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Pathology

Cartilaginous Choristoma of the Palatine Tonsil: A Rare Histopathological Finding

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Abstract **Case Report**

Cartilaginous choristomas are rare benign lesions composed of mature hyaline cartilage at abnormal anatomical sites. While most commonly found in the tongue, involvement of the palatine tonsil is exceedingly uncommon and may mimic neoplastic or malignant lesions. We report the case of a 44-year-old female with recurrent tonsillitis who underwent right tonsillectomy. Histopathological examination revealed follicular hyperplasia with a well-circumscribed focus of mature hyaline cartilage within the tonsillar parenchyma, without atypia, establishing the diagnosis of cartilaginous choristoma. The exact pathogenesis remains uncertain, with proposed mechanisms including congenital developmental disturbances of the branchial arches, multi-lineage mesenchymal progenitor cell differentiation, or associations with mixed salivary gland tumors. Although most cases are asymptomatic and discovered incidentally, patients may present with throat discomfort, dysphagia, or foreign body sensation. Definitive management is surgical excision by tonsillectomy, with an excellent prognosis and no reported recurrences in tonsillar cases. This case highlights the importance of routine histopathological evaluation of tonsillectomy specimens to ensure accurate diagnosis and prevent unnecessary overtreatment.

Keywords: Cartilaginous Choristoma; Choristoma; Heterotopia; Hyaline Cartilage; Tonsillectomy; Tonsillitis.

INTRODUCTION

Choristomas are ectopic islands of histologically normal tissue located in abnormal locations. Despite their tumor-like appearance, they represent developmental heterotopias rather than true neoplasms [1]. In the oral cavity, Osseous choristomas are the most common type, typically affecting the tongue [2], while cartilaginous choristomas (CC) are rare benign lesions reported in the tongue, pharynx, hypopharynx, oral mucosa, and middle ear, with a predilection for the posterior tongue [3-4]. In contrast, tonsillar involvement is exceedingly rare, with few cases reported. Tonsillar cartilaginous choristoma consists of mature hyaline cartilage within the tonsil, a site normally composed of lymphoid tissue, arising from embryological disturbances [5-6]. Although benign, these lesions may present with throat discomfort, dysphagia, or recurrent infections and are often discovered incidentally in tonsillectomy specimens [6-7]. Owing to their rarity and limited literature, tonsillar choristomas remain a diagnostic challenge, requiring awareness from clinicians and pathologists [8]. We report the case of a 44-year-old female with recurrent tonsillitis who was subsequently diagnosed with a cartilaginous choristoma of the palatine tonsil on histopathological examination.

CASE REPORT

A 44-year-old female presented to the outpatient department of the Raipur Institute of Medical Sciences, a tertiary care hospital in Raipur, Chhattisgarh, India, with a chief complaint of moderate throat pain localized to the right tonsillar fossa for the past 10–15 days. The patient reported a history of similar episodes of throat pain occurring intermittently over the past few months. She denied any additional symptoms such as dysphagia, odynophagia, fever, weight loss, or the presence of masses elsewhere in the body. Following an initial trial of conservative management, the patient was admitted to the Department of Otorhinolaryngology (ENT) for further evaluation. Given the persistence of

symptoms, a right tonsillectomy was performed on the patient. The excised tonsillar tissue was submitted to the Department of Pathology for gross and histopathological examinations.

Gross Examination:

The right tonsillectomy specimen measured 3 × 2 × 2 cm in size. The external surface was grayish-white, firm, and unremarkable. On sectioning, the cut surface was gritty in texture, firm, smooth, homogeneous, and pale grayish-white, consistent with the appearance of the external surface. Representative tissue sections were processed and submitted for histopathological evaluation of the lesion.

Histopathological Examination:

Microscopic examination of the tonsil revealed follicular hyperplasia with a well-circumscribed focus of mature hyaline cartilage within the tonsillar parenchyma, with no evidence of atypia. Based on these features, a final diagnosis of cartilaginous Chori stoma of the palatine tonsil was made.

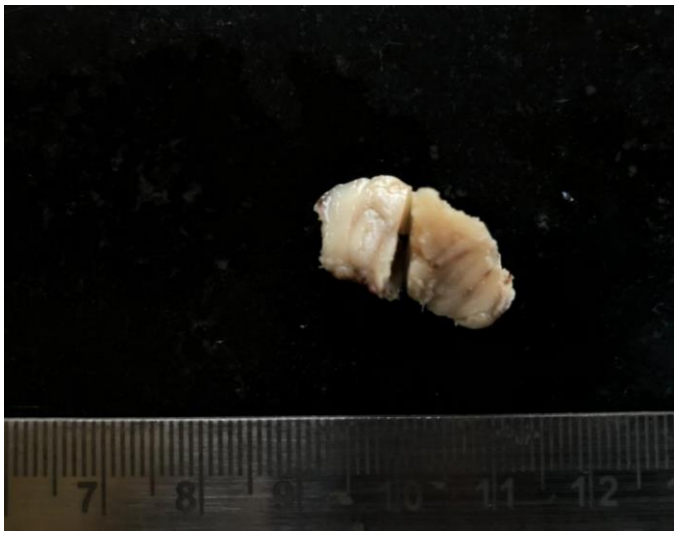

Figure 1: Gross photograph of the right tonsillectomy specimen (3 × 2 × 2 cm) showing a firm, pale gray-white cut surface with gritty consistency

