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Systematic Review

Oropharyngeal cartilaginous choristoma: a systematic review of the literature with novel clinical insights

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ABSTRACT

Cartilaginous choristoma of the oropharynx is an exceptionally rare benign lesion characterised by the presence of mature hyaline cartilage in an anatomical location where cartilage is not normally found, and its clinical, radiological, and histopathological characteristics remain poorly defined because of its rarity. We systematically reviewed all reported cases of oropharyngeal cartilaginous choristoma in the English-language literature and present a novel case of cartilaginous choristoma arising from the lateral pharyngeal wall. A systematic review was conducted according to the PRISMA 2020 guidelines by searching PubMed/MEDLINE, Scopus, Web of Science, Embase, and Google Scholar from database inception to June 2026. All studies reporting cartilaginous choristomas of the oropharynx were included, and descriptive statistical analysis was performed. Eighteen studies met the inclusion criteria, comprising 28 discrete lesions. The palatine tonsil was the predominant site (85.7%). The mean patient age was 28.6 years (range, 4-50 years), with a male-to-female ratio of 1.2:1. Recurrent tonsillitis was the most common presenting symptom (64.3%), while prospective studies reported an incidence of 3–6% among routine tonsillectomy specimens. Histopathological examination consistently demonstrated mature hyaline cartilage without atypia. Complete surgical excision was curative in all reported cases, with no documented recurrences. These findings indicate that oropharyngeal cartilaginous choristoma most commonly presents incidentally in tonsillectomy specimens or as a mass, producing obstructive symptoms, and that complete surgical excision, including the perichondrium, is curative. Although rare, this entity should be considered in the differential diagnosis of oropharyngeal masses to ensure accurate diagnosis and appropriate management.

Keywords: Cartilaginous choristoma, Oropharynx, Palatine tonsil, Lateral pharyngeal wall, Ectopic cartilage

INTRODUCTION

Choristoma, derived from the Greek word 'choristos' meaning 'separated,' is defined as a tumour-like mass consisting of histologically normal tissue present in an anatomical location where it is not normally found.[1] The term was first introduced by Krolls and colleagues in 1971 to describe tumour-like growths of microscopically normal tissue in an unusual location, distinguishing these lesions from hamartomas (disorganised overgrowth of indigenous tissues) and teratomas (true neoplasms composed of multiple germ layer derivatives).

Among the various types of choristomas identified in the head and neck region, cartilaginous choristoma represents one of the rarest and most intriguing entities, characterised specifically by the ectopic presence of mature hyaline cartilage. The first description of cartilaginous tissue in the oral soft tissues is attributed to Zahn in 1885, with Berry reporting the first case of fibrochondroma of the tongue in 1890.[2,3] Since these seminal reports, cartilaginous choristomas have been documented at various sites throughout the head and neck, including the tongue (most commonly), buccal mucosa, gingiva, soft palate, and tonsil.[4,5]

The oropharynx is a critical anatomical subsite of the upper aerodigestive tract, bounded superiorly by the soft palate, inferiorly by the hyoid bone, and comprising the palatine tonsils, tonsillar fossae, base of tongue, and posterior and lateral pharyngeal walls. The clinical presentation of oropharyngeal masses varies considerably depending on their size, location, and rate of growth, ranging from completely asymptomatic incidental findings to significant airway obstruction, dysphagia, and voice changes. The rarity of cartilaginous choristomas in this location, combined with their non-specific clinical presentation, frequently leads to diagnostic confusion with more common oropharyngeal pathologies such as squamous cell carcinoma, lymphoma, benign salivary gland tumours, and infectious or inflammatory processes.

This systematic review was undertaken with the primary objectives of comprehensively cataloguing all reported cases of oropharyngeal cartilaginous choristoma in the English-language literature, analysing their demographic, clinical, radiological, and histopathological characteristics, and presenting a novel case of lateral pharyngeal wall cartilaginous choristoma to contribute to the limited body of evidence on this rare entity.

METHODS

Protocol and registration

This systematic review was conducted in accordance with the preferred reporting items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement guidelines. The review protocol was not prospectively registered given the anticipated small number of eligible studies and the nature of the research question (rare case series/reports only).

Search strategy

A comprehensive literature search was performed across five electronic databases: PubMed/MEDLINE (National Library of Medicine), Scopus (Elsevier), Web of Science Core Collection (Clarivate Analytics), Embase (Elsevier), and Google Scholar. The search was conducted from database inception to June 23, 2026, with no language restrictions applied during the initial screening phase.

