Management of Plexiform Ameloblastoma in a 12 year old female: A Case Report

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Abstract

Ameloblastoma is a true neoplasm of odontogenic origin. Ameloblastoma is responsible for 1% of all the oral and maxillomandibular cysts and tumors. It is odontogenic in origin and benign in nature but it has a high percentage of local recurrence rate and possible malignant development when treated inadequately.

We report a case of plexiform ameloblastoma presenting in a 11-year-old female. The aim of this article is to evaluate the clinical result of the patient reported to us with mandibular ameloblastoma using conservative management. The tumour was conservatively managed by enucleation and chemical cauterization. Histological analysis demonstrated a plexiform ameloblastoma. The patient remains well without disease after 3 years of postoperative follow-up and still being followed up.

Keywords: Ameloblastoma, maxillomandibular cysts and tumors, plexiform ameloblastoma, enucleation, chemical cauterization.

Introduction

Ameloblastoma is a benign epithelial odontogenic tumor but is often aggressive and destructive, with the capacity to attain great size, erode bone and invade adjacent structures [1]. The World Health Organization (1991) defined ameloblastoma as a benign but locally aggressive tumour with a high tendency to recur, consisting of proliferating odontogenic epithelium lying in a fibrous stroma [2]. It represents about 1% of all oral ectodermal tumors and 9% of odontogenic tumors [3]. Most ameloblastomas develop in the molar-ramus region of the mandible with 70% of these arising in the molar-ramus area and they are occasionally associated with unerupted third molar teeth [4]. Ameloblastoma appears most commonly in the third to fifth decades but the lesion can be found in any age group including children [3].

Case Report

A 12-year-old girl was referred to the department of oral and maxillofacial surgery, with a diffuse swelling in the right side of mandible [Figure 1]. The swelling was painful and had been slowly increasing in size for 6 months. Extra oral examination revealed the swelling measuring about 4 cm x 4 cm in size on the right mandible extending antero-posteriorly to about 4 cm from the symphysis region to 1 cm in front of the ear lobe, and supero-inferiorly it was 2 cm from the cheek prominence to 1 cm below the lower border of the mandible. The swelling was firm in consistency, tender on palpation and a mild rise in temperature was evident.

Intraorally, the swelling extended from the distal surface of right first molar to the retromolar region, obliterating the buccal vestibule [Figure 2]. The orthopantomograph revealed a well-defined unilocular radiolucency extending from distal to the first molar region towards the ramus of involving the body ramus and coronoid process of the mandible on the involved side [Figure 3]. It was found that second molar was impacted and radiolucency was present around its crown portion. Displacement of the roots of first molar was evident. Paranasal sinus radiography revealed a well-defined radiolucency involving the ramus of mandible with its bucco-lingual extensions [Figure 4]. Fine needle aspiration cytology was performed which did not give any conclusive evidence. Therefore, an extensive enucleation of the said lesion along with sub-periosteal dissection was planned under general anesthesia. A Modified Wards incision was placed using a No.15 B.P. blade, extending anteriorly up to the region of canine. After reflecting the mucoperiosteal flap, the expanded cortical plate was identified and separated from the mucoperiosteum. Subperiosteal dissection was carried out beginning from the sound bone near the canine region to posteriorly over the ramus of mandible [Figure 5]. The mental nerve was identified and preserved. The cystic lining was separated from the inferior border of the mandible taking care not to injure the inferior alveolar nerve. The impacted tooth bud was delivered out with its cystic lining. The retracted cystic mass was then sent for histopathological analysis. The histopathological processing of the tumor revealed a plexiform ameloblastoma predominantly composed of epithelium arranged as a tangled network of anastomosing strands enclosing cysts of various sizes [Figure 6]. Based on these findings a diagnosis of

Discussions and Conclusion

Ameloblastoma is a true neoplasm of odontogenic epithelium. It is uncommon in children, in a review of 1,036 ameloblastomas of jaw, the average patient age is 38.9 years, with only 2.2% (19 of 858) were under 10 years and 8.7% (75 of 858) were between 10 and 19 years [5]. Ameloblastomas are slow growing and locally invasive tumors, occurring in three different clinico-radiographic situations namely, Conventional solid/ multicystic, uncinicystic and peripheral [6]. Typical ameloblastoma starts insidiously as a central bony lesion which is slowly destructive; however tends to expand the bone instead of punching a hole through it. The tumor is rarely painful, unless infected and usually does not cause signs and symptoms of nerve involvement, even when large. Ackerman et al. in their study of unicystic ameloblastomas, defined three subgroups. Group I (42%) consisted of a unilocular cyst with a nondescript but variable epithelial lining. Inactive odontogenic cell rests might be present in the fibrous wall, but there was no infiltration by neoplastic epithelium. Group II lesions (9%) featured intraluminal plexiform proliferation but no infiltration of the cyst wall. In Group III lesions (49%), plexiform or follicular-type ameloblastoma, sometimes in continuity with the cyst lining, infiltrate the wall [7].

Illustrations

Illustration 1

Figure 1

![Image 1: Figure 1 showing a neck area with arrows indicating points of interest.]

Illustration 2

Figure 2

![Image 2: Figure 2 showing a close-up of a mouth area with a large swelling and other anatomical features.]

Illustration 3

Figure 3

Illustration 4

Figure 4
Illustration 5

Figure 5

![Illustration 5](image)

Illustration 6

Figure 6

![Illustration 6](image)
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