Section: ENT

Original Research Article

CLINICAPATHOLOGICAL STUDY OF HYPOPHARYNGEAL MALIGNANCIES AMONG PATIENTS ATTENDING A TERTIARY CARE CENTRE

Fathima[1], Killu Sridevi[2], Naveen Kumar Srirama[1], Swapna Lenka[1]

[1]Assistant Professor, Department of ENT, Andhra Medical College, India.
[2]Associate Professor, Department of ENT, ACSR Medical College, India.

Received : *08/11/2023*
Received in revised form : *23/12/2023*
Accepted : *10/01/2024*

Keywords:
Hypopharyngeal malignancies, smoking, elderly, alcohol, pyriform.

Corresponding Author:
Dr. Swapna Lenka,
Email: swapnakalyanirs@gmail.com.

DOI: 10.47009/jamp.2024.6.1.56

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (1); 282-286

Abstract

Background: Hypopharyngeal malignancies are rare but carry the worst prognosis among head and neck malignancies. Patients generally present in advanced stages. The Indian subcontinent has the highest rate of hypopharyngeal malignancies worldwide. **Aim and Objectives:** The aim is to study etiological factors, presentation, progression and the distribution of these tumors in relation to age, sex, and site of occurrence, describe the epidemiology, workup, and staging of disease. **Material & Methods:** It is a prospective study carried out from October 2022 to December 2023. This study included all cases of hypopharyngeal malignancy seen in the above duration. **Results and Conclusion:** Most of the patients presented between 5th to 7th- decade. Males were more commonly affected. Smoking was the most common addiction observed. Most common presentation was dysphagia. All cases in the present study had biopsy-proven squamous cell carcinoma. Early diagnosis and initiation of treatment help in improved survival rates and functional outcomes of patients.

INTRODUCTION

Hypopharyngeal malignancies are relatively rare entities and account for less than 10% of all squamous cell carcinoma of the upper aerodigestive tract. They account for less than 0.5% of all cancers and 3–5% of head and neck cancers. .

Hypopharynx includes three subsites –posterior pharyngeal wall, pyriform fossa or sinuses, and post cricoid space. Hypopharyngeal malignancies generally tend to present late in advanced stages due to the site of the tumor and do not produce sufficient symptoms for the patient to seek early medical advice. These also tend to carry the worst prognosis of all head and neck cancers. This is attributed to the fact that the disease has submucosal spread that can be extensive, involves regional lymph nodes, and has a tendency of early distant metastasis.

The peak incidence of hypopharyngeal malignancy is 6th to 7th decade. Alcohol and smoking both acting synergistically is the strongest risk factor. HPV related cancers are seen in 10.9% of hypopharyngeal malignancies, with subsite being pyriform fossa with the highest association.

Most of the malignancies histologically are squamous cell carcinoma. These are biologically more aggressive due to its rich vascularity and a lack of barriers to the spread of the tumor.

Proper management of patients includes detailed history taking, general examination of the patient, and a thorough laryngeal and neck examination. Barium swallow is an effective screening tool for hypopharyngeal malignancies and synchronous cancers in the esophagus. CT imaging has a higher sensitivity for defining the T stage of the tumor

A chest x-ray should be performed as a part of screening for distant metastasis. In borderline-resectable disease, positron emission tomography (PET) along with CT scan (FDG-PET/ CE-CT) as a single-staging investigation may be considered for evaluation of the primary disease status and excluding any distant occult disease. Treatment depends upon the stage of cancer. Early cancers are potentially curable, and goals of treatment should be maximizing chances of cure with function preservation. The main issue in treating patients with advanced stages, as they have many comorbidities, is preserving the laryngeal form and function.

Hypopharynx is rich in lymphatics with a high incidence of metastasis to the jugular Para tracheal and retropharyngeal group of lymph nodes and occult metastasis can be seen in 30% to 40% of N0 necks. Hence treatment of neck nodes is mandatory in all hypopharyngeal cancers.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

MATERIALS AND METHODS

This is a prospective observational study conducted in patients who presented to the department of ENT, Andhra medical college, from October 2022 to December 2023. A total of 30 cases were taken.