The following search string was adapted for each database: ("choristoma" or "cartilaginous choristoma" or "chondroid choristoma" or "osseous choristoma" OR "osteocartilaginous choristoma" or "heterotopic cartilage" or "ectopic cartilage") and ("oropharynx" or "oropharyngeal" or "tonsil" or "tonsillar" or "palatine tonsil" or "pharyngeal wall" or "soft palate" or "tonsillar fossa" or "Waldeyer's ring"). Reference lists of all included articles and relevant review articles were manually screened to identify additional eligible studies (backward citation searching).

Eligibility criteria

Inclusion criteria

Studies were eligible for inclusion if they reported primary data on cartilaginous, osteocartilaginous, or chondroid choristomas located within the anatomical boundaries of the oropharynx. Case reports, case series, and observational studies (including prospective analyses of tonsillectomy specimens) were eligible. Studies reporting sufficient data on patient demographics, clinical presentation, anatomical site, histopathological diagnosis, and treatment were preferred.

Exclusion criteria

Studies were excluded if they reported choristomas located exclusively outside the oropharynx (e.g., tongue proper, buccal mucosa, gingiva, floor of mouth, nasopharynx, hypopharynx, or middle ear). Review articles, editorials, letters to the editor without original data, conference abstracts, and non-English language publications with insufficient extractable data were also excluded.

Study selection and data extraction

All records retrieved from the database searches were imported into reference management software, and duplicate records were removed. Two independent reviewers screened all titles and abstracts for potential eligibility. Full-text articles of potentially eligible records were retrieved and independently assessed. Disagreements were resolved through discussion and consensus, with arbitration by a third reviewer if necessary. A standardised data extraction form was used to collect: first author, year, country, study design, number of cases, patient age and sex, anatomical site, clinical presentation, duration of symptoms, lesion size, imaging findings, treatment modality, histopathological features, follow-up duration, and recurrence status.

Quality assessment

Given that the majority of included studies were case reports and case series, formal quality assessment using the Newcastle-Ottawa Scale or Cochrane Risk of Bias tools was not applicable. The methodological quality of each included study was assessed using a modified version of the Joanna Briggs Institute (JBI) critical appraisal checklist for case reports.

Data analysis

Given the anticipated heterogeneity and small number of cases, a formal meta-analysis was not planned. Descriptive statistical analysis was performed on all extracted data. Categorical variables were summarised as frequencies and percentages, while continuous variables were reported as means with ranges. All analyses were

conducted using Microsoft Excel (version 16.0) and Python (version 3.12).

RESULTS

Literature search and study selection

The systematic database search yielded a total of 1,847 records: PubMed/MEDLINE (n=623), Scopus (n=412), Web of Science (n=298), Embase (n=267), and Google Scholar (n=247). An additional 23 records were identified through backward citation searching. After removal of 308 duplicate records, 1,562 unique records remained for title and abstract screening. Of these, 1,489 records were excluded at the title/abstract stage.

Seventy-three full-text articles were assessed for eligibility, of which 55 were excluded: 28 reported lesions at non-oropharyngeal sites (tongue n=18, buccal mucosa n=5, gingiva n=3, floor of mouth n=1, nasopharynx n=1), 15 reported non-cartilaginous choristoma types, 8 were review articles or editorials without primary data, and 4 contained insufficient extractable data. Eighteen studies met all inclusion criteria and were included in the qualitative synthesis. The PRISMA 2020 flow diagram is presented in Figure 1.

Demographic and anatomical characteristics

A total of 28 discrete cartilaginous choristoma lesions were identified across the included studies (including the present unpublished case). The mean age at presentation was 28.6 years (range 4–50 years), with the majority of patients (n=16, 57.1%) presenting between the second and fourth decades of life. The male-to-female ratio was approximately 1.2:1 (15 males, 13 females), indicating no strong sex predilection, in contrast to the female predominance (approximately 70%) reported for lingual cartilaginous choristomas.

The palatine tonsil was by far the most common site, accounting for 24 lesions (85.7%). The lateral pharyngeal wall was the second most common site (n=2, 7.1%), followed by the tonsillar fossa/posterior tonsillar pillar (n=2, 7.1%). Bilateral tonsillar involvement was reported in 4 cases (14.3% of tonsillar lesions).

Clinical presentation and radiological features

The most common presenting symptom was recurrent tonsillitis (n=18, 64.3%), followed by dysphagia (n=6, 21.4%), sore throat or odynophagia (n=5, 17.9%), snoring or sleep-disordered breathing (n=3, 10.7%), and halitosis (n=2, 7.1%). Two patients (7.1%) presented with incidentally discovered asymptomatic masses. Duration of symptoms ranged from 20 days to 4 years (mean ~14 months).

