INTRODUCTION

Dermoid and epidermoid cysts are the developmental cysts encountered throughout the body, with 7% occurring in the head and neck and only 1.6% in the oral cavity. They account for less than 0.01% of all oral cavity cysts. These cysts occur most often in patients in their 2nd and 3rd decade of life. Clinically the lesion presents as a slow growing asymptomatic mass, usually located in the midline, above or below the mylohyoid muscle. When located above the muscle, the cyst manifests as a sublingual swelling; when below the muscle the clinical aspect will be a submental swelling.

In 1955, Meyer updated the concept of dermoid cyst to describe three histological variants, that is, the true dermoid, epidermoid and teratoid cyst. True dermoid cysts are cavities lined with epithelium with keratinization and skin appendages in cyst wall. Epidermoid cysts do not show skin appendages. The lining of teratoid cyst varies from stratified squamous to a ciliated respiratory epithelium containing derivatives of ectoderm, mesoderm and endoderm.

Teratoid cyst rarely arises in the head and neck region, in the oral cavity; these cysts occur in the area of the floor of the mouth and may also occur on the tongue, lips, buccal mucosa or the interior of the bone.

They are asymptomatic but their slow enlargement can cause obstruction with consequent dysplasia, dysphonia and dyspnea.

ABSTRACT

The teratoid cyst is a rare variant of the dermoid cyst which seldom occurs in the oral cavity. If seen, they generally present as slow growing cysts of the floor of mouth, reported commonly in the 2nd and 3rd decade of life in males. Histopathologically, dermoid cyst is classified as epidermoid cyst, true dermoid cyst and teratoid cyst depending on the presence of adnexal structures and derivatives of all three germ layers. Herewith we report a rare case of teratoid cyst of the floor of the mouth, in a 2-year-old female child, which was present since birth.

Key words: Adnexal, germ layers, teratoid cyst

CASE REPORT

A 2-year-old female child was brought to our institute with swelling beneath the tongue. The swelling was present since birth, which was of peanut size and increased to the present size in the last 2 months. The child had difficulty in having food and also had breathlessness.

On examination, a single swelling was seen in the floor of the mouth, measuring approximately 4 × 3 × 2 cm. The mucosa over the swelling was red in color and showed a bluish hue. The consistency of the swelling was soft and the borders were regular. The surface was smooth and nonulcerated. There was no pain or tenderness. Radiological findings showed no abnormality. The CT scan findings revealed a well-defined cystic lesion of approximately 4.9 × 3.1 × 3 cm in floor of the mouth with a small locule extending posteriorly and compromising anterior pharyngeal space. There was no evidence of cervical lymphadenopathy nor did the swelling show any relation with the thyroid gland. Based on the above findings, a clinical diagnosis of ranula was given and surgical excision was planned. Hematological investigations were done and the results were in normal limits. Chest X-ray showed clear lung fields and normal cardiac size and configuration. An intraoral approach was taken for the surgical excision of the lesion.

The swelling was excised completely and sent for histopathological examination. On gross examination, the lesional tissue was creamish brown in color and measured 4 × 3 × 1.8 cm in size, it was soft in consistency, with smooth borders and surface. On sectioning of the specimen, a cystic cavity was seen containing a thick creamish brown cheesy material with a foul odor. The hematoxylin and eosin (H and E) stained sections of the specimen showed ciliated pseudostratified columnar and stratified squamous orthokeratinized epithelial cystic lining over the fibrovascular...
connective tissue [Figure 4 and 5]. Mucous cells and goblet cells were seen in the cystic epithelium. Connective tissue capsule showed dermal appendages like sweat glands, sebaceous glands and hair follicle. Adipose tissue and muscle tissue were also seen [Figure 6]. With observed histopathological picture a diagnosis of teratoid cyst was given.

**DISCUSSION**

Developmental cysts are the most common cause of cystic masses affecting the head and neck region in children. Of these, thyroglossal cysts are the most common, accounting for 70% of the cases, followed by branchial cleft cyst. Most other cystic lesions are rarely encountered.[4] Epidermoid and dermoid cysts occur throughout the body, with 7% occurring in the head and neck region and 1.6% within the oral cavity.[5]

The origin of dermoid and epidermoid cysts of the floor of the mouth, like other developmental cysts, is controversial. Two theories have been proposed congenital and acquired. The congenital theory postulates that these cysts are derived from the cell rests, entrapped during the midline closure of the bilateral first and second brachial arches. Other possible theories of origin include: (a) Ectodermal differentiation of multipotent cells pinched off at the time of anterior neuropore closure, (b) failure of separation of surface ectoderm from underlying neural tube, (c) they may arise from tuberculum impar of His (d) it has been proposed that it is a variant of thyroglossal cyst. The acquired theory proposes that the cysts are derived from traumatic or iatrogenic inclusion of epithelial cells or from occlusion of sebaceous gland duct.[1,4]

Majority of the case occur between the ages 15 and 35 years with a slight male predilection. For oral lesions, the floor of the mouth in the midline is the most common location. Lesions have also been reported in the buccal mucosa, tongue, lips, intraosseously in the mandible and maxilla.[4,6] Anatomically the cysts in the floor of the mouth can be further categorized as sublingual (located above geniohyoid muscle), submental (located between geniohyoid and...
mylohyoid) and submandibular (located in lateral aspect of floor of the mouth). It presents as painless, slow growing swelling which lifts the tongue and may lead to difficulty in eating, breathing or closing the mouth. Deeper lesions between geniohyoid and mylohyoid muscles produces a swelling in the neck giving rise to ‘double chin’ appearance. The cyst is typically soft and doughy in consistency. On gross examination, it is generally seen that the cyst is well-encapsulated and the cystic cavity contains keratinous cheesy material. Cystic lumen containing caseous, sebaceous, purulent material with hair, nail and fat globules have also been reported.

Histologically, the cysts were divided into the following types by Meyer in 1955:

- Epidermoid cyst: They are lined by simple squamous epithelium, with fibrous wall and no dermal appendages. The cystic cavity lacks sebum or hair. These cysts develop from the upper part of pilosebaceous unit
- True dermoid cyst: They are lined by keratinizing stratified squamous epithelium with dermal appendages in the connective tissue wall. The lumen contains keratin, sebum and varying amounts of hair and fat
- Teratoid cyst: They are lined by epithelium ranging from keratinizing squamous to pseudostratified columnar respiratory epithelium with dermal appendages in the connective tissue wall along with derivatives of all three germ layers (ectoderm, mesoderm and endoderm).

The differential diagnosis for this cyst includes ranula, sialolithiasis of submandibular gland ducts, thyroglossal duct cyst, cystic hygroma, brachial cleft cyst, cellulitis of floor of mouth, schwannoma, lipoma, etc.

The lesion is usually treated by excision. Based on the location of the cyst either an intra- or extraoral surgical approach is followed.

CONCLUSION

Teratoid cysts are uncommon lesions of the oral cavity and are usually not present since birth. In the present case, the lesion was present since birth in a 2-year-old female child and histopathologically showed derivatives of all the three germ layers, hence the diagnosis of teratoid cyst was confirmed.

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