Inclusion Criteria

a) All patients presenting with growth in the Hypopharynx admitted to ENT wards of ASRAMS.
b) Patients who give consent for the study.

Exclusion Criteria

a) Patients who do not give consent for the study.
b) Growth is found to be non-neoplastic.

Methodology

Medical history was obtained including the onset of, severity, duration of symptoms, smoking and alcohol intake, dietary history, occupational history, and family history of cancer.

Prior history of anemia, History of Plummer – Vinson syndrome was looked for in patients Also, in female patients, parity was included due to the risk of anemia with increased parity. Socioeconomic status was graded accordingly by the modified Kuppuswamy scale. Clinical examination included an examination of the oral cavity and oropharynx, indirect laryngoscopy, neck examination, and video laryngoscopy

In cases of cervical lymphadenopathy ultrasound neck, and FNAC of lymph node was done. X-ray neck lateral view is done as a part of the examination in all cases

In cases of dysphagia, a barium swallow is done. CECT neck was done in all cases, and appropriate staging was given. A chest x-ray and ultrasound abdomen was done, as a part of screening for distant metastasis. CECT chest was done in cases of suspected distant metastasis.

All patients underwent direct laryngoscopy, and biopsy was taken from growth and sent for histopathology.

All patients were referred to the oncology center for further management.

RESULTS

Age and Sex

In the present study, age incidence ranged from 35-70 years. 40% of the patients presented in the 6th to 7th decade. The mean age of presentation was 55.4 years.In this series of 30 patients, 20 [66.66%] were males, 10 [33.33%] are females. Males: females ratio [m:f] is 2:1. [Table 1]

In the present study, 66% of the patients presented to ENT OPD, with chief complaints of dysphagia, followed by cervical lymphadenopathy seen in 60% of patients. 20% of patients presented with a globus sensation. The most commonly involved nodes were level II. [T

Risk Factors

Smoking and Alcohol

In this series of 30 patients, 17 smokers from which 14 are males,3 are females. The mean duration of the smoking habit in males is 26.2 years, and females are 23.3 years. Most of the patients had smoked hand-rolled [bidi] tobacco[43.3%] followed by filtered cigarettes[13.3%] .most of the patients had 21-30 pack-years. 6 patients had a habit of smokeless tobacco use.

Out of 30 patients, 12 patients are alcoholics who were all males. The mean duration of habit was 25.3 years. All the patients who were alcoholics also smoked. Most of the patients had a habit of whiskey, followed by traditional spirits.9 patients were binge drinkers, 2 were moderate and 1 patient had heavy alcohol use. [Table 3]

Occupation And Nutrition

In the present study, most of the patients were farmers, followed by daily laborers. 76.6% of patients, belonged to the lower middle class.16.6% of patients from upper middle class and 6.6% patients are from upper class

Females had a low intake of fruits, pulses, green leafy vegetables, and carotenoids, and meat when compared to males.

ULTRASOUND NECK, FINE NEEDLE ASPIRATION CYTOLOGY OF LYMPH NODES AND SUBSITE INVOLVED

In the present study, 60% of patients had cervical lymphadenopathy. The most commonly involved lymph node was level-II.FNAC of all patients showed metastatic squamous cell carcinoma.most commonly involved site is pyriform fossa [66.6%],post cricoid area[23.3%],posterior pharyngeal wall[10%].

Staging

All the patients were thoroughly evaluated, and staging was done by the eighth edition of the UICC and American Joint Committee on Cancer (AJCC) Staging Manual, Head and neck Section.

Primary tumor

In the present study, 46.6% of patients presented in the T3 stage, followed by 26.6% of patients in the T2 stage. [Table 4]

Regional lymph nodes

In the present study, 60% patients had nodal metastasis.30% of patients had N2b stage. N3a was seen in 1 [3.3%] patient. [Table 5]

Distant metastasis

M Stage

In present study, 1[3.3%] patient had distant metastasis to lung.

