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SURGICAL TREATMENT OF AN UNUSUALLY LARGE MANDIBULAR RESIDUAL CYST: A CASE REPORT

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Abstract

Residual cysts are common after the extraction of a third impacted molar. Many of them are usually asymptomatic and can be detected incidentally on routine radiography before symptoms appear. Lately, 3D CBCT is the most common diagnostic method for detecting them.

We present a case of a residual cyst that exists 20 years after extraction of the right lower third molar. Cysts can vary in size, and over the years can grow and disrupt bone continuity. In this case, a 53-year-old patient has painless swelling that manifests extra-orally in the buccal and masseteric regions.

It has been recurring in recent years but the condition was improving with the administration of antibiotic therapy. Surgical treatment is the method of choice.

Diagnosis and management of the patient are discussed.

Keywords: odontogenic cyst; residual cyst; operative extraction; third lower molar;

Introduction

Odontogenic cysts are pathological cavities with epithelial lining and surrounded by fibrous connective tissue that originates from odontogenic tissues, they are classified as developmental and inflammatory cysts [1].

A residual cyst is inflammatory in origin and is usually preceded by a radicular cyst in the jaws which has formed apical or adjacent to an extracted tooth [2].

Some studies reported that residual cysts show active growth patterns in areas that have been edentulous for several years [3].

The variable behavior of these cysts highlights the importance of further detailed studies on these often overlooked lesions. Large cysts can be a subject of interest because if there is a growth in multiple facial anatomical spaces, differential diagnostic they can resemble various tumors and soft-tissue pathological lesions of the affected area. Evaluation is required in a specialized institution in the field of OMFS.

Case report

A 53-year-old male patient appears at the clinic due to recurrent swelling. The patient provides information on the extraction of an impacted lower third molar more than 20 years ago. After extraction, the patient does not present for follow-up examinations due to the absence of symptoms.

This asymptomatic period lasts for about 10 years. In recent years, the patient has appeared several times at the maxillofacial surgery clinic because of swelling and thus the existence of the cyst has been diagnosed. The patient is familiar with the condition, but does not decide on surgical treatment.

The cyst is located at the angle of the mandible. The dimensions of the cyst are 75x53mm in its largest volume of the surface.

The temporomandibular joint is not involved, and the patient has normal occlusion, and no deviation of the mandible while opening and lateral movements. (Figure 1)

Figure 1. Preoperative image of the patient with visible swelling in the masseter and buccal region.

Radiographic CBCT 3D examination shows resorption of the vestibular cortical lamina and the cyst continues into the soft tissues through the mandibular incision. Concerning the mandibular canal, the cyst does not affect it and pushes cortical lamine towards the lingual side. (Figure 2).

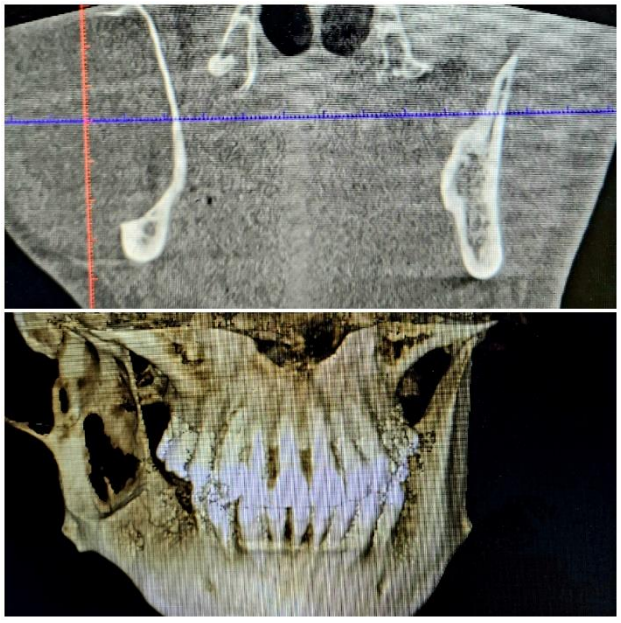

Figure 2. Bone defect and discontinuity of the mandible visually shown on 3D CBCT scan.

The surgical approach to cyst removal is intraoral with an incision laterally and parallel to crista temporalis. When the cyst was exposed, the cystic contents were removed with a syringe. A total of 40 ml was aspirated.

After emptying the cyst, the cyst wall was dissected off surrounding tissues and separated from adjacent anatomical structures. After the removal of the cyst (Figure 3), the surgical field was cleaned with a suspension of NaCl 0,9% and betadine. The incision was sutured consequently.

