

## Odontogenic Keratocyst in Anterior Mandible: A Case Report

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### Abstract

Odontogenic Keratocyst (OKC) is a non-inflammatory developmental odontogenic cyst arises from cell rest of the dental lamina and most commonly occurs in the posterior of the mandible. OKC may be detected in patients of various age groups, from infants to seniors, and usually occurs in the third and fourth decades of the patient's life. Female to male prevalence is 2:1 respectively. Mandible makes up 60% to 80% of cases and shows a specific tendency to involve the ramus and posterior area. Detection of OKC through clinical exams and radiography is to be suspected, and thus, confirmation via histopathology is needed. This study describes the occurrence of this lesion in a rare location in a 36 years old female patient.

**Keywords:** Anterior mandible, Dental lamina, OKC (odontogenic keratocyst)

### Introduction

The odontogenic keratocyst (OKC), previously known as Keratocystic Odontogenic Tumor (KCOT) constitutes 3 to 11% of all Odontogenic cysts [1]. It is generally agreed that OKC arises from the cell rests of the dental lamina [1]. OKC may be detected in patients of various age groups, from infants to seniors, and usually occurs in the third and fourth decades of the patient's life. Female to male prevalence is 2:1 respectively [2].

In 25 to 40% of the cases, an unerupted tooth is involved in the lesion.

Mandible makes up 60% to 80% of cases and shows a specific tendency to involve the ramus and posterior area. However, it can also occur in the upper jaw, especially in the canine region. This can be easily mistaken with other sinus lesions in the upper jaw, such as sinusitis or antral polyps, which have similar symptoms; in rare cases, it has been reported in the anterior mandible like in our case. Detection of OKC through clinical exams and radiography is to be suspected, and thus, confirmation via histopathology is needed [3-5].

OKCs have a tendency to grow in the anteroposterior path in the medullary cavity, and no bone expansion is evident in this condition. This view may help differential diagnosis of this cyst via clinico-radiographic procedure because the radicular and dentigerous cysts of the same size occur with bone expansion. OKCs demonstrate a radiolucent area with defined boundaries smooth margins, and most often corticated. Larger lesions, especially in the ramus and posterior side of the mandible, may look multilocular.

### Case Report

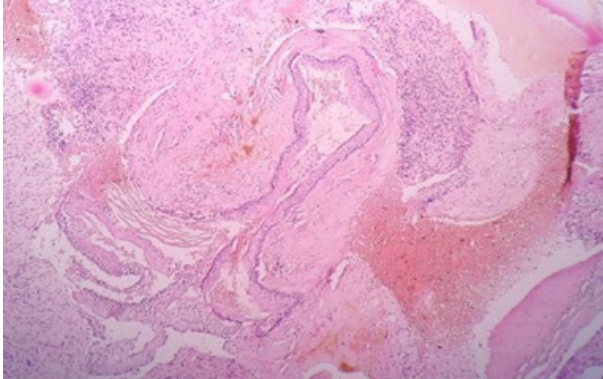
A 36-year-old woman with a small swelling in the canine tooth region was referred to the Dentistry School of Mashhad University of Medical Sciences. The radiographic image showed a radiolucent lesion with a well-defined cortical boundary in the anterior mandible was detected in the panoramic view, which was extended from the distal surface of the tooth #35 to the area of extracted tooth #46, a very small radiolucency at the apex of tooth #43 was also observed (Figure 1). No expansion was detected in this radiographic scan; however, root resorption of tooth #5 was apparent on both sides. Considering the radiographic scan and the larger extension of the lesion than its expansion, and that the lesion was expanded without much effect on the surrounding structures, the best diagnosis was OKC, although TBC, and Myxoma also considered as differential diagnosis. However, since these lesions were mostly located in the posterior mandible, the sample was sent for histopathological examination.



