Submental midline dermoid cyst in a 25-year-old man

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Abstract
A 25-year-old man presented with a painless, nontender, nonerythematous sublingual mass that had gradually increased in size over the preceding 2 years. Fine-needle aspiration biopsy was nondiagnostic. During the week following our evaluation, the mass became increasingly painful and swollen, and it severely impaired his speech and swallowing. Magnetic resonance imaging demonstrated a sharply demarcated, fluid-filled, sublingual cyst that measured approximately 7.1 × 4.5 × 2.9 cm. During surgical excision, the mass was found to contain a large amount of sebaceous material, which was removed along with the entire capsule of the cyst. Histologic examination of the cystic contents identified epidermis, sebaceous glands, and hair follicles along with copious sebaceous material. These findings are consistent with a dermoid cyst.

Introduction
Dermoid cysts are uncommon, congenital, epithelium-lined lesions that contain tissues of ectodermal origin. They form during fetal development when ectodermal structures become trapped along lines of embryonic fusion. Cyst walls are made up of epithelium-lined connective tissue, skin appendages, keratin, sebum, and hair.¹,² Dermoid cysts are true hamartomas—focal malformations that can resemble neoplasms grossly and even microscopically—but they arise from an abnormal formation of tissue elements normally present at the site.¹ They develop and grow at virtually the same rate as do normal tissue. Unlike neoplasms, they are not likely to compress or invade adjacent structures.³

Dermoid cysts in the head and neck are uncommon.¹ In this article, we describe a case of a large dermoid cyst in the floor of the mouth.

Case report
A 25-year-old man, a pest-control technician, presented to our clinic with a single, large, painless, sublingual and submental mass, which he had first noticed 2 years earlier. Since then, the mass had steadily enlarged. The patient had been in otherwise good health except for several traumatic injuries that he sustained while engaging in extreme sports.

On physical examination, a large, firm, mobile, nontender midline mass was visually prominent below the mandible (figure 1, A). It extended to the sublingual area, where it formed a “second tongue” by protruding anteriorly into the oral cavity from below the real tongue in the midline (figure 1, B). The lesion was nonerythematous, and it exhibited no overlying lesions or drainage. No regional lymphadenopathy was noted. A fine-needle aspiration biopsy was nondiagnostic.

During the week following the biopsy, the mass became increasingly painful, and it became swollen to the point that it greatly interfered with the patient’s speech and swallowing. Magnetic resonance imaging (MRI) demonstrated a single, sharply demarcated, cystic, fluid-filled structure measuring 7.1 × 4.5 × 2.9 cm (figure 2). The mass was located in the midline, and it extended from the hyoid bone cephalad to the base of the tongue. No involvement of normal structures was noted, and no evidence of other masses or cervical adenopathy was seen.

The patient was admitted for surgical excision, and intravenous antibiotics were started. With the patient under general anesthesia, a horizontal submental incision was made just superior to the hyoid bone through subcutaneous tissues and platysma muscle. Limited anterior and inferior flaps were developed in the subplatysmal plane. The submental muscles were split in the midline and retracted laterally, and the cyst was encountered in the midline. A small nick was placed in the cyst, revealing its contents to be a large amount of sebaceous material with a cheesy consistency. The contents were carefully removed with finger dissection, and the capsule of the cyst was completely removed from the surgical field with external traction and blunt dissection. Following copious irrigation, a Blake drain was placed, and the wound was closed in normal fashion.

Histologic examination of the cyst wall revealed epi-
dermis with sebaceous glands and hair follicles. These findings are consistent with a dermoid cyst.

The drain was removed on postoperative day 1, and the patient was discharged in stable condition on oral antibiotics. He noted that his lingual range of motion was greatly improved. However, his recovery was complicated by the development of a subdermal abscess along the incision line on postoperative day 2. The patient was readmitted for drainage of the abscess, administration of IV antibiotics, and observation. He was discharged 3 days later in stable condition.

Discussion
The three most common locations for dermoid cysts are the gonads, the superior mediastinum, and the head and neck, in that order. Head and neck dermoid cysts account for nearly 7% of all dermoid cysts. Most head and neck dermoid cysts occur in the orbit, nasal cavity, and oral cavity; approximately 23% arise in the floor of the mouth. Most of these cysts arise during the second and third decades of life. They have no predilection for either sex.

Although dermoid cysts can become quite large, symptoms are generally minimal. Patients usually present with a several-month history of a painless, nontender, subcutaneous cystic mass. Physical examination reveals that the mass is attached not to the skin, but to underlying structures. The differential diagnosis of a cystic lesion in the floor of the mouth includes a thyroglossal duct cyst, cystic hygroma, cystic lymphangioma, mucocele, branchial cleft cyst, hemangioma, and ranula.

Radiologic investigation is essential. Dermoid cysts are typically thin-walled and unilocular, with a sharply margined, enhancing rim. Globules of fat floating within the lesion may produce the characteristic “sack of marbles” appearance on computed tomography (CT) and appear as echogenic foci with shadowing on ultrasonography. MRI and CT can identify a fat fluid level that is characteristic of a dermoid cyst. Fine-needle aspiration biopsy of the mass is usually nondiagnostic.

The treatment of choice is surgical excision. Excision is generally done to obtain a pathologic diagnosis, prevent airway obstruction, correct cosmetic deformity, or prevent infection. The chance of malignant degeneration is small, and the postoperative prognosis is excellent.

References