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True lateral dermoid cyst of the floor of the mouth

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Abstract

Congenital dermoid cysts of the floor of the mouth are relatively rare but when they occur, they do so inevitably in the midline. We present a case of a true lateral dermoid cyst of this region without any intra-oral extension. We discuss the anatomical and histological classification of dermoid cysts within the floor of the mouth.

Key words: Mouth Floor; Dermoid Cyst

Introduction

Congenital dermoid cysts occurring in the floor of the mouth and submandibular space account for approximately 23 per cent of all head and neck dermoids.[1] Their occurrence is rare. Most documented cases have been of dermoid cysts in the floor of the mouth in the midline. In a review of data from 195 cases of floor of the mouth dermoids only 10 cases were reported in the English literature to be lateral dermoid cysts.[2] This case report describes a true lateral dermoid cyst arising in the right submandibular region.

Case report

A 44-year-old male presented to the ENT department with a history of a long-standing, painless, progressive swelling in the right side of his neck. On examination he was found to have a 10 cm × 8 cm swelling within the right submandibular region that had a smooth surface consistent with a cystic origin (Figure 1). The oral cavity and floor of the mouth appeared normal.

Ultrasonography confirmed the mass to be cystic. A submandibular sialogram demonstrated the submandibular duct up to the gland but no intraglandular ducts could be visualized. A computerized tomography (CT) scan failed to show the mass as a separate structure in relation to the right submandibular gland.

The cyst was completely excised by a skin crease incision 2 cm below the angle of the mandible. It was removed by blunt dissection after identification of the marginal mandibular, hypoglossal and lingual nerves. There were no identifiable submandibular salivary gland structures. The cyst was found superficial to both genioglossus and hyoglossus. The mylohyoid muscle was found to be stretched and displaced medially.

The cyst was unilocular and contained pultaceous material with multiple hairs (Figure 2). Histopathology showed it to be a true dermoid cyst lined by epidermis with adnexal structures in the wall of the cyst.

Discussion

Dermoid cysts remain a relatively rare condition in the head and neck territory estimated to constitute approximately seven per cent of all dermoids[3,4] with the gonads being the most frequent site of predilection. There is a varying incidence of head and neck dermoids arising within the floor of the mouth and submandibular space; 23 per cent,[4] 19 per cent,[5] 3.2 per cent.[6]

In a comprehensive review of floor of the mouth dermoid cysts by King[2] 52 per cent were found in the sublingual region, 26 per cent in the submental region and only six per cent in the submandibular region (of which we are only aware of 10 reported cases in the English literature).

Dermoid cysts arise as a result of failure of the surface ectoderm to separate from the underlying structures, usually between the third and fifth weeks of gestation or due to implantation of surface ectoderm.[7] In the head and neck this is most likely to occur at the embryonic lines of dermal fusion.

Debate exists around the origin of the lateral dermoid cyst. There are proponents of the theory that they arise from the first pharyngeal pouch or branchial cleft,[8,9] whilst many believe that lateral dermoids are simply midline dermoids that have migrated during their expansion.[10,11]

Dermoid cysts of the floor of the mouth can be classified by their anatomical position[12] (Figure 2). It has long been thought that most cysts develop in the midline superior or deep to the geniohyoid and mylohyoid muscles. Spread of sublingual dermoids by direct penetration of the mylohyoid muscle or by small deficiencies in the muscles into the neck has been described. Dermoid cysts located lateral to the tongue musculature are rare. As in this case the cyst was deep to the genioglossus and hyoglossus muscles and stretching the mylohyoid muscle with no intra-oral extension. Warren and Cooper[13] have described sublingual cysts that spread laterally around the mylohyoid muscle to present both intra-orally and in the neck.

Complete excision is the method of treatment. Sublingual dermoids can be removed via a per-oral approach, submental dermoids by a submental skin incision and lateral dermoids via a submandibular approach.[14] Larger

