

A Case Report

Radicular Cyst Causing Fistulization On The Skin: A Case Report

*Ciltte Fistülizasyona Sebep Olmuş Radiküler Kist:
Vaka Sunumu*

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ABSTRACT

Radicular cysts are the most common odontogenic cysts, accounting for approximately 70% of all cysts in the jaw. Radicular cyst commonly occurs in maxillary anterior region in between 30th and 50th year of age. Radicular cysts are usually associated with the apex of erupted teeth with a devitalized pulp. These cysts, which tend to grow slowly, are usually asymptomatic until they reach large sizes and are infected. Cutaneous skin fistula may originate from large radicular cysts. In the present case report management of a large mandibular radicular cyst with cutaneous fistula that was treated by enucleation, followed by sinus tract reconstruction is described.

Keywords: Fistulization; Mandible; Radicular Cyst

ÖZET

Radiküler kistler en sık görülen odontojenik kistlerdir ve çenelerde görülen bütün kistlerin yaklaşık %70'ini oluştururlar. Radiküler kistler sıklıkla maksilla anterior bölgede ve 30 -50 yaş aralığında görülürler. Radiküler kistler sıklıkla devital pulpalı sürmüş dişlerin apeksleriyle ilişkilidir. Yavaş büyüyen bu kistler, büyük boyutlara ulaşana ve enfekte olana kadar sıklıkla asemptomatiktir. Kutanöz deri fistülleri radiküler kistlerden köken alabilmektedir. Bu vaka raporunda kutanöz fistülün eşlik ettiği geniş radiküler kistin enükleasyon ile tedavisi ve fistül yolu rekonstrüksiyonu anlatılmaktadır.

Keywords: Fistülizasyon; Mandibula; Radiküler Kist

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INTRODUCTION

The word “cyst” comes from the Greek language, the cysts are described as pathological formations with liquid, semi-liquid or gas content. Cysts are categorized as odontogenic and non-odontogenic according to the epithelial tissue they develop from.¹

Radicular cysts are inflammatory odontogenic cysts which originates from the epithelial rests of Malassez in the periodontal area or development of pulpal necrosis by a periapical inflammatory reaction.¹ They commonly occur in maxillary anterior region in between 30th and 40th year of age and affects mostly men.² Based on radiographic examination, a radicular cyst appears as a round well-defined unilocular radiolucency. Multilocular radiolucency associated with radicular cysts are extremely rare with a few reported cases.^{3,4} Radicular cysts are grow slowly with clinical asymptomatic bony swelling. One of the main clinical features of radicular cysts is the presence of a tooth with devital pulp, and sometimes a sinus tract can appear from the cystic cavity.⁵

In the present case, treatment of a large radicular cyst, causing odontogenic cutaneous fistula, is described.

CASE REPORT

A 37-year-old female patient was referred to the department of oral and maxillofacial surgery clinic with a complaint of swelling on the symphysis region. Medical history was unremarkable. On intraoral examination, swelling was noted on the buccal vestibule, extending from 33 to 43. The lesion was



Figure 1. Clinical appearance of asymmetry at the tip of the chin

fluctuant on palpation. On extraoral examination the presence of odontogenic cutaneous fistula, asymmetry and pus discharge from the inferior border of the mandible was observed (Figure 1). The teeth associated with the lesion were tested for vitality and found to be devital. Severe luxation was observed in the teeth up to 43-33 and pain was observed in percussion test. No paraesthesia was noted.

The orthopantomograph (OPG) and cone beam computed tomography (CBCT) showed well-defined unilocular radiolucency with sclerotic border extending from the mandibular right canine to the mandibular left canine (Figure 2). The buccal cortex exhibited expansion with perforation. The largest dimensions of the lesion were measured as 26x18x15 mm. The root stumps of teeth 43,42,41,31,32,33 were in relation with the lesion (Figure 3).

