Factors Leading To Early Versus Late Presentation In Patients With Neck Masses

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Abstract

Objective: To compare the factors that lead to early versus late presentation in patients with neck masses
Study Design: Group Comparative Study.
Study Setting & Duration: Department of Otorhinolaryngology and Head &Neck Surgery at Rawalpindi Teaching Hospital from 01-9-2022 to 01-03-2023.
Methods: Approval of the study was obtained from the hospital's ethical committee. A total of 64 patients (32 in each group) were placed in two Groups A & B. Group A included patients who presented early and Group B included patients who presented late. Both male and female patients were selected. In this study patients suffering from neck masses who have reported for work-up to the Department of ENT, Rawalpindi Teaching Hospital, and fulfil the complete inclusion and exclusion criteria were included. Patients were selected via consecutive nonprobability sampling. The data were analyzed for frequencies by SPSS 24.
Results: A total of 64 patients were included in this study. In the majority of patients, the size of mass more than 1.5 cm (51.56%) revealed malignancy, while only a small percentage of patients (48.44%) had less than 1.5 cm neck mass.
Conclusion: The majority of patients who were drug and alcohol addicts were presented late with advanced disease. Both groups were considered to be significant (p=0.00) based on the probability ratio. This study helped to identify the role of various suspected risk factors for late presentation in head and neck cancers in an attempt to reinforce or negate their importance which will help to guide the formation of screening protocols thereby improving morbidity, and mortality and reducing financial costs.
Keywords: Neck masses, Early Presentation, Late Presentation.

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1. Introduction

A neck mass is a lump, bulge, or hump that develops abnormally in the neck region. It can differ in dimensions, form, appearance, and uniformity, and it is capable of being felt or visible on the outer layer of the neck. Numerous underlying diseases, such as inflammatory processes, benign tumours, malignant tumours, cysts, and vascular anomalies, can result in neck masses. Benign lymph nodes are mobile rather than fixed to underlying structures. During physical examination, vertical movement of a midline mass during swallowing suggests thyroid swelling and movement with tongue protrusion suggests thyroglossal duct cyst. Vagal and carotid paragangliomas can move in both directions but not in the craniocaudal one.[1] On examination, benign lymph nodes are mostly soft or cystic. Firm, hard and matted cervical lymph nodes are suspicious of malignancy. Lymphoma is not tender, rubbery, and distinct. Young individuals with a neck mass that raises lymphoma suspicions should have any systemic symptoms looked into. Lymphangiomas are characterized by their diffuse edges are cystic and Trans illuminant. CT scan (computed tomography) or magnetic resonance imaging (MRI) are used for definitive diagnosis of congenital neck masses.[2] Hemangiomas are soft and can be recognized by their red or bluish colour. Lipomas are subcutaneous lumps that are soft, ill-defined, and typically found in individuals over the median age of 35. While CT imaging is useful in evaluating this mass, a diagnosis may frequently be made based solely on the distinctive consistency of this tumour.[3] Teratomas are solid masses that often develop during the first month of life or at birth. On CT and MRI, heterogeneity and calcifications are typically visible. Following trauma (forceps delivery of babies), hematomas in the anterior neck are typically hard and near the muscles of the sternocleidomastoid.[4] In adults, the main concern when dealing with a persistent neck mass is the possibility of malignancy. Despite advancements in cancer diagnosis and treatment, cancer remains a significant contributor to mortality in many countries.

When cancer originates from the mucosal lining of the neck, it's referred to as head and neck cancer (HNC). This category encompasses cancers of the tongue, tonsils, oropharynx, hypopharynx, nasopharynx, nose, paranasal sinuses, larynx, and major salivary glands. In our represented region, HNC constitutes 20–30% of all reported cancer cases.[5]

Squamous cell carcinomas of the head and neck account for over 90% of all instances of this type of cancer. It accounts for the bulk of head and neck cancer fatalities and is the sixth most prevalent cancer in the world, with an estimated 0.63 billion incidents occurring each year.[6] Fortunately, a comprehensive medical history and physical examination, combined with a well-structured diagnostic assessment, usually lead to a clear diagnosis. Individuals diagnosed with early-stage head and neck cancer (HNC) generally experience positive outcomes. The term "patient delay" refers to the interval between the onset of symptoms related to the disease and the initiation of medical attention or advice-seeking. The absence of a correlation between the delay in patient diagnosis and the stage of illness can be attributed to the limited sensitivity of the disease stage about the progression associated with delays and the variability in tumour aggressiveness.[7]

