

# Clinicopathological Study of Supraglottic Carcinoma of Larynx

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## Abstract

**Introduction:** Incidence of supraglottic carcinoma is more common which may be related to poor nutrition with personal habit like smoking and chewing habit of betel leaves with various ingredient.

**Objectives:** To find out the incidence, age and sex distribution, occupation and clinical presentation of supraglottic carcinoma of larynx.

**Materials and Methods:** In this prospective study, 30 patients of supraglottic carcinoma are collected from department of ENT and Head-Neck surgery, Combined Military Hospital, Dhaka from July 2012 to July 2013.

**Results:** Patients belongs to different age groups, ranging from 40 to 80 years and maximum patients are in 50 to 60 years of age. The male to female ratio is 5:1. In this series, majority of patients are smoker (66.66%). Most of them are from low socio-economic group. The incidence of lymph node involvement is 40% (12 cases). Maximum number of patients presents with exophytic lesion (60%). Ulcerative lesions are 26.66% and infiltrative lesions are 13.33%. Maximum numbers of patients have T2 lesions (80%). T1 lesions are 20%. In this study all cases are histopathologically confirmed to be squamous cell carcinoma (100%). In this study, all cases are Mo state.

**Conclusion:** Supraglottic carcinoma occurs between 40-80 years of age, more common in 5th and 6th decades. Chewing betel nut and tobacco should be avoided to reduce the risk of supraglottic carcinoma and early presentation & diagnosis will improve the prognosis of patients.

**Key-Words:** Supraglottic carcinoma, Squamous cell carcinoma, exophytic lesion, Smoking.

## Introduction

Laryngeal cancer is the most common head and neck cancer worldwide, but is relatively uncommon in women. However, there is now a trend towards a proportional increase in female numbers compared to males in the UK, probably secondary to increased tobacco consumption<sup>1</sup>.

The demographics and epidemiology of the disease have changed during the past 40 years. Male/female<sup>2,3</sup> incidence has, dropped from 15:1 to now less than 5:1 in 2004. Relative incidence of malignant tumours within the larynx includes: squamous cell carcinoma (>90% of all laryngeal cancer) and lymphoma (second most common).

Laryngeal cancer represents between 1% and 2% of all malignant tumours in the body. Both the general incidence and the incidence by location (supraglottis, glottis, subglottis) have geographic

variants. Incidence of supraglottic carcinoma is more common which may be related to poor nutrition with personal habit like smoking and chewing habit of betel leaves with various ingredients<sup>4</sup>.

Other factors associated with increased risk of laryngeal cancer include prolonged exposure to fossil fuels, human papilloma virus infection, chronic gastro-esophageal reflux, passive smoking, and occupational exposure to substances like- asbestos, wood, cement, solvent and nickel. Those working in the railway and timber industry, sheet metal worker, grinding wheel operators, and car mechanics are also said to have a higher incidence of laryngeal cancer. High dietary intake of fruits and vegetables is associated with a decreased incidence of laryngeal cancer, probably because of a protective effect related to high contents of vitamins A and C<sup>4</sup>.

The symptom pattern of supraglottic carcinoma are altogether more diffuse<sup>5</sup>. Clinically supraglottic carcinoma usually presents with progressive and unremitting dysphonia followed possibly by difficulty in respiration, difficulty in swallowing, pain in the throat often radiating to the homolateral ear, neck masses and rarely debilitation. The important factors influencing survival rate are the site of primary lesion, local infiltration, level of cellular differentiation and regional metastasis. Survival decreases by 40% with the regional metastasis<sup>6</sup>. Referred otalgia is caused by Arnolds nerve, the vagal branch that supplies part of ear sensation. Bulky tumours of the epiglottis often present with a hot potato or muffled voice quality due to airway compromise<sup>7</sup>. As the supraglottis is rich in lymphatics, incidence of lymphnode metastases and occult metastases is higher here<sup>8</sup>. Few patients present with non-lymphatic distant metastases at the time of diagnosis, most of which occurred in lungs followed by bone, liver and skin incidence of lymph node metastasis from supraglottic cancer is 50 to 60%. There is a significant relationship between the presence of intra tumoral lymphatics and nodal metastasis at presentation and poorly differentiated tumour grade<sup>9</sup>.

## Material and Methods

In this study, 30 patients of supraglottic carcinoma were collected from in-patients Department of Combined Military Hospital, Dhaka. Detail history was taken. General examination and ENT examination were done thoroughly. Examination of neck was done in all patients. The nodal metastases, level of nodal involvement, size of the neck nodes were thoroughly checked. Indirect laryngoscopy, Fiberoptic laryngoscopy and USG and CT scan were done in all cases. FNAC of palpable lymph node was done. Complete blood count, bleeding time, clotting time, serum creatinine, random blood sugar, urine R/E, ECG and X-ray chest P/A view were done. Direct laryngoscopy under G/A was done for evaluation of disease and tissue was sent for histopathology for confirmation of malignancy, type of malignancy and histopathological grading. All examination, investigation and operative findings were recorded in data sheet.

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**Results**

**Table-I:** Age distribution (n=30).

Age	No of patients
40-50 years	6
50-60 years	15
60-70 years	7
70-80 years	1
> 80 years	1

The age of the patient in our study varied from 40 yrs to 80 yrs. Maximum number of patients were belonged to 50-60 yrs (50%).

