

Tumor of Mid Face-Challenges and Outcomes

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ABSTRACT

Background: Tumors of the midface throws challenges both during diagnosis and management. An adenomatoid odontogenic tumor (AOT) is a relatively uncommon benign neoplasm of odontogenic epithelial origin, accounting for less than 5% of odontogenic tumors. It is commonly seen in the anterior maxilla. The tumor is usually associated with an impacted tooth with maxillary canine being the most common tooth. AOT is seen in a younger age group, especially below 20 years with a female preponderance. Radiologically, it represents as a radiolucent lesion with radiopaque foci usually an impacted or a supernumerary tooth. Here we describe a case report of a 19-year-old male with an adenomatoid odontogenic tumor presenting in the anterior maxilla treated with Dieffenbach's modification of the Weber Ferguson approach.

Keywords: Adenomatoid odontogenic tumor, mid face tumor, root resorption, impacted tooth.

INTRODUCTION

Adenomatoid odontogenic tumor (AOT) is a relatively uncommon, benign, and slow-growing tumor that is often misdiagnosed as an odontogenic cyst [1, 2]. AOT accounts for 3% of all the odontogenic tumors [3]. It is predominantly found in 2nd decade of life and in female patients. It is generally located in the anterior maxilla and is associated with an unerupted permanent tooth. The unerupted tooth usually is lateral incisors or canines [4]. It often causes the expansion of the surrounding bone and the displacement of the adjacent teeth [5]. However, the slow-growing and painless nature of the lesion may cause the patients to tolerate the swelling for years until it produces an obvious deformity [6]. The authors describe a case report of AOT in a young male patient in the anterior maxilla which was treated by surgical enucleation and curettage.

CASE REPORT

A 19-year-old male patient reported to the department of oral and maxillofacial surgery, MNR dental college and hospital with the clinical presentation of painless swelling in the left upper jaw region for 6 months. On extra oral examination, there was a diffuse swelling in the left maxilla extending from nasolabial fold to the infraorbital rim and zygomatic bone. (Fig-1). Intraorally the swelling was seen on the labial aspect of the maxillary alveolus extending from the maxillary left lateral incisor to left maxillary second molar region. (Fig-2). All the teeth were present except missing canine tooth. On palpation, the swelling was firm in consistency and non-tender. The overlying mucosa was intact and there was grade two mobility with respect to premolars, 1st and 2nd molars.

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Fig 1: Extra oral swelling with obliteration of nasolabial fold.



Fig 2: Intra oral Swelling.



Fig 3: OPG - radiolucent lesion around the impacted canine in the left axilla with resorption of premolars and molars.



Fig 4: CT Scan - Encapsulated radiolucent lesion in left maxilla of size 3cm x 2.5 cm with multiple flecks of calcification.

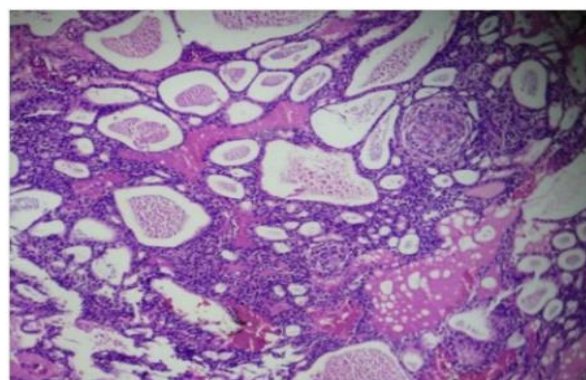


Fig 5: HPE - Suggestive of Adenomatoid odontogenic tumour.

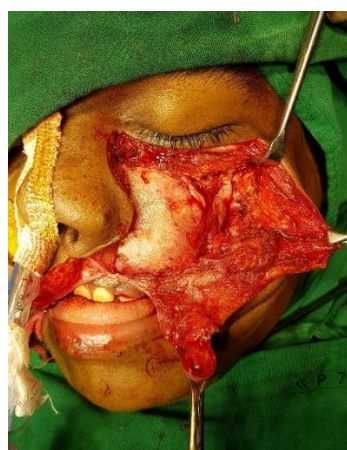


Fig 6: Surgical enucleation of tumor through Dieffenbach's modification of Weber-Fergusons approach.



Fig 7: Excised tumor with extracted teeth.



Fig 8: Follow up of 2 years with no recurrence.