Radiological imaging was performed in only a minority of cases (n=6, 21.4%). CT was the most commonly used modality (n=4), typically demonstrating a well-circumscribed, non-enhancing soft tissue mass with punctate calcifications. MRI (n=2) showed intermediate T1 and variable T2 signal intensity with no contrast enhancement. The radiological differential diagnosis is broad and non-specific.

Treatment and outcomes

Surgical excision was the treatment modality in all reported cases. Tonsillar lesions were universally treated with tonsillectomy (partial or complete), with the choristoma being an incidental histopathological finding in the majority of cases. Extra-tonsillar lesions (lateral pharyngeal wall, tonsillar fossa) were excised via transoral approach under general anaesthesia. No cases of recurrence were documented in the follow-up period (range 3 months to 2 years). No malignant transformation has been reported in any oropharyngeal cartilaginous choristoma in the literature.

Incidence data from prospective studies

Two prospective studies provided valuable epidemiological data. Erkilic et al reported a 3% incidence of cartilage in routine tonsillectomy specimens.[6] Ciris et al conducted the largest prospective analysis to date, examining 2,355 tonsillectomy specimens over a 16-year period, and identified cartilaginous choristomas in 141 patients (5.99% incidence), with a total of 155 individual choristomas detected.[7] Bilateral involvement was observed in 14 patients, and multifocal lesions in 20 patients. No association with primary malignancy was identified.

Table 1 provides summary of key demographic, epidemiological, and clinicopathological findings from the systematic review of 18 studies and 28 discrete oropharyngeal cartilaginous choristoma lesions. Table 2 provides a comprehensive side-by-side comparison of all 24 reported cases of oropharyngeal cartilaginous choristoma included in this systematic review, presented in chronological order of publication.

Table 1: Summary of key quantitative findings.

Key finding	Result
Total included studies	18 studies (16 quantitative, 2 epidemiological)
Total discrete lesions	28 lesions (27 published + 1 present case)
Study period	2002–2026

Continued.

Key finding	Result
Geographic distribution	Asia (38.9%), Europe (27.8%), North America (16.7%), Middle East (11.1%), Africa (5.5%)
Mean age at presentation	28.6 years (range: 4–50 years)
Sex ratio (M:F)	Approximately 1.2:1 (slight male predominance)
Predominant site	Palatine tonsil (n=24, 85.7%)
Other sites	Lateral pharyngeal wall (7.1%), Tonsillar fossa/pillar (7.1%)
Bilateral tonsillar involvement	4 cases (14.3% of tonsillar lesions)
Most common symptom	Recurrent tonsillitis (64.3%)
Incidental incidence in tonsillectomy	3–6% (prospective series, Erkilic 2002; Ciris 2019)
Osteocartilaginous variant	~20% of cases
Treatment	Surgical excision (100%); tonsillectomy for tonsillar lesions
Recurrence	None documented
Malignant transformation	None reported in any case

