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Surgical and Interventional Medicine

Symptomatic osseous choristoma of the posterior dorsal tongue in a 15-year-old girl: A case report and focused review

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Abstract

Introduction and importance

Lingual osseous choristoma is an uncommon benign lesion comprising mature bone in an ectopic soft-tissue location.

Case presentation

A 15-year-old girl from Jordan presented with 6 months of mild dysphagia, intermittent nausea, and occasional pain during swallowing. Examination revealed a hard, pedunculated mass on the posterior dorsal tongue near the foramen cecum. Contrast-enhanced computed tomography showed a hyperdense, mineralized lesion. Complete local excision under general anesthesia yielded a 0.7 × 0.6 × 0.5-cm specimen. Histopathology demonstrated mature lamellar bone beneath benign stratified squamous epithelium, without atypia, mitoses, or malignant features, and confirmed clear excision margins. Symptoms were relieved after excision and healing. Routine oral examinations showed no clinical recurrence during four months of follow-up; no postoperative radiological imaging was performed.

Clinical discussion

Imaging suggested a mineralized lesion, but histopathology established the diagnosis of osseous choristoma.

Conclusion

Osseous choristoma should be considered in adolescents with a firm, mineralized posterior dorsal tongue lesion. Complete local excision provided tissue for diagnosis and was followed by symptom relief.

Keywords: Osseous choristoma, Tongue, Dysphagia, Oral pathology, Case report

1. INTRODUCTION

A choristoma is histologically normal tissue situated in an anatomically abnormal location.[1] When the ectopic tissue is mature bone, the lesion is termed an osseous choristoma. Krolls et al[2] used this term for mature bone in intraoral soft tissue, although older reports often referred to lingual osteoma. Vered et al[3] questioned whether all such lesions share a developmental, reactive, or neoplastic origin.

Shareef et al[4] identified 35 case reports or case series describing 69 patients with lingual osseous choristoma. Patients were predominantly female (48 of 69; 69.6%), with ages ranging from 5 to 73 years and a mean (SD) age of 28.1 (16.7) years. Most lesions involved the posterior third of the

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tongue. Of 41 lesions with recorded morphology, 33 (80.5%) were pedunculated.[4]

Symptoms were reported in 38 patients (55.1%); gagging or globus sensation and dysphagia were the most frequent complaints.[4] We report the clinical assessment, imaging, excision, histopathological diagnosis, and follow-up of a symptomatic adolescent with a pedunculated lesion on the posterior dorsal tongue.

We structured the case according to CARE case-report principles and the SCARE 2025 guidance for surgical case reports.[5,6] The literature review is focused rather than systematic and includes selected pediatric comparisons.

2. CASE PRESENTATION

2.1. PATIENT INFORMATION AND CLINICAL FINDINGS

A 15-year-old girl from Jordan was referred to the Oral and Maxillofacial Surgery Clinic at Al-Hussein Al-Salt New Hospital for evaluation and management of a posterior dorsal tongue nodule. Her complaints had lasted approximately 6 months and included mild dysphagia, intermittent nausea, and occasional pain during swallowing, particularly after hard food. The lesion was painless at the time of examination. She reported no history of trauma to the region. Medical history, dental history, and medication intake were unremarkable.

Intraoral examination showed a pink, hard, smooth, pedunculated mass covered by normal-appearing mucosa. The lesion was on the posterior dorsal tongue near the foramen cecum, slightly to the right of the midline and posterior to the circumvallate papillae. Cervical lymph-node assessment and the remaining mouth and throat examination were unremarkable. Lingual thyroid was considered in the clinical differential because of the lesion's location. Figure 1 shows the intraoral appearance before excision.

2.2. DIAGNOSTIC ASSESSMENT

On day 1, fiberoptic nasolaryngoscopy was performed to visualize the posterior dorsal tongue. The examination showed the mass without reported airway compromise and documented its anatomical position (Figure 2).

