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PRIMARY HYPOPHARYNGEAL TUBERCULOSIS MIMICKING MALIGNANCY: A DIAGNOSTIC CHALLENGE – A CASE REPORT

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Abstract

Background: *Hypopharyngeal tuberculosis is a rare form of extrapulmonary tuberculosis. Symptoms such as dysphagia, odynophagia, and hoarseness closely mimic those of hypopharyngeal malignancy, posing a significant diagnostic challenge. This case report presents a case of primary hypopharyngeal tuberculosis masquerading as malignancy in Quetta, Balochistan.*

Case Presentation: *A 60-year-old male patient presented to the outpatient department with a two-month history of dysphagia, severe odynophagia, and shortness of breath. On detailed examination, the patient appeared dehydrated and emaciated, with cervical lymphadenopathy. Laryngoscopy revealed an exophytic mass in the supraglottic region extending to the left pyriform fossa. These clinical findings were highly suggestive of laryngeal carcinoma.*

Management and Results: *CT scan demonstrated mural thickening of the supraglottic larynx, pre-epiglottic space, and paraglottic space. Multiple biopsies were obtained from the laryngeal mass. Histopathological examination revealed chronic granulomatous inflammation composed of epithelioid histiocytes with central caseous necrosis. Subsequent investigation with GeneXpert yielded positive results for tuberculosis. Consequently, the patient was started on standard anti-tuberculous therapy.*

Keywords: *Caseous necrosis, GeneXpert, Granulomatous inflammation, Hypopharynx, Primary tuberculosis*

INTRODUCTION

Tuberculosis is caused by a bacterium called *Mycobacterium*. It is a chronic infection that mainly affects the lungs but can also involve other organs. Tuberculosis is classified into two types: latent or active (1). The global burden is high and continuously increasing. Pakistan accounts for about two-thirds of the total disease burden (2). Tuberculosis is present in all regions of the world with varying ratios. Although it commonly affects the lungs, it is also found in other organs, such as the head and neck region. It initially involves regional lymph nodes but can also affect the larynx, middle ear, oropharyngeal mucosa, salivary glands, paranasal sinuses, or the prevertebral space (3). The pathogenesis and clinical symptoms of laryngeal tuberculosis (LTB) were first described in 1941. Laryngeal tuberculosis can manifest as either primary or secondary infection. LTB accounts for 1% of total tuberculosis cases, presenting with very uncommon symptoms and a low occurrence rate. Regarding gender distribution, LTB cases show that males are more affected than females. The signs of this disease are similar to those of malignant tumors of the larynx, making it difficult to differentiate from tumors. Hoarseness and dysphonia are common symptoms (4). In this case report, we present a case of tuberculosis with exceptional localization the hypopharynx mimicking a tumor—thus presenting diagnostic difficulties.Collision tumors are a very uncommon type of tumors, which is combined of two neoplasms with in one organ and different histological features are co-exist within the organ. This tumor has been reported in gastrointestinal tract, skin, adrenal, lymph-nodes, uterus, central nervous system, but a rare entity in the ovary (1). The most common among the group is co-existing mucinous cystadenoma and teratoma. The mature cystic teratomas make up about 10-20% of the total ovarian tumors but only 2-10% of teratomas are related with co-existent mucinous cystadenomas, so only a handful of cases are reported to date. While combined serous cystadenoma or serous cystadenofibroma and mature cystic teratoma are even rarer (2).

CASE PRESENTATION

A male patient aged 60 years came to OPD with symptoms having from last two months, including trouble in swallowing, severe throat pain, and shortness of breath. On doing the detailed examination, the patient looked dehydrated and emaciated with cervical lymphadenopathy. There was a history of low-grade evening fever with some weight loss. The patient denies any history of tobacco or alcohol use. Additionally, no significant data were identified in the patient's family history. During the patient's indirect laryngoscopic examination, an exophytic mass was seen, arising from supraglottic region extending to the left pyriform fossa.

Fig. 1. Clinical presentation of the patient

CT scan reveals heterogeneously enhancing circumferential mural thickening of the supraglottic, pre-epiglottic, and para-glottic parts of the larynx, extending from C4 to C7 vertebral levels, causing significant narrowing of the laryngeal airway. The lesion is closely abutting the thyroid cartilage with questionable erosion. Findings suggestive of laryngeal carcinoma stage-IVc with multiple enlarged bilateral cervical lymph nodes were also noted.