Radicular cyst, ameloblastoma, odontogenic keratocyst, pseudocysts and unilocular lesions were con-

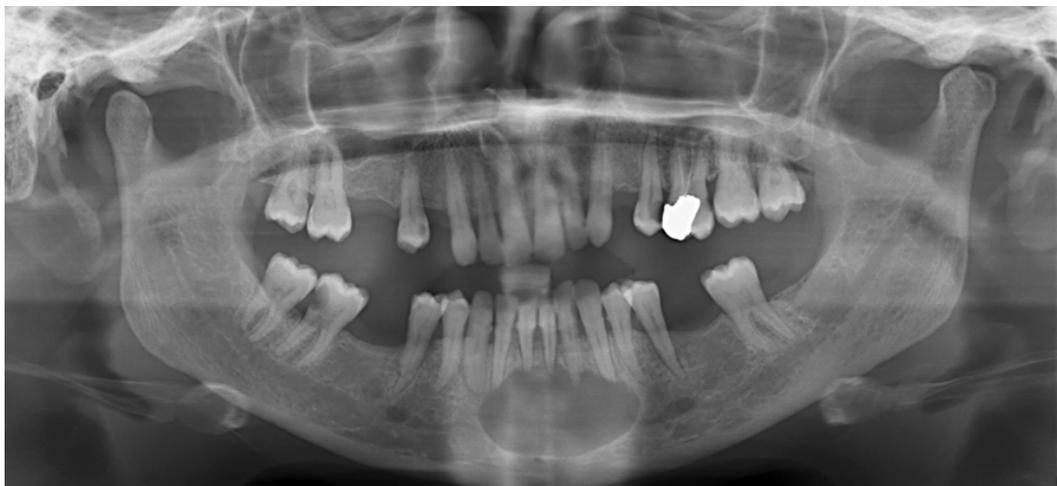


Figure 2. Ortopantomograph showing unilocular lesion in the mandibular anterior region

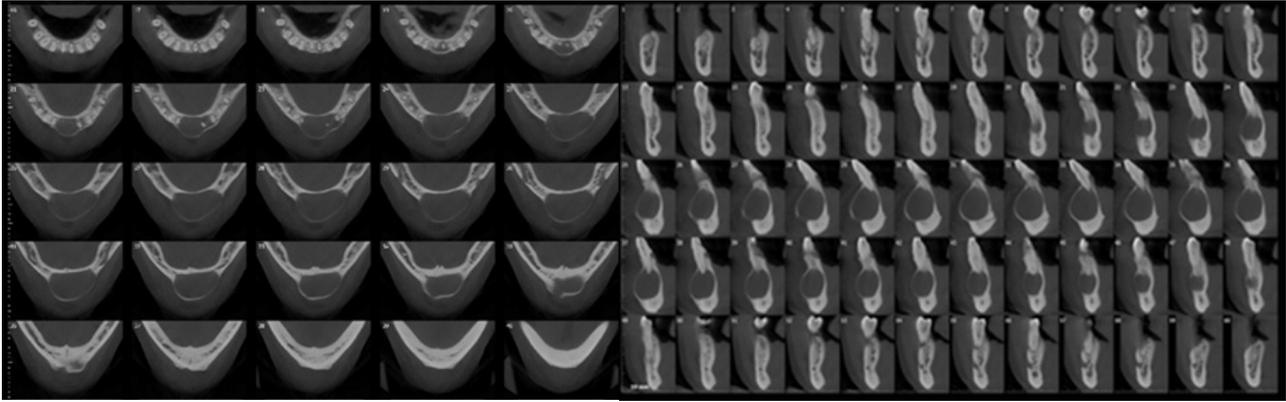


Figure 3. Preoperative cross-sectional and axial CBCT scans showing expansion and perforation of the buccal cortex.

sidered as a provisional diagnosis. Based on clinical and radiographic examinations and fine needle aspiration cytology report, the preliminary diagnosis was considered as mandibular radicular cyst.

