31(96.88%)	11(34.38%)	6(18.75%)

Table-V: Nodal involvement in different stage of supraglottic carcinoma (n=80).

Nodal involvement	Early Stage [T ₁ & T ₂]	Advance Stage [T ₃ &T ₄]	Total
Node - Ve	45(56.25%)	3(3.75%)	48 (60.0%)
Node + Ve	16(20.00%)	16(20.00%)	32 (40.0%)
Total	61(76.25%)	19(23.75%)	80(100.0%)

Table-VI: Staging [TNM] patient n=80.

Stage [TNM]	Number of cases	Percentage
Stage-I	20	25.0%
Stage-I	25	31.25%
Stage-III	18	22.50%
Stage-IV	17	21.25%

Discussion

Carcinoma larynx is not uncommon in Bangladesh. Laryngeal cancer is one of the 10 most common cancers in Bangladesh⁷. Previous study revealed that incidence of carcinoma of the larynx was 25.22%. Highest incidence was found in the 6th decade of life in both sexes with male female ratio was 4.5:1⁸. Supraglottic carcinoma of larynx is a common (67-73%) disease in otolaryngology in Bangladesh^{11,12,13}.

80 patient of supraglottic carcinoma fulfilling the inclusion criteria were included in this cross sectional study from

purposely selected three tertiary hospitals of Dhaka during July 2009 to March 2011. Among them 32 [40%] patient had metastatic neck node.

The incidence (as opposed to mortality) of laryngeal carcinoma is common with other head and neck cancer increase with age. This is predominantly found in patient aged from 50-70 years^{14,15,16}. In this study age of the patient ranged from 38-83 years (mean 57.58 ± SD 9.79 years). 38 (72.5%) of patients were in the 5th- 6th decade. Highest number (38, 47.5%) of patient with supraglottis carcinoma larynx was found between 50 to 59 years of age. No case was found below 38 years of age. In the developing countries many cases are diagnosed in individuals before 5th decade of live. Less than 1% of Carcinoma of the larynx occur before age of 30 except for the supraglottic type that has a lower age range⁵.

One invariable characteristic of carcinoma of the larynx is its greater predominance in men compared with women¹⁴. The male/female ratio (8:1) is higher for cancer at any other site, thus emphasizing the rarity of laryngeal cancer among females¹¹. This international male/female ratio for the incidence of laryngeal carcinoma Male to female ratio was (M:F)9:1⁴. The overall male to female ratio varies 4:1 to 20:1. Here 72 (90%) patient were male and 8 (10%) were female, Male to female ratio was 9:1, which was consistent with other studies in Bangladesh and in this subcontinent.

Most of the supraglottic growth was exophytic in appearance (60%). 40% lesion was ulcerative type. No fungating type was observed in this study. This two types had no statistically significant difference (P=0.127). This was also similar to study of Haque, 2000.

The most common site of origin of supraglottic carcinoma is the center of infrahyoid epiglottis followed by the false cord, suprahyoid epiglottis, aryepiglottic fold and ventricle¹⁵. The common site of involvement of supraglottic carcinoma in this study was epiglottis (87.5%). 5 cases (6.25%) were in Aryepiglottic fold and other 5 cases (6.25%) had lesions at false cord. There was statistically significant difference among the involvement of carcinoma in other different sites of the supraglottic larynx (P <0.001).

In this study all the carcinoma larynx were found as squamous cell carcinoma of different variant and degree of differentiation. Majority of the subjects were found well-differentiated (57.5%) which was belong to grade- I. 30% patients had moderately differentiated (grade- II) and 7.5% (grade- II) patients had poorly differentiated carcinoma (grade- III) and 4 (5%) patients had undifferentiated carcinoma (grade- IV).

Out of 80 patient 32 (40%) had their regional lymph nodes involved. There was not a significant difference in the proportions of individuals with the presence or absence of metastatic neck node (z= 1.526, P = 0.127). 16 (50%)

patient were found in early stage of neck node metastasis (<3cm in size in ipsilateral side). Homolateral involvement of nodes were found in most cases 28 (87.5%).

One of the most important significant prognostic factors in head and neck cancer is the presence or absence, level and size of metastatic neck disease. A single ipsilateral cervical lymph node metastasis decreases 5- year survival rate by 50% patients with squamous cell carcinoma of the supraglottis of larynx. This survival rate decreases according to the number and level of the metastatic neck node involved and presence of capsular rupture⁹. Nodal metastasis is also associated with a high rate of regional recurrence¹⁰.

Poorly differentiated tumours have the highest of distance metastasis. Though presented late, in no case of our series distant metastasis was found. So, all were in M0 state. In presentation staging was concerned maximum (31.25%) at stage-II followed by 22.50% at stage-III, 25% in stage-I and 21.25% were in stage-IV. (Table-II). The distributing of stage is almost nearer to others studies^{11,12,17}. For proper staging CT Scan and MRI were necessary, but could not done for monetary problem of the patients.

Conclusion

To evaluate the cervical lymph node metastasis in different stage of supraglottic laryngeal carcinoma this cross sectional study was done in limited three hospitals in Dhaka among limited number of subjects. Lymph node metastasis was found in early supraglottic carcinoma (T1& T2) of larynx is significantly frequent in level II cervical lymph node. There was also significant association and correlation was found in advance stage of tumour with the size of tumour and node, site of involvement, age and sex groups, smoking and sociodemographic factors. Result of this study may help the clinician for their planning of treatment of this malignant diseases as well prevention.

Conflict of Interests: None.

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