On day 4, contrast-enhanced computed tomography (CT) was performed with 1-mm slice thickness to characterize the lesion and its vascularity and to assess its anatomical relationships with adjacent structures, including the thyroid gland. Axial and sagittal images showed a hyperdense, mineralized lesion on the posterior dorsal tongue (Figure 3). The thyroid gland was normal in size and normally positioned in the neck. Imaging supported a suspected osseous choristoma, but histopathological examination was required to establish the diagnosis and distinguish it from a cartilaginous choristoma or another mineralized soft-tissue lesion.

Because the mineralized lesion was symptomatic, excisional biopsy was selected to obtain a definitive diagnosis and relieve the symptoms.



Figure 1. Intraoral clinical photograph showing a pink, hard, pedunculated, mucosa-covered mass on the posterior dorsal tongue.



Figure 2. Fiberoptic nasolaryngoscopy view showing the posterior dorsal tongue mass.

2.3. THERAPEUTIC INTERVENTION

On day 15, under general anesthesia, complete local excision was performed using a No. 15 blade, and hemostasis was achieved with bipolar cautery. The specimen was submitted to the histopathology laboratory for diagnostic confirmation. The gross surgical specimen measured 0.7 × 0.6 × 0.5 cm (Figure 4).

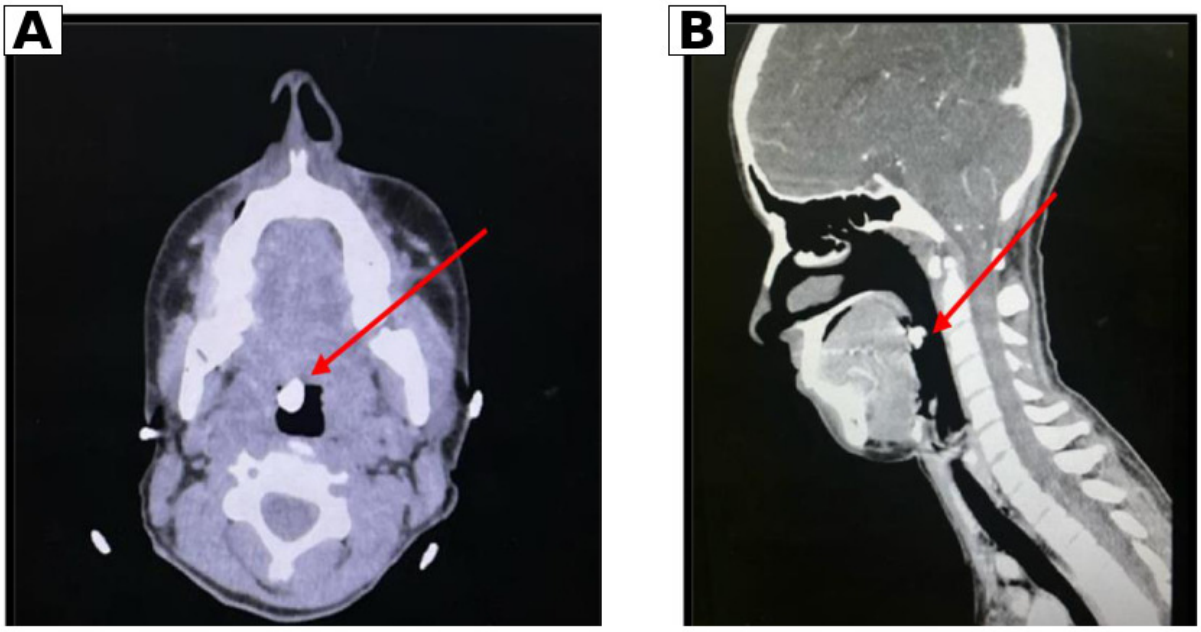


Figure 3. Contrast-enhanced computed tomography images with 1-mm slice thickness showing a hyperdense, mineralized lesion on the posterior dorsal tongue (arrows). (A) Axial view. (B) Sagittal view.



Figure 4. Gross photograph of the excised specimen, measuring 0.7 × 0.6 × 0.5 cm.

