Case report

Epidermoid cysts: an exclusive palatal presentation and a case series

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Abstract

Background Epidermoid cysts (EC) can occur anywhere in the body. In the head and neck region, they more often present in the midline between the submental region and the supra sternal notch. EC in the oral cavity are extremely rare and present as benign, slow growing lesions.

Methods Records from College of Dental Surgery, Saveetha University, from 2002 to 2006 were searched for cases coded as EC. The study included 13 cases within the oral and maxillofacial region.

Results Of the 13 cases, 11 occurred in male patients and 2 in female patients. Specific anatomic locations included posterior auricular region ($n = 2$), forehead region ($n = 2$), lateral side of the face ($n = 3$), chin ($n = 1$), gingiva ($n = 3$), intraosseous within the anterior maxilla ($n = 1$), and hard palate ($n = 1$).

Conclusion Besides the previously reported locations, we present the first case occurring in the hard palate, measuring 5×3 cm in size along with melanin pigmentation.

Introduction

Epidermoid cysts (EC) are rare, benign conditions in the head and neck region that are derived from abnormally situated ectodermal tissue.[1,2] EC arise from traumatic entrapment of surface epithelium or more often from aberrant healing of the infundibular epithelium, during the episode of follicular inflammation.

About 7% of them are found in the head and neck region, and only 1.6% is located within the oral cavity.[3] Most often they are located in the submental region.[4] Other common locations are the lateral tongue, lateral pharyngeal wall, and soft palate.

Their growth is slow and painless, and attracts little attention until their size gives annoyance.

They are inclusion cysts lined by ectoderm.[5] They do not contain any adnexal structures and is lined by squamous epithelium and may contain cheesy keratinous material.[6]

Being that EC is a rare condition in the oral and maxillofacial region, we highlight the important and interesting aspects of 13 cases, along with the first documented case of EC in the hard palate.

Materials and Methods

Records from College of Dental Surgery, Saveetha University, from 2002 to 2006 were searched for cases coded as EC. The study included 13 cases within the oral and maxillofacial region. All available slides and appropriate clinical information were reviewed, congregated and tabulated (Table 1).

Results

Of the 13 EC, 11 occurred in male patients and 2 in female patients.

In all specific sites, EC occurred predominantly in males. The average age was 37.4 years, ranging from 20 to 70 years. The mean duration prior to excision was 2.92 years (35 months), ranging 1–7 years. Specific anatomic locations included posterior auricular region ($n = 2$), forehead region ($n = 2$), lateral side of the face ($n = 3$), chin ($n = 1$), gingiva ($n = 3$), intraosseous within the anterior maxilla ($n = 1$), and hard palate ($n = 1$).

EC in the posterior auricular region were on the right side. Both the cases of EC in the forehead region were seen in relation to right eyebrows. All the cases of EC on the lateral side of the face involved the left side. All the cases of EC in gingiva occurred in the mandible, two were seen on the left posterior region and one occurred in the right posterior region. One case of EC occurred intraosseously within the anterior maxilla in a patient who had a previous surgical history of a Caldwell-Luc procedure done in the right canine region. Besides the previously reported locations, we present the first case occurring in the hard palate.

Table 1 Epidermoid cysts: College of Dental Surgery, Saveetha University experience

Location	Age/sex	Duration of the symptoms (years)	Signs and symptoms
Extra oral region			
Posterior auricular region	45/F	2	Slow growing painless mass on the right side
	28/M	3	Slow growing painless mass on the right side
Forehead region	55/M	2	Slow growing painless mass near the right eyebrows
	25/M	1	Slow growing painless swelling near the right eyebrows
Lateral side of the face	28/M	2	Swelling in the left side of the face in relation to the skin over the body of the mandible
	54/M	5	Swelling on the left cheek region
	38/F	3	Swelling the left side of the face, in the parotid region
Chin	20/M	1	Slow growing painless swelling
Intra oral			
Gingiva	70/M	7	Swelling on the right lower posterior molar region
	22/M	1	Slow growing painless swelling in left lower molar region
	45/M	4	Swelling in relation to lower left posterior molar region
Maxilla (Intraosseous)	32/M	2	Swelling in relation to the upper anterior teeth
Hard palate	25/M	5	Slowly progressing, painless swelling in the palatal mucosa