The surgery was performed in OETA. Iodoform gauze was placed in the wound due to the large defect of the mandible. The drain began to shorten after the third day and continued to recur for the following weeks. Antibiotic, anti-edematous, and analgesic therapy are prescribed postoperatively.

A regular toilet was made at the clinical control check-ups. Postoperatively there was swelling, which started to decrease after the 5th day.

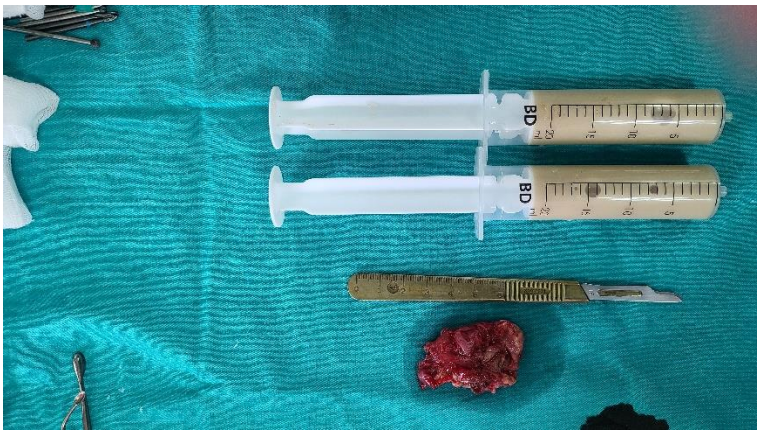

Figure 3. Postoperative image of the emptied cyst .

Regular check-ups are expected every month and a regular CBCT 3D scan after 6 months. Pathohistological findings show that the cyst is inflammatory. The analyzes were made by repainting the preparation with hematoxylin-eosin, and the cyst wall demonstrate dense fibrous connective tissue with an inflammatory infiltrate (Figure 4) but also on some preparation cyst wall shows varying thickness. (Figure 5).

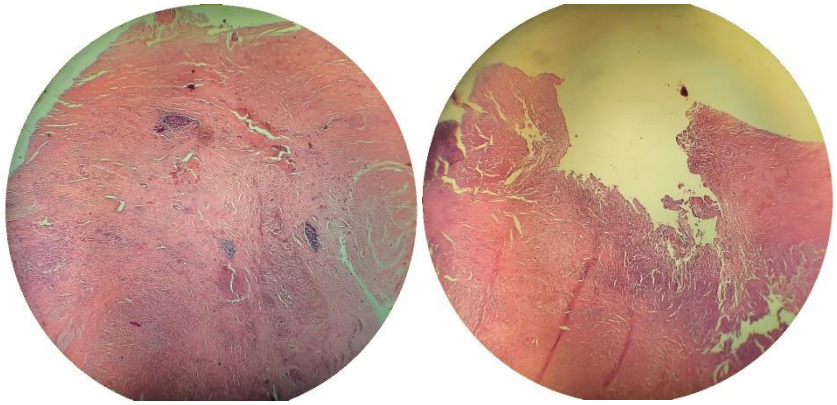

Figure 4, 5. Microscopic images of sections for pathohistological analysis.

Discussion

Inflammatory cysts are the most frequent type of cysts in the jaws. This group of cysts comprises of radicular and residual cysts of which residual cysts are the second most common.

The frequency of residual cysts have been reported to range from 2.2%–18% of odontogenic cysts in the jaws [4,5].

Histopathological examination remains the main method of diagnosis of these lesions along with radiological correlation [6]. Residual cysts present as unilocular, well-defined, radiolucent lesions on radiographs. They are usually round or oval in shape with a thin sclerotic border [3].

Residual cysts are usually surgically managed by enucleation, marsupialization or decompression to decrease the intraluminal pressure within the cyst [7].

Larger residual cysts particularly those extending into adjacent anatomical structures should be managed with marsupialization over a period of time to reduce the size of the cyst followed by enucleation of the remaining cyst lining [4].

This method was used for one extensive lesion as in this case study that extended into the ramus of the mandible. A major disadvantage of this technique is that it requires surgery under general anaesthesia. Residual cysts have low recurrence rate following enucleation hence the prognosis following surgical management is good [8].

Conclusion

Early diagnosis of these cysts leads to a complete cure without consequences for general health and local functional defects. Large cysts are a major challenge for maxillofacial surgeons, especially those that threaten bone continuity.

This is due to the complexity of the cyst itself when it affects different anatomical structures in the environment and there are possibilities for complications of different types. To prevent these complications, regular check-ups and radiographic examinations of patients are required, especially after extraction of the lower third impacted molar.

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