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# Ameloblastomatous transformation in dentigerous cyst: A case report

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## ABSTRACT

Mandibular swellings can be caused by a number of benign lesions, which can be of odontogenic or nonodontogenic origin. Lesions include ameloblastoma, radicular cyst, dentigerous cyst, keratocystic odontogenic tumor, central giant cell granuloma, fibro-osseous lesion, and osteoma.<sup>1</sup>

The most common developmental cyst in oral cavity is dentigerous cyst, which accounts for 20% of the developmental cysts of jaws and originates because of accumulation of fluid between reduced enamel epithelium and the tooth crown. Hence, it usually is associated with impacted or unerupted tooth.<sup>2</sup> Ameloblastoma is a locally aggressive odontogenic neoplasm accounting for approximately 10% of all the neoplasms arising in jaws.<sup>3</sup> Unicystic tumors include those that have been variously referred to as mural ameloblastomas, luminal ameloblastomas, and ameloblastomas arising in dentigerous cysts. The goal of treatment for ameloblastoma is to achieve complete excision and appropriate reconstruction.

We present a case of a large dentigerous cyst transforming into an ameloblastoma.

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## Key message:

Transformation of cystic lining of dentigerous cyst into ameloblastoma is a rare occurrence. The surgeon and the oral pathologist should endeavor for a thorough curettage and serial sections of the lining, respectively, to comprehensively treat the patient.

## 1. Case history

A 15-year-old male patient was referred to us in June 2012 with complaints of swelling over right side of face since 2 months [Fig. 1].

On examination, a bony hard swelling with crepitation at places was found on the right side of face extending from body of mandible (Rt) to sigmoid notch (Rt) involving the ramus extensively. Intraoral examination showed 48 was missing. On palpation, buccal cortex was found expanded with perforation at places. Lingual cortex was normal except at 46–47 region where marked expansion was noticed. No intraoral discharge of fluid was observed. The cystic fluid was aspirated from the swelling, which was sent for fine-needle aspiration cytology (FNAC) and protein estimation. The protein levels were found to be within normal range.

The orthopantomogram (OPG) X-ray [Fig. 2] image provided an overview of an extensive progressive cystic lesion extending from sigmoid notch of right mandible to body of the mandible and involvement of buccal cortex alone at most

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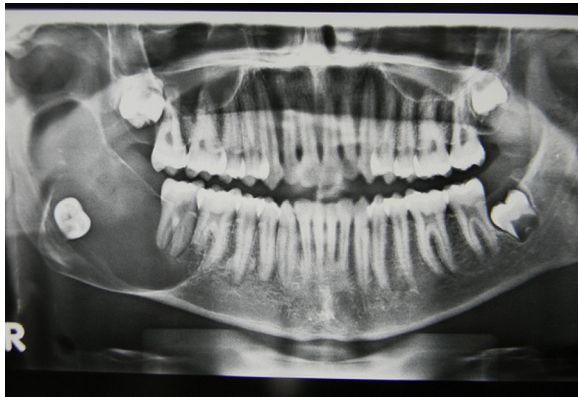
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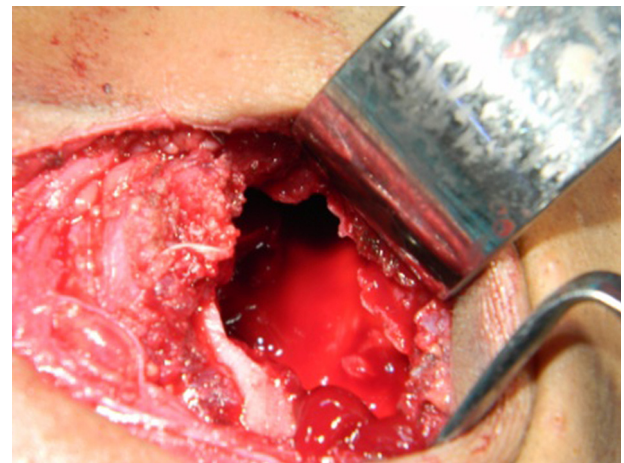
**Fig. 1 – Swelling on right side face.**



**Fig. 3 – CT scan.**



**Fig. 2 – OPG showing the radiolucency.**



**Fig. 4 – Risdon approach.**

places. However, ramus (Rt) showed multiple perforations. Resorption of distal root of 46 was also noticed.

On review of the CT [Fig. 3] along with clinical findings, we found the involvement of lingual cortex of body of mandible along with perforation at multiple places of ascending ramus and body of the mandible.

## **2. Maxillofacial surgical procedure**

Incisional biopsy on the affected region was performed and histopathologic report confirmed dentigerous cyst mandible (Rt).

The patient was taken up for complete enucleation of cystic lesion, and peripheral osteotomy was performed under general anesthesia. The cyst was approached extraorally using Risdon approach [Fig. 4]. The thin flakes of buccal cortical bone were removed, and the cystic lining along with impacted 48 was removed in toto. A small portion of healthy bone (4 mm) was also removed at the mesial end of the lesion after extraction of 46 and 47. All soft tissues in contact or overlying the lesion were excised. However, the compact bone at lower border of

mandible and ascending ramus along with periosteum were conserved. Carnoy's solution was applied at the wound with peanut swab. At the mesial end of the lesion, electrocautery was applied at the tooth root socket and adjacent area. A suction drain was placed before wound closure. The sample was sent for histopathologic evaluation with its border marked [Fig. 5].

Postoperative recovery was uneventful with administration of intravenous antibiotic. The suction drain was removed after 48 h, and the patient was discharged 7 days after the suture removal.

The biopsy result showed a cystic lesion with thin non-keratinized stratified squamous epithelium with no rete processes, and the subjacent connective tissue was devoid of any inflammatory cells, consistent with the diagnosis of which corresponded to the cyst lining the ramus and body of the mandible [Fig. 6] whereas at mesial border, cystic lining proliferation into the lumen was noticed [Fig. 7]. Ameloblastic islands showing reversal of polarity of nuclei and cytoplasmic vacuolations were also observed [Fig. 8]. Histopathologic findings were consistent with those of an ameloblastoma arising within a dentigerous cyst lining and associated with an unerupted tooth.

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