2.4. HISTOPATHOLOGICAL FINDINGS

Histopathological examination showed benign surface oral mucosa with stratified squamous epithelial lining and an underlying well-defined nodule composed of lamellar bone structures surrounded by fibroconnective stroma. At higher magnification, mature bone lamellae with reactive osteocytes were seen. No cellular atypia, mitotic figures, or malignant features were identified. Histological examination confirmed clear excision margins. These findings established the diagnosis of lingual osseous choristoma (Figure 5).

2.5. FOLLOW-UP AND OUTCOMES

At the early postoperative review on day 19, 4 days after excision, the surgical site was healing appropriately, without surgical complications. Dysphagia, nausea, and pain during swallowing were relieved after excision and healing. Follow-up consisted of routine physical oral examinations as well as fiberoptic nasolaryngoscopy, with no clinical recurrence during four months of follow-up. No postoperative radiological imaging was performed. Postoperative endoscopic views of the excision site are shown in Figure 6.

2.6. TIMELINE

Time point	Event
Approximately 6 months before presentation	Mild dysphagia, intermittent nausea, and occasional pain during swallowing, especially with hard food.
Day 1	Outpatient presentation to the Oral and Maxillofacial Surgery Clinic. Clinical examination and fiberoptic nasolaryngoscopy examination were performed.
Day 4	Contrast-enhanced CT with 1-mm slice thickness showed a hyperdense, mineralized lesion on the posterior dorsal tongue. The thyroid gland was normal in size and normally positioned in the neck.
Day 15	Complete local excision was performed under general anesthesia using a No. 15 blade and

Time point	Event
	bipolar hemostasis. Histopathological examination of the specimen subsequently confirmed clear excision margins.
Day 19	Early postoperative wound review, 4 days after excision, showed appropriate healing without surgical complications.
Follow-up through 4 months	Symptoms were relieved after excision and healing. Routine physical oral examinations showed no clinical recurrence during four months of follow-up. No postoperative radiological imaging was performed.

Exact calendar dates are withheld to protect the confidentiality of a minor.

2.7. PATIENT PERSPECTIVE

A separate patient or guardian perspective was not available because the guardians did not respond to attempts to contact them.

3. DISCUSSION

3.1. CLINICAL FEATURES AND PEDIATRIC COMPARISON

The posterior dorsal location and pedunculated appearance in this patient are consistent with the commonly reported presentation of lingual osseous choristoma.[4] Pediatric cases include both asymptomatic and symptomatic lesions. Arimoto et al[7] and Yoshimura et al[8] described asymptomatic nodules, whereas Adhikari et al[9] reported a 15-year-old girl with throat discomfort and a 5-mm pedunculated lesion near the foramen cecum. Our patient presented with dysphagia, nausea, and pain during swallowing for approximately 6 months. These cases are compared in Table 1.

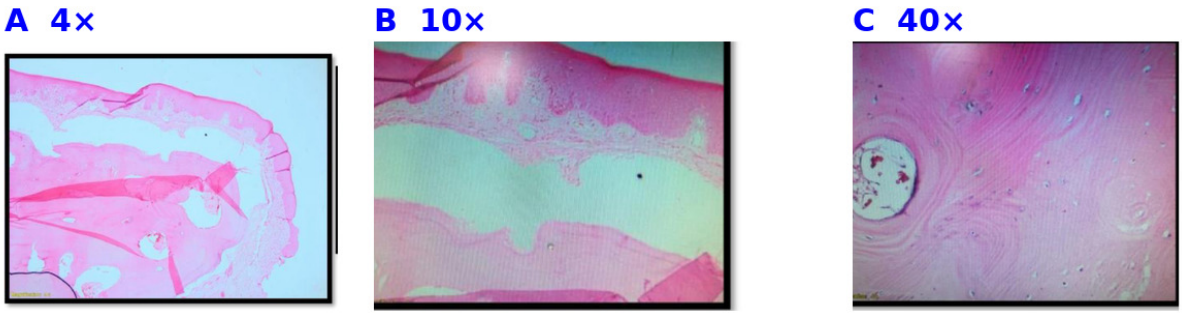


Figure 5. Histopathological findings.