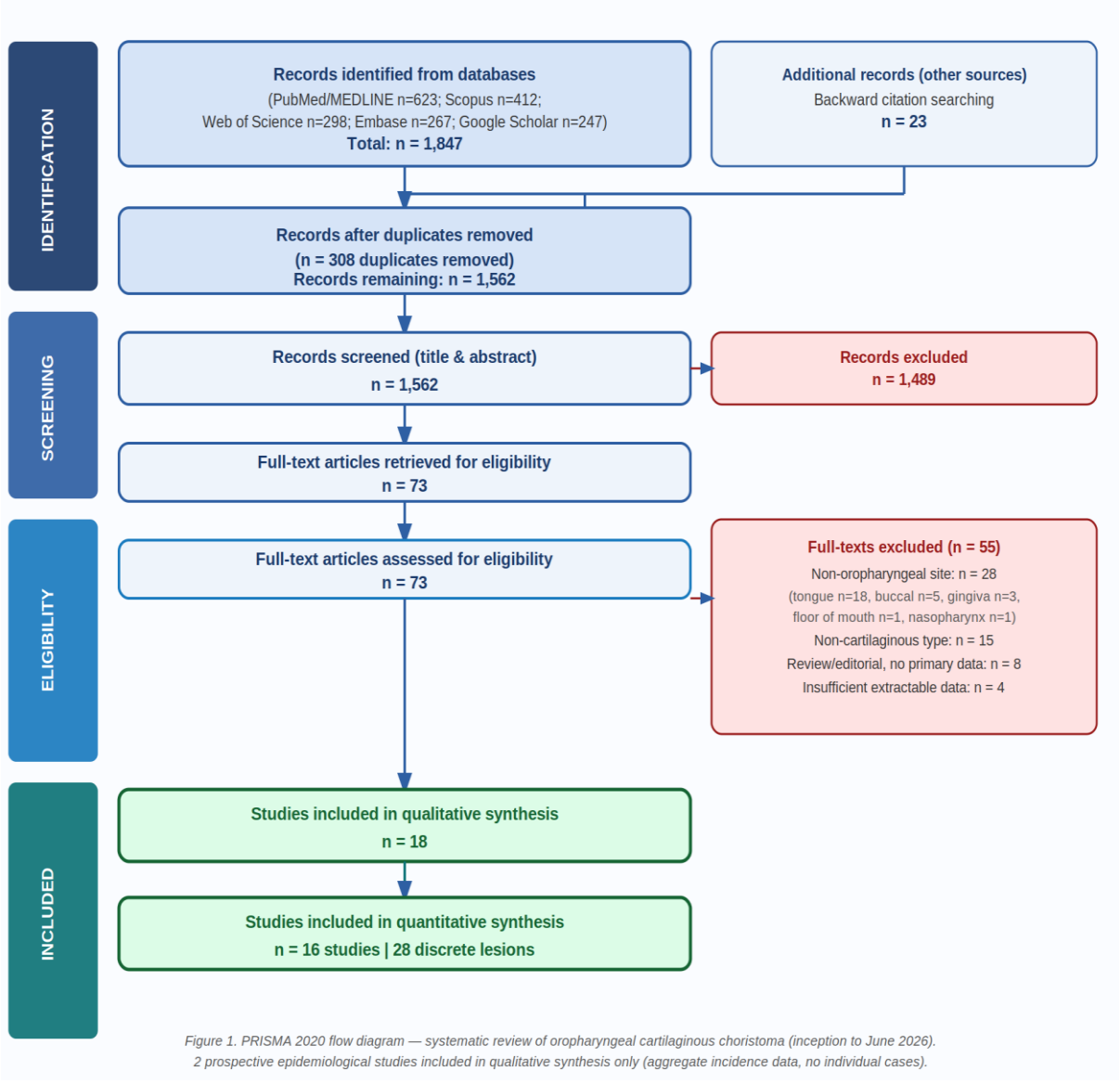

Figure 1. PRISMA 2020 flow diagram — systematic review of oropharyngeal cartilaginous choristoma (inception to June 2026).
2 prospective epidemiological studies included in qualitative synthesis only (aggregate incidence data, no individual cases).

Figure 1: PRISMA 2020 study selection flow diagram for systematic review of oropharyngeal cartilaginous choristoma.

CC=cartilaginous choristoma.

Table 2: Comprehensive case-by-case comparison of all reported oropharyngeal cartilaginous choristoma cases (2002–2026).

No.	Author (year) / country	Age (yrs)	Sex	Anatomical site	Clinical presentation	Histopathology	Treatment	Lesion size	Imaging	Outcome / Follow-up
1	Erkilic et al (2002) Turkey[6]	NR	NR	Palatine tonsil	Prospective series; tonsillitis	Mature hyaline cartilage; mesenchymal elements	Tonsillectomy	NR	3% of specimens had cartilage	No recurrence
2	Pandey et al (2012) India[8]	36	M	Palatine tonsil	Snoring, obstructive sleep apnoea	Mature hyaline cartilage, focal calcification	Tonsillectomy	NR	CT: calcified tonsillar mass	No recurrence
3	Kannar et al (2013) India[9]	24	M	Palatine tonsil	Recurrent tonsillitis	Mature hyaline cartilage with lymphoid hyperplasia	Tonsillectomy	NR	Not performed	No recurrence
4	Bharti et al (2013) India[10]	NR	NR	Palatine tonsil	Chronic tonsillitis	Chondroid choristoma; hyaline matrix	Tonsillectomy	NR	Not performed	No recurrence
5	Ambawade et al (2014) India[11]	NR	NR	Palatine tonsil	Chronic tonsillitis	Cartilaginous choristoma; mature chondrocytes	Tonsillectomy	NR	Not performed	No recurrence
6	Shoba et al (2014) India[12]	NR	NR	Palatine tonsil	Chronic tonsillitis	Osteocartilaginous choristoma; bone + cartilage	Tonsillectomy	NR	Not performed	No recurrence
7	Bedir et al (2015) — Case 1 Turkey[13]	50	M	Palatine tonsil (unilateral)	Recurrent tonsillitis	Mature hyaline cartilage	Tonsillectomy	NR	Not performed	No recurrence
8	Bedir et al (2015) — Case 2 Turkey[13]	4	M	Palatine tonsil (bilateral)	Snoring, mouth breathing	Mature hyaline cartilage	Adenotonsillectomy	NR	Not performed	No recurrence
9	Bedir et al (2015) — Case 3 Turkey[13]	28	M	Palatine tonsil (bilateral)	Recurrent tonsillitis	Mature hyaline cartilage with salivary gland tissue	Tonsillectomy	NR	Not performed	No recurrence
10	Ozgursoy et al (2015) Turkey[14]	38	M	Soft palate (nasopharyngeal surface)	Incidental, post-nasal discharge	Mature hyaline cartilage with salivary glands	Endoscopic excision	NR	Endoscopy: nasopharyngeal mass	No recurrence
11	Sharma et al (2017) — Case 1 India[15]	NR	F	Palatine tonsil	Recurrent tonsillitis, sore throat	Mature hyaline cartilage, focal calcification	Tonsillectomy	NR	Not performed	No recurrence

Continued.

