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## Correspondence

# Plunging ranula with extension to the tongue base

## KEYWORDS

Plunging ranula;  
Submandibular space;  
Tongue base

Plunging ranulas extend to the submandibular space (SMS) through the posterior edge or defect of the mylohyoid muscle and occasionally involve other adjacent spaces such as the parapharyngeal space (PPS).<sup>1–3</sup> However, plunging ranulas extending into the tongue base are extremely rare.<sup>4</sup> Here we reported a plunging ranula with extension to the tongue base.

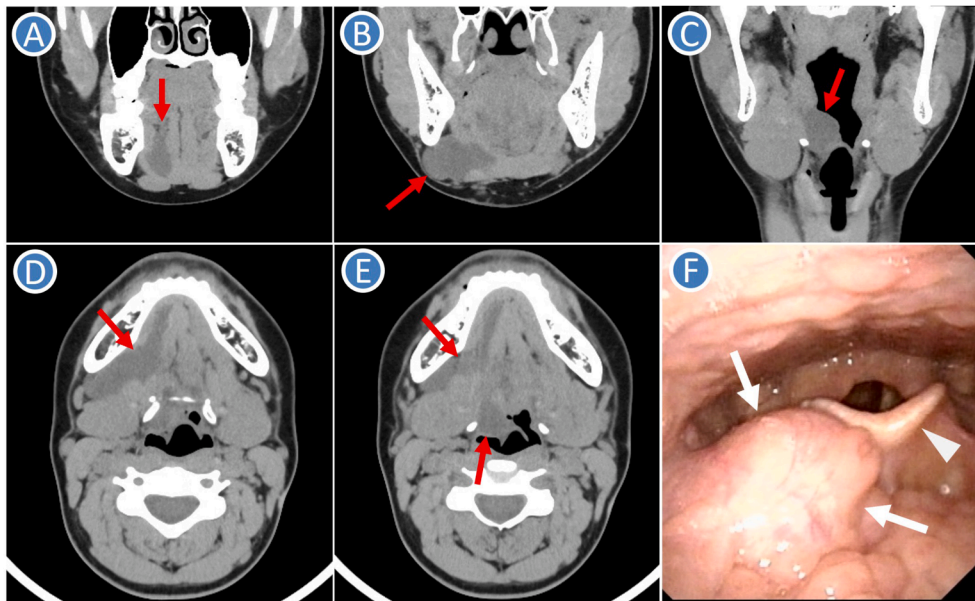
A 17-year-old woman was referred to our hospital for pharyngeal discomfort and slight swelling in the submandibular region. Intraoral examinations showed that the mucosa of the right oral floor was intact. Computed tomography showed a well-circumscribed homogeneous cystic lesion extending to the SMS and tongue base (Fig. 1A–E). Flexible transnasal endoscopy revealed the mass of the tongue base (Fig. 1F). The cystic lesion was clinically and radiologically diagnosed as a plunging ranula with extension to the tongue base. The patient underwent intraoral sublingual gland (SLG) removal with drainage of remaining saliva in the plunging ranula under general anesthesia. The plunging ranula was extended into the SMS through the defect of the mylohyoid muscle and was intruded from between the genioglossus muscle and hyoglossus muscle into the tongue base. The cystic lesion included yellowish mucus. The pathological diagnosis was ranula. The postoperative course was uneventful without lingual nerve paralysis, and there was no recurrence 5 months after surgery.

Ranulas are extravasation mucocoeles arising from ruptured acini or ducts of the SLG and can be divided into

two known subtypes (Simple/Intraoral ranula and plunging ranula). A recent systematic review and meta-analysis of ranulas revealed that SLG removal with/without pseudocyst wall excision had low heterogeneity and the highest success rates. A new classification system was proposed, categorizing ranulas by intraoral (Type 1), cervical (Type 2), or PPS (Type 3) extension.<sup>1</sup> Each type is then divided into 'a' and 'b' categories, designating further specific extensions within these anatomical regions: Type 1a - simple intraoral unilateral sublingual ranula; Type 1b - simple intraoral sublingual ranula with extension to the contralateral oral floor; Type 2a - sublingual plunging ranula that reaches the cervical region from a hiatus of the mylohyoid muscle; Type 2b - sublingual plunging ranula that reaches the cervical region from the posterior margin of the mylohyoid muscle; Type 3a - extended sublingual ranula involving the PPS; Type 3b - extended sublingual ranula involving the PPS, masticatory space and/or infratemporal fossa.<sup>1</sup> However, the present case with the rare ranula extending to the tongue base could not be included in this novel classification. To our knowledge, there was only one report of a ranula with extension to the tongue base and vallecula.<sup>4</sup> In this case with extension to the tongue base and vallecula, a marsupialization was performed at the patient's wish.<sup>4</sup> Because a shrinkage of the ostium and low progression of the vallecular protrusion were observed in a follow-up 6 months after the marsupialization, surgical enlargement of the ostium was performed.<sup>4</sup> Marsupialization alone may not be a sufficient therapeutic option and

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**Figure 1** Computed tomography (CT) images and endoscopic image.

(A–C) Axial images. (D, E) Coronal images. CT showed a ranula (arrows) extending to the tongue base and submandibular region. (F) Endoscopic view of the laryngopharynx. Arrows indicate the ranula with extension to the tongue base. Arrowhead indicates the epiglottis.

may need future SLG removal.<sup>4</sup> In contrast, curative SLG removal was performed in the present case.

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## Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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