

ORIGINAL RESEARCH

Clinical and Radiological Association of Carcinoma Larynx and Hypopharynx at a Tertiary Care Hospital: A Prospective Analysis

¹Zahid Mustafa Khan, ²Gajendra Nayak, ³Rajiv Romal Mark

¹Associate Professor, ^{2,3}Junior Resident, Department of ENT, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India

Correspondence:

Rajiv Romal Mark

Junior Resident, Department of ENT, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India

Email: rajivkisku@gmail.com

ABSTRACT

Background: To assess clinical and radiological association of carcinoma larynx and hypopharynx.

Materials & Methods: 100 patients with newly diagnosed carcinoma of larynx and hypopharynx were included in the study. Complete demographic and clinical details of all the patients was recorded. Biopsy was done by direct endoscopic examination either under LA or GA. Clinical TNM staging based on this information was made. Correlation of clinical findings with radiographic findings was done. All the results were recorded and analysed using SPSS software.

Results: While assessing the distribution of patients according to tumour size as per clinical evaluation, it was seen that 29 percent and 25 percent of the patients were of T3 and T2 staging while 23 percent of the patients each were of T1 and T4 staging respectively. On radiographic evaluation, it was seen that 5 patients which were diagnosed as T2 clinically, were found to be of T3 (2 patients) and T4 (3 patients). While analysing the correlation statistically, significant results were obtained.

Conclusion: A combination of clinical and radiological assessment in carcinoma of larynx and hypopharynx is necessary so that prompt treatment can be given.

Key words: Carcinoma, Larynx, Hypopharynx.

INTRODUCTION

Cancer of the larynx is so common that it accounts for one in every five cases of malignancy of the head and neck area, with squamous cell carcinoma (SCC) accounting for the majority. Up to 40% of patients visit doctors at a late stage of the disease. In total, 65–85% of cancers of the hypopharynx involve the pyriform fossae, 10–20% arise from the posterior pharyngeal wall, and 5–15% from the postcricoid region.¹⁻³

The larynx lies within the hypopharynx. The pyriform sinuses, the most common site of hypopharyngeal carcinomas, are created by the location of the larynx within the hypopharynx. The medial wall of the pyriform sinus is the lateral wall of the supraglottic larynx, and, at times, the precise site of origin of a carcinoma in this location is determined by subjective measures. Carcinomas of the larynx most frequently present in early stages. They tend to be well-differentiated tumors. Glottic tumors outnumber supraglottic tumors by a ratio of three to one. The true vocal cords have a sparse lymphatic supply, and, typically, glottic cancers remain a local (or primary site) problem. Even advanced carcinomas of the glottis

have a low incidence of lymphatic metastases. The incidence of hematogenous metastases from carcinomas of the true cords is extremely low.⁴⁻⁶

Patients with carcinoma of the hypopharynx frequently have advanced disease at the time of presentation. These patients have some of the worst prognoses of all head and neck cancer patients and combined-modality therapy is usually required to achieve a cure. The conventional treatment for advanced, but resectable, cases has been surgery followed by post-operative adjuvant therapy, and five-year survival rates vary from 10% to 60%.⁶⁻⁸ Hence; the present study was conducted for assessing clinical and radiological association of carcinoma larynx and hypopharynx.

MATERIALS & METHODS

The present study was conducted for assessing clinical and radiological association of carcinoma larynx and hypopharynx. 100 patients with newly diagnosed carcinoma of larynx and hypopharynx were included in the study. Complete demographic and clinical details of all the patients was recorded. Biopsy was done by direct endoscopic examination either under LA or GA. Clinical TNM staging based on this information was made. Correlation of clinical findings with radiographic findings was done. All the results were recorded and analysed using SPSS software.

RESULTS

In the present study, out of 100 patients of SCC, 59 percent of the patients were of laryngeal carcinoma while the remaining 41 percent of the cases were of carcinoma of hypopharynx. While assessing the distribution of patients according to tumour size as per clinical evaluation, it was seen that 29 percent and 25 percent of the patients were of T3 and T2 staging while 23 percent of the patients each were of T1 and T4 staging respectively. On radiographic evaluation, it was seen that 5 patients which were diagnosed as T2 clinically, were found to be of T3 (2 patients) and T4 (3 patients). While analysing the correlation statistically, significant results were obtained.