Stage Grouping

In the present study, most patients have presented in advanced stages stage III and IVa. [Table 6]

Histological grading

All patients were biopsy-proven squamous cell carcinoma. Nearly half of the patients, in the present study, were poorly differentiated squamous cell carcinoma. 10% of patients had well-differentiated grading.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Table 1: Age and Sex Incidence

AGE	No of females	No of males	N0 OF PATIENTS	% OF TOTAL PATIENTS
21-30	0	0	0	0
31-40	3	1	4	13.33
41-50	4	1	5	16.66
51-60	1	8	9	30
61-70	2	10	12	40
TOTAL	10	20	30	100

Table 2: Symptoms and Duration

SYMPTOMS	No. of patients	Duration of symptoms[mean] in months	% of the total
Dysphagia	20	3.6	66.6%
Globus sensation	6	4.1	20%
Neck mass	18	2	60%
Throat pain	13	3.5	43.3%
Odynophagia	11	3	36.6%
Hoarseness of voice	5	1	16.6%
Weight loss	17	4.3	56.6
Refereed otalgia	10	2	33.3%

Table 3: Smoking and Alcohol Addiction

ALCOHOLICS	MALES	FEMALES	TOTAL NO OF PATIENTS	% OF TOTAL PATIENTS
SMOKING	14	3	17	56.6
ALCOHOL	12	0	12	40
SMOKING + ALCOHOL	12	0	12	40
SMOKELESS TOBACCO USE	4	2	6	20

Table 4: Distribution of T-Staging

T –stage	Number of patients	% of the total
T1	4	13.3%
T2	8	26.6%
T3	14	46.6%
T4a	3	10%
T4b	1	3.3%
Total	30	100%

Table 5: Distribution of N- Staging

N-STAGE	Number of patients	% of the total
N0	12	40%
N1	3	10%
N2a	2	6.6%
N2b	9	30%
N2c	3	10%
N3a	1	3.3%
N3b	0	0
Total	30	100%

Table 6: Stage Grouping

Stage	Number of patients	% of the total
I	3	10%
II	5	16.6%
III	7	23.3%
Iva	13	43.3%
IVb	1	3.3%
IVc	1	3.3%

Table 7: Histological Grading of SCC

Type	No of patients	% of the total
Well differentiated[grade 1]	3	10%
Moderately differentiated[grade 2]	11	36.6%
Poorly differentiated[grade 3]	16	53.3%
Undifferentiated [grade 4]	0	0

DISCUSSION

Age

In this study, 21 [70%] patients were in the age group of 50-70 years. The mean age of presentation was 55.4 years, which is similar to previous studies, MD. Nazmul Islam et al, 2015,[1] where mean age was 54.25, Gupta et al,2009,[2] it was 55.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Sex distribution

In the present study, the male preponderance is seen. M: F ratio is 2:1, comparable to studies of Christian Godballe et al., 2002,[3] M: F ratio 2.7:1, Johansen LV et al., 2000,[4] M: F ratio was 2.6:1

Mode Of Presentation

nt study, 66% of patients had dysphagia, which is comparable to the study by Johansen LV et al., 2000[4]

Neck mass was seen in 60% of patients, where the same symptom was seen in 30% of patients in the study by Johansen LV et al., 2000[4], and 21.7% of patients by Tsikoudas. A. et al.,2007[5].

20 % of patients had a globus sensation comparable to studies by Tsikoudas. A. et al.,2007[5]

Risk Factors

Smoking and alcohol

Vendhan Gajalakshmi et al., 2007[6] study support that tobacco chewing ,smoking are risk factors for this disease.Mark P. Purdue et al., 2009[7] and Federica Turati et al.,2010[8] studies argue in favor of ethanol and its metabolites as the principal carcinogenic agents and the dose–risk relation between alcohol consumption and hypopharyngeal cancer.

Occupation and Socioeconomic Status

In the present study, 76.6% of patients are from lower-middle socioeconomic class. The majority of patients are from rural areas. Farming is the most common occupation involved.these were consistent with Sanjeev Bhagat et al,[9] 2003 Manilal Aich et al.,2009[10] where rural population and lower socioeconomic status were most commonly involved.

