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Research Paper

Adenomatoid Odontogenic Cyst(Aoc) of The Mandible: Report of a Case

Medical science

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ABSTRACT

Adenomatoidodontogenic cyst (AOC) is a benign, non-neoplastic and slow growing lesion commonly seen in maxillary anterior region. AOC is characterized histologically by the formation of duct-like structures with amyloid-like deposits. Histogenesis of AOC is still uncertain and it is often considered as a hamartomatous lesion rather than a true neoplasm. AOC has a benign behavior and conservative surgical enucleation or curettage is sufficient. We report a case of AOC in a 19-year-old female managed with surgical enucleation of the lesion.

Introduction:

Adenomatoidodontogenic cyst (AOC) is a benign, non-neoplastic and slow growing lesion commonly seen in maxillary anterior region.

The lesion is most frequently encountered in the second decade of life (68.6%) and 53.1% of cases occur within the teens (13 - 19 years of age) with females having a higher incidence than males in almost a two to one ratio[1].

As AOC is considered as a hamartomatous lesion rather than a true neoplasm and has a benign behaviour conservative surgical enucleation or curettage is sufficient. Here we present a case of surgical enucleation of AOC present in right mandibular anterior region.

Case Report:

A 19-year-old female was referred to the Department of Oral and Maxillofacial Surgery with a swelling present in the mandible on right side of the face. The swelling was painless and had gradually increased in size causing asymmetry of the face (fig-1). On clinical examination a labio-lingual bony expansion was seen on the body of the mandible and in posterior alveolus in relation to all teeth on right side. The swelling had well defined margins with normal overlying mucosa. The swelling was bony hard and non-tender on palpation. Needle aspiration yielded no fluid. Radiographic examination (OPG, CT scans) revealed circumscribed radiolucent lesion with impacted canine and fine calcifications involving the molars and premolars (fig-2). Displacement of teeth was present with no root resorption. Computed Tomography (CT) scans also demonstrated the radiolucent lesion with a radio-opaque foci, and loss of cortical bone. 3mm of intact bone was appreciated at the inferior border of the mandible ruling out pathological fracture. An incisional biopsy was performed 3 days prior to the surgery.The patient was subjected to a thorough medical and hematological examination and surgical enucleation and curettage of the lesion was planned under general anaesthesia.

A vestibular incision was taken and a full thickness mucoperiosteal flap was reflected and the buccal cortex was exposed. Using round bur no 8 holes were drilled in the buccal cortex and then were connected with each other and the buccal cortex was removed. The enucleation was done first anteriorly and then moved on to the posterior section (fig-3). As both cortices in the region were destroyed, soft tissues and vital structures e.g. lingual nerves, vessels and sub mandibular duct were protected. The inferior alveolar nerve was also identified and protected and enucleation of the lesion with the impacted canine was carried out. The surrounding bone was smoothened with a diamond bur (fig-4).The resultant cavity was packed with gauze impregnated povidone-iodine solution and the wound was allowed to heal by secondary intention. The dressings were changed every 24 to 48 hours. Healing was uneventful. 6 months after the surgery cystic cavity was partly obliterated and face symmetry restored to near normal without any plastic procedure (fig-5). 1 year post operative OPG (fig-6) shows adequate bone formation and one and half year clinical evaluation (fig-7) revealing no signs of pathology.

Gross examination of the specimen showed a single pink-white soft tissue mass measuring 5 cm ×7 cm encapsulated with a thick, regular fibrous connective tissue (fig-6). The lesion consisted of ameloblast-like epithelial cells forming ductus-like structures. Eosinophilic droplets and irregular displaced odontogenic calcification areas were seen amongst the epithelial cells. The final diagnosis of AOC was obtained.

Discussion:

The AOC is an uncommon cause of jaw swelling. Previously, described as Adenomatoid Odontogenic Tumor (AOT), but rather it is a cyst that has hamartomatous intraluminal proliferation of epithelial cells derived from Hertwigs epithelial root sheath[2]. There is a female predominance over male and it appears most often in the second decade of life.The maxilla is involved nearly twice as frequently as the mandible. Unerupted permanent teeth were associated with this lesion in one-third of the cases[3, 4].

The lesions are typically asymptomatic, but may cause cortical expansion and displacement of the adjacent teeth[2], as in the case reported here. It is sometimes referred to as the two-thirds tumor because about two-third occur in the maxilla, two-third occur in young women, two-third are associated with unerupted teeth & two-third of these teeth are canine[2]. The size of the lesion usually varies from 15 to 30 mm in diameter. Several larger cysts have been noted, the largest was more than 120 mm[5]. An intraoral or extraoral swelling may be the main symptom and the swelling is usually painless and slow growing[6].

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The tumor has three clinicopathologic variants, namely intra-osseous follicular, intra-osseous extrafollicular, and peripheral [7, 8].The follicular type (in 73% of all AOC cases) is associated with an unerupted tooth whereas extrafollicular type (24%) has no relation with an impacted tooth and the peripheral variant (3%) is attached to the gingival structures [8, 9]. Follicular and extrafollicular types are over two times more located in the maxilla than in the mandible and most of the lesions involve anterior aspect of the jaws.

Radiographically, the lesion frequently looks like a dentigerous cyst or follicular cyst. The radiolucency associated with the AOC may extend more apically than the dentigerous cyst[4]Radiographically, they usually appear unilocular, may contain fine calcifications, and irregular root resorption is rare. This appearance must be differentiated from various types of lesions, such as calcifying odontogenic tumor or cysts. The differential diagnosis can also be made with dentigerouscyst, ameloblastoma, ameloblastic fibroma and ameloblastic fibro odontoma[7]. In our case there was no root resorption, but there was displacement of the adjacent teeth. The teeth involved in the lesion were not extracted though they were mobile and were found firm during follow up. AOC is well encapsulated and shows an identical benign behavior. Therefore, conservative surgical enucleation produces excellent outcome without recurrence.

Conclusion:

We conclude that the rarity of AOC may be associated with its slowly growing pattern and symptomless behavior. Therefore, it should be always distinguished from more common lesions of odontogenic origin in routine dental examination. A conservative approach is best suited for such lesions unless indicated by biopsy or clinically judged by the surgeon.

Photos

Figure 1- Facial asymmetry present on right side of face

Figure 2 – Panoramic radiograph showing unilocular radiolucency surrounding the impacted canine

Figure 3 – Intraoral operative pic showing enucleation of the lesion

Figure 4 – Resultant bony cavity

Figure 5 – 6 Months post-operative pic

Figure 6 – 1 year post-operative panoramic radiograph

Figure 7 – One and half year post-operative follow up

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