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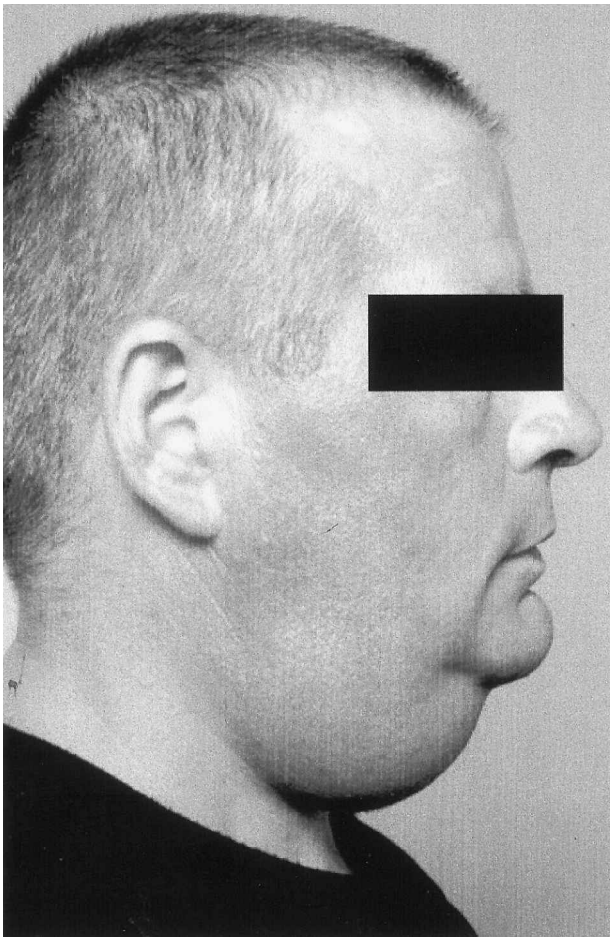
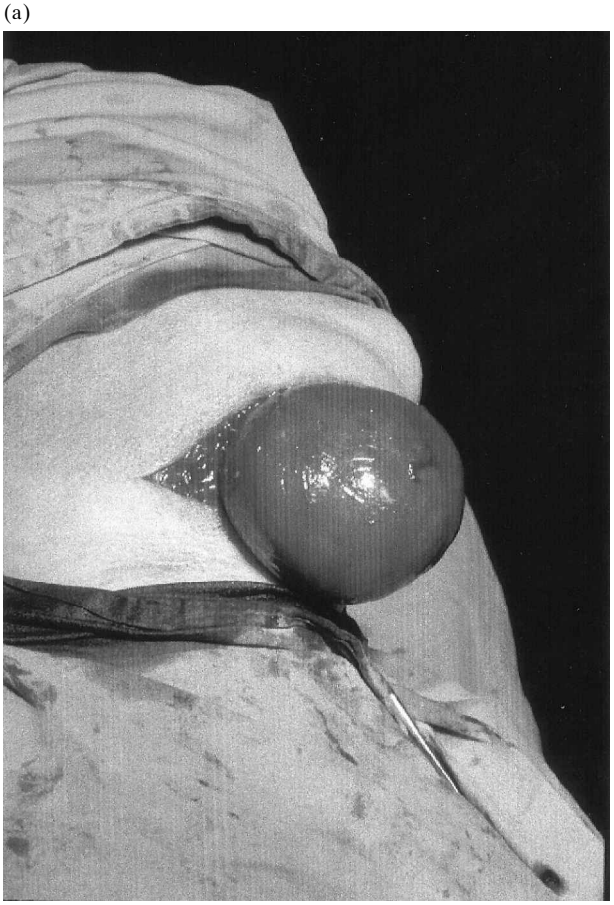


(a)



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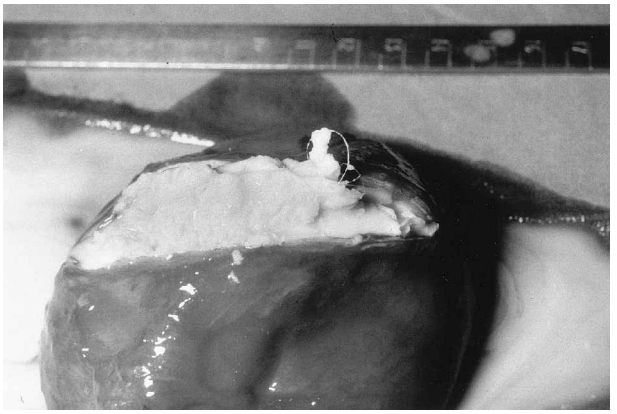

(c)

FIG. 1

(a) Pre-operative photograph showing right submandibular swelling. (b) Per-operative photograph showing delivery of lateral dermoid cyst through a right submandibular skin crease incision. (c) Photograph of pathological specimen following incision of the cyst wall. The cyst was unilocular and contained pultaceous material with multiple hairs. Histopathology showed it to be a true dermoid cyst lined by epidermis with adnexal structures in the wall of the cyst.

dermoid cysts with a compromised airway can be dealt with by initial decompression of the cyst by aspiration of its contents that can provide better exposure for blunt dissection of the cyst. Use of a purse string suture through the cyst wall after partial decompression of the inspissated cyst contents has been described in order to either aid tracheal intubation or to help identify the vital surrounding structures.[14] Lacrimal probes can be used to cannulate and locate the submandibular gland ducts during dissection. In the above case there was no identifiable submandibular gland tissue either macroscopically or by histological examination of the excised cystic lesion. This raises the possibility of pressure atrophy of the submandibular salivary gland by the progressive development of this long-standing dermoid cyst.

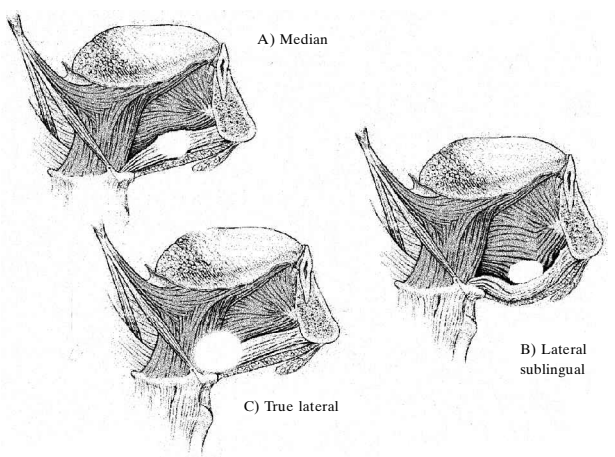

FIG. 2

Classification of floor of mouth dermoids by location: (a) Median develops between the genioglossus muscle. (b) Lateral sublingual develop between the genial muscles and mylohyoid. (c) True lateral develop between genioglossus and hyoglossus medially and mylohyoid laterally. Some believe that it is simply a lateral sublingual which has migrated.[12]

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