Adult Asymmetrical Tonsils: Case Series

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ABSTRACT
Asymmetrical tonsil enlargement in adults may stem from various underlying pathologies, including infectious, inflammatory, and neoplastic processes. Differential diagnoses may include but are not limited to, chronic tonsillitis, peritonsillar abscess, tonsillar hypertrophy, lymphoma, and squamous cell carcinoma. Each differential presents unique clinical features, diagnostic challenges, and management considerations, highlighting the need for a comprehensive approach to patient assessment. This case series will explore the clinical presentations, diagnostic workup, and therapeutic interventions employed in managing adult patients with asymmetrical tonsil enlargement. We aim to facilitate early detection, appropriate treatment, and optimal outcomes for affected individuals by emphasizing the importance of considering a broad range of differentials.

1. Introduction

Squamous cell carcinomas of the tonsils account for approximately 85% of malignant tonsillar neoplasms, often presenting with unilateral enlargement or mucosal ulceration (1). Over 90% of oropharyngeal cancers are squamous cell carcinomas, which arise from the cell lining of the oropharynx (2). Lymphoma is the second most common malignancy of the tonsils, typically manifesting as a submucosal mass with asymmetrical tonsillar enlargement (1). Tonsillar lymphomas predominantly affect elderly males and present with symptoms such as sore throat, tonsillar enlargement, cervical lymphadenopathy, or dysphagia. Most tonsillar lymphomas are of B-cell origin, with diffuse large B-cell lymphoma (DLBCL) being the most common histological subtype (3). The primary indications for tonsillectomy include recurrent infections, peritonsillar abscesses, obstructive sleep apnea, and suspected malignancy (1). This case series highlights the varied presentations of tonsillar asymmetry, emphasizing the need for timely and definitive intervention.

2. Case Report 1

A 23-year-old female with no comorbidities presented to the ENT outpatient department with a three-month history of sore throat, painful swallowing, and difficulty swallowing. She denied any weight loss, night sweats, or prolonged fever. Physical examination revealed Grade 4 enlargement of the left tonsil, with deviation of the uvula to the right. A neck examination showed a firm, mobile, enlarged lymph node at left level 3. A contrast-enhanced CT scan from the skull base to the thorax revealed a heterogeneously enhancing mass lesion measuring 2.5 x 2 x 3 cm, involving the left palatine tonsil and crossing the midline, causing displacement of the uvula. Fine needle aspiration cytology (FNAC) of the lymph node showed reactive lymphadenitis. Given a high suspicion of malignancy, the patient underwent a left tonsillectomy under general anesthesia, and the tissue was sent for histopathological examination (FIGURE 1). Immunohistochemistry results were positive for CD20, KI67, CD45, and CD10, leading to a diagnosis of non-Hodgkin lymphoma, diffuse large B-cell type (germinal center B-cell type). The patient was started on chemotherapy with the R-CHOP regimen and followed up regularly. After two years of follow-up, no recurrence was observed.

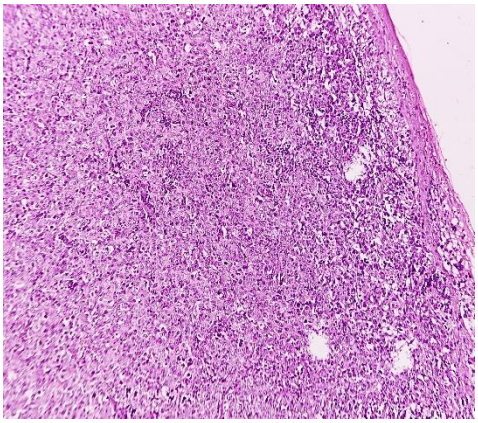

Figure 1-HPE- Left Tonsil – showing partial effacement of architecture by sheets of medium-sized to large atypical lymphoid cells.

3. Case Report 2

A 53-year-old female presented to our institution with complaints of dysphagia, odynophagia, sore throat, right otalgia, and the appearance of swelling in the right tonsillar fossa. Upon examination of the throat, a large mass was observed without any mucosal ulceration, which felt hard in consistency and projected through the right tonsillar fossa and the palate, resembling a tumor of the oropharynx or a peritonsillar abscess. Palpation revealed a hard, mobile, painless swelling in the right tonsillar fossa, along with cervical lymphadenopathy. The remaining findings of the head and neck examination were within normal limits. A computed tomography (CT) scan of the oropharynx was performed, revealing axial slices showing a calcified cylindrical lesion at the level of the lower part of the ramus of the mandible in the posterior pharyngeal region, on the right side, located between the palatoglossus and palatopharyngeal muscles. The patient underwent tonsillectomy under general anesthesia. Specimen (FIGURE 2) was sent for histopathological examination which revealed tonsillar tissue showed some chronic inflammation, calcification, and necrotic debris with no signs of malignancy which was confirmed to be tonsillolith. The patient was followed up post-operatively with no recurrence in the follow-up of one year.