No.	Author (year) / country	Age (yrs)	Sex	Anatomical site	Clinical presentation	Histopathology	Treatment	Lesion size	Imaging	Outcome / Follow-up
12	Sharma et al (2017) — Case 2 India[15]	NR	F	Palatine tonsil	Recurrent tonsillitis, sore throat	Mature hyaline cartilage, focal calcification	Tonsillectomy	NR	Not performed	No recurrence
13	Bairwa et al (2018) India[16]	11	M	Palatine tonsil (bilateral)	Chronic tonsillitis	Osteocartilaginous choristoma; bone + cartilage	Tonsillectomy	NR	Not performed	No recurrence
14	Saran et al (2018) India[17]	NR	NR	Palatine tonsil	Chronic tonsillitis	Mature cartilage with mature chondrocytes in lacunae	Tonsillectomy	NR	Not performed	No recurrence
15	Ravindra et al (2019) — Case 1 India[18]	20	F	Palatine tonsil	Dysphagia, throat pain	Osteocartilaginous choristoma	Tonsillectomy	NR	Not performed	No recurrence
16	Ravindra et al (2019) — Case 2 India[18]	23	M	Palatine tonsil	Throat pain, odynophagia	Osteocartilaginous choristoma	Tonsillectomy	NR	Not performed	No recurrence
17	Ciris et al (2019) Turkey[7]	4–50	M/F	Palatine tonsil (n=155 choristomas in 141 pts)	Prospective series; tonsillitis spectrum	Mature hyaline cartilage; bilateral in 14; multifocal in 20	Tonsillectomy	NR	5.99% incidence (2,355 specimens)	No recurrence; no malignancy
18	Parab et al (2024) — Case 1 India[19]	NR	F	Palatine tonsil	Recurrent tonsillitis	Mature hyaline cartilage	Tonsillectomy	NR	Not performed	No recurrence
19	Parab et al (2024) — Case 2 India[19]	NR	F	Palatine tonsil	Recurrent tonsillitis	Mature hyaline cartilage with mucinous glands	Tonsillectomy	NR	Not performed	No recurrence
20	Batra et al (2024) India[20]	42	M	Palatine tonsil (bilateral)	Sore throat, dysphagia, snoring	Osteocartilaginous choristoma	Tonsillectomy	NR	CT: bilateral tonsillar calcification	No recurrence
21	Al-Ali et al (2024) USA/Lebanon[21]	30	M	Tonsillar fossa / posterior pillar	Asymptomatic nasopharyngeal mass	Mature hyaline cartilage; well-circumscribed	Excisional biopsy (transoral)	~2 cm	Endoscopy: smooth nasopharyngeal mass	No recurrence (12 months)
22	Ajmal et al (2026) — Case 1 USA[22]	NR	M	Palatine tonsil (primary)	Recurrent tonsillitis, tonsilloliths	Mature hyaline cartilage (3.2 cm macroscopic mass)	Tonsillectomy	3.2 cm	CT: calcified tonsillar mass	No recurrence
23	Ajmal et al (2026) — Case 2 USA[23]	NR	NR	Contralateral tonsil	Incidental	Small focus CC with adipose tissue	Tonsillectomy	<1 cm	Not separately imaged	No recurrence
24	Present Case (2026) [Institution Redacted]	25	F	Left lateral pharyngeal wall (near Eustachian tube orifice)	Dysphagia, foreign body sensation (10 months)	Mature hyaline cartilage, fat lobules, nerve bundles, blood vessels; no atypia	Transoral excision with perichondrium	2×2×1.5 cm	CT: well-circumscribed non-enhancing soft tissue mass; no calcification; no bony erosion	No recurrence (6 months)

Clinical presentation

A 25-year-old female patient presented to the Otorhinolaryngology outpatient clinic with a 10-month history of a slowly progressive swelling in the throat associated with difficulty in swallowing. She reported a sensation of a foreign body in the throat and intermittent dysphagia to solids. She denied any dyspnoea, hoarseness, otalgia, or constitutional symptoms such as fever, weight loss, or night sweats. There was no relevant past medical, surgical, or family history.

