ADENOMATOID ODONTOGENIC TUMOR OF JAW: A RARE CASE

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Abstract

Adenomatoid odontogenic tumor (AOT) is infrequent tumor of odontogenic epithelial origin comprising 3% of all the odontogenic tumors. It is a slow growing but progressive lesion which is often painless, benign and non-invasive lesion. The most common site is maxilla and usually seen in young females with average age of 13 years. The present case is of 13-year-old male patient with chief complaint of bulge in upper front tooth bearing area since 1 month the provisional diagnosis of dentigerous cyst was given. On histopathology the final diagnosis of AOT was made. In this case the tumor was present in male patient of Caucasian race which is seen in relatively less number of cases which makes it unique from similarly published cases. Furthermore, cases of such type will be helpful in understanding the behaviour of the tumor.

Keywords: Adenomatoid odontogenic tumor, extra osseous, intraosseous, benign

Introduction: It is a relatively sparse and marked odontogenic neoplasm that was first described by Steensland in 1905[1,2] and the title Adenomatoid odontogenic tumor (AOT) was given by Philipsen and Birn in 1969.[3] It is also called 'two-thirds tumor' as 2/3rd of these tumors present in the maxilla, 2/3rd occur in youthful females, two-thirds of the cases are associated with un-erupted teeth, and two-thirds of the affected teeth are canines.[4] AOT constitutes about 2.2-7.1% of the odontogenic tumors. The number of reported cases has increased in recent times probably due to the increased incidence of tumor.[5] The present paper highlights the radiological and histopathological behavior of AOT with an overview on its epidemiology.

Case report: A 13-year-old caucasian boy (ethnicity was confirmed through history taking) reported to the OPD of Dental college with chief complaint of swelling in upper front teeth region since 1 month. Patient was completely asymptomatic 1 month ago and started noticing a swelling in the upper front tooth region which was asymptomatic and started causing gradual facial disfigurement. The personal and family history was non-significant. On general physical examination all the vitals were under normal with no abnormality seen except facial disfigurement due to an extra oral swelling in the upper front tooth region extending mediolaterally from the philtrum of the nose to the mid-facial region concentrated over the right side of face measuring 2cm by 1.5cm in diameter. No associated cervical lymphadenopathy was present. The color of the overlying skin appeared normal. On palpation, it was firm to hard, immobile, non-fluctuant, non-compressible. All the extraoral findings were confirmed on intra oral examination, swelling extended from 11 upto 14 region with vestibular obliteration and slight tenderness along with expansion of the buccal cortex. The color of the overlying mucosa was normal. [Fig-1]

Figure 1: Lesional area

The aspiration of the lesion was inconclusive and hence on the basis of clinical finding hinting towards a missing canine along with aspirational finding a provisional diagnosis of Adenomatoid odontogenic tumor was made and a differential diagnosis of dentigerous cyst, calcifying epithelial odontogenic cyst/tumor and an odontogenic keratocyst was considered.

OPG was advised which revealed well defined radiolucency surrounding with respect to impacted 11 with corticated margins which appears to originates below the cemento enamel junction of 11 with impacted 13. The radiolucency appears to displace roots of 14 and 21 laterally. The

provisional diagnosis of Adenomatoid odontogenic tumor was given based on clinico radiographic diagnosis. [Fig-2]

Figure 2: OPG showing well defined radiolucency irt to 11

The excisional biopsy was performed. On gross examination the specimen was irregular in shape with rough surface was firm in consistency and greyish brown in colour. Multiple bits of soft tissues were received largest bit measured around 2cm x 1cm x 0.5cm. On histopathological evaluation the haematoxylin and eosin stained section revealed tumor cells arranged in different pattern surrounded by loose connective tissue capsule. These tumor cells were arranged in sheets, nests, cuboidal to columnar in shape having nucleus away from the lumen. Hyaline eosinophilic rings were also seen within the lumen. Many extavassated RBCs are also seen. Based on these histopathological features diagnosis of Adenomatoid odontogenic tumor was made. [Fig-3,4]

