Management of unicystic ameloblastoma of the mandible in a 5-year old child

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ABSTRACT

Unicystic ameloblastoma rarely seen in first decade of life. This tumour usually appears very similar to a non-neoplastic odontogenic cyst and is frequently clinically misdiagnosed as dentigerous cyst. The distinction from dentigerous cyst is important as unicystic ameloblastoma (UA) unlike dentigerous cyst needs different treatment approach and long term follow-up due to its chances of recurrence. This report highlights the importance of clinical examination in the diagnosis and management of UA in a 5 year old boy.

Key words: Dentigerous cyst, non-neoplastic odontogenic tumor, unicystic ameloblastoma

INTRODUCTION

Unicystic ameloblastoma (UA) was first described by Robinson and Martinez in 1977 as a special type of ameloblastoma.\(^1\) UA usually appears very similar to a non-neoplastic odontogenic cyst\(^2,3\) and is frequently clinically misdiagnosed as dentigerous cyst and odontogenic keratocyst hence, histological confirmation is mandatory from the management point of view. This report highlights the importance of clinical and radiographic features in the diagnosis and management of UA in a 5-year-old boy.

CASE REPORT

A 5-year-old boy presented to our unit Center for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, India with a painless hard swelling in the lower chin region of 3 months duration. Extra oral examination revealed a facial asymmetry with diffuse swelling over the chin region. Swelling was found to be approximately 2 cm × 2 cm in size, overlying skin was normal in color and texture with no evidence of sinus/fistula.

Intra oral examination revealed adequate mouth opening with intact deciduous dentition. Swelling was extended from right deciduous molar to left canine. Mucosa overlying was normal in color. Swelling was non-tender, non-pulsatile, bony hard, non-fluctuant, non-compressible on palpation with expansion of both, buccal as well as lingual cortical plates and aspiration from the swelling yielded cystic color fluid.

Panoramic radiographic revealed that unilocular well-defined radiolucent lesion extending from lower deciduous first mandibular molar to right lower canine with evidence of roots resorption [Figure 1]. All other blood investigations were within the normal limit.

On the basis of lingual cortical bone expansion, presence of cystic fluid on aspiration and evident of root resorption of the teeth in the panorex, we made the provisional diagnosis of UA. Treatment was planned according to UA.

Enucleation of the cyst with extraction of the involved teeth followed by application of Carnoy’s solution for 3 min over the cavity was planned under general anesthesia (GA).

Treatment performed - patient was taken under GA. Planned treatment procedure was carried out successfully.
Specimen obtained was sent for histopathological examination.

Histopathology report of the specimen revealed that type 1 UA as per the histological criteria defined by Ackerman et al. [Figure 2a and b].

Patient has been on regular follow-up since 2 years, patient is doing well with no signs of recurrence [Figure 3].

**DISCUSSION**

Ameloblastoma is rare before the age of 10 years. According to statistical analysis of 1036 cases of ameloblastoma collected from the literature by Small and Waldron, only 2% of cases occur before 10 years of age.\(^3\) The UA is considered a variant of the solid or multicystic ameloblastoma, accounting for 6% to 15% of all intra osseous ameloblastomas.\(^1\)

It is more difficult to distinguish dentigerous cysts from UA clinically. Presence of lingual cortical plate expansion, cystic fluid on aspiration and presence of root resorption of teeth in panoramic radiograph helped us in making the preoperative diagnosis of UA over the dentigerous cyst without incisional biopsy (which requires GA in the child).

Histopathological features of the tumor showed type 1 (tumor confined to the luminal surface of the cyst) UA as per the histological criteria defined by Ackerman et al.

Treatment modality of UA is being divided into following types - enucleation alone yielded the highest recurrence rate among all treatments (30.5%).\(^4,5\) Marsupialization together with other treatments resulted in an 18% of recurrence rate.\(^6\) A more conservative approach is enucleation with application of Carnoy’s solution and the extraction of closely related adjacent teeth has resulted in a recurrence rate of 16%.\(^7\) The success of the application of Carnoy’s solution after enucleation was thought to be due to both its penetration and fixation action. The usual practice is to apply the solution with cotton applicators or ribbon gauze for 3-5 min, rinse the bony cavity. The recurrence rate could even lower than reported, if the closely related teeth with tumor are extracted. Because in an attempt to preserve the tooth without damage, tumor remnants may be left around the tooth apex or root and these may lead to recurrence.\(^8\)

We carried out the same procedure in the case i.e. enucleation followed by application of Carnoy’s solution for 3 min, extraction of all involved teeth and close follow-up.

Second surgery (i.e. incisional biopsy followed by definitive treatment) under GA in the child was not required due to proper preoperative planning of the case.

At 2 years follow-up, patient has been doing well with no signs of recurrence.

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