INCIDENCE OF HYPOPHARYNGEAL CARCINOMA IN PATIENTS PRESENTING WITH DYSPHAGIA

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ABSTRACT

Objective: To determine the incidence of hypopharyngeal carcinoma in patients presenting with dysphagia.

Materials and Methods: A descriptive cross-sectional study was conducted at ENT, Head & Neck Surgery Department, Khyber Teaching Hospital, Peshawar, for one year. All patients who presented with dysphagia for more than three weeks, of both genders and above 15 years of age were included in the study.

Results: A total of 342 patients were included in this study. The mean age was 60 years, with a standard deviation ± 1.87. Seventy percent of patients were male, and 30% of patients were female. Hypopharyngeal carcinoma was found in 24 patients (7%) patients.

Conclusion: Hypopharyngeal cancer should be ruled out if a patient between 40 to 70 years of age presents with dysphagia, cervical lymphadenopathy, and has a history of smoking.

Keywords: hypopharyngeal carcinoma, dysphagia, piriform fossa.

INTRODUCTION

Hypopharynx lies inferiorly and posterior to the tongue base, and behind and lateral to the larynx, extending from the hyoid bone superiorly to the lower border of the cricoid cartilage inferiorly consisting on the posterior pharyngeal wall, piriform sinus, and postcricoid space[1]. Tumors of the hypopharynx may be mesodermal or epithelial in origin, and benign or malignant. Squamous cell carcinoma is the most common malignant tumor of the hypopharynx. Only 4.3% of head and neck cancers originate from the hypopharynx in dysphagic patients[2]. The incidence of carcinoma in hypopharynx is that 5-85% involve the pyriform fossa, 10-20% involve the posterior pharyngeal wall, and 5-15% involve post cricoid area[3]. Hypopharyngeal cancer usually does not give rise to symptoms until late in the course of the disease[4]. The clinical features of hypopharyngeal carcinoma include difficulty in swallowing, sore throat, constant coughing, sometimes difficulty in breathing, weight loss, and a lump in the neck[5]. The risk factors include tobacco and alcohol, poor nutrition, Human papillomavirus, weakened immune system, genetic syndromes, and gastro-esophageal reflux disease[6]. Hypopharyngeal carcinoma can be diagnosed by detailed clinical evaluation complemented by Computed tomography scan, Magnetic resonance imaging, Barium swallow, Positron emission tomography, and endoscopic biopsy[7]. Hypopharyngeal squamous cell carcinoma requires an interdisciplinary approach to manage patients appropriately[8]. Tumor staging and histology, functional outcome, and patient comorbidities are essential factors for consider[9]. The treatment modality of hypopharyngeal carcinoma includes sur-

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gery, chemoradiotherapy, and a combination of these depending upon the stage of the disease. The 5-year survival of patients after surgery for hypopharyngeal carcinoma is 30-58%[10].

The results of this study will give us an insight into the frequency of carcinoma in patients with hypopharyngeal growth in this part of the country. Based on this study, results from guidelines can be suggested regarding the immediate screening of all patients presenting with Dysphagia by sharing the result of this study with other health professionals. Early diagnosis and prompt treatment will reduce the morbidity and mortality related to hypopharyngeal carcinoma. This study will highlight the influence of further studies on this topic.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted at ENT, Head & Neck Surgery Department, Khyber Teaching Hospital, Peshawar, for one year. The patients were enrolled in the study through OPD with a history of Dysphagia, i.e., difficulty in swallowing for semisolids (grade1), difficulty in swallowing for liquids (grade 2), or difficulty in swallowing for any material (grade 3) with a duration of more than three weeks. Both male and female patients above 15 years were enrolled. Patients with Dysphagia due to oral cavity tumors, laryngeal tumors, esophageal tumors, and patients with a previous history of hypopharyngeal carcinoma were excluded from the study. The enrolled patients were admitted to the ENT unit for further evaluation, and written informed consent was obtained, and the purpose and benefits of the study were explained.

