Dermoid cyst of the floor of the mouth with abundant hair: a case report

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Abstract Dermoid cysts are developmental cysts and considered to develop from enslavement of epithelial debris in the midline during closure of the mandibular and hyoid brachial arches. These cysts are painless, slow growing and most commonly occur in young adults with no gender predilection. They are uncommon in the head and neck region. Oral dermoid cysts are found usually in the submental or sublingual triangle in variable relation to mylohyoid, geniohyoid, and genioglossus muscle. The cyst is lined by epidermis like epithelium and contains dermal adnexal structures in the cyst wall. We report a case of dermoid cyst arising in the sublingual region of a young adult male with abundance of hair which is rare finding.

Keywords Dermoid cyst · Floor of mouth · Abundant hair

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Introduction

Dermoid cysts are developmental cysts, which arise either by entrapped totipotent cells or by implantation of epithelium, with the former being termed congenital and the latter as acquired [1]. These cysts arise commonly in the skin. Other regions where these cysts may occur rarely occur are the intracranial, spine and ovary. About 7% of them found in the head and neck region and only 1.6% are located within the oral cavity [2]. We report a case of dermoid cyst of floor of mouth in an young adult.

Case report

A 22-year-old male patient presented with a painless swelling over the right side of the floor of the mouth, which was gradually increasing in size for the past one year. On examination, an ovoid swelling measuring about 4x2 cm was observed on right floor of the mouth (Fig.1). On bimanual palpation, the lesion was doughy in consistency, non-tender and no lymphadenopathy was noted. FNAC was done and the aspirate was creamy and whitish in colour. There were presence of keratin debris and nucleated cells in the aspirate. The clinical and the FNAC findings indicated a provisional diagnosis

of a dermoid cyst. The patient was planned for surgical excision under local anesthesia with conscious sedation.

An intraoral incision was done on the right side of the floor of the mouth parallel and lateral to the submandibular duct. Sharp and blunt dissection was carried out to expose the lesion. The overlying mucosa was dissected and yellow color cyst wall was observed (Fig. 2). During the surgical procedure, the lumen of the cystic lesion was punctured and, presence of abundance of hairs was perceived. Hairs were in bunch, long and white in color (Fig. 3). Postoperative recovery was uneventful. The patient was under follow up for 24 months, and showed no recurrence.

The histopathological investigations revealed a cystic lumen lined by orthokeratinized stratified squamous epithelium. The cystic lumen contained abundant keratin. The cyst wall was fibrous, with presence of skin appendage in the form of a sebaceous gland (Fig. 4).

Discussion

Dermoid cysts are most frequently manifested between the second and sixth decade of life, although cases of younger and older patients have been reported [3]. The most common location in the head and

neck area is the periorbital region followed by intraoral sites. The intraoral cyst generally develops in the floor of mouth and it can be found either lateral to tongue or in the midline. In 1925, Colp [4] classified dermoid cysts according to their relationship with muscle. They can be located over the geniohyoid muscle and below the genioglossus muscle, bowing the submental region or below geniohyoid muscle and above the mylohyoid muscle bowing the submental region. They can also be located laterally in submandibular space above mylohyoid muscle laterally under tongue.

The cyst shows no gender predilection, grows slowly, is well circumscribed, and unilocular. Clinical signs vary according to location of the cyst. A unilateral elevated floor of the mouth is suggestive of cyst located laterally above the geniohyoid muscle or may be above the genioglossus muscle just below the mucosa. In the present case, we found a similar observation. The size of the cyst usually varies from several millimeters to as much as 12 cm [5]. Sudden increase in size at puberty has been attributed to copious production of sebum from sebaceous glands [2].

The pathogenesis of dermoid cyst is still undefined with two theories explaining its origin. The commonly accepted one is the

Fig. 1 Well marked swelling on right lateral floor of the mouth measuring about 4x2 cm

Fig. 2 Cyst is exposed and reddish yellow cyst wall is observed

Fig. 3 Enucleated cyst with abundant hairs

Fig. 4 Cystic lumen lined by orthokeratinized stratified squamous epithelium a) The cystic lumen contained abundant keratin b) The cyst wall was fibrous, with presence of skin appendage in the form of a sebaceous gland c) (40X, H&E Stain)

congenital theory, which suggests that the cyst originates from the median pluripotent tissue incarcerated during the fusion of the first and second brachial arch in the third and fourth intrauterine life. The second is the acquired theory, which implicates implantation of epithelial cells in deep tissue during intrauterine life secondary to trauma and accident [6].

Three histological variants of dermoid cyst have been described in literature [7], (1) Epidermoid cyst: lined with simple squamous epithelium with fibrous wall containing no adnexal structure, (2) True dermoid cyst: an epithelial lined cavity with keratinization and with skin appendages like sebaceous and sweat glands and hair follicle in the cyst wall. This is also known as a compound cyst, (3) Teratoid cyst: lined with a range of epithelia, from simple squamous epithelia to ciliated respiratory type, containing derivatives of ectoderm, mesoderm, and endoderm. This is also known as complex cyst. Our case of cyst fall into true dermoid category.

The walls of these soft tissue cysts are 1–3 mm thick and filled with keratinous

sebum like material [8]. The keratin is produced by the cyst's stratified squamous epithelium lining, and its presence is reflected clinically by the cyst's doughy texture. In intraoral true dermoid cysts presence of hair is a rare finding [9]. In the present case the most unusual finding was presence of abundant hair.

The clinical and radiological presentation of dermoid cysts can be ambiguous. A conclusive preoperative diagnosis may be difficult. CT scan, MRI, ultrasound, and FNAC can be performed. CT scan and MRI can show the exact location and size of mass and relationship to adjacent structures, but cannot give a definitive preoperative diagnosis. Ultrasound may be helpful in differentiating between solid vascular and cystic lesions. The final diagnosis cannot be established until histopathological study of surgical specimen is performed. In patient presenting with lesion in floor of mouth, FNAC should be the first line of diagnostic procedures. Dermoid cysts of the floor of the mouth have been successfully diagnosed by this method [10].

Numerous pathologies that can occur in the oral region include embryologic anomalies, tumors, salivary lesions, and infectious processes. Lesions of the floor of the mouth, and neck regions could be mucocele, ranula, cystic hygroma, thyroglossal duct cyst, and, brachial cleft cyst. All these entities should be considered in differential diagnosis.

The treatment of choice for a dermoid cyst is surgical enucleation, which is facilitated by the presence of a capsule. While intraoral incisions are sufficient in accessing most cases of dermoid occurring in the midline, extraoral incisions may be required for cysts occurring inferior to the mylohyoid, in the submandibular regions and for large cystic lesions which extend

across the mylohyoid. The recurrence rates for the dermoid cyst are low.

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