Surgical enucleation was planned based on clinical and radiographical findings. Informed consent form was obtained from the patient. Under local anesthesia the mucoperiosteal sulcular flap was raised and the mandibular lesion was explored. After the lesion was entirely exposed, it was completely enucleated. Devital teeth were also extracted. From the perforation of the bone cavity, the fistulous area of the skin was reached with a curved tip hemostat and the debridement of the soft tissues was performed. The specimen was fixed in 10% formalin and sent for histopathologic examination (Figure 4).

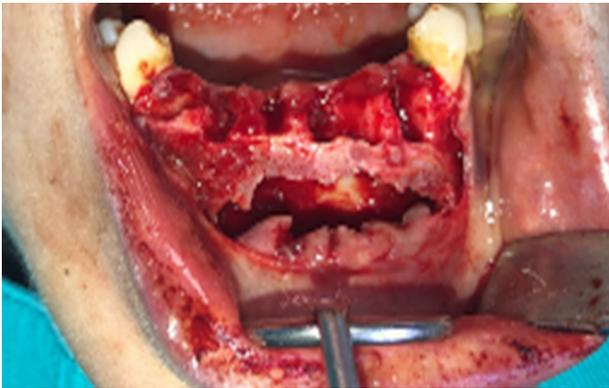


Figure 4. Clinical appearance of the bony cavity after excision of the lesion

The sutures were removed one week after surgery and the wound healing period was uneventful. Histopathologic examination of the specimen revealed a cyst lined with non-keratinized, hyperplastic, multilayered squamous epithelium. The connective

tissue of the cyst was collagenized and contained mononuclear inflammatory cell infiltration and hemorrhage areas (Figure 5). On the basis of clinical, radiographical and histopathological findings the diagnosis of radicular cyst was made. The patient has been under continuous follow-up for three years and CBCT evaluation showed complete recovery of the lesion without recurrence.

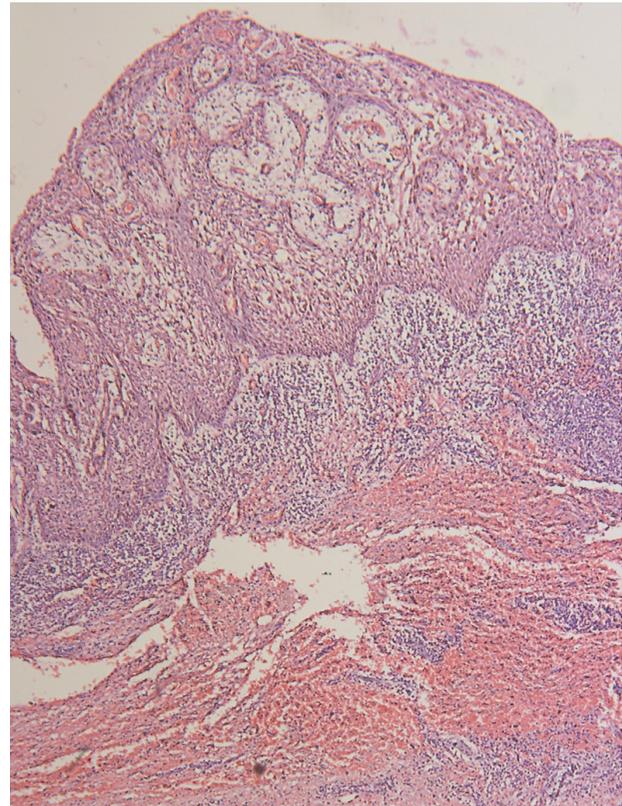


Figure 5. The connective tissue under the hyperplastic cyst epithelium is collagenized and contains abundant mononuclear inflammatory cell infiltration and hemorrhage areas. (x40 magnification, Hematoxylin&eosin)