All patients were carefully evaluated, detailed history, clinical examination, and routine investigations were made. This was followed by radiological investigations, i.e., barium swallow and CT scan in patients with a suspected mass lesion. A biopsy was taken where mass was found and subjected to histopathological examination to detect hypopharyngeal carcinoma.

All the data was stored and analyzed in SPSS version 14. Mean ± SD was calculated for numerical variables like age and duration of Dysphagia. Frequencies and percentages were calculated for categorical variables like sex, hypopharyngeal carcinoma, and grade of Dysphagia at presentation (grade 1, 2, 3). Hypopharyngeal carcinoma was stratified among age, sex, duration of Dysphagia, and grade of Dysphagia at presentation to see the effect modifications.

RESULTS

Three hundred forty-two patients were enrolled to find the frequency of hypopharyngeal cancer in patients with Dysphagia. Age distribution among 342 patients was analyzed as n=20(6%) patients were in the age range of 30-40 years, n=127(37%) patients were in the age range of 50-60 years, n=195(57%) patients were in the age range of 60-70 years. The mean age was 60 years, with a standard deviation ± 1.87.

Gender distribution among 342 patients was analyzed as n=239. 70% of patients were male, while n=103, 30% of patients were female.

Grade of Dysphagia among 342 patients was analyzed as n=99(29%) patients had grade 1 dysphagia, n=24(7%) patients had grade 2 dysphagia, and n=219(64%) patients had grade 3 dysphagia.

The frequency of hypopharyngeal carcinoma in patients presenting with Dysphagia was analyzed as n=24(7%) patients had hypopharyngeal carcinoma in Dysphagia while n=318(93%) patients didn't have hypopharyngeal carcinoma in Dysphagia. (Table No. I)

Association of hypopharyngeal carcinoma in age distribution was analyzed as among 24 cases of positive hypopharyngeal carcinoma, only one patient was in the age range 30-40 years, ten patients were in the age range 50-60 years, and 13 patients were in the age range 60-70 years. (Table No. II)

Association of hypopharyngeal carcinoma in gender distribution was analyzed as among 24 cases of positive hypopharyngeal carcinoma, 17 patients were male while seven patients were female.

DISCUSSION

In our study, hypopharyngeal carcinoma was mostly seen in the fifth and sixth decade of life. This is the same as the finding of Ganzer U et al.,[19,] who found that hypopharyngeal cancer mostly affects male patients in their fifth and sixth decade of life, with a consistently reported peak incidence at 50 to 60 years of age.

Table 1: Frequency of hypopharyngeal carcinoma in dysphagia (n=342)

Frequency of Hypopharyngeal carcinoma in Dysphagia	Frequency	Percentage
Yes	24	7%
No	318	93%
Total	342	100%

Table 2: Association Of Hypopharyngeal Carcinoma In Age Distribution (n=342)

Association of Hypopharyngeal carcinoma in age	34-40years	50-60years	60-70years	Total
Yes	1	10	13	24
No	19	117	182	318
Total	20	127	195	342

In our study, the sex distribution revealed that males were highly predominant in developing hypopharyngeal carcinoma and the male to female ratio was 3:1. Ganzer et al.,[19] also found a similar ratio and said that in cases of hypopharyngeal carcinoma, the male to female ratio for man is overwhelmingly unfavorable.

The study showed that in patients with hypopharyngeal carcinoma, seven percent present with Dysphagia, and the average duration of Dysphagia was about 20 weeks. Change of voice was complained by 77.8% of patients. Neck mass as a direct extension or metastatic neck node was seen in 73.3% of patients. A significant number complained of weight loss, blood-stained sputum, and fatigue of patients. Wolfensberger M et al. [20] showed that change in voice, pain, difficulty in swallowing, painless neck mass, or visible ulcerating lesions are key points to diagnose Hypopharyngeal carcinoma. In this study, pyriform sinus was the commonest site in hypopharyngeal cancer. Post-cricoid region and posterior pharyngeal wall carcinoma were rare comparatively. Watkinson JC et al. [15] mentioned the most common tumor was cancer of pyriform sinus, which is between a half and two-thirds of the total. Steiner W et al. [22,] in their study, found that post cricoid cancer was up to 50% of hypopharyngeal cancer in UK and Canada[3]. In their study, 40% of patients presented with palpable cervical lymphadenopathy, and all of them were in level II. Robertson MS et al[17,] found that 26% of hypopharyngeal carcinoma presented with a metastatic neck node. Steiner W et al. [22] in their study found that 90% of the cases presented with neck metastases (pN+) and mostly in levels II and III. In this study, the evaluation of retropharyngeal and mediastinal lymph nodes was not done.