Orthopantomogram revealed well-demarcated unilocular radiolucency extending from the left maxillary lateral incisor to the left maxillary tuberosity in mediolateral direction with impacted canine (Fig-3). There was resorption of roots of maxillary left lateral incisor, premolars and molars. CT Scan revealed a large encapsulated radiolucent lesion measuring 3cm x 2.5cm with multiple flecks of calcification involving left maxillae extending to the left nasal floor, infraorbital rim (Fig-4).

Incisional biopsy was done, microscopically the lesion consisted of sheets of variously-sized solid nodules of cuboidal and columnar epithelial cells, nests, and rosette-like structures containing eosinophilic droplets. Tubular duct-like spaces lined by single layer of columnar cells with nuclei spread

away from the lumen. The overall features confirmed the diagnosis of adenomatoid odontogenic tumor (Fig-5).

Surgical enucleation and curettage of the tumor was done under general anesthesia through Dieffenbach's modification of Weber-Fergusons approach (Fig-6). A well encapsulated tumor mass was enucleated along with extraction of impacted canine, premolars, 1st and 2nd molars (Fig -7). The wound was primarily closed. Patient was followed up for two years with no local recurrence (Fig -8)

DISCUSSION

The AOT is a rare odontogenic tumor that causes jaw swelling [10]. There is a slight female predilection which is almost 2:1[11] and it appears most often in the second decade of life. The sex and the ages of the patients that we have described in this case report were consistent with those found in the literature. The origin of the AOT is controversial, but as it arises in the tooth-bearing area, it is thought to arise from the odontogenic epithelium i.e. the cell rests of malassez [12].

The tumor has three clinicopathological variants, namely intraosseous follicular, intraosseous extra follicular, and peripheral. The intrafollicular type is seen in 73% of all the AOT cases and is associated with an impacted tooth which is consistent with the reported case, whereas the extra follicular type (24%) has no relationship with an impacted tooth, and the peripheral variant (3%) is attached to the gingival structures [13]. AOT is commonly seen in the maxilla. In the case report, tumor presented in the anterior maxilla.

Although larger lesions are reported in the literature, the tumors are usually in the dimensions of 1.5 – 3 cm. This lesion should be differentiated from the calcifying odontogenic tumors or cysts, ameloblastomas, ameloblastic fibromas, and ameloblastic fibro odontomas. The present case report revealed radiolucent lesion with flecks of calcifications associated with impacted canine and root resorption which were consistent with radiological features of AOT.

The histological findings of the presented case were consistent with histological features of AOT in the literature. It presents as polygonal odontogenic cells with duct-like structures and with a varying degree

of inductive changes in the connective tissue. The tumor may contain pools of amyloid-like material and globular masses of calcified material.

The tumor was excised through Dieffenbach's modification of Weber-Fergusons incision for the proper exposure of the tumor since the lesion was bigger in size. The Weber-Fergusson incision for maxillary tumors was first described by Weber in German and later modified by Fergusson [14] in English. It is one of the most commonly used trans facial approaches to the midface for the resection of maxillary tumors. The modified incision is required for the exposure of diseases of the maxilla. When the primary tumor that involves the maxilla and maxillary sinus is large, then the Weber-Fergusson incision is required with a Lynch, Dieffenbach's, or subciliary extension. To expose the ethmoid sinus, a Lynch extension is required, and for a total maxillectomy a subciliary extension is required [15]. Dieffenbach's modification of Weber-Fergusson's approach provides a very good exposure of the maxillary region. This incision gives more direct access to the maxilla and allows for more unimpeded resection of tumors. This approach will avoid resection of the uninvolved structures owing to its direct access to the pathologies of the maxilla. The approach is more flexible with a relatively minimal scar and lymphedema. According to the study conducted by Rajashekar et al. there will be minimal scar in Dieffenbach's modification of Weber-Fergusson's approach for maxillary tumors. The upper lip split displays the maxilla and the maxilla can be swung laterally through this approach. When the maxilla is pedicled to the cheek flap and swung laterally, the paranasal sinuses, the nasopharynx and the base of skull become readily accessible [16]. The final cosmetic result is optimized by restoring the normal anatomical position of the maxilla and mandible with stable fixation and careful approximation of the soft tissues. Surgical excision produces excellent outcomes without recurrence. Most AOT lesions are well encapsulated, hence conservative surgical enucleation and curettage is the treatment of choice [17].

CONCLUSION

Adenomatoid odontogenic tumors are rare benign slow growing tumors commonly seen in anterior maxilla associated with impacted canine tooth if not

detected early with proper investigations can cause damage to adjacent vital structures via resorption. Weber Fergusons incision gives an unimpeded access to mid face tumors for complete excision of tumor with minimal scar and no recurrence.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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