DISCUSSION

Radicular cysts are the most common odontogenic cysts in the jaws.¹ The patients has no specific age distribution, but most lesions occur in their 30s. Radicular cysts are commonly seen in the anterior maxilla.⁶ They arise from epithelial rests of Malassez in the periodontal ligament as a consequence of an inflammatory reaction in the dental pulp and periodontium.¹ These lesions are usually discovered by dental check-up. Radicular cysts are usually clinically asymptomatic, but some long-standing lesions may present inflammation and acute exacerbation and cause symptoms such as swelling, tooth mobility, and displacement of an unerupted tooth.⁷ Radicular cyst may cause extensive damage to the jaw and result in pathological fractures.⁸

Based on clinical, radiographic, and histological examination provisional diagnosis of radicular cysts was made in the present case. Radiological examination showed, unilocular, round, radiolucent lesion with dense sclerotic border associated with the apex of devital teeth.⁹

The cystic membrane may have an expansile behavior and resorb the cortical layer of the bone. The borders of the lesion may extend to the adjacent anatomical structures such as inferior alveolar canal, infraorbital foramen, maxillary sinus and nasal cavity.¹⁰ Consequently, the patients are referred for a palpable mass or facial asymmetry.¹⁰ In this case report, the patient had a remarkable facial asymmetry. The method to be applied for the treatment of the cyst may vary depending on the size and localization of the lesion, the bone integrity of the cystic wall and its proximity to anatomical structures. Two methods have been described in the surgical management of large radicular cysts: enucleation and marsupialization.¹¹ Marsupialization technique includes creation of a lateral window osteotomy, insertion of a sterile tube, its fixation to the bone or soft tissue, regular irrigation and follow-up examination.¹² It has been reported that the advantages of marsupialization are low morbidity, preservation of anatomical structures and mandible continuity in pediatric or elderly patients.¹² However, this treatment has several disadvantages. A major disadvantage of this approach is that the pathological tissues of the cyst stay in bone for a long healing period, especially if there is need

for second surgery.¹³ After placement of marsupialization tube, a good patient cooperation and extended follow up are required.¹⁴ These factors make marsupialization less tolerable by patients.

Surgical treatment of radicular cysts is usually enucleation, where the cystic lining is separated from its inner bony surface and removed, thereby allowing to fill with blood clot.¹¹ In the present case, the lesion was treated with enucleation. Damage to adjacent anatomical structures, and pathological fracture of mandible, were not encountered. No symptoms of secondary infection were observed at the follow-up period. Enucleation increases postoperative comfort and provides early rehabilitation for patients. However long-term and regular follow-ups are required.¹³ Enucleation may be chosen for management large radicular cysts. This method of treatment can be excluded in young patients in order to preserve and expose unerupted permanent teeth.¹⁵

A large odontogenic cyst may cause cutaneous fistulae.¹⁶ The location of odontogenic cutaneous fistula can be either intraoral or extraoral.¹⁷ Odontogenic cutaneous fistulas may be the sign of bacterial invasion of the infected dental pulp tissue, results in dissection and break through to form sinus tracts draining towards the skin.¹⁸ In addition odontogenic cutaneous fistulae is a pathological connection between the surface of the skin and oral cavity. These cutaneous fistulas are described as a rare form of dermatosis and most often observed on the chin or jawline.¹⁹ Elimination of secondary infection of the cyst and dental infection through root canal treatment or extraction allow healing of the skin fistulae.²⁰

A bone graft may be necessary to promote bone regeneration of the cyst cavity. The remaining cystic bone cavity can be reconstructed with different grafting materials to improve bone healing.¹⁴ In the present case, the grafting was not performed due to the risk of secondary infection and the presence of cutaneous fistula.

CONCLUSION

The large radicular cysts may have clinically and biologically aggressive course and can sometimes be difficult to diagnose. This case report highlights on the occurrence of odontogenic cutaneous fistula

associated with radicular cyst. In this case report it has been emphasized that the postoperative period may be uneventful after careful enucleation of large cysts in the mandible.

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