In the current study, T1 was 44.4%, and the T2 tumor was 35.6%. T3 and T4 were 13.3 and 6.7%, respectively. The palpable lymph node size was up to 6cm. Only 8.9% of patients had palpable bilateral lymphadenopathy. Distant metastasis was not found in the current study. Murakami Y et al. [16] found that hypopharyngeal cancer spread through the invasion of submucosa and local lymph node metastasis. Distant metastasis was usually rare[11].

Our study showed that majority of the cases (75.6%) of hypopharyngeal carcinoma presented in an advanced stage. There is a significant relationship between diagnostic delay and staging($p<0.05$). Steiner W et al. [22] in a study found a similar percentage (71.4 %) of the patient presented in the advanced stage.

In the present study, squamous cell carcinoma was the histopathological type of hypopharyngeal carcinoma in all cases. Differentiations were well-differentiated in 11.1%, moderately differentiated in 46.7%, and poorly differentiated in 42.2%. Mazzone A[18] mentioned that lymph node metastases are related to cellular, nuclear, and structural gradings[12]. Clinical and statistical analysis proved that Carlon's grading based on the structural organization of the tumor seen as a manifestation of its cellular cohesiveness is a more discriminating system of malignancy than others. Grading could be the guideline for better management in terms of surgical management.

In our study, 86.7% of patients had a history of smoking. The mean duration of smoking was 19.6years, and the mean number of sticks smoking was 11/ day. Smoking is significantly associated with hypopharyngeal cancer ($p<0.05$). Rahman MZ[14]

found smoking, chewing of betel nuts and tobacco leaves have got relationship in the causation of pharyngeal malignancy. Takezaki T[13] showed that hypopharyngeal cancer was greater in person who has a history of smoking with drinking than those for smoking or drinking.

In our study, 15.6% of subjects were alcoholic, 42% of patients were found to have a history of betel nut chewing. The average duration of betel nut chewing was eight years approximately. Relationship of hypopharyngeal carcinoma with betel nut chewing is significant ($p<0.05$). History of tobacco chewing was found in 31% of patients. Tobacco chewing is one of the factors to develop hypopharyngeal cancer.

The current study showed that there was no patient with satisfactory oral hygiene. Average and bad oral hygiene was found in 55.6% and 44.4%, respectively. Poor oral hygiene was related to hypopharyngeal carcinoma significantly($p<0.05$). Freiie J et al. [21] found that in tumor patients, oral hygiene and dental status are proved to be significantly poor. The majority of tumor patients hardly brushed their teeth, and the frequency of dental consultation was significantly lower.

The current series shows the performance status of patients at presentation was good, and 77.8% of patients with hypopharyngeal cancer at diagnosis were capable of self-care, although 75.6% of hypopharyngeal cancer presented at advanced disease and 24.4% presented at an early stage ($p<0.05$). The relation between staging and performance status at the presentation of hypopharyngeal carcinoma was found significant($p<0.05$). It is believed that survivals in head & neck malignancies are dependent on some host factors, and some tumor factors like stage and histological type. Contrary to that, Stell PM et al. [23] demonstrated that performance status is the only significant predictor of survival. Other host factors (age and sex) and all tumor factors (site, TNM stage, distant metastasis, and histological tumor grade} are not significant. The performance status of hypopharyngeal carcinoma at a presentation in this series is good.

CONCLUSION

Patients who present with Dysphagia should be thoroughly evaluated for early diagnosis and prompt management of hypopharyngeal carcinoma at an early stage, especially in male patients above 50 years of age.

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