Patients were assessed using a history and physical examination, an organized clinical evaluation, an ultrasound, FNAC, contrast-enhanced CT scan and MRI. These methods often provide a conclusive diagnosis. A head and neck specialist should be contacted if the cause is unclear. Examining the neck mass physically entails determining its dimensions, size, appearance, warmth, movement, and other features. Additional information about the degree of involvement and potential dissemination can be obtained by palpating the neck and any surrounding lymph nodes. Ultrasound is a noninvasive investigation and is frequently used to see and assess neck masses, giving details on size, shape, internal characteristics, and blood flow. Ultrasound can assist in differentiating between solid and cystic tumours. Fine Needle Aspiration (FNA) is a technique that involves removing a sample of cells from the mass for analysis using a fine needle. To identify whether the mass is benign, malignant, or inflammatory, the collected cells are next analyzed under a microscope. FNA is very helpful when malignancy is suspected. Contrast-enhanced computed tomography (CT) scan

produces fine-grained cross-sectional images of the neck. This imaging method can reveal details regarding the neck mass's dimensions, position, density, and connections to nearby structures. Contrast-enhanced CT scans can assist in locating characteristics that are suggestive of particular illnesses, such as the degree of malignant development.[8] Several reasons may contribute to the late presentation of neck masses and cause people to put off seeking medical care. Poverty, a lack of awareness, cultural stigma and beliefs, limited access to healthcare, unpleasant prior medical experiences, and illiteracy are some risk factors and barriers that contribute to late presentation. Furthermore, studies show that 58% of mouth cancer patients are to fault for the illness's tardy diagnosis. The rural population in low-middle-income nations experiences a huge gap in the early diagnosis of malignancies, which is mostly a result of a lack of knowledge, socioeconomic inequality, low educational levels, and difficulty accessing facilities for cancer diagnostics. Additionally, there are still not enough primary care doctors available in rural areas of Pakistan. Additionally, patient delays are the primary cause of oral cancer therapy delays. Furthermore; there are both tertiary and secondary delays that are also referred to as competent inefficiencies.[9]

This study will assist in the assessment of the early versus late presentation in patients with neck masses.

2. Materials & Methods

Upon obtaining ethical committee approval from the hospital, the Department of ENT Rawalpindi Teaching Hospital conducted a Group comparative study with informed consent of the patients. This study encompassed both male and female patients within the age range of 25 to 70 years. Following the informed consent process, a total of 64 patients who met the operational criteria for neck masses were included in the study and were divided into two groups A & B. In Group A patients were included who presented early and Group B included patients who presented late.

Patients were chosen through a consecutive nonprobability sampling method. Upon enrollment in the study, all patients underwent a comprehensive medical history review and clinical examination. Subsequently, all patients underwent investigations including ultrasound neck, FNAC, and contrast-

enhanced CT scan. MRI is expensive and not available in our setup therefore our patients underwent CECT.

The case history was comprehensively gathered, with specific attention to factors such as the patient's age, the size and duration of the mass, the occurrence and duration of symptoms, the time taken for a definitive diagnosis, and any subsequent delays. The presence of acute symptoms like fever, sore throat, and cough indicated reactive lymphadenitis. On the other hand, persistent symptoms like chronic sore throat, dysphagia, breathing difficulty or hoarseness were often linked to structural or functional changes in the pharynx or larynx. Furthermore, patients' educational background was also assessed, classifying them based on their level of education, which included illiteracy, primary school attendance, completion of school education, and education beyond schooling.[19] Examining any linked medical conditions and past treatments proves valuable in narrowing down potential diagnoses and devising an effective treatment strategy. The physical assessment of the patient encompasses inspecting the head and neck area for any indications of premalignant or malignant skin lesions. Additionally, during the ENT and head & neck examination, the presence of a sinus or fistula linked with a branchial anomaly might be observed. The identification of chronic sinusitis or pharyngitis often points toward reactive adenopathy as the probable source of a neck mass. Special emphasis was placed on inspecting mucosal surfaces. When assessing mucosa, it might be necessary to remove dentures or other dental devices. Hidden lesions can be unveiled through palpation of the tongue, including its base. Close observation was dedicated to identifying ulcerations, submucosal swelling, and any irregularities, with specific attention directed towards the tonsillar fossa.