Subsite of Involvement

In the present study, the most commonly involved site is pyriform fossa, which is comparable to Sheng-Chieh Chan et al,[11] and Park YM et al., 2012,[12] where Pyriform fossa was the most commonly affected site in 93.4%and 78% patients respectively.

Stage of Presentation

T1 Stage

In the present study, T1 stage is seen 13.3% of patients T2 in 26.6%, T3 in 46.6%, and T4 in 13.3%.

13.3% of patients presented in the T1 and T3 stages, which is comparable to studies with Eun-Jae Chung et al., 2013,[13][17.2%].

26.6% patients, in this study, have presented in T2 stage, which is comparable to studies by and Bahadur.S et al., 2002,[14] where patients presented in T2 stage are 25% respectively.

In the present study, 46. 6% of patients presented in T3 stage. This is comparable with studies of S. Bahadur.S et al., 2002,[14] where 47% patients

N- STAGE

In the present study, 40% of patients did not have regional lymph node metastasis and are categorized under N0. This is comparable to studies by Bahadur.S et al., 2002,[14] and Marc Makeieff et al., 2004,[15] N2a stage was seen in 6.6% of patients, and the N2b stage was seen in 30% of patients, comparable to studies by Young-Hoon Joo et al., 2009,[16] N3 stage was seen in 3% of patients, consistent with findings in the study by Young-Hoon Joo et al., 2009.[16]

M STAGE

In the present study, 1[3.3%] patient had distant metastasis to the lungs. In studies by Spector JG et al., 2001,[17] and Hirano et al., 2010,[18] it was 16.8% and 1.4%, respectively.

Overall Stage

In the present study, the majority of patients have presented in advanced stages. 10% of patients presented in stage I, which is comparable to the study by Chiu Ming Ho et al., 1993.[19] 16.6% of patients presented in stage II, which is comparable to studies by Chiu Ming Ho et al., 1993.[19] In a study by Tanaka.S et al. 2017,[20] 56% patients presented in stage II and 27.2% presented in stage I. In the present study, 23% of patients present in stage III and 50% of patients presented in stage IV, which is comparable to studies by Christian Godballe et al., 200.[23]

Histology

All patients underwent direct laryngoscopy, and biopsy and histopathology were squamous cell carcinoma. Wahid et al,[20] 2012 in their study concluded that SCC was the commonest (97.33%) tumor in their patients.

Histological Grading

In the present study, 53% of patients had poorly differentiated, 36.6% had moderately differentiated squamous cell carcinoma. This is comparable to studies by Robert J. Carpenter et al.,1976.[21]

CONCLUSION

Hypopharyngeal malignancies are more common in the 5th -7th decades and men. Dysphagia is the commonest symptom, and the most common signs on clinical examination are growth in subsites of the Hypopharynx and the pooling of saliva in the pyriform fossa. Nodal metastasis is seen in 60% patients.smoking and chronic alcohol consumption are the most likely risk factors. Majority are from the lower middle socioeconomic class and rural areas and farming is the most common occupation involved. The most commonly involved site is pyriform fossa. Most patients presented in advanced stages, i.e., stage III and IV. Histopathology in most of the patients was poorly differentiated squamous cell carcinoma.

REFERENCES

1. Md Nazmul Islam, Dipankar lodh et al., clinicopathological study of hypopharyngeal malignancies in Dhaka medical college hospital, Bangladesh J otorhinolaryngology 2015; 21(2):85-89.
2. Gupta. T Chopra .s et al., squamous cell carcinoma of the Hypopharynx: single institution outcome analysis of a large cohort of patients treated with primary nonsurgical approaches.Acta Oncol 2009; 48:541-48.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

