



TRAUMATIC BONE CYST: CASE REPORT

TRAVMATİK KEMİK KİSTİ: OLGU SUNUMU REPORT

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ABSTRACT

The non-epithelial, lined and empty cavity of the jaw is often where a traumatic bone cyst (TBC) is found. The lesions are uncommon and generally seen in young individuals. They occur frequently in the mandible posterior area. TBCs are often accidentally discovered on routine radiological examination. The cystic cavity is usually empty and there is a very little material for histological examination. Surgical curettage is done to treat the condition, and recurrence is rare.

In this paper, we discuss a mandibular TBC that was diagnosed during routine panoramic examination and we present its treatment. After surgical curettage, bone regeneration of the cystic cavity within a short period of time was seen.

Key words: Traumatic bone cyst, panoramic radiography, diagnosis

ÖZET

Çenelerde görülen, benign, non-epitelize ve sınırları belirgin ve içleri boş olan kemik kavimleri; travmatik kemik kisti olarak isimlendirilirler. Travmatik kemik kistleri nadirdir ve genellikle genç bireylerde görülür. Mandibulada posterior bölgede daha sık gözlemlenirler. Genellikle rutin dental muayeneler sırasında ve panoramik radyograflerde tespit edilebilir. Kist kavitesi genellikle boştur ve histolojik kesit alabilmek için sınırlı materyal bulunmaktadır. Tedavisi cerrahi küretaj ile yapılır ve nüks nadir görülmektedir.

Bu olgu sunumunda; alt çenede, rutin panoramik radyografi ile tespit edilmiş bir travmatik kemik kisti ve tedavisi rapor edilmiştir. Cerrahi sonrası kist kavitesinde, kısa sürede kemik rejenerasyonu gözlemlenmiştir.

Anahtar kelimeler: Travmatik kemik kisti, panoramik radyografi, diagnoz

INTRODUCTION

A traumatic bone cyst (TBC) is a pathological bone cavity which occurs without significant odontogenic epithelial. ¹ They were firstly described in 1929 which are rare in the jaws. ² In literature, they also named as solitary bone cyst; haemorrhagic bone cyst; extravasation cyst; progressive bone cavity; simple bone cyst or idiopathic bone cavity. ³ Today, the term "traumatic bone cyst" is the most used. ⁴ In the classification of the World Health Organization

(WHO), TBCs are non-neoplastic lesions of the bones and are included in the group of bone-related lesions, together with the aneurysmal bone cyst, ossifying fibroma, fibrous dysplasia, osseus dysplasia, central giant cell granuloma and cherubism. ^{5,6}

Traumatic bone cysts account for 1% in all jaw cysts and commonly found on the metaphysis of long bones. ⁷ The lesions occur in young patients, especially during second decade of life. ⁸ These lesions are asymptomatic and have slow growing pattern. TBCs are generally diagnosed during routine radiographic examination. ⁹ The etiology and pathogenesis is still

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unclear. Different causal factors have been proposed including bone tumor degeneration, altered calcium metabolism, infection, venous obstruction, increased osteolysis, intramedullary bleeding, local ischemia and trauma.³

In this paper, to describe the clinical and radiographic features and diagnostic parameters of TBCs in young male was aimed.

CASE REPORT

A 17-year-old male patient was referred to our faculty with the chief complaint of infection in his left mandibular first molar tooth. He had no significant health problem, drug intake, or trauma history. Radiographic examination revealed a lined, unilocular radiolucent area between the canine and the first molar region on the left side of the mandible (Figure 1). The canine and the first and second premolar teeth were vital and painless. On palpation, expansion of the buccal bone was appreciable. The pulp in all four of the related teeth continued to remain vital. The patient underwent surgery. Under local anesthesia, a mucoperiosteal flap was raised. After osteotomies, the bone cavity was exposed. The surgery indicated that the lesion was an empty traumatic bone cavity. Surgical exploration of the cavity, along with the inducing of bleeding points, was performed. Any type of graft material was used. Three months after surgery, bone healing was clearly seen on the panoramic radiography (Figure 2).



Figure 1. Panoramic radiography is showing the lesion (red arrow)



Figure 2. Panoramic radiography of the patient; three months after surgery

DISCUSSION

The detection of diagnostic features in jaw lesions are substantial to perform appropriate surgical procedures. TBCs diagnostic features are important because it affects treatment plan of the surgery. In this report, we detected a TBC during routine panoramic examination. Additionally, we aim to emphasise the priority of accurate diagnosis of the TBCs.

Reports vary in the literature, generally men are affected more than women. The mean age of those affected is 20 years, the lesion is less common after the end of the third decade.¹⁰

Over 90% of TBCs are located in long bones, most commonly the proximal humerus and femur. Moreover, less than 10% that are found in the jaws.¹¹ In either the maxilla or mandible, the posterior, premolar-molar area may be affected. TBCs are located mainly between the canine and the third molar in the mandibular body.⁸ Although the lesion is usually asymptomatic, pain is the presenting symptom in 10% to 30% of the patients.¹

Many theories have been suggested for etiology. In literature, the most frequently discussed theory suggests bleeding in the bone which is related to trauma.⁴ The presence of a history of trauma is extremely variable in the reported series of cases from 17% to 70%.¹ Trauma leads to intraosseous hematoma formation. After trauma, instead of the organization of a blood clot, healing is not seen properly and the clot liquefactively necrotises or is resorbed. The surrounding bone is resorbed due to the enzymatic activity. Thus, the bone cavity enlarges because of the pressure of its contents.⁴

Subramaniam et. al⁸ reported that comparing the maxilla, the mandible has more cortical bone, and repairs itself more slowly. This theory explains why

TBCs are seen frequent in young individuals, an age at which trauma occurs more often.

Radiographically, TBCs are variably sized radiolucent lesions with well-defined or poorly defined borders. Moreover they may have multilocular presentation and association with impacted teeth. Computed tomography and magnetic resonance imaging are not required for diagnosis of jaw TBCs in general.¹ On the other hand, these advanced imaging techniques can be used for further evaluation.¹² Root resorption is rare and generally associated with vital teeth. Histologically, the lesion is lack of tissue. However, it may consist of scant fragments of fibrovascular connective tissue, extravasated red blood cells and pieces of reactive vital bone. No cystic epithelium is identified. Diagnosis can be difficult but during surgery empty or fluid filled cavity is supportive for TBC.¹¹

The treatment of choice for TBC is surgical. Careful curettage of the lesion which favors progressive bone regeneration after formation of a stable blood clot, offering a good prognosis.¹¹ Recurrency is uncommon, and usually occur within three months of surgery. Thus, follow-up is recommended.¹²

CONCLUSION

The differential diagnosis of TBCs is important to provide surgical procedures and incomplete treatment. Moreover, the treatment of these lesions are simple. Dentists should prevent bone grafting or radical surgical procedures in the treatment of TBCs.

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