**Table-II:** Sex distribution (n=30).

Sex	Number of cases	Percentage (%)
Male	25	83%
Female	5	17 %

In this study 25 (83%) patients were male and 5 (17%) were female. Thus male to female ratio was 4.8:1.

**Table-III:** Occupation (n=30).

Occupation	Number of cases	Percentage (%)
Cultivation	13	43.33%
Service	4	13.33%
Labour	4	13.33%
Business man	2	6.66%
House Wife	2	6.66%
Teaching	2	6.66%
Shop Keeper	3	10%

13 (43.33%) patients of this study were cultivators and the next common occupations of the patients were service and labour

**Table-IV:** Socio-economical condition (n=30).

Socio-economic status	Number of cases	Percentage (%)
Poor Class	17	56.66%
Medium Class	11	36.66%
Higher Class	2	6.66%

Most of the patients belonged to poor socio-economic class (56.66%).

**Table-V:** Personal habits of patients with supraglottic carcinoma (n=30).

Personal habit	Number of patients	Percentage
Smoking	20	66.66
Chewing leaf and tobacco	4	13.33
Smoking chewing tobacco and alcohol	1	3.33
Smoking and alcohol	1	3.33
Smoking and chewing tobacco	4	13.13

Smoking was the commonest (66.66%) personal habit. The other common personal habits were chewing leaf and chewing tobacco.

**Table-VI:** Incidence of cervical lymph node metastasis (n=30).

Cervical nodal metastasis	Number of patients	Percentage
Present	12	40%
Absent	18	60%

Out of 30 patients, 12 (40%) had their regional lymph nodes involvement.

**Table-VII:** Status of involved node (n=12).

Status	Number of cases	Percentage
N1	7	58.33%
N2	2	16.33%
N3	3	25%

Nodes in N1 stage of involvement were found in most cases (58.33%)

**Table-VIII:** Presenting symptoms of supraglottic carcinoma (n=30).

Symptoms	No of cases	Percentage (%)
Cough and irritation	25	83.33%
Dysphagia	20	66.66%
Change of voice	17	56.66%
Foreign body sensation	15	50.00%
Respiratory distress	06	20.00%
Neck pain	06	20.00%
Neck swelling	16	53.33%
Stridor	04	13.33%
Loss of weight	04	13.33%

Most of the patients presented with more than one symptoms and the commonest presenting symptoms of supraglottic carcinoma were cough and irritation (83.33%) followed by dysphagia (66.66%) and change of voice (56.66%). A good number of patients (53.33%) presented with neck swelling.

**Discussion**

Among laryngeal cancers, supraglottic cancer was the commonest in Bangladesh (74.1%)<sup>3</sup>. This study was carried out to find out the clinic-pathological study of supraglottic carcinoma of larynx. In this study, it was observed that patients belonged to different age groups ranging from 40 to 80 years and maximum patients were in 50 to 60 years of age. Incidence was more in male, smoking was the commonest predisposing factor. The male to female ratio was 5:1. Age and sex incidence was consistent with other studies<sup>4,8</sup>.

Smoking-especially cigarette smoking and alcohol are indisputable risk factors and act synergistically to increase the risk of malignant transformation<sup>5</sup>. In this study, majority of patients had the habit of smoking (66.66%) and chewing habit of betel leaves and nuts (13.33%), but habit of alcohol consumption was less. In study by Quayum MA<sup>10</sup>, habit of smoking was 70%. Laryngeal carcinoma has marked association with poor socio-economic group. Smoking rates were higher and poor access to healthcare may explain the higher incidence of laryngeal carcinoma in lower socioeconomic classes. In this study most of the patients (56.66%) were from poor socio-

economic group, which was about 61.68% in another study carried out in Bangladesh<sup>2</sup>.

Patients presented with one or more symptoms. We found that cough and irritation were the common symptoms (83.33%) followed by dysphagia (66.66%), change of voice (56.66%), neck swelling (53.33%). Symptoms related to the pain, persistent irritation or sore throats were related to Sidransky D<sup>11</sup>. Supraglottic carcinoma was of three types macroscopically<sup>12</sup>. In this study, out of 30 patients, 18 (66.66%) had exophytic, 8 (26.66%) had ulcerative and 4 (13.33%) had infiltrative growth. Squamous cell carcinoma was the commonest malignant tumour (>90% of all laryngeal cancer)<sup>1</sup>. In this study, all cases were histopathologically confirmed to be squamous cell carcinoma.

## Conclusion

1. Supraglottic carcinoma usually occurs between 40-80 years of age, more common in 5th and 6th decades.
2. Patients with supraglottic carcinoma initially present with persistent irritation, pain or sore throat
3. Smoking and chewing (betel nut and tobacco) habits have got relation in the causation of supraglottic carcinoma.
4. Laryngeal carcinoma has got marked association with poor socio economic group.
5. Level-II nodes are frequently involved which are mostly unilateral.
6. If patients present early, staging of carcinoma will not be advanced.

With the above findings, one can clearly say that, chewing betel nut and tobacco should be avoided to reduce the risk of supraglottic carcinoma and early presentation & diagnosis will improve the prognosis of patients.

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