Hematoxylin and eosin stain. (A) At 4× magnification and (B) at 10× magnification, benign surface oral mucosa with stratified squamous epithelial lining overlies a well-defined nodule composed of lamellar bone surrounded by fibroconnective stroma. (C) At 40× magnification, mature bone lamellae with reactive osteocytes are present. No cellular atypia, mitotic figures, or malignant features were identified.

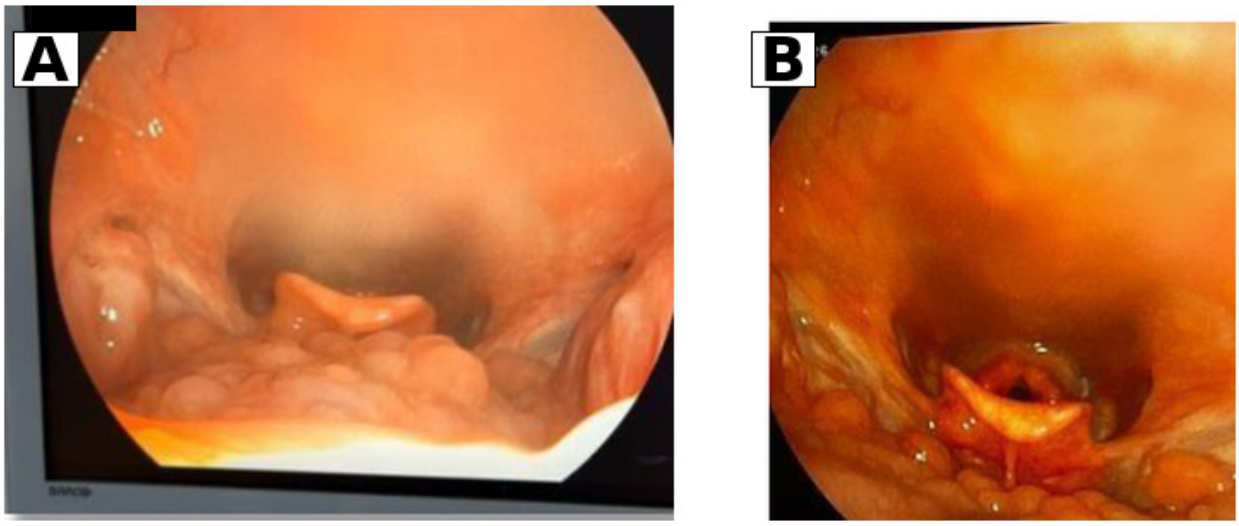


Figure 6. Postoperative fiberoptic nasolaryngoscopy views of the excision site (A and B).

The precise postoperative interval for each photograph is unavailable.

Table 1. Present case compared with selected pediatric lingual osseous choristoma reports.

Study	Age and sex	Tongue site	Presentation	Management and outcome
Arimoto et al[7]	11-year-old girl	Posterior dorsal tongue	Asymptomatic pedunculated nodule, approximately 7 mm	Excision under general anesthesia; no recurrence reported at 12 months
Yoshimura et al[8]	7-year-old boy	Posterior tongue	Asymptomatic pedunculated nodule, approximately 5 to 6 mm	Excision under general anesthesia; no recurrence reported at 36 months
Adhikari et al,[9] case 1	15-year-old girl	Posterior dorsal tongue near the foramen cecum	Throat discomfort associated with a painless, pedunculated 5-mm lesion	Excision under local anesthesia; no recurrence reported at 5 months
Present case	15-year-old girl	Posterior dorsal tongue near the foramen cecum	Pedunculated nodule with dysphagia, nausea, and pain during swallowing for approximately 6 months	Complete local excision under general anesthesia; no clinical recurrence during four months of follow-up

3.2. PATHOGENESIS

Proposed mechanisms include developmental tissue rests, ossification associated with thyroid or branchial arch remnants, and reactive or metaplastic ossification following chronic irritation or trauma.[4,10] This patient reported no preceding trauma, but neither that history nor the presence of mature lamellar bone establishes a specific origin. The pathogenesis remains uncertain.