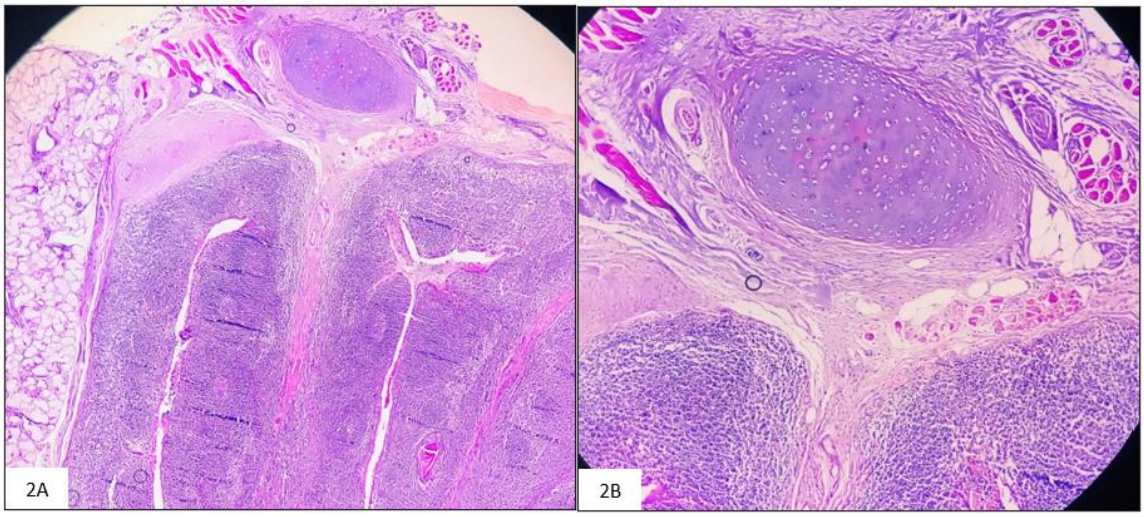

Figure 2A: Photomicrograph (H&E, ×10) showing a well-circumscribed focus of mature hyaline cartilage within the tonsillar parenchyma, surrounded by reactive lymphoid tissue

Figure 2B: Photomicrograph (H&E, ×40) demonstrating mature hyaline cartilage with chondrocytes in lacunae and absence of atypia or mitotic activity

DISCUSSION

The clinical significance of tonsillar choristoma lies in its rarity and potential to clinically mimic neoplastic or malignant lesions, leading to diagnostic uncertainty and possible overtreatment [7].

Pathogenesis:

Several mechanisms have been proposed. Congenital theories suggest that entrapped branchial arch remnants or heterotopic mesenchymal tissue incorporated during embryogenesis may give rise to these lesions [3,9]. Haemel *et al.*, in 2008 emphasized the

role of multi-lineage mesenchymal progenitor cell differentiation and linked tonsillar choristomas to anomalies of the second pharyngeal arch, which may predispose individuals to recurrent tonsillitis [10]. In addition, neoplastic or teratomatous origins with a significant predominance of cartilage have been considered. An alternative theory links these lesions to mixed salivary gland tumors, in which cartilage represents the dominant component [11].

Incidence and Literature Evidence

Erkilic *et al.,* in 2002 reported a 3% incidence of cartilaginous choristoma in tonsillectomy specimens [12], while additional cases have been described by Bedir *et al.,* in 2015[13] and Kannar *et al.,* in 2013 [2]. These reports highlight the uncommon but recognized occurrence of this entity in clinical practice.

Demographics and Clinical Presentation:

Unlike oral choristomas, which often show a female predominance, palatine tonsillar lesions do not consistently demonstrate sex predilection [2,12]. Nevertheless, sporadic reports suggest a higher occurrence in females, as seen in the series by Shamloo *et al.,* in 2023 [5] and Bedir *et al.,* in 2015 [13]. Most cases are asymptomatic and are discovered incidentally in tonsillectomy specimens for chronic or recurrent tonsillitis. When symptomatic, patients may complain of throat pain, dysphagia, or foreign body sensation [6]. Our patient presented with localized throat pain, which aligns with these findings.

Histopathology:

Cartilaginous choristomas are characterized by well-circumscribed islands of mature hyaline cartilage, sometimes with areas of ossification, embedded within reactive lymphoid stroma. The absence of atypia or mitotic activity is a key feature that helps differentiate them from true neoplasms, such as chondromas, osteomas, and chondrosarcomas. The most important differential diagnosis is cartilaginous metaplasia, which can be distinguished histologically by its diffuse dystrophic calcification and the presence of cartilage at varying stages of maturation [14].

Management & Prognosis:

Definitive management remains surgical, most frequently through tonsillectomy [15]. Notably, recurrences have not been recorded in head and neck choristomas, although isolated oral lesions have demonstrated such potential, highlighting the importance of excising the perichondrium to mitigate the risk of new cartilage formation [15]. In concordance with this observation, our patient remained free of recurrence on follow-up, reinforcing the lesion's benign nature and excellent prognosis.

CONCLUSION

Tonsillar cartilaginous choristomas are a rare entity. When evaluating a patient with recurrent tonsillitis, a high index of suspicion for choristomas is required. Routine histopathological examination of tonsillectomy specimens remains essential to avoid missed diagnoses and to more accurately define the true incidence of tonsillar choristomas. Continued reporting of such rare cases will enhance recognition and help differentiate them from malignant mimics, thereby preventing overtreatment of patients.

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