3. Christian Godballe., Jorgensen K, Hansen O, et al. Hypopharyngeal cancer: results of treatment based on radiation therapy and salvage surgery. Laryngoscope. 2002; 112:834–838.
4. Johansen LV, Grau C, Overgaard_J.Hypopharyngeal squamous cell carcinoma: Treatment results in 138 consecutively admitted patients. Acta Oncol 2000; 39(4):529–36.
5. Tsikoudas A, Ghuman N, Riad, MA. Globus sensation as early presentation of hypopharyngeal cancer. Clin Otolaryngol 2007; 32(6): 452–6.
6. 12. Vendhan Gajalakshmi Amir Sapkota1, 2, Vendhan Gajalakshmi et al., Int. J. Cancer: 121, 1793–1798 (2007), Smokeless tobacco and increased risk of hypopharyngeal and laryngeal cancers: A multicentric case-control study from India.
7. 14. Mark P. Purdue, Mia Hashibe Type of Alcoholic Beverage and Risk of Head and Neck Cancer—A Pooled Analysis Within the enhance Consortium American Journal of Epidemiology, Volume 169, Issue 2, 15 January 2009, Pages 132–142, https://doi.org/10.1093/aje/kwn306.
8. Turati F, Garavello W, Tramacere I, et_al.A_meta-analysis of alcohol drinking and oral and pharyngeal cancers. Part 2: Results by subsites. Oral Oncol 2010;46(10): 720–6
9. Sanjeev Bhagat et al., clinicopathological study of tumors of the Hypopharynx, Indian journal of otolaryngology and head and neck surgery 55(4):241-243.october 2003
10. Aich, M., Joarder, M. A. H., Datta, P., & Alauddin, M. (2009). Hypopharyngeal carcinoma: a clinical study. Bangladesh Journal of Otorhinolaryngology, 14(1). doi:10.3329/bjo.v14i1.3276.
11. Chan SC, Lin CY, Ng SH, et al. 18F-FDG PET for retropharyngeal lymph node metastasis in oropharyngeal and hypopharyngeal cancers: impact of diagnosis and prediction analysis. Nucl Med Commun. 2010; 31:260–265.
12. Park YM, Kim WS, De Virgilio A, et_al.Transoral robotic surgery for hypopharyngeal squamous cell carcinoma: 3-year Oncologic and functional analysis. Oral Oncol 2012; 48(6): 560–6
13. Chung E-J, Lee J-J, Kim H-S, et_al.Alternative treatment option for hypopharyngeal cancer: clinical outcomes after conservative laryngeal surgery with partial pharyngectomy. Acta Otolaryngol 2013
14. Bahadur S, Thakar A, Mohanti BK, et al. Results of radiotherapy with, or without, salvage surgery versus combined surgery and radiotherapy in advanced carcinoma of the Hypopharynx. J Laryngol Otol. 2002;116:29–32
15. Makeieff M, Mercante G, Jouzdani E, et_al. Supraglottic hemipharyngolaryngectomy for the treatment of T1 and T2 carcinomas of laryngeal margin and piriform sinus. Head Neck 2004; 26(8): 701–5.
16. Young-Hoon Joo,youn-soo lee et al ploS one 89(11),e78718,2013
17. Spector JG, Sessions DG, Haughey BH, et_al. Delayed regional metastases, distant metastases, and second primary malignancies in squamous cell carcinomas of the larynx and Hypopharynx. Laryngoscope 2001; 111(6): 1079–87
18. Hirano S, Tateya I, Kitamura M, et_al.Ten_years single institutional experience of treatment for advanced hypopharyngeal cancer in Kyoto University. Acta Oto-Laryngol Suppl 2010; 563: 56–61
19. Ho CM, Lam KH, Wei WI, Yuen PW, Lam LK. Squamous cell carcinoma of the Hypopharynx–analysis of treatment results. Head Neck 1993; 15:405–12.
20. Wahid FI, Hussain M, Khan A, Khan IA. Frequency of hypopharyngeal carcinoma in patients presenting with dysphagia. Pak J Surg 2012; 28(1):17-20.
21. Carpenter RJ, DeSanto LW, Devine KD,Taylor WF. Cancer of the Hypopharynx: analysis of treatment and results in 162 Patients. Arch Otolaryngol 1976; 102(12):716–21.

ISSN (O): 2687-5365; ISSN (P): 2753-6556