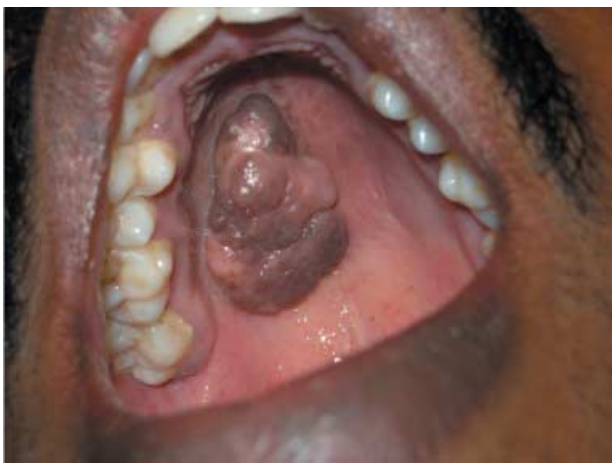

Figure 1 A lobulated mass in the hard palate measuring 5 × 3 cm in size, brownish pink in color, with melanin pigmentation on inspection

Patients were asymptomatic, noting only an increase in size of the swelling. On examination, the mean size was 2 × 1 cm. They were well circumscribed, without any secondary changes and the skin over the swelling appeared normal. On palpation, they were firm in consistency and nontender.

The lesions were removed by local surgical excision. The patients had an uneventful recovery. On follow-up, there was no evidence of recurrence of the cyst.

On gross examination, the specimens consisted of ovoid mass of tissue with a smooth surface. They were yellowish white to brown in color and firm in consistency. Upon sectioning, they were filled with cheesy material.

Histologically, H&E section showed cystic lining with a connective tissue wall. Cystic lining was composed of stratified squamous epithelium and cystic lumen contained keratin flakes as well as ribbons of keratin detaching from the cystic lining.

The EC in the hard palate, presented as a lobulated mass measuring 5 × 3 cm in size and brownish pink in color (Fig. 1). Radiographs did not reveal any bone involvement. Histopathology of EC in the hard palate showed a cystic lining made up of parakeratinized stratified squamous epithelium (2–3 layers thickness). Cystic lumen contained numerous flakes of keratin (Fig. 2). There was evidence of overlying surface epithelium. The surface epithelium, which was a distinct entity from the cystic lining, contained both sebaceous glands and melanin pigmentation (Fig. 3).

Discussion

Roser, in 1859 first described epidermoid cyst (EC) in the floor of the mouth.[6] EC are rare benign conditions in the head and neck region that are derived from abnormally situated ectodermal tissue.[1] They represent < 0.01% of all oral cavity cysts.

Depending on the pathogenesis, EC can be divided into the congenital and acquired types.[7] The former is thought to develop from congenital inclusion of ectodermal tissue during embryological development. The latter type, was first recognized by Werhner in 1855 and originally referred to as "implantation cyst" by Sutton in 1895, is believed to originate through implantation of epithelium by either surgical or accidental trauma into deeper mesenchymal tissues.

There are two theories for EC formation. EC may occur when two epidermal surfaces fuse together during early

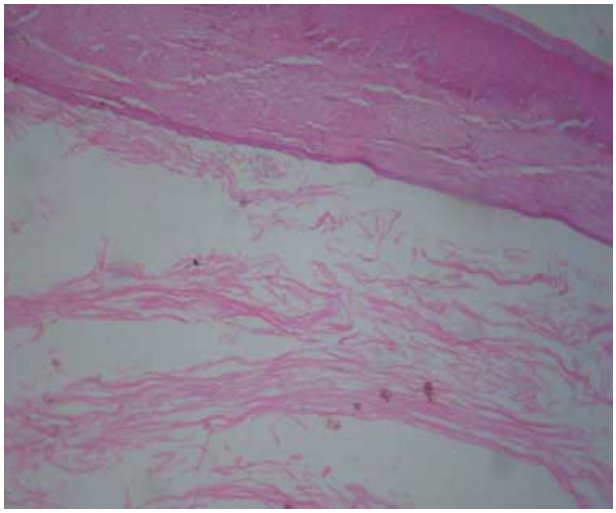

Figure 2 Histopathology of EC in the hard palate showed a cystic lining made up of parakeratinized stratified squamous epithelium (2–3 layers thickness). Cystic lumen contained numerous flakes of keratin. (H&E, ×10)

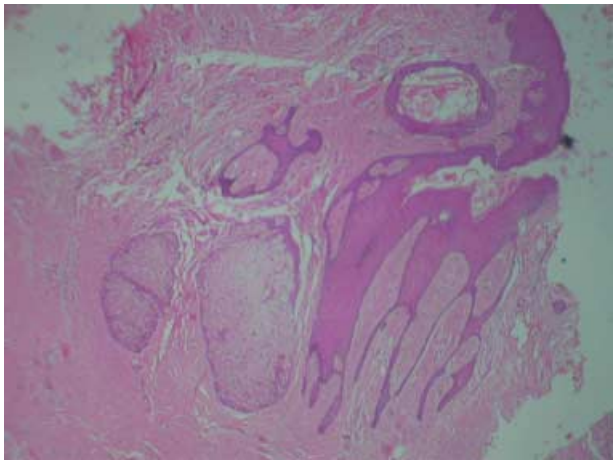

Figure 3 The surface epithelium that was seen as a distinct entity from the cystic lining, contained both sebaceous glands and melanin pigmentation (H&E, ×4)

intrauterine life and an ectodermal implant is retained deep to the surface or due to the traumatic entrapment of the surface epithelium in the connective tissue; later the cells may differentiate to form a cyst.[5,8]

