

# Adenomatoid Odontogenic Tumour Associated with Dentigerous Cyst of the Maxillary Antrum: A Rare Entity

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**Abstract** Adenomatoid Odontogenic Tumour is an uncommon Odontogenic lesion, accounting for about 3 to 7% of odontogenic tumours. The tumour composed of Odontogenic epithelium, characterized histologically by duct like structures with amyloid like deposits. It is a non invasive lesion with slow but progressive growth. We hereby report a case of Adenomatoid Odontogenic Tumour in a 13 year old female patient in the maxillary region. This paper provides the controversies regarding its origin and management in light of recent findings, clinical, radiographic, histopathological and therapeutic features of Adenomatoid Odontogenic Tumour.

**Keywords:** Adenomatoid odontogenic tumour, dentigerous cyst

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## 1. Introduction

Adenomatoid Odontogenic Tumour, is an uncommon benign epithelial lesion of odontogenic origin, was first described by Drieibaldt in 1907. According to the second edition of the "WHO - Histological Typing of Odontogenic Tumours", [3] Adenomatoid odontogenic tumour is defined as "A tumour of odontogenic epithelium with duct-like structures and with varying degrees of inductive change in the connective tissue. The tumour may be partly cystic, and in some cases the solid lesion may be present only as masses in the wall of a large cyst."

The epithelial lining of the odontogenic cyst may transform into an odontogenic neoplasm like ameloblastoma. There are 3 variants of Adenomatoid odontogenic tumour, follicular variant 73% which has a central lesion associated with an embedded tooth, the extra follicular variant 24% case which has a central lesion and no connection with the tooth and the peripheral variety (3% case). The report describes a follicular Adenomatoid odontogenic tumour in the maxilla illustrating the clinical, histopathological, and biological features of the tumour and emphasizes the importance of the relation between the dental follicle and the tumour tissue [6].

## 2. Objective

The aim of this study was to investigate histopathological features and occlusal disturbance of the tooth.

## 3. Methods

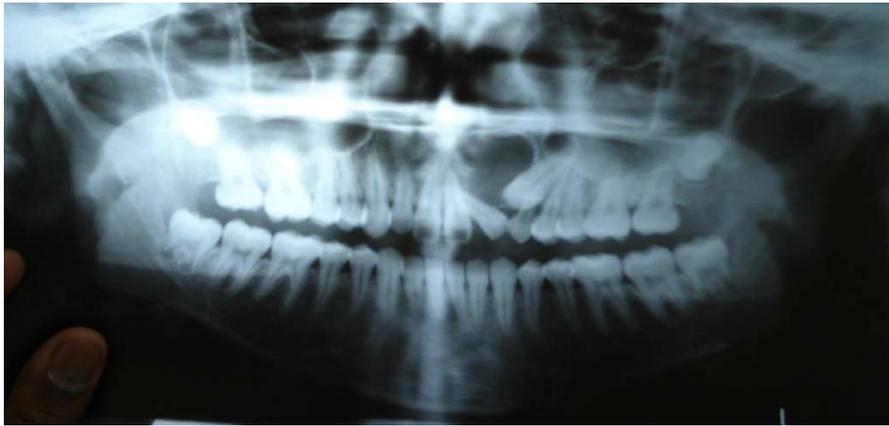
A 13 years old female patient reported with a chief complaint of unerupted tooth and pain in the upper anterior left maxillary region. The medical history was insignificant. Intra oral examination disclosed a non tender, expansile lesion of the left maxilla, surrounded by normal mucosa and retained deciduous canine. OPG revealed the presence of a significant unilocular radiolucent area with well defined sclerotic borders, involving an embedded upper left permanent canine. According to the clinical and surgical findings the lesion was diagnosed as an odontogenic cyst. Under local anaesthesia excisional biopsy was performed with excavation of upper left canine.

The Differential diagnosis was dentigerous cyst, calcified epithelial odontogenic tumour and Odontogenic keratocyst.

## 4. Results

### 4.1. Histopathological Features

Odontogenic epithelium is arranged in the form of sheets, rods and few Odontogenic cells, arranged in duct like structures with eosinophilic material in the centre. A well defined firm thick fibrous tissue capsule is seen at the periphery. The patient was completely asymptomatic after three months.



**Figure 1. RADIO GRAPHIC FEATURES**



**Figure 2. POST OPERATIVE SURGICAL PICTURE**



**Figure 3. PALATAL VIEW**



Figure 4. PATHOLOGICAL SPECIMEN



Figure 5. POST OPERATIVE PICTURE

**5. Discussion** Adenomatoid odontogenic tumour is a slow growing lesion, constituting only 3% of all odontogenic tumors with a predilection for the anterior maxilla (ratio 2:1) Rick et al have reported adenomatoid odontogenic tumour to occur with many types of cysts and neoplasm's including dentigerous cyst, calcifying odontogenic cyst, odontoma, and ameloblastoma etc. In relation with a dentigerous cyst the adenomatoid odontogenic tumour may demonstrate, grossly and microscopically, one or more associated cystic cavities. Some these cysts are lined by nonkeratinized stratified squamous epithelium which is similar to the lining of the dentigerous cyst or lined by less structured membrane that may demonstrate bud like extensions into the connective tissue. In our case a moderate amount of the inflammatory

component was evident in the sections, which could cause the cystic epithelium to lose its characteristic features and hence restrict the typing to an odontogenic cyst alone.

Odontogenesis is a complex process wherein neoplastic or hamartomatous lesions can occur at any stage of odontogenesis. The secondary development of an ameloblastic proliferation, whether hyperplastic or neoplastic is well known, but remains controversial. In the present case, the multifocal cellular proliferation had the structure of an AOT, Although larger lesions reported in the literature, [17] the tumours are usually in the dimensions of 2 to 3 cm. [6] Radio graphically, they usually appear unilocular, [6,17] may contain fine calcifications, [2] and irregular root resorption is rare. [6] This appearance must be differentiated from various types of disease, such as calcifying odontogenic tumour or cysts.

The differential diagnosis can also be made with ameloblastoma, ameloblastic fibroma and ameloblastic fibro odontoma. [7] The tumour is well encapsulated and shows an identical benign behavior. [15] Therefore, conservative surgical enucleation produces excellent outcome without recurrence. [18] Our patient has been under follow-up for 6 months.

## 6. Conclusions

Because of being the extra follicular variant of, and with respect to the localization of the lesion in the maxilla, our case is a rare case of Adenomatoid odontogenic tumour. Additionally, it supports the above mentioned general description of Adenomatoid odontogenic tumour in the previous studies. We conclude that the rarity of Adenomatoid odontogenic tumour may be associated with its slowly growing pattern and symptomless behaviour. Therefore, it should be distinguished from more common lesions of odontogenic origin in routine dental examinations.

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