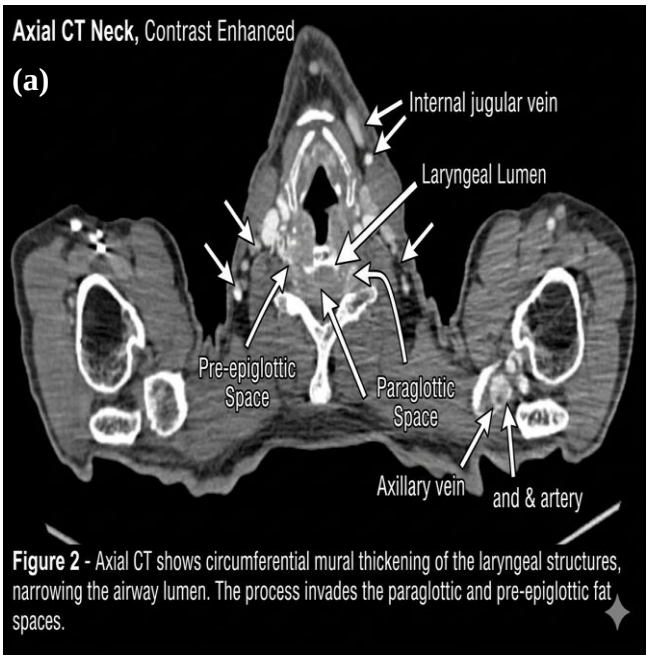

Figure 2 - Axial CT shows circumferential mural thickening of the laryngeal structures, narrowing the airway lumen. The process invades the paraglottic and pre-epiglottic fat spaces.

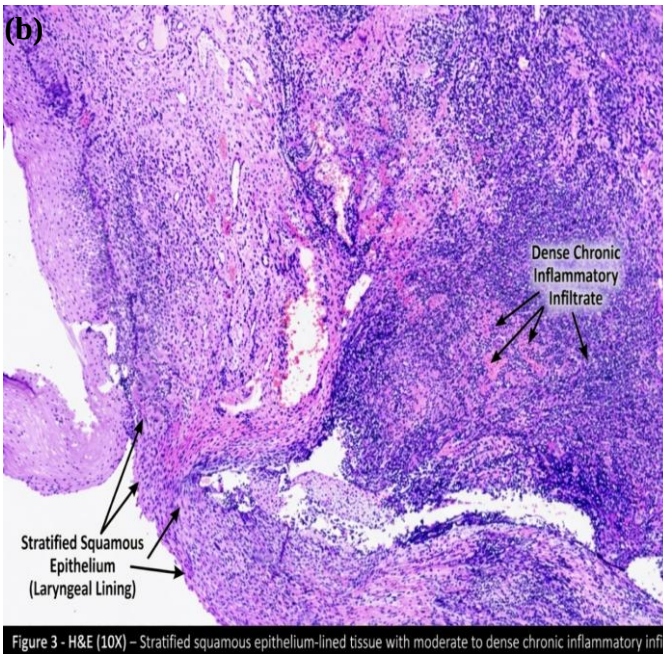

Figure 3 - H&E (10X) – Stratified squamous epithelium-lined tissue with moderate to dense chronic inflammatory infi