One case of EC occurred intraosseously within the anterior maxilla. There was a previous surgical history of a Caldwell-Luc procedure. The pathogenesis of this EC is similar to the description given by Sutton in 1895.

Clinically these cysts manifest as slow growing, well-circumscribed swellings, invariably small in size and may occur at any time from adolescence to adult life.[5] These cysts in the head and neck region arise principally about the eyes, nose, in the floor of the mouth, and along the mid-ventral and mid-dorsal lines of closure.[6] To our knowledge, we report the first case of EC in the region of hard palate in the English literature. The EC in the hard palate presented as a lobulated mass measuring 5 × 3 cm in size, brownish pink in color, firm in consistency, and nontender on palpation.

EC are often described as pearly tumors because of the shiny, smooth, waxy character of their "dry keratin" at gross inspection.[4] These cysts contain debris from the desquamation of their squamous epithelial lining. The debris consists of mostly keratin, a proteinaceous material, and some cholesterol.[4]

Histopathologically, the EC are covered by squamous epithelium and are called Ectoderm-Lined Inclusion cysts.[5] They lack ectodermal appendages such as hair, sweat glands, sebaceous glands, and so on. Because of the squamous epithelial lining, the cysts have a cheesy keratinaceous material within the lumen.[5] Histology of EC in the hard palate showed a cystic lining made up of parakeratinized stratified squamous epithelium (2–3 layers thickness). Cystic lumen contained numerous flakes of keratin. There was evidence of overlying surface epithelium. The surface epithelium along with its corium contained both sebaceous glands and melanin pigmentation, delineated as a distinct entity from the cystic lining. This authenticates that the surface mucosa of hard palate has a lineage towards skin, which may have resulted from ectodermal inclusions in the oral cavity, during the course of development of the maxillary and mandibular processes in the embryonic life. These inclusions may have some of the potentialities of skin.[9,10] Skin has the propensity for developing EC and since the palatal mucosa in our case histologically may have a similar lineage, thereby attributing to the pathogenesis of EC at this site.

Treatment consists of local excision. Recurrence is unlikely and no malignant transformation is reported to date.[4]

Summary

The cases presented show no variation from the normal histopathology, but they prove to be significant because of the variation in their anatomical presentation. Herewith, we report the first case of EC in the region of the hard palate.

References

1 Ozer E, Kanlikama M, Bayazit YA, *et al*. A unique case of an epidermoid cyst of the pterygopalatine fossa and its management. *Int J Pediatr Otorhinolaryngol* 2003; **67**: 1259–1261.
2 Marsot-Dupuch K, Leroux C. Epidermoid cyst of the base of the skull. *Ann Radiol* 1992; **35**: 472–476.

3 Turetschek K, Hospodka H, Steiner E. Case report: epidermoid cyst of the floor of the mouth: diagnostic imaging by sonography, computed tomography and magnetic resonance imaging. *Br J Radiol* 1995; **68**: 205–207.
4 Pancholi A, Raniga S, Vohra AP, *et al*. Midline submental epidermoid cyst: a rare case. *Internet J Otorhinolaryngol* 2006; **4** (2).
5 Ulku CH, Uyar Y, Kocaogullar Y, *et al*. Iatrogenic epidermal inclusion cyst of the para pharyngeal space: unusual complication of ear surgery. *Skull Base* 2004; **14**: 47–51.
6 Makarand V, Dinaz K, Irani Navin L. Epidermoid cyst of the floor of the mouth. *BHJ* 2002; **44** (2): Case 267.
7 Bitar MA, Kumar S. Plunging congenital epidermoid cyst of the oral cavity. *Eur Arch Otorhinolaryngol* 2003; **260**: 223–225.
8 Abedi E, Frable MA. Epidermoid cyst of the frontal bone masquerading as frontal sinusitis. *Laryngoscope* 1984; **94**: 545–546.
9 Miles AEW. Sebaceous glands of the lip and cheek mucosa of man. *Br Dent J* 1958; **105**: 235–246.
10 Sewerin I. The sebaceous glands in the vermilion border of the lips and in the oral mucosa of man. *Acta Odontol Scand* 1975; **33**: Supplement 68.

