

## Case Report of a Dermoid Cyst at the Floor of the Mouth

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### Abstract

The growth of dermoid cysts at the floor of the mouth is considered a rare condition. Typically, intra-oral dermoid cysts present as non-tender, slow growing masses at the sublingual, submental and submandibular region. We report a case of a young adult male who presented at our hospital with a sublingual cyst superimposed with acute infection and failed antibiotic treatment. The cyst was excised and confirmed histopathologically as a dermoid cyst with overlying acute inflammation. Clinical progress was uneventful and postoperative recovery excellent with no recurrence.

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**Key words:** Cysts, Dermoid cyst, Floor of mouth, Slow-growing mass

### Case Report

A 19-year-old Indian male with a past history of "Ludwig's angina" was seen at the Accident and Emergency Department of National University Hospital complaining of an acute swelling at the floor of the mouth for 2 days. The patient was seen the day before in an outpatient clinic and was given oral antibiotics without significant improvement.

The patient was febrile and had bilateral submandibular lymphadenopathy. His floor of the mouth was swollen, doughy and tender. A sinus tract was noted at the left floor of the mouth and a few strands of hair were retrieved from the tract. The tongue was raised such that the soft palate could not be visualised (Fig. 1). Clinically, there did not seem to be any odontogenic source of infection and this was confirmed radiographically. Both Wharton's ducts were patent.

The patient was hospitalised and placed on intravenous fluids and antibiotics. A computed tomography (CT) scan of the mandible and the neck showed a 3.5 x 2.6 cm lesion in the sublingual space containing multiple pockets of gas anteriorly and an air fluid level posteriorly resembling an abscess (Fig. 2). Bilateral cervical lymphadenopathy was noted.

Excision of the infected cyst was done through a lingual incision followed by blunt dissection. The lesion was found sitting on top of the genioglossus and the mylohyoid

was not visualised. Several strands of hair were found around the lesion and on the lesion itself. The exudate from the cyst was slightly purulent and had multiple yellowish granules (Fig. 3). The Wharton's ducts were cannulated by size #30 gutta percha to prevent injuries. The excision was complete even though there was some adherence to the underlying tissues due to coexisting infection. Debridement and suturing with resorbable Vicryl sutures was performed.

Microscopic description showed section of a cyst lined by skin with adnexal structures in the wall and lumen containing hair structures (Fig. 4). Part of the cyst showed ulceration covered with inflammatory granulation tissue and acute inflammatory exudate in the adjacent stroma. There was no evidence of malignancy.

The diagnosis was a sublingual cyst consistent with dermoid cyst.

The patient was well postoperatively and duly discharged. He was placed on yearly dental follow-ups.

### Discussion

One of the earliest accounts of cases seen as sublingual dermoids occurs in Jourdain's book written in 1778.<sup>1</sup> Dermoid cysts of the floor of the mouth are considered rare. New and Erich (1937) reported 24 dermoid cysts occurring at the floor of the mouth out of 1495 cases of dermoid cysts seen at the Mayo Clinic (1.6%).<sup>1,2</sup> The term dermoid cyst

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Fig. 1. Swelling at the floor of the mouth with the tongue visibly raised.

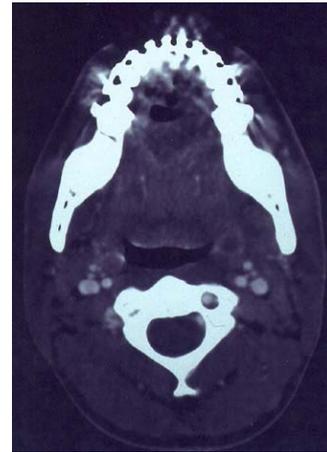


Fig. 2. Computed tomography scan showing multiple pockets of air and fluid level resembling an abscess.

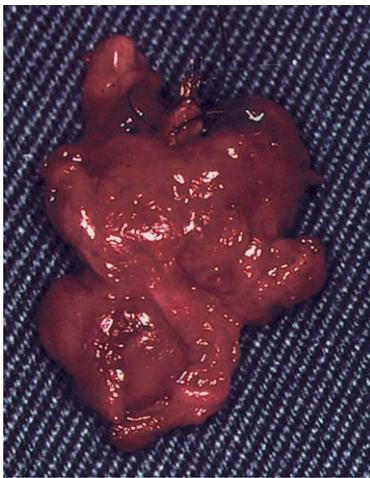


Fig. 3. The excised dermoid cyst.