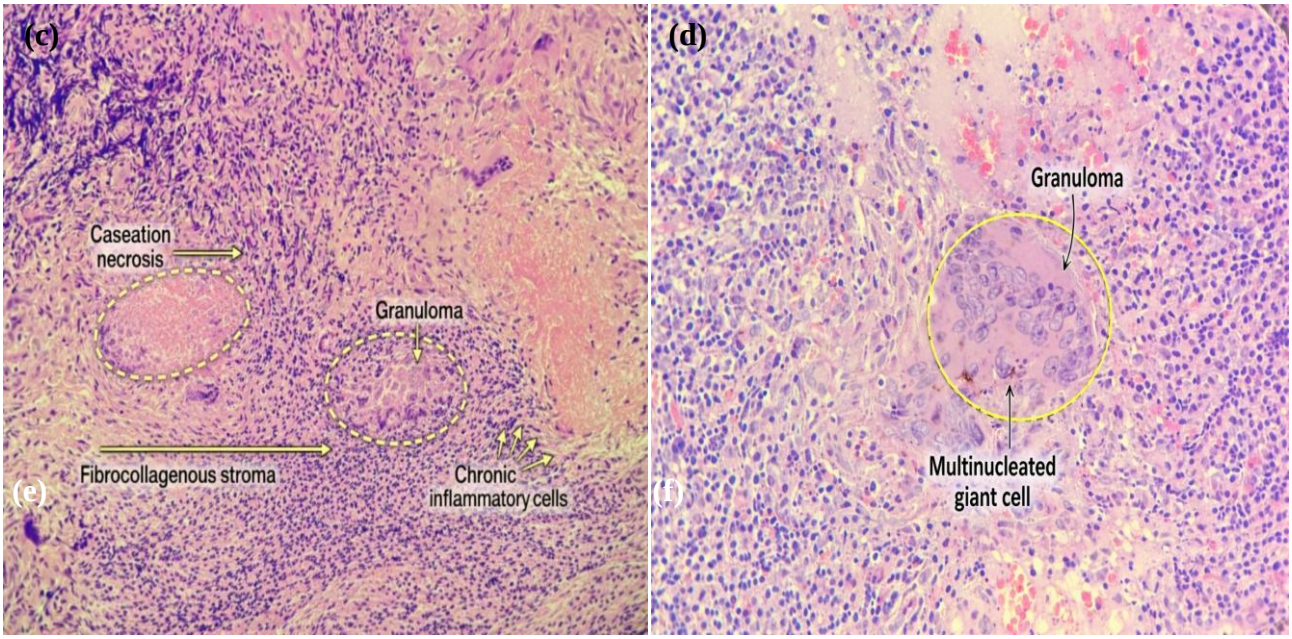

Fig. 2 (a). The Axial CT Neck circumferential mural thickening of the laryngeal structures, narrowing the airway lumen. Circumferential mural thickening of the larynx involving supraglottic, pre-epiglottic, and para-glottic parts; **(b).** H&E (10X) – Stratified squamous epithelium-lined tissue with moderate to dense chronic inflammatory infiltrate, which is characteristic of tuberculosis rather than Cancer; **(c).** H&E (20X) – Fibrocollagenous tissue with scattered granulomas having central caseation necrosis; **(d).** H&E (40X) – Granuloma with multinucleated giant cell

CT scan reveals heterogeneously enhancing circumferential mural thickening of the supraglottic, pre-epiglottic, and para-glottic parts of the larynx, extending from C4 to C7 vertebral levels, causing significant narrowing of the laryngeal airway. The lesion is closely abutting the thyroid cartilage with questionable erosion. Findings suggestive of laryngeal carcinoma stage-IVc with multiple enlarged bilateral cervical lymph nodes were also noted.

Several biopsies were taken from the laryngeal mass. Chronic granulomatous were seen in the histopathology results, which were made up of epithelioid histiocytes with central caseous necrosis, thus concluding with Tuberculosis of the hypopharynx. Further investigations, including GeneXpert, were conducted for Tuberculosis (TB) in the patient, yielding positive supportive results. After confirmation of the diagnosis, treatment for the patient was determined through a multidisciplinary approach, and the patient was subsequently started on Tuberculosis treatment.

DISCUSSION

The frequency of TB is different globally, but it is present in all regions of the world, and both Asian and African countries have a higher number of cases. The WHO report states that in 2024, the number of cases was 8.3 million. Among them, 16 percent were cases of extrapulmonary tuberculosis. Patients having TB of the head and neck regions are less than 1%. Lymph nodes, spine, soft and hard plate of the tongue are the main areas most likely affected by the extrapulmonary TB. TB of the hypopharynx is a rare type of TB in the pharyngeal region and is very difficult to diagnose, as symptoms are similar to malignancy. On doing the detailed examination of the patient, the patient looked dehydrated and emaciated with cervical lymphadenopathy. There was a history of low-grade evening fever with some weight loss. Several biopsies have been done on the mass taken laryngeal mass. Chronic granulomatous were seen in the histopathology results, which were made up of epithelioid histiocytes with central caseous necrosis, thus concluding with Tuberculosis of the hypopharynx. Further investigations, including GeneXpert, were conducted for Tuberculosis (TB) in the patient, yielding positive supportive results (5). In many cases, it is very difficult to diagnose TB as patients were initially presented with serious signs and symptoms that led to a misdiagnosis of a tumor. Similarly, in our case, we initially started the workup and considered this case as a tumor, but moving further on, histopathology results showed chronic granulomatous and epithelioid histiocytes with central caseous necrosis, thus concluding with Tuberculosis of the hypopharynx. Final diagnosis was made on the positive result of GeneXpert (6). Extrapulmonary TB initially invades through lymph nodes, as it

looks like a hypopharyngeal cancer, which makes cases difficult to diagnose. Odynophagia and dysphagia help to diagnose tuberculosis of the hypopharynx. It's also mimicking a tumor, as we have faced in our case. Initially, it was assumed as tumor, but later it was tuberculosis (7). A CT scan is essential and helps in the diagnosis rather MRI is not considered helpful in this case. Biopsy findings for hypopharyngeal TB are a phenomenon. Rifampin, ethambutol, and pyrazinamide with isoniazid in combination were given to a patient with follow-up of 3 months. After 2 weeks of TB medicine, the patient's condition started improving, the mass had reduced, and symptoms also improved.

CONCLUSION

These types of cases are very rare and difficult to diagnose due to their pathological features, which closely resemble those of a tumor. In Pakistan, particularly in Balochistan, resources are extremely limited. There are no appropriate histopathology setups accessible within tertiary care services, including radiology.

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Conflict of interest:

Authors declared no conflict of interest.

Consent:

The patient provided written informed consent authorizing the inclusion of his photographic image in this case report.

Authors' contribution:

LZ Histopathological evaluation; SW Supervised the study; AN & MAH Critically reviewed the manuscript.

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