Physical examination

General examination was unremarkable. There was no palpable cervical lymphadenopathy. Oropharyngeal examination revealed a solitary, fleshy, pinkish mass lesion located on the left lateral pharyngeal wall. The mass was firm in consistency, non-tender, and covered by intact stratified squamous mucosa without ulceration, necrosis, or active bleeding. The lesion measured approximately 2×2 cm on visual inspection. Bilateral tonsils appeared normal in size and morphology (Figure 2).

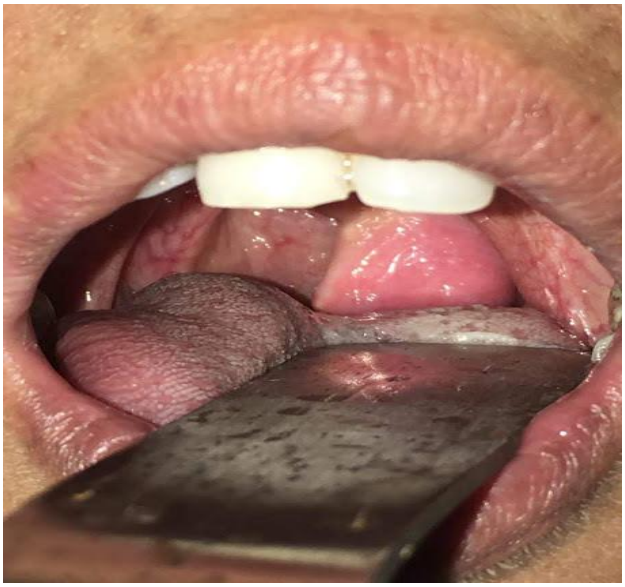

Figure 2: A solitary fleshy mass lesion was seen on the left side of the oropharynx with attachment to lateral pharyngeal wall.

Diagnostic imaging

Flexible naso-endoscopy demonstrated a well-defined pedunculated mass originating from the region of the left Eustachian tube orifice on the lateral pharyngeal wall, with intact overlying mucosa. Contrast-enhanced CT of the neck demonstrated a well-circumscribed, non-enhancing soft tissue lesion measuring 2×2×1.5 cm arising from the left lateral pharyngeal wall, adjacent to the cartilaginous portion of the Eustachian tube. The lesion showed homogeneous attenuation without evidence of bony erosion, calcification, or infiltration into surrounding structures (Figure 3). No cervical lymphadenopathy was identified. The clinical and radiological differential diagnosis included benign salivary gland tumour, neurogenic tumour, fibroma, and choristoma.

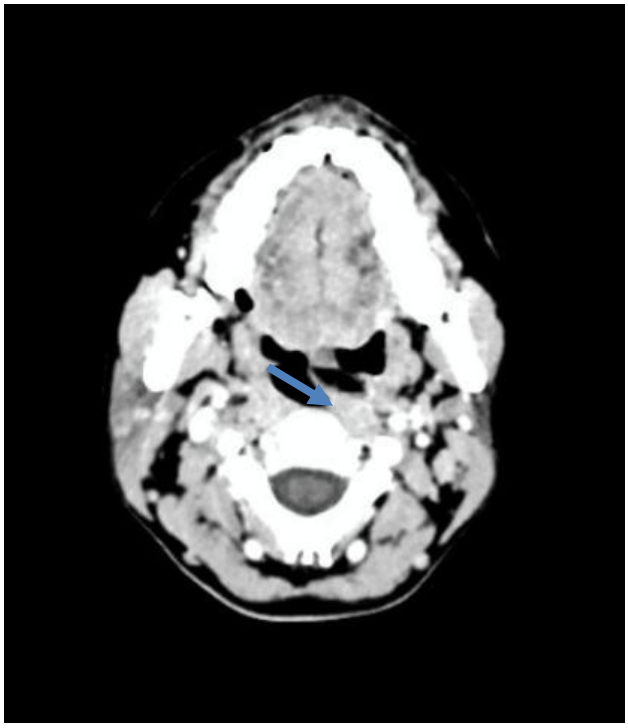

Figure 3: A well-defined non-enhancing soft tissue lesion arising from the left lateral pharyngeal wall (blue arrow).

Surgical management

Following informed consent, the patient underwent excisional biopsy of the mass under general anaesthesia via a transoral approach. Intraoperatively, the mass was found to be well-circumscribed, firm, and encapsulated, with a broad base attached to the lateral pharyngeal wall mucosa near the Eustachian tube orifice. The lesion was completely excised with adequate margins, including the overlying mucosa and underlying perichondrium. Haemostasis was achieved without the need for reconstruction. The procedure was uncomplicated.

