Case 1787

Sublingual dermoid cyst
Published on 21.10.2002

DOI: 10.1594/EURORAD/CASE.1787
ISSN: 1563-4086
Section: Head & neck imaging
Imaging Technique: Ultrasound
Imaging Technique: MR
Case Type: Clinical Cases
Authors: G. Ege, H. Akman, A. Senvar, G. Cakýroglu
Patient: 19 years, male

Clinical History:

Complaints of slow-growing, painless swelling in the sublingual region. Breathing and swallowing were normal.

Imaging Findings:

The patient was admitted with complaints of a slow-growing, painless swelling in the submandibular region. Breathing and swallowing were normal. Physical examination revealed a large, tender and suspect mass in the mid-sublingual region.

Ultrasound (US) examination was performed with a 7.5MHz linear transducer (Siemens Elegra, Erlangen, Germany). A unilocular mass lesion with smooth contours was detected; this was homogenously iso-echogenic to surrounding tissues (Fig. 1). The lesion was 4cm x 4.5cm x 7cm in size.

On MR imaging (Siemens Concerto Open, Erlangen, Germany), the mass was of low-signal intensity on T1-weighted images and was of high signal intensity on T2-weighted images, reflecting its fluid content (Fig. 2). The cystic lesion showed no fat content on fat-suppression sequences. The lesion was located between the tongue and the mylohyoid muscle. Post-contrast images showed enhancement of the cyst wall.

The patient underwent surgery and the cystic lesion was totally removed. Pathological examination showed that the cyst was lined by benign squamous epithelium. There was also necrotic keratinised debris in the lumen. Focal chronic inflammation was seen. There was also a couple of benign sebaceous glands next to the epithelium. Thus, the diagnosis was dermoid cyst. No relapse of the lesion was seen in 5 months of follow-up.

Discussion:

Dermoid and epidermoid cysts are developmental pathologies that occur in the head and neck with an incidence ranging from 1.6% to 6.9%, and they represent less than 0.01% of all oral cavity cysts (1). Epidermoid cysts consist of simple squamous cell epithelium with a fibrous wall. Dermoid cysts have, in addition, a variable number of skin appendages such as hair follicles and sebaceous glands, and teratoid cysts contain any number of diverse tissues derived from all three germ layers (2).

The most popular theory regarding the aetiology of these lesions suggests that they are derived from epithelial rests that become enclaved during midline closure of the first and second branchial arches (2).

When they occur in the oral cavity, dermoid cysts most commonly involve the floor of the mouth (sublingual, submental, or submandibular regions), although other sites have been reported, including the lips, tongue, and
buccal mucosa (2). Dermoid cysts are typically well-circumscribed, thin-walled, unilocular masses. If the lesion has floating fat globules in the lumen, these are seen as hyper-echogenic bodies on ultrasound and as a characteristic marble appearance on CT. Dermoid cysts appear less dense than muscle, and may or may not contain fat. The wall of the cyst usually enhances on CT following contrast administration. In the absence of fat globules, epidermoid and dermoid cysts are indistinguishable. On MRI, epidermoid cysts are of low-signal intensity on T1-weighted images and high signal intensity on T2-weighted images. Dermoid lesions present a more variable appearance, depending on their fat content being either hypointense or hyperintense to muscle on T1-weighted images. They are typically hyperintense on T2-weighted sequences (2,3). In this case, the cyst had no fat content. On MRI, the lesion had several bright globules in the upper portion only on T2-weighted images, but the reason for these is not known.

Dermoid cysts usually present in young adults. However, Bloom et al. (4) have reported the first case of a neonatal dermoid cyst in the floor of the mouth with extention to the midline of the neck.

Although dermoid cysts are benign lesions, Devine and Jones (5) have reported a case of malignant transformation to squamous cell carcinoma of a long-standing sublingual dermoid cyst.

In differential diagnosis for midline cysts, we should consider thyroglossal duct cyst, inclusion cyst, cystic hygroma, ranula, nasal glioma and encephalocele (with cranial defects) (3). The main differential features of these lesions are their age of onset, location, and cystic contents. If the lesion has fat content, the diagnosis of dermoid is easy.

Differential Diagnosis List: Sublingual dermoid cyst

Final Diagnosis: Sublingual dermoid cyst

References:

Description: A mass lesion, with smooth contours, homogenously iso-echogenic to adjacent soft tissues, was detected in the sublingual region sagitally. Origin:
Figure 2

Description: The lesion had high signal intensity on T2-weighted images and low signal intensity on T1-weighted images, reflecting its cystic content. The cystic lesion was in the midline. Origin:

Description: In the sagittal plane on T2-weighted imaging, the well-circumscribed lesion was located between the tongue and the mylohyoid muscle. The upper part of the lesion had more bright globules in the lumen, but no explanation for these can be offered. Origin:
Description: The thin wall of the cyst enhanced after contrast administration on T1-weighted imaging.
Origin: