Indian J Otolaryngol Head Neck Surg
(October 2022) 74(Suppl 2):S1961–S1963; https://doi.org/10.1007/s12070-020-01939-1

CLINICAL REPORT

Dermoid Cyst Floor of Mouth: A Diagnostic Conundrum

Gunjan Dwivedi[1] · Pavitra Saxena[1] · Uma Patnaik[1] · Abha Kumari[1] · Amit Sood[1]

Received: 31 May 2020 / Accepted: 25 June 2020 / Published online: 3 July 2020

Abstract Dermoid cysts are benign tumours of ectodermal origin, commonly seen in young. The clinico-radiological presentation of dermoids can be equivocal, like in our case of a teenager who had painless swelling of floor of mouth. Radiological findings were consistent with cystic lesion but histopathological examination proved it as dermoid cyst.

Keywords Dermoid cyst · Floor of mouth · Head and Neck · Case report

Introduction

Dermoid cysts are rare tumours, derived from ectodermal elements. Approximately 80% arise in the ovaries and sacral region with around 7% being found in Head and Neck territory [1, 2]. A dermoid cyst in the floor of mouth accounts for 1–1.6% of all dermoid cysts [1, 3, 4]. Generally, they present during the 2nd–3rd decade of life with no sex preponderance [1, 5]. Dermoid cysts usually present as asymptomatic slow growing swelling which occasionally progress to the extent of making patient symptomatic with dysarthria, dysphagia, dysphonia, dyspnoea and sometimes "Double Chin" [5, 6]. We here report case of a dermoid cyst floor of mouth which was initially presumed to be a plunging ranula but the histopathological examination confirmed it as a mature dermoid cyst.

Report of Case

A 13 year old male presented with a painless swelling of floor of mouth of 01 year duration. The swelling was initially limited to the floor of mouth which in due course of time also involved the upper part of neck in the midline and was not associated with any other complaints. On examination, a soft cystic non tender swelling was observed on the floor of mouth predominantly on the left side which was bimanually palpable in the left submandibular region and was approximately 4 × 5 cm with smooth surface. This swelling did not move on deglutition and on tongue protrusion. USG neck showed thin walled anechoic midline cystic lesion in the submental region, descending from the floor of mouth into the upper part of neck with multiple echogenic contents. T2 weighted magnetic resonance imaging (MRI) neck images revealed a well—defined hyperintense 18 × 45x41 mm lesion above the mylohyoid with few hypointense areas within (Fig. 1) and a diagnosis of ranula was offered on MRI. FNAC of the lesion was not contributory. The lesion was approached through a transcervical incision. Intraoperatively, lesion was found deep to geniohyoid and mylohyoid muscles. Digastric muscle was incised and retracted to expose mylohyoid, which was separated to reach the geniohyoid fibres which were incised to deliver the lesion in toto (Fig. 2). Definitive histopathological examination of the excised lesion showed a cyst wall lined by stratified squamous keratinized epithelium with haphazardly lying mature adnexal structures in the sub-epithelium and numerous keratin flakes within the cyst cavity consistent with mature dermoid cyst. Patient had an uneventful postoperative recovery and showed no signs of recurrence on six months follow up.

✉ Gunjan Dwivedi
entgunjan@gmail.com

[1] Department of ENT, CHSC, AFMC, Pune, India

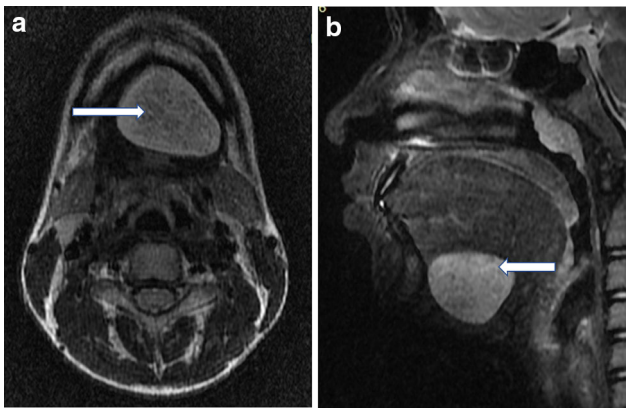

Fig. 1 Hyperintense lesion (white arrows) on T2 weighted image with hypointense areas within in floor of mouth a. axial cut, b. sagittal cut

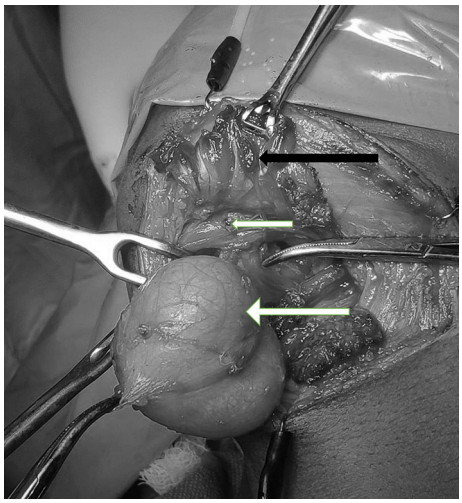

Fig. 2 Cystic mass (Longer white arrow) noticed above mylohyoid (small white arrow) and geniohyoid. Digastric (black arrow) held up in Babcock forceps, mylohyoid fibres (small white arrow) separated to reach the lesion