The examination of the larynx and pharynx was conducted using either indirect or flexible laryngoscopy. For both the initial evaluation and subsequent follow-up, the size of the mass was measured using callipers or a tape measure. Following the primary physical examination, patients underwent ultrasound assessments. If any worrisome findings were identified during the ultrasound, a fine needle aspiration procedure was carried out. Additionally, if suspicious results were evident from the fine needle aspiration, a contrast-enhanced computed tomography (CT) of the neck was subsequently performed.

Patients were staged according to TNM staging.

3. Results

A total of 64 patients were included in this study. The mean age of these patients was 48.67 ± 9.74 years, ranging from 25 to 70 years. As indicated in Figure 1.
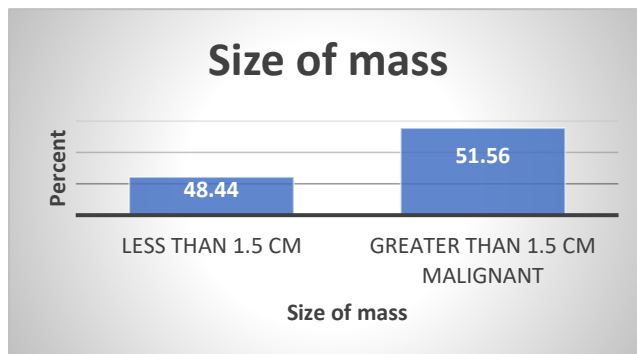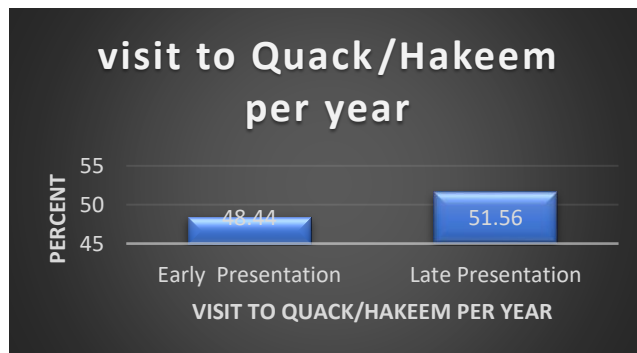

Figure 1: Frequency distribution of Size of mass

The majority of patients' Size mass greater than 1.5cm (51.56%) revealed malignancy, while only a small percentage of patients (48.44%) had less than 1.5 cm neck mass. As indicated in Figure 2.
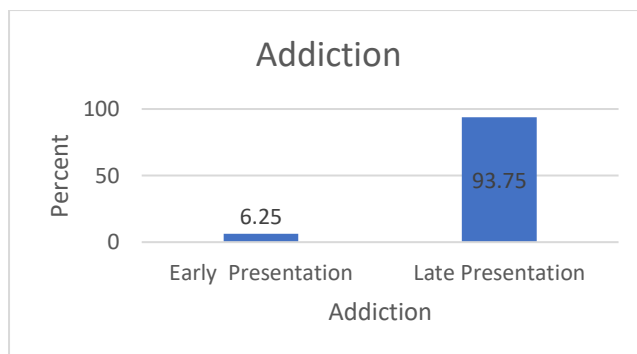
Figure 2: Frequency distribution of Addiction

The majority of patients (93.75%) with addiction were presented late, while just a small number (6.25%) had early presentation. As indicated in Figure 3.

Figure 3: Frequency distribution of visits to Quack/Hakeem per year

The majority of patients (51.56%) with frequent visits to Quack /Hakeem per year were presented late. Regarding socioeconomic conditions, as indicated in Table 1.

Table 1: Socioeconomic status among study groups

Socioeconomic status	Early Presentation	Late Presentation	P Value
Upper class	28	0	0.00
Middle Class	4	11	
Lower class	0	21	
Total	32	32	

The majority of patients (28) from high-class families presented early, compared to (11) patients from middle-class families who presented late, and all (21) patients from lower-class families who presented late. The education level reveals that the majority of patients (31), who were educated, attended a school for more than a year, but only up to ten (matriculate or similar) years, or advanced literacy: got a college- or university-level education, and they displayed early presentation. Additionally, as indicated in Table 2.

Table 2: Education status among study groups

Education	Early Presentation	Late Presentation	P Value
Educated	31	2	0.00
Uneducated	1	30	
Total	32	32	

The (30) patients who were uneducated, never attended an educational institution or attended for less than one year, presented late. (31) Patients who received medical attention and visited health care professionals more than 4 times a year were presented early and 30 patients who had fewer than 4 visits a year presented late and with advanced disease: Early presentation is when a patient interacts with a healthcare practitioner four or more times a year. late presentation is indicated by interaction with a medical practitioner less than four times a year, as illustrated in Table 3. According to the probability ratio, both groups were determined to be significant (p=0.00).

Table 3: Frequency of contact with health care per year status among study groups

Frequency of contact with health care per year	Early Presentation	Late Presentation	P Value
Appropriate: In contact with any healthcare professional 4 or more times a year.	31	2	0.00
Minimal: In contact with any healthcare professional less than 4 times a year	1	30	
Total	32	32	

4. Discussion

In our study, the mean age at presentation was 48 years old, and the majority of patients were men. Other studies conducted in Nigeria reveal instances in the fourth and fifth decades, which contrasts with this mean age.[10] According to my research, there were several risk factors for late presentations, including addiction, low socioeconomic status, illiteracy, frequent visits to quacks and Hakeem, less frequent interaction with medical professionals annually, and additional risk variables. Many factors may contribute to the delayed manifestation of neck masses and the decision to delay seeking medical attention. Some risk factors and obstacles that contribute to late presentation include poverty, a lack of understanding, cultural stigma and beliefs, restricted access to healthcare, unpleasant prior medical experiences, and illiteracy.[14] Additionally, research indicates that 58% of oral cancer patients are presented late with advanced stage. An enormous gap in the early diagnosis of malignancies affects the rural population in low-middle-income countries, which is mostly due to ignorance, socioeconomic disparity, low educational levels, and difficulty accessing facilities for cancer diagnostics. In addition, there are still insufficient primary care physicians in Pakistan's rural areas. Additionally, the main factor behind oral cancer therapy delays is patient delays—additionally, tertiary and secondary delays, which are also known as competent inefficiencies, exist.[15]

The non-association is comparable to the research done by Osazuwa-Peters et al,[11] but they reported a diagnosis in addition to treatment initiation. Our environment has a trait called late hospital presentation, which has a significant impact on patient outcomes.[12] But it is intriguing to note that in this study, this was not a predictor of tumor stage. More research is required in this area because other investigations have not been able to show a connection between the cancer stage at early appearance and a delay in initiating medication.[13] Investigations including ultrasound, computed tomography (CT) scans, and MRI are utilized to make a diagnosis and clinically stage malignancies along with a thorough medical history and physical examination.

Due to the high cost of these tests and the out-of-pocket expenses for medical care, not all of the participants in our study could afford CT scans and MRIs. Due to this restriction, some of the stage IV tumours in our study may have been understated. My research indicated that alcohol and drug addiction was a risk factor for late presentation. However, research among Black South Africans showed that men who were addicted had a significantly increased risk of laryngeal cancer[16]. As health education aimed at discouraging their use will be of utmost significance in those at greatest risk, these two known risk factors are manageable in the avoidance of HNC. The majority of patients in the current study arrived at the tertiary medical center late. Studies carried out in other developing nations revealed that the most typical causes of the late presentation were financial difficulties and care in outlying facilities. which is also the case in our study.[17] In addition, this study found that late presentation was associated with low education, visits to quack or Hakeem, and less yearly frequency of contact with health care. These cases arrived in this African sub-Saharan region in a chronically unwell state and at an advanced stage of the disease, which was consistent with past observations.[18] Anorexia, weight loss, inability to thrive, and anaemia had taken hold in many youngsters despite the clear position of the masses, and these symptoms frequently served as the reason for requesting surgical consultation, as documented by others.[19] Traditional African healers continue to cure numerous illnesses with scarification and the application of local remedies. Numerous youngsters, especially those with malignant neck tumours, had severe scarification marks when they arrived, indicating that this mode of treatment had previously been used on them.[20]

5. Conclusion

The majority of patients who have an addiction can have a variety of disorders linked to neck masses. Middle-class families, lower-class families, uneducated patients, and patients who did not see a healthcare provider four or more times per year make up the majority of the trips to Quacks and Hakeem each year presented late with advanced disease as compared to the group of patients who belong to upper class are literate with no history of drug or alcohol addiction and have frequent visits to health care professionals. Both groups were considered to be significant (p=0.00) based on the probability ratio. This study will help to identify the role of various suspected risk factors for late presentation in head and neck cancers in an attempt to reinforce or negate their importance which will help to guide the formation of screening protocols thereby improving morbidity, and mortality and reducing financial costs.

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