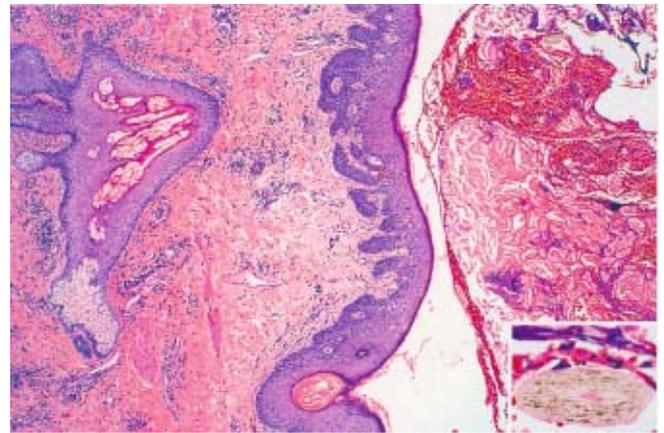


Fig. 4. Dermoid cyst wall (Haematoxylin and eosin, magnification x50) with hair structure in the cyst content (insert H&E x350).

has been used to describe masses that are either epidermoid, dermoid or teratoid cyst.<sup>3-5</sup> Histologically, all true dermoid cysts are lined by epidermis with the presence of adnexae such as sweat glands, sebaceous glands, hair and hair follicles.<sup>6,7</sup> If no adnexa is present, the entity is termed as an epidermoid cyst.<sup>4,6</sup> If there are structures in the cystic wall derived from all 3 germinal layers in the cystic wall, then the entity is called a teratoma or teratoid cyst.<sup>3,4,6,7</sup> Carcinomatous changes to long-standing dermoid cyst at the floor of the mouth have been reported but is exceedingly rare.<sup>8</sup>

Clinically, the cyst is a painless slow-growing lesion. It has a doughy consistency<sup>6</sup> and is often soft and well encapsulated without associated lymphadenopathy. The sudden increase in size is postulated to be due to the onset of puberty when there is an increase in the secretion of sebum from the sebaceous glands.<sup>9</sup> In our case, the acute enlargement of the cyst was due to infection. This can occur

by blockage of salivary glands involved in the cyst or by implantation of oral microbials into the cyst through trauma.<sup>10</sup> Pain, trismus, fever, dysphagia, odynophagia<sup>11</sup> and cervical lymphadenopathy may then follow.

Contents of the cyst are often keratinous,<sup>12</sup> caseous, sebaceous, or purulent with hair, nails, fat globules,<sup>4</sup> cholesterol and even cartilage.<sup>6</sup> This separates ranula from a dermoid cyst on fine needle aspiration.<sup>4</sup> In this case, the presence of hair points to the diagnosis of dermoid cyst or teratoma.

Diagnostic imaging of the lesion includes CT scan, magnetic resonance imaging and ultrasonography.<sup>4,7</sup> The use of plain radiographs or orthopantomogram may not be so useful unless a radiopaque medium is injected into the lesion.<sup>3</sup>

Differential diagnosis of the lesion includes neoplasm, infections and developmental processes. These include ranula, blockage of the submandibular gland duct, neoplasm

of the sublingual and minor salivary glands, thyroglossal cyst,<sup>7</sup> cystic hygroma, acute infection, neurofibroma, haemangioma and lymphangioma.<sup>12,13</sup> In this case, the presence of hair points to the diagnosis of dermoid cyst or teratoma.

Excision of the dermoid cyst is often the treatment of choice.<sup>7,10,12</sup> There is a low recurrence rate and the fibrous capsule that surrounds the cyst makes it easy to enucleate.<sup>12</sup> Should airway problems occur, decompressing a cyst through aspiration can be attempted. This allows routine intubation and eases the need for tracheostomy. Lacrimal probes can be used to cannulate the salivary gland ducts to prevent injuries during excision.<sup>7,10</sup> For this case, gutta percha was used instead. Gutta percha is useful in cases where the opening of the Wharton's duct is narrow and damage to the duct opening can be avoided.

### Conclusion

We report a rare case of dermoid cyst involving the floor of the mouth, presenting as Ludwig's angina and treated successfully with excision. Regular follow-up over a period of 1 year failed to reveal any evidence of recurrences.

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