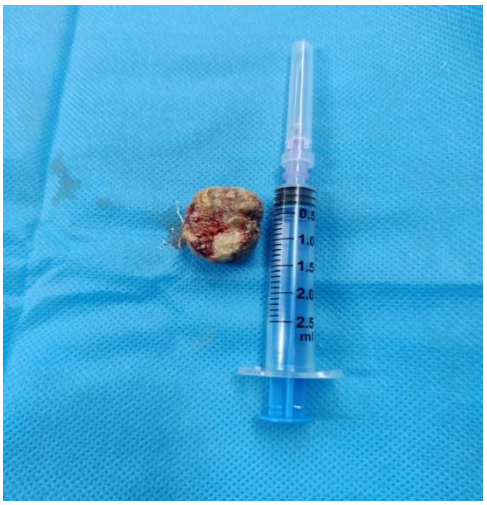

Figure 2-Post-operative image of right tonsillolith obtained by tonsillectomy.

4. Case Report 3

A 56-year-old male noted a swelling in the right side of his neck for 2 months, which was initially treated by his primary care physician with antibiotics without any effect. The mass continued to enlarge. 10 pack-year history of smoking, and occasional alcohol intake. Clinical examination revealed a proliferative growth at the right tonsil. Significant for a solitary, right level II neck mass, 3.5 × 2.5 cm in size with intact overlying skin. Direct laryngoscope revealed proliferative growth of 2 cm diameter at right tonsil; involving the anterior and posterior pillar and encroaching to the soft palate and lateral pharyngeal wall. The vallecula and epiglottis were free. Fine-needle aspiration of the right neck mass was performed which revealed granulomatous lymphadenitis. CECT

Neck revealed a fairly defined heterogeneously enhancing soft tissue dense swelling measuring 1.6*1.7*2.2 cm with a fairly defined iso dense lesion of size ~ 3.9 x 2.2 x 3.8 cm (AP x TR x CC) noted in the right upper jugular station. In view of the suspicion of malignancy, a right tonsillar biopsy under local anesthesia was done. The histopathological report of the tonsillar fossa biopsy reported a moderately differentiated, infiltrating squamous cell carcinoma(FIGURE-3). The patient was referred to a higher center for concurrent chemoradiation.

5. Case Report 4

A 50-year-old female came with swelling in the right tonsillar fossa for 15 days, which was sudden in onset, associated with difficulty while swallowing food, and a change in voice for 15 days. Ear, nose, and throat examination defined a unilateral ulcero proliferative growth arising from the right tonsillar fossa around 3 × 3 cm pushing the uvula to the left (FIGURE -4). Direct laryngoscopy revealed 3x3 cm ulcero proliferative growth over the right tonsillar fossa extending till epiglottis and vallecula, CECT NECK revealed fairly defined soft tissue heterogeneously enhancing dense swelling seen in oro-pharynx with loss of fat plane with right side pharyngeal mucosa, Measuring 2.3 x 3 x 3.4 cm. Multiple ill-defined conglomerated heterogeneously enhancing nodal masses with internal non-enhancing areas seen in the right upper and mid-jugular station, Measuring 2.7 x 2.3 x 5.4 cm. FNAC, Right cervical lymph node revealed Features suggestive of Granulomatous lymphadenitis for which Antitubercular drugs was started.In view of the suspicion of malignancy Patient underwent tonsillectomy under general anaesthesia and sample sent for histopathological examination and Immuno histochemistry was positive for CD20 ,CD10,BCL6, MUM1 which was confirmed to be Non-Hodgkins lymphoma, Diffuse large B cell lymphoma, Non-Germinal centre type. Patient was started on chemotherapy with an R-CHOP regimen and on regular follow up. After one year of follow-up, no recurrence was observed.