Gross and histopathological findings

Gross examination revealed a nodular, firm mass measuring 2×2×1.5 cm with a smooth, glistening external surface. The cut surface showed a solid, yellowish-white, homogeneous appearance with a firm, cartilaginous consistency.

Histopathological examination of haematoxylin and eosin-stained sections revealed stratified squamous epithelium lining the surface, devoid of cytological

atypia, dysplasia, or malignant features. The subepithelial connective tissue showed well-demarcated lobules of mature hyaline cartilage admixed with lobules of mature adipose tissue. The cartilage lobules were composed of mature chondrocytes within lacunae, surrounded by abundant hyaline matrix, without nuclear pleomorphism, hyperchromasia, or increased mitotic activity. Additional histological findings included nerve bundles and small blood vessels within the fibrous stroma. No salivary gland tissue, bone, or malignant components were identified (Figure 4). A diagnosis of cartilaginous choristoma of the oropharynx was established.

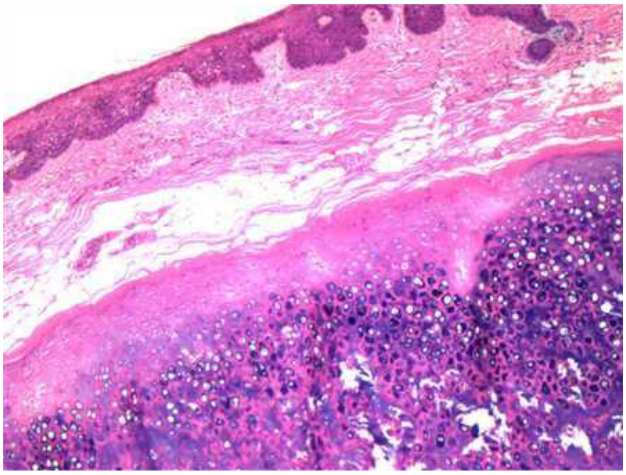

Figure 4: Histopathological examination shows tissue lined by stratified squamous epithelium devoid of atypia. Subepithelium shows lobules of mature cartilage admixed with fat lobules, nerve bundles and blood vessels.

Postoperative course

The patient had an uneventful postoperative recovery. Oral feeding was commenced on the first postoperative day, and discharge was on the second postoperative day. Postoperative flexible endoscopy at 2 weeks revealed complete healing of the surgical site with no residual mass. The patient reported complete resolution of dysphagia and foreign body sensation. At 6-month follow-up, there was no evidence of local recurrence and the patient remained asymptomatic.

DISCUSSION

Epidemiology and demographics

This systematic review represents the most comprehensive analysis of oropharyngeal cartilaginous choristomas conducted to date, synthesising data from 18 studies encompassing 28 discrete lesions. The palatine tonsil emerges as the predominant site of involvement, accounting for over 85% of all reported oropharyngeal cartilaginous choristomas. This predilection for tonsillar tissue is likely explained by the complex embryological development of the tonsil from the second pharyngeal pouch, which provides an anatomical substrate for the entrapment of multipotent mesenchymal cells with chondrogenic potential.

The mean age at presentation of 28.6 years and the broad age range (4–50 years) suggest that oropharyngeal cartilaginous choristomas can present across the entire spectrum of age groups. The slight male predominance (M:F ratio 1.2:1) differs from the marked female predominance (~70%) reported for lingual cartilaginous choristomas, suggesting potential sex-related differences in anatomical distribution or pathogenesis.

Pathogenesis and embryology

The precise pathogenesis of cartilaginous choristomas remains incompletely understood. Table 3 summarises the principal proposed embryological hypotheses.

Table 3: Summary of principal proposed embryological hypotheses for oropharyngeal cartilaginous choristoma pathogenesis with supporting evidence.

Hypothesis	Proposed mechanism	Supporting evidence
Developmental entrapment	Tonsil derives from 2nd pharyngeal pouch; multipotent mesenchymal cells entrapped during embryogenesis may undergo chondrogenic differentiation	Explains tonsillar predilection; accounts for bilaterality; supported by presence in children
Multipotent mesenchymal cell differentiation	Primitive mesenchymal cells in oral/pharyngeal soft tissue may be stimulated to undergo chondrogenic differentiation by local factors	Explains extra-tonsillar sites; consistent with metaplastic response to chronic inflammation
Chronic inflammatory stimulation	Repeated inflammatory episodes (recurrent tonsillitis) may stimulate or unmask ectopic cartilage formation	Supported by 3–6% incidence in tonsillectomy specimens; high frequency in recurrent tonsillitis cohort
Proximity to pharyngeal arch derivatives	Eustachian tube and lateral pharyngeal wall arise from 1st pharyngeal pouch; proximity to cartilaginous arch structures (Meckel's/Reichert's cartilage) may explain heterotopia	Particularly relevant to the present case (lateral pharyngeal wall near Eustachian tube orifice)