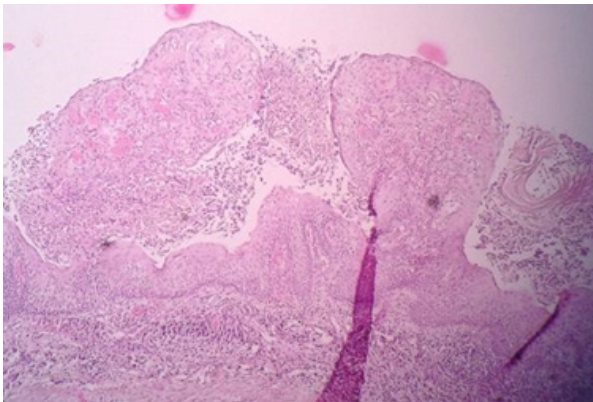
Figure 1: Panoramic X-Ray showing anterior jaw radiolucency

Upon histologic examination cystic cavity lined by 4-6 layers of Parakeratinized odontogenic epithelial cell with a corresponding palisaded basal layer which mostly did not showed evidence of rete ridges have been observed although some areas of this lesion had become infectious, and rete ridges were formed (Figure 2 and 3).

After the diagnosis of OKC, marsupialization surgery was performed on the patient. As the OKC cyst wall was thin and fragile, the cyst was given time to shrink, and the cyst membrane thickened, this permitted easier removal of the cyst; thus, reducing the risk of relapse (Figure 4).



**Figure 2:** Microscopic view of odontogenic keratocyst (100x)



**Figure 3:** Microscopic view of infected odontogenic keratocyst epithelial lining (400x)



**Figure 4:** Surgical marsupialization procedure

## Discussion

Odontogenic keratocyst, Unicystic Ameloblastoma, Odontogenic Myxoma, Glandular odontogenic cyst are cystic and jaw tumors that have a significant overlap in their histopathological, diagnostic and radiographic features. We intend to make a more definite diagnosis by focusing on the characteristics of these lesions.

Glandular odontogenic cyst is a rare and recently recognized type of developmental odontogenic cyst that can exhibit aggressive behavior. This lesion is usually seen as an asymptomatic, slow-growing mass in the anterior of the mandible in 80% of cases. Some lesions may cross the midline and are more common in middle-aged people. In terms of Radiographic criteria, the lesion may be unilocular or usually a multilocular radiolucency. The radiographic margin is usually well defined with sclerotic borders [1,6,7].

Histologically, it is characterized by variable thickness of nonkeratinized epithelium consisting of superficial layer of cuboidal or columnar cells that are referred as hobnail cells, and occasionally, these cells may be ciliated. The epithelium might show papillary projections, nodular thickenings, microcystic areas, and mucous cells [6,7].

Ameloblastoma is the most common odontogenic tumor, which is a tumor of odontogenic epithelial origin. unicystic Ameloblastoma is a distinct type of ameloblastoma and is considered as a neoplastic cystic lesion [8].

Unicystic ameloblastoma deserves separate examination based on its clinical, radiographic, pathological features and response to treatment. In various studies, unicystic Ameloblastoma makes 10% to 15% of intraosseous ameloblastomas and is often seen in young patients with an average age of 23 years. More than 90% of unicystic Ameloblastoma of the mandible is commonly seen in the posterior regions. The lesion is often asymptomatic, although large lesions may cause painless swelling of the jaws [1]. In many patients, the lesion usually appears as a well-defined radiolucency that is seen around the crown of the impacted third molars in mandible [1].

Odontogenic Myxoma (OM) is a benign and locally aggressive tumor. Average age of the patients with myxoma is between 25-30 years. OMs are derived from mesenchymal odontogenic tissue and are associated with the impacted teeth located in the posterior region of the mandible [1,9]. Treatment is surgery and varies from curettage to resection [10]. It is usually a painless, asymptomatic swelling. Radiographic features appear similar to odontogenic tumors, as unilocular or multilocular radiolucency that may cause tooth displacement or bone resorption in the tumor area. The radiolucet margin is often irregular or scalloped [1,11].

Odontogenic keratocyst (OKC) is a developmental non-inflammatory odontogenic cyst that appears to be caused by cell rests of the dental lamina. Among jaw cysts, OKC is the third most common and radicular and dentigerous cysts are first and second respectively. Most of the studies have shown that the posterior part of the mandible is the most common site in terms of Radiographic features, but in our case we present a case of OKC in anterior region which is rare location. OKC is specified as a well-defined radiolucency that may be either unilocular or multilocular [12].

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