ABSTRACT

Objectives: 1) Describe two cases of sublingual dermoid cysts presenting clinically as submental neck masses; and 2) discuss radiographic features of dermoids as well as the differential diagnoses they are often mistaken for.

Study Design: Case series.

Methods: Two patients presented with submental neck masses with no associated symptoms and unremarkable oral cavity exams. Both patients had ultrasound and CT or MRI that revealed well circumscribed, avascuclar cystic lesions in sublingual and submandibular spaces. One had a radiologic diagnosis of plunging ranula and the other ranula versus dermoid cyst.

Results: Both patients underwent successful cyst excision via submental approach. While both masses appeared confined to the submental space without intraoral involvement on exam, intraoperatively both were superior to the mylohyoid with obvious FOM and submandibular space extension. The masses were delivered entirely via submental incision without capsular violation. Pathology for both returned as dermoid cyst.

Conclusions: Dermoid cysts are relatively rare clinical entities in the head and neck. They are difficult to distinguish radiologically from simple and plunging ranulas, abscesses, lymphangiomatis, and thyroglossial duct cysts. Involvement is generally confined to either the submental, submandibular, or sublingual space. These distinctions are important when considering clinical presentation and management: sublingual cysts tend to present as a FOM mass and are usually treated via intraoral approach, while submental and submandibular cysts tend to present as neck masses approached transcranially. The relationship of the lesion to the mylohyoid may be important for surgical planning. However, some authors have reported that while the mass’ relationship with the mylohyoid determines its space, it is the relationship with the geniohyoid that determines where the cyst presents clinically. In these patients, the cysts presented as submental masses but were located primarily in the sublingual space.

Computed tomography (CT), US and MRI can be used for the diagnostic imaging of dermoid cysts. Imaging characteristics are shown in the table on the left. In general, the first choice imaging modality is CT scan with contrast. Dermoid cysts are difficult to distinguish radiologically from epidermoid cysts, simple and plunging ranulas, abscesses, lymphangiomatis, and thyroglossial duct cysts. Lymphangiomatis appear as multiloculated cystic masses that involve multiple spaces, however they generally do not involve the sublingual space. Simple and plunging ranulas are low signal masses with thin, non-enhancing walls that involve the sublingual space and in the case of plunging ranulas, also involve the submandibular space. Ranulas may have the same radiographic appearance as dermoid cysts. Dermoids and epidermoids are typically midline or paramidline in location in most cases. Simple dermoids generally cannot be differentiated from epidermoids. However, compound dermoid cysts can be identified based on the presence of intralabial fat or calcification.

Treatment of dermoid cysts is generally simple excision. Cysts above the mylohyoid muscle can usually be approached intraorally, allowing for preservation of the mylohyoid and an inconspicuous scar. Larger or submental masses generally require transcervical excision. Recurrence of these lesions is rare, but prevention of recurrence requires complete excision of the cyst.

CASE PRESENTATIONS

Case 1
An adolescent female with a past medical history significant for absent corpus callosum, polycystic ovarian syndrome, and papillary thyroid cancer status post total thyroidectomy and 131I ablation, presented with a one-year history of submental swelling. She had no associated symptoms. On exam, she had a 6 cm nontender mass in the submentum. Her floor of mouth was soft, and there was no cervical lymphadenopathy.

The patient underwent transverse incisional excision of the mass. The mass was encapsulated and positioned deep to the mylohyoid muscle and extended into the floor of mouth between bilateral genioglossus muscles. The mass was removed entirely via transverse incisional excision. Pathology returned as dermoid cyst.

Case 2
A 21-year-old otherwise healthy male presented with a 1 year history of slowly enlarging left sided neck mass. The mass was occasionally tender. On exam, he had a soft, mobile mass in the submentum. His floor of mouth was soft, and there was no cervical lymphadenopathy.

The patient underwent transcervical excision of the mass. The mass was well-circumscribed and in close proximity to the submandibular gland and extended into the floor of mouth. The mass was removed entirely via transcervical excision. Pathology returned as dermoid cyst.

DISCUSSION

Dermoid cysts are relatively rare clinical entities in the head and neck. It is estimated that about 7% of dermoid cysts occur in the head and neck region, and approximately 1-2% are located in the FOM. The term dermoid cyst is often applied to epidermoid, dermoid and teratoid cystic lesions. Both simple dermoids and epidermoids appear as well-demarcated cystic lesions. Dermoid cysts contain dermal adnexal elements in addition to epithelial elements. Dermoids are cystic masses formed from epithelial rests and found along embryonic fusion lines. Dermoid cysts of the oral cavity tend to present in the midline anterior FOM during the second or third decade of life. They may be acquired or congenital. They tend to present as nontender masses that slowly progress in size. When located in the FOM and with sufficient growth, they may be associated with respiratory or swallowing difficulties. These lesions are generally confined to either the submental, submandibular, or sublingual space. Within the oral cavity, they are most commonly reported in the sublingual location, followed by submental and submandibular regions. Sublingual dermoids are superior to the mylohyoid and may split the midline extrinsic tongue musculature, while submental dermoids lie between the mylohyoid and the platysma. Sublingual dermoids may elevate the tongue and appear similar to a ranula. These distinctions are important when considering clinical presentation and management: sublingual cysts tend to present as a FOM mass and are usually treated via intraoral approach, while submental and submandibular cysts tend to present as neck masses approached transcranially.

In these patients, the cysts presented as submental masses but were located primarily in the sublingual space. Computed tomography (CT), US and MRI can be used for the diagnostic imaging of dermoid cysts. Imaging characteristics are shown in the table on the left. In general, the first choice imaging modality is CT scan with contrast. Dermoid cysts are difficult to distinguish radiologically from epidermoid cysts, simple and plunging ranulas, abscesses, lymphangiomatis, and thyroglossial duct cysts. Lymphangiomatis appear as multiloculated cystic masses that involve multiple spaces, however they generally do not involve the sublingual space. Simple and plunging ranulas are low signal masses with thin, non-enhancing walls that involve the sublingual space and in the case of plunging ranulas, also involve the submandibular space. Ranulas may have the same radiographic appearance as dermoid cysts. Dermoids and epidermoids are typically midline or paramidline in location in most cases. Simple dermoids generally cannot be differentiated from epidermoids. However, compound dermoid cysts can be identified based on the presence of intralabial fat or calcification.

Treatment of dermoid cysts is generally simple excision. Cysts above the mylohyoid muscle can usually be approached intraorally, allowing for preservation of the mylohyoid and an inconspicuous scar. Larger or submental masses generally require transcervical excision. Recurrence of these lesions is rare, but prevention of recurrence requires complete excision of the cyst.