Discussion

Dermoid cysts are rare benign tumours. Multiple theories govern its development, the most widely accepted being entrapment of ectodermal tissues in the midline during the fusion of 3rd and 4th branchial arches [4, 6, 7]. Some senior colleagues prefer the term "*fissural inclusion cysts*" as they develop from pluripotent cells which get trapped during the early stages of embryonic life [5, 7]. They can also arise secondary to any surgical/ accidental implantation of epithelium into the mesenchymal tissue of the jaw, leading to its proliferation in the deeper tissues [4, 7]. Meyer recommended the use of term Dermoid cysts for all the developmental cysts of the floor of mouth [5, 7]. Based on their formative elements they are categorized into three types [5, 7]. "Epidermoid cysts" are the ones lined by squamous epithelium with no dermal elements, "dermoids" are keratinized squamous epithelium lined cyst with adnexa like sweat glands, sebaceous glands and hair follicles whereas "teratomas" or complex cysts are constituted by all the 3 geminal layer derivatives [1, 3, 5, 7]. Anatomically, dermoid cysts of floor of mouth are classified by Colp into three types based on their relationship with muscles of floor of mouth [1, 5, 7]. Those which lie above the mylohyoid muscle are termed as "Sublingual dermoids", the ones below mylohyoid muscle as "Submental dermoids" and those located laterally under the tongue and above the mylohyoid in the submandibular space are "Submandibular/Lateral dermoids" [5, 7–9]. Our case was a sublingual dermoid.

Patient usually remains asymptomatic but it is only when there is functional restriction secondary to a bulky lesion in the form of difficulty in swallowing, speaking, chewing that an individual becomes aware of his pathology [4, 7, 8]. Since the incidences are rare, diagnosis of a dermoid cyst is not always easy. Ranula should be considered as a differential if it presents as a Sublingual lateral swelling [2]. A Submandibular/ Sublingual Sialadenitis also presents as swelling in their respective regions. A few rare entities should also be kept in mind while dealing with such lesions like dentigerous cysts, lymphangioma, lipoma, branchial cleft cysts or a necrotizing metastatic lymph node [1, 10].

Diagnosis may be assisted by imaging [1]. The various modalities that may aid in the diagnosis include USG, CT Scan, MRI and FNAC [1, 10]. For oral lesions, USG is the first imaging modality of choice [10]. An exact localization of the tumour with respect to the different muscles of floor of mouth and tongue and also its size is of utmost importance for surgical planning and can be aided by MRI images [2, 7, 9]. MRI characteristics of a dermoid cyst are variable. Dermoids exhibit a hyperintense signal on T2 weighted image whereas depending on their fat content show signal variability on T1 weighted imaging [9].

In order to ensure complete removal, surgery should be considered. A dermoid cyst can be dissected out completely with ease from the surrounding tissues in toto thus having rarest chances of recurrence. Different approaches for the same are – intraoral, transcervical (extraoral) and combined approach. The most commonly used approach described in literature is intraoral [8]. Its advantage over the extraoral approach is in terms of cosmesis while disadvantages include limited exposure and injury to submandibular duct [8]. The approach for excision is decided by the exact size and site of the lesion with the prime aim of complete removal and prevention of recurrence [8]. In our case we used an extraoral approach as the size of lesion was very big.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval Not applicable as it is a case report.

Informed Consent Informed consent was obtained from the individual participating in the study.

References

1. Jadwani S, Misra B, Kallianpur S, Bansod S (2009 Dec 1) Dermoid cyst of the floor of the mouth with abundant hair: a case report. J Maxillofac Oral Surg 8(4):388–389
2. Fuchshuber S, Grevers G, Issing WJ (2002) Dermoid cyst of the floor of the mouth: a case report. Eur Arch Otorhinol 259:60–62
3. Boko E, Amaglo K, Kpemissi E (2014) A bulky dermoid cyst of the floor of the mouth. Eur Ann Otorhinolaryngol Head Neck Dis 131(2):131–134
4. Lima SM, Chrcanovic BR, de Paula AMB, Freire-Maia B, de Souza LN (2003) Dermoid cyst of the floor of the mouth. Sci World J 3:156–162
5. King RC, Smith BR, Burk JL, Antonio S, Angelo S (1994) Dermoid cyst in the floor of the mouth Review of the literature and case reports.
6. Akao I, Nobukiyo S, Kobayashi T, Kikuchi H, Koizuka I. (2003) A case of large dermoid cyst in the floor of the mouth [Internet].: www.elsevier.com/locate/anl
7. Behl A, Raghavan D, Pandey SS, Mani H (2001) Giant epidermoid cyst of the floor of mouth. Med J Armed Forces India 57(3):247–249
8. Ozturk M (2015) Dermoid cysts of the floor of mouth: a review. J Otolaryngol ENT Res 2:3
9. Giarraputo L, Savastano S, D'Amore E, Baciliero U (2018) Dermoid cyst of the floor of the mouth: diagnostic imaging findings. Cureus 10:2035
10. Patel H, Mayl J, Chandra B, Pritchett C, Chandra T (2016 Dec 1) Dermoid of the oral cavity: case report with histopathology correlation and review of literature. J Radiol Case Reports 10(12):19–27