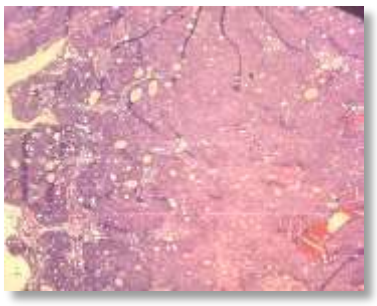

Figure 3: The H&E stained section at (4x) shows epithelial cells arranged in form of sheets and islands in loose connective tissue stroma along with blood vessels

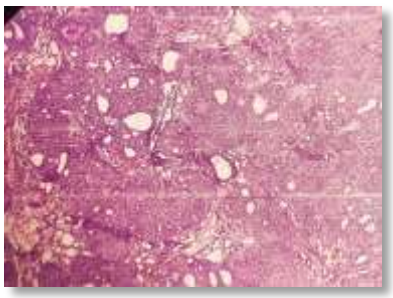

Figure 4: The H&E stained section at (10x) shows epithelial cells arranged in different pattern like glandular and rosette-like configuration

Discussion and brief epidemiological features: AOT is a distinct odontogenic tumor which is benign, slow growing and progressive in nature with a low recurrence rate. There is diversity in occurrence of tumor in terms of gender with female to male ratio is 2.3:1, (fig-5) Race (Caucasian: African 1.2%: 9%) (fig-6)[6] And site (maxilla: mandible 2.6:1(fig-7) but the mean age is usually the second decade of life.

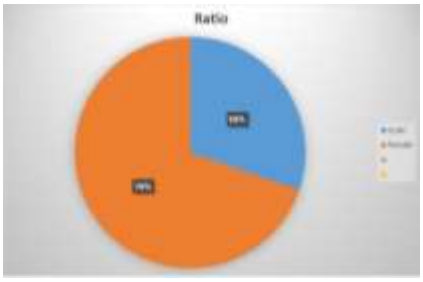

Figure 5: The pie chart showing Prevalence of AOT in both the genders

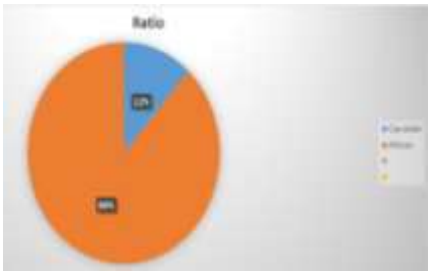

Figure 6: The pie chart showing Prevalence of AOT in terms of racial differentiation

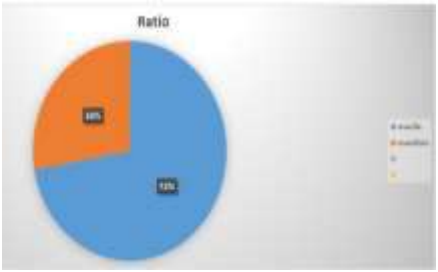

Figure 7: The pie chart showing Prevalence of AOT in terms of site

The tumor has three clinicopathologic variants, namely, intraosseous follicular, intraosseous extra follicular, and peripheral and these have diverse relations with unreupted teeth Histologically, AOT originates from the odontogenic epithelium and exhibits a solely solid growth pattern or a mixed proportion of solid and cribriform patterns. The histology all AOT types are identical and show remarkable consistency. The most visible pattern is various solid nodules of columnar or cuboidal epithelial cells that form a rosette-like configuration in the center at low magnification.

Most AOTs contain structures with a tubular or duct-like appearance that consist of convoluted structures of epithelium with areas of ductal patterns mixed with globular masses of calcified material.[7,8] In present case all the above mentioned features were present. Usually conservative surgical enucleation is performed, and very low recurrence rate is there.[9] In the present case the same treatment protocol was followed and the patient was without recurrence over the six months of follow-up.

Conclusion: The findings in this case although typical of the condition sometimes ay lead to unwarranted intervention of the uninvolved teeth in the hands of an unaware practioner who only is dependent on an intra-oral periapical radiograph for diagnosis. Hence whenever such a lesion is witnessed the extent of the lesion should be well delineated by ordering OPG so that uncessary interventions can be avoided and treatment of the pathology can be initiated at the earliest.

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