Table 1: Distribution of patients according to tumour size (T staging) as per clinical evaluation

T Staging	Number	Percentage
T1 (<2 cm)	23	23
T2 (2 to 4 cm)	25	25
T3(4 to 6 cm)	29	29
T4 (More than 6 cm)	23	23

Table 2: Distribution of patients according to tumour size (T staging) as per radiographic evaluation

T Staging	Number	Percentage
T1 (<2 cm)	23	23
T2 (2 to 4 cm)	20	20
T3(4 to 6 cm)	31	31
T4 (More than 6 cm)	26	26

DISCUSSION

Squamous cell carcinoma (SCC) of the aerodigestive tract, a common adult cancer in most parts of the world, is essentially a lifestyle related cancer occurring after decades of tobacco use. As expected from the multistep carcinogenesis model, it is very rare in children. Carcinomas in this region are generally more common in males, aged around 55

years, the exception being tumours in the retrocricoid region, seen in about 30% of British women and unrelated to alcohol consumption or smoking, which are the two main risk factors for hypopharyngeal cancer. Given the late presentation of symptoms and considerable submucosal spreading of the tumour, squamous cell carcinoma of the hypopharynx is usually detected in advanced stage (III and IV), often with locoregional and/or distant metastases and, consequently, has a poor prognosis. Treatment options include radiotherapy, chemotherapy and surgery, alone or combined. Early cancers of the hypopharynx can be treated with radiotherapy alone. In terms of locoregional control and survival rates, results are comparable to those of partial surgery.⁷⁻¹⁰ the present study was conducted for assessing clinical and radiological association of carcinoma larynx and hypopharynx.

In the present study, out of 100 patients of SCC, 59 percent of the patients were of laryngeal carcinoma while the remaining 41 percent of the cases were of carcinoma of hypopharynx. While assessing the distribution of patients according to tumour size as per clinical evaluation, it was seen that 29 percent and 25 percent of the patients were of T3 and T2 staging while 23 percent of the patients each were of T1 and T4 staging respectively. In a previous study conducted by Spector GJ, authors analysed occurrence of the distant metastases from laryngeal and hypopharyngeal cancer. In 2,550 patients, the overall incidence of distant metastases was 8.5% (217/2,550 patients) with the following distribution: glottis 4.4%, supraglottis 3.6%, subglottis 14%, aryepiglottic fold 16%, pyriform sinus 17% and posterior hypopharynx 17.6%. The overall 5-year disease-specific survival for distant metastases was 6.4%. Distant metastases were related to advanced local disease (T3 + T4), lymph node metastases at presentation (N+), tumor location (hypopharynx) and locoregional tumor recurrence.¹¹

In the present study, on radiographic evaluation, it was seen that 5 patients which were diagnosed as T2 clinically, were found to be of T3 (2 patients) and T4 (3 patients). While analysing the correlation statistically, significant results were obtained. As per staging reviewed by Hermans R, evaluation of laryngeal SCC requires a contrast CT study of the neck. Excellent images of the neck are obtained using a multidetector CT (MDCT) following the injection of an iodinated contrast agent (total dose 35-40 g). The contrast may be hand injected or an automated power injector may be used, in which case sufficient delay should elapse before scan acquisition begins. An additional examination for better assessment of the tumor in laryngeal ventricle, anterior commissure and aryepiglottic folds may be done with e-phonation (Yousem DM et al).^{12, 13}

In another previous study conducted by Larbcharoensub N et al, authors evaluated the clinicopathologic findings and treatment outcome in laryngectomized patients with laryngeal cancer and hypopharyngeal cancer. The authors retrospectively reviewed the medical records of 212 patients who had been newly diagnosed and treated with laryngectomy. The common clinical presentations were hoarseness (73.6%), cervical lymphadenopathy (35.8%), sorethroat (22.2%), and odynophagia (14.6%). The laryngeal cancer commonly involves true vocal cord (86.5%), anterior commissure (65.8%), false vocal cord (56.8%), laryngeal ventricle (53.5%), subglottis (47.1%), and paraglottic space (35.5%), respectively.¹⁴ In a paper by Atlanoğlu et al., the staging was as follows: two cases (7.1%) of T1a, three (10.7%) of T2, 14 (50%) of T3, and nine cases (32.2%) of T4a. In comparison with histopathologic staging, clinical staging was accurate in four (14%) patients. Twenty-four patients were under-staged by clinical examination. The matching between clinical staging and pathological staging was fair ($\kappa_w=0.06$). Twenty-three (82.1%) patients were accurately staged. The match between T-stage on imaging and histopathology was good ($\kappa_w=0.773$).¹⁵

CONCLUSION

From the above results, the authors conclude that a combination of clinical and radiological assessment in carcinoma of larynx and hypopharynx is necessary so that prompt treatment can be given.

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