3.3. DIFFERENTIAL DIAGNOSIS AND DIAGNOSTIC REASONING

Lingual thyroid and benign vascular or developmental lesions are relevant clinical alternatives for a nodule near the foramen cecum.[8,10] In this patient, CT demonstrated mineralization and documented a normally positioned thyroid gland. The CT findings supported a suspected osseous choristoma but were not diagnostic. The distinction between osseous and cartilaginous choristoma required histopathological assessment.

The diagnosis was established by histopathological examination, which showed mature lamellar bone beneath benign stratified squamous epithelium.

3.4. MANAGEMENT AND PROGNOSIS

Complete local excision provides tissue for diagnosis and removes the lesion. In the systematic review by Shareef et al,[4] 49 patients underwent surgical resection, with no recurrence reported among those cases. Our patient underwent complete local excision under general anesthesia, with histologically clear margins, uncomplicated healing, and subsequent symptom relief.

Routine physical oral examinations showed no clinical recurrence during four months of follow-up. This observation does not exclude later recurrence. Long and Koutnik[11] reported recurrence in a buccal osseous choristoma; that nonlingual case does not establish a recurrence rate for lingual lesions.

3.5. STRENGTHS AND LIMITATIONS

The clinical, CT, and histopathological findings document the diagnostic sequence. Interpretation is limited by the single-case design, focused literature review, and 4-month follow-up. The exact postoperative intervals for the Figure 6 photographs are unavailable, and a separate patient or guardian perspective could not be obtained. These limitations preclude conclusions about long-term recurrence or the lesion's pathogenesis.

4. CONCLUSION

Osseous choristoma should be considered in the differential diagnosis of a firm, pedunculated, mineralized lesion on the posterior dorsal tongue in an adolescent. Histopathological examination established the diagnosis in this 15-year-old girl. Complete local excision with histologically clear margins was followed by healing and symptom relief, with no clinical recurrence during four months of follow-up.

CONFLICT OF INTEREST / COMPETING INTERESTS

The authors declare no conflicts of interest relevant to this work.

ETHICS APPROVAL AND CONSENT

This manuscript describes a single anonymized clinical case. According to the institutional policy of the treating hospital, formal ethics committee approval was not required for publication of an anonymized case report. Consent for clinical management was obtained by the treating team. Written informed consent for publication of this case report and the accompanying images was obtained from the patient's parent or legal guardian.

AI TOOL USE DISCLOSURE

ChatGPT (OpenAI; GPT-5) was used to assist with language editing, manuscript organization, and formatting. All clinical information, interpretations, references, and conclusions were reviewed and verified by the authors, who accept full responsibility for the final manuscript.

THIRD-PARTY MATERIAL PERMISSIONS

No third-party material requiring permission has been reproduced in this manuscript. All clinical photographs, radiographic images, histopathological images, and illustrations are original and were generated during the patient's clinical care.

DATA AVAILABILITY

All data supporting the findings of this case report are included in the manuscript. No additional datasets were generated or analyzed.

FUNDING

This research received no external funding.

REPORTING GUIDELINES

The report was structured according to CARE case-report principles and the SCARE 2025 guideline for surgical case reports.[5,6]

PREPRINT DISCLOSURE

This manuscript has not been posted as a preprint and has not been previously published.

AUTHOR CONTRIBUTIONS (CREDIT)

Conceptualization: Zayed M. Al-Zu'bi (Lead). Investigation: Zayed M. Al-Zu'bi (Lead). Writing – original draft: Zayed M. Al-Zu'bi (Equal), Dareen Abu-Azzam (Equal), Esra Nsour (Equal). Methodology: Dareen Abu-Azzam (Lead). Resources: Dareen Abu-Azzam (Lead). Data curation: Esra Nsour (Lead). Validation: Esra Nsour (Lead).

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