6. Discussion

Chronic inflammation, often caused by recurrent infections or conditions such as chronic tonsillitis or lymphoid hyperplasia, can result in persistent unilateral tonsillar enlargement. When asymmetry persists despite appropriate medical treatment, further evaluation is necessary to exclude potential neoplastic causes.

Squamous cell carcinomas of the tonsils, which account for approximately 85% of malignant tonsillar neoplasms, may present as unilateral enlargement or mucosal ulceration. These carcinomas can appear similar to lymphomas and require pathological examination for accurate differentiation. Lymphoma, the second most common malignancy of the tonsils, typically presents as a submucosal mass with asymmetrical tonsillar enlargement (1).

HPV-associated oropharyngeal squamous cell carcinoma occurs in patients infected with human papillomavirus, with HPV16 being the most prevalent strain found in oropharyngeal cancers (2).

Malignant lymphoma (ML) primarily affects lymph nodes, with about 10% of extra-nodal lymphomas occurring in the head and neck region (3). Among these, the tonsils are the most frequently involved site in Waldeyer's ring non-Hodgkin lymphoma (WR-NHL), accounting for 60.6% of cases, followed by the nasopharynx (6.4%), oropharynx (5.4%), sublingual region (4.8%), and salivary glands (1.8%). In cases of tonsillar involvement, 15% also show concurrent involvement of the nasopharynx or oropharynx (4). Aside from malignancies, chronic infections such as tuberculosis and actinomycosis, recurrent inflammation, lipid storage disorders, benign tumors, and conditions affecting adjacent tissues may also lead to unilateral tonsillar enlargement (1).

In the first case, the patient presented with unilateral tonsillar swelling with cervical lymphadenopathy was very much younger than reported in the literature. The patient was started on chemotherapy and responded well to the treatment. Similarly, our fourth case was misdiagnosed as granulomatous lymphadenitis which turned out to be non-Hodgkin lymphoma.

In the second case, Tonsillolith presented as a tonsillar asymmetry, Tonsilloliths are rare calcified formations that develop within the tonsillar crypts or near the tonsils. Their size can vary, and larger tonsilloliths may be mistaken for abscesses or tumors. Given the wide range of possible diagnoses, recognizing tonsilloliths can be difficult without a thorough approach that includes a detailed patient history, careful examination, and precise lesion assessment through digital palpation and imaging (5).

In the fourth case, the Patient was diagnosed to have granulomatous lymphadenitis in the FNAC but a suspicious appearance of the tonsil was confirmed to be diagnosed as squamous cell carcinoma for which the patient was being treated accordingly.

Several local anatomical factors can influence the upper airway and contribute to the development of obstructive sleep apnea (OSA), including both craniofacial bony and soft tissue structures. Craniofacial bony factors involve the mandible and hyoid bone, while soft tissue factors include the tongue, uvula, soft palate, tonsils, and lateral pharyngeal wall (6).

Surgery and radiotherapy are the primary treatments for oropharyngeal cancers, with a combination of both often used in advanced cases. Minimally invasive techniques, such as transoral laser microsurgery, are becoming more common. Survival rates are enhanced by induction chemotherapy or concurrent chemoradiotherapy. For unresectable tumors, cisplatin-based chemotherapy combined with radiotherapy is preferred over radiotherapy alone (2). Antimicrobial peptides (AMPs) have attracted interest due to their differential regulation in cancers such as oral squamous cell carcinoma (OSCC), indicating their potential as innovative anti-cancer agents (7).

Haematology and electrolyte balance have been suggested as potential indicators of tumours and pathways to understanding cancer development. Analysing a patient's blood count and electrolyte levels can provide valuable insights into the progression of oral cancer (8).

In addition to significant asymmetry, which may indicate a potential malignancy, other warning signs include abnormal appearance of the tonsils, neck adenopathy, suspicious systemic symptoms, and a history of malignancy or immunosuppression. Tonsillar asymmetry can also result from anatomical variations, such as differences in the depth of the tonsillar fossa or irregularities in the anterior tonsillar pillar (1). Where as in this cases series all the tonsillar asymmetry required a intervention to manage the case which when neglected might end up in complications.

7. Conclusion

Tonsillar asymmetry in adults can present a diagnostic challenge, as it may be attributed to various factors, including anatomical variations. It is essential to evaluate patients presenting with tonsillar asymmetry and other suspicious history and examination and appropriate diagnostic imaging are crucial for accurate diagnosis and timely management of tonsillar asymmetry in adults.

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