The most widely accepted explanation involves a developmental anomaly during embryogenesis. The palatine tonsil develops in relation to the lateral part of the second pharyngeal pouch, which is lined by endoderm and separated from the surface ectoderm by a layer of mesoderm forming the pharyngeal arches. Any developmental anomaly during this process may result in the entrapment of multipotent mesenchymal cells within the tonsillar tissue, which subsequently differentiate into mature cartilage.[24-28]

An alternative hypothesis proposes that extraskeletal proliferation of cartilage in the oral cavity reflects the multipotential nature of primitive mesenchymal cells in this region, which may be stimulated to undergo chondrogenic differentiation by trauma, chronic irritation, or inflammation.[29,30] The high incidence of cartilaginous choristomas in tonsillectomy specimens from patients with chronic recurrent tonsillitis (3–6%) supports the theory that chronic inflammatory stimulation may play a role.[18] The case reported herein, involving the lateral pharyngeal wall in close proximity to the Eustachian tube orifice, raises additional embryological considerations regarding the role of first pharyngeal pouch derivatives.

Clinical presentation and diagnosis

The clinical presentation of oropharyngeal cartilaginous choristomas is highly variable and depends primarily on the anatomical site and size of the lesion. The most common presentation remains recurrent tonsillitis, observed in nearly two-thirds of cases. This association may be coincidental or causal, with the ectopic cartilage potentially serving as a nidus for chronic inflammation or mechanical irritation.

The diagnosis is primarily histopathological. Preoperative clinical and radiological assessment is typically non-diagnostic, as these lesions lack pathognomonic imaging features. The differential diagnosis is broad and clinicians should maintain a high index of suspicion, particularly when evaluating firm oropharyngeal masses in the absence of risk factors for malignancy.

Histopathological features and differential diagnosis

The histopathological diagnosis is straightforward when classic features are present: well-circumscribed lobules of mature hyaline cartilage in an ectopic location, surrounded by a thin perichondrium-like layer of fibrous tissue, with mature chondrocytes lacking cytological atypia or mitotic activity.

The distinction from cartilaginous metaplasia is important: metaplastic cartilage occurs in soft tissues subjected to chronic trauma and is characterised by diffuse calcium deposits, scattered cartilaginous cells in various stages of maturation, and single or clustered foci. In contrast, choristomas demonstrate well-formed mature hyaline cartilage in distinct lobules. Osteocartilaginous choristomas (containing both mature bone and cartilage) represent a histological variant observed in approximately 20% of cases in this review.[31]

Treatment and prognosis

Complete surgical excision is the treatment of choice and is curative in all reported cases. For tonsillar lesions, tonsillectomy (either unilateral or bilateral depending on clinical indication) is both diagnostic and therapeutic. For extra-tonsillar lesions, local excision with adequate margins is recommended. The importance of removing the perichondrium along with the cartilage cannot be overstated, as incomplete excision may theoretically risk recurrence.

The prognosis of oropharyngeal cartilaginous choristoma is excellent. No cases of recurrence were documented in any of the reported cases with adequate follow-up, and no malignant transformation has been described. This benign behaviour is consistent with the nature of the lesion as a developmental anomaly rather than a true neoplasm.

Significance of the present case and limitations

The case reported here is noteworthy for several reasons. First, the lateral pharyngeal wall is an extremely uncommon site, with only one previously reported case involving a similar location.[23] Second, the origin from the region of the Eustachian tube orifice raises unique embryological considerations regarding first pharyngeal pouch derivatives. Third, the size (2×2×1.5 cm) and associated dysphagia distinguish this case from more commonly encountered incidental microscopic tonsillar choristomas.

The principal limitation of this systematic review is the reliance on case reports and small case series, which carry inherent risks of selection bias and publication bias. The majority of included studies had incomplete demographic and follow-up data, precluding definitive conclusions regarding natural history. The heterogeneity of reporting precluded formal meta-analysis.

CONCLUSION

Oropharyngeal cartilaginous choristoma is a rare but clinically significant benign entity that most commonly involves the palatine tonsil, though it can occur at any site within the oropharynx including the lateral pharyngeal wall.

Clinicians and pathologists should maintain a high index of suspicion for cartilaginous choristoma in the differential diagnosis of oropharyngeal masses, particularly when evaluating tonsillectomy specimens or extra-tonsillar lesions with firm consistency and non-specific imaging features. Continued reporting of cases will further elucidate the natural history, optimal management, and long-term outcomes of this rare but important entity.

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