

# Management of Large Residual Cyst in Elderly Patient with Decompression Alone: Case Report

## SUMMARY

**Background/Aim:** Residual cysts comprise approximately 10% of all odontogenic cysts. They are more commonly seen in 4<sup>th</sup>-6<sup>th</sup> decades of life, and occur due to incomplete previous surgical removal of a radicular cyst; or due to left epithelial remnants stimulated by tooth extraction. These lesions are often treated with enucleation. However, this procedure is not always the ideal treatment solution for elderly people due to the presence of physical and mental disorders, and risk of jaw fracture. **Case Report:** In this case report, the successful treatment of a large residual cyst in the symphysis of a 93 year-old female patient by performing decompression alone is presented. A plastic drain was placed on the wall of the cyst to allow irrigation. Regeneration was observed in the cyst cavity 3 months after surgery. The 1-year follow up showed that the majority of the cyst cavity was filled with new bone. **Conclusions:** In elderly patients, large inflammatory cysts can be successfully treated with decompression considering the limited regeneration capacity and difficulties in follow-up.

**Key words:** Odontogenic Cyst, Decompression, Geriatrics, Mandible

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## CASE REPORT (CR)

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## Introduction

Jaw cysts are closed sacs that may contain air, fluid, or semi-solid material and be either odontogenic or non-odontogenic in accordance with the origin of the epithelium that covers the cystic cavity<sup>1,2</sup>. Residual cyst (RC) or recurrent radicular cyst is an inflammatory type of odontogenic cyst that originates as a result of proliferation of the odontogenic epithelial remnants<sup>3</sup>. The cyst may occur in the edentulous area at the site of a previously extracted tooth months or even years later<sup>3,4</sup>. Stimulation of the odontogenic epithelial remnants entrapped in hard and soft tissues of the jaws using inflammatory and immunological processes is considered as the primary mechanism responsible for RC development<sup>1,5</sup>.

RCs comprise approximately 10% of all odontogenic cysts<sup>4,6</sup>. Radiographically, a RC is a well-defined, round-to-oval unilocular radiolucency of varying size, located in the jaw bones in edentulous areas and is commonly detected in the maxilla<sup>4,6</sup>. The cyst is usually encountered in individuals in the age range of 50-60 years with female predominance<sup>6</sup>. The majority of RCs are asymptomatic

and are often detected as an incidental finding during routine radiographic examination. However, because of their tendency of expanding, they may cause expansion of the jaw cortical plates or displacement of the related anatomical structures<sup>7</sup>. They can be accurately diagnosed combining clinical, radiographic and histologic findings<sup>7</sup>.

RCs can be treated by enucleation, marsupialization, or decompression to reduce the intraluminal pressure of the cystic lesion<sup>2</sup>. Enucleation aids in complete surgical excision of the cyst and is an ideal treatment choice for benign cystic lesions. However, in certain cases, the size, location of the cystic lesion, its proximity to adjacent vital structures, and patient's age contraindicate enucleation<sup>8</sup>. Thus, particularly in younger, elderly, or high-risk patients, minimally invasive treatment is a treatment of choice<sup>9</sup>. Marsupialization is a well-accepted treatment option that involves cystic wall fenestration and suturing of the inner cystic lumen with the oral mucosa for reducing the intra-cystic pressure and allowing new bone growth around the defect<sup>10</sup>. Decompression is another treatment option that reduces the pressure caused by the cystic mass. This technique requires a smaller window,

which is kept open by suturing a device to it<sup>2</sup>. Even though both decompression and marsupialization are based on the rationale that releasing intramural pressure to diminish the cyst size allows gradual bone growth around the lesion, decompression seems the more suitable treatment option in cases that require a more conservative approach<sup>9</sup>. RC has a low recurrence rate. However, follow up is required to rule out malignancies and recurrences<sup>6</sup>.

Since with aging, various compromising medical conditions may appear, dental management of geriatric patients requires special attention, particularly in cases of oral surgery. This paper presents the conservative treatment of a large-sized residual cyst in a 93-year-old female.

### Case Report

A 93-year-old female was referred to our clinic with a complaint of slowly progressing and painless swelling located in the anterior mandible. The medical history of the patient did not indicate any previous conditions other than severe osteoporosis. Findings of intraoral examination revealed a swelling in the anterior region of the mandible. The mucosa surrounding the lesion appeared to be normal, and the swelling was non-tender and displayed cystic consistency. On panoramic radiography (Figure 1) and cone beam computed tomography (CB-CT scan), large, well-defined, radiolucent expansive lesion was detected (Figure 2), extending from the area of the mandibular right premolar to the mesial aspect of left canine area, inferiorly to the mandibular basis and superiorly to the level of the alveolar crest. On the basis of these findings, residual cyst was provisionally diagnosed.



Figure 1. Initial panoramic radiograph of the patient

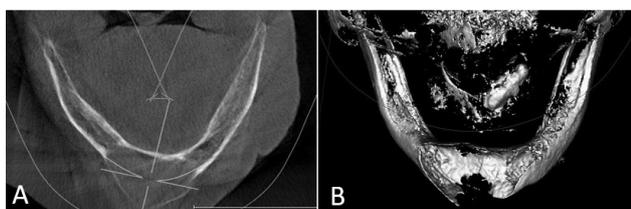


Figure 2. (A) Axial view of the lesion on the CBCT; (B) View of the lesion on 3D reconstruction

Because the cyst was of a large size, we planned to take a conservative approach and performed decompression under local anesthesia. We initiated decompression by performing a fenestration in the cystic wall lining with a scalpel, and placed a pacifier at the opening for daily cystic cavity irrigation (Figure 3). We sent an excised specimen for histologic examination; histopathological examination results confirmed the diagnosis of a residual cyst (Figure 4). We performed follow-up after decompression, which included clinical and radiographic examinations every 15 days. After 3 months, we observed new bone formation within the cyst cavity. Recurrence and malignant transformation were not noted at the 1-year follow-up (Figure 5).



Figure 3. The pacifier adapted to the cystic window for irrigation

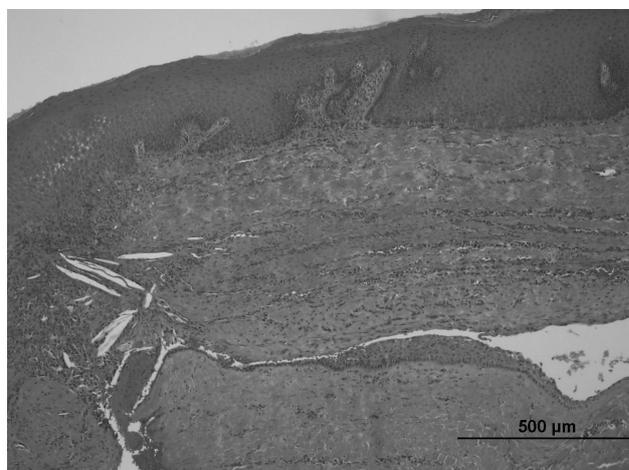


Figure 4. Histopathological view shows features of residual cyst



Figure 5. Panoramic radiograph at the follow-up control after 1 year

## Discussion

Cystic lesions of the jaws are frequently encountered among elderly patients, and the management of these lesions presents a challenge for the surgeon because of potential comorbidities associated with aging<sup>11</sup>. Reports indicate that the occurrence of coexisting diseases increases from 20% to 90% from 20-30 to 70-80 years<sup>12</sup>. Elderly population generally suffers from bone and joint diseases, hypertension, diabetes mellitus, cancer, stroke, along with other degenerative diseases<sup>12</sup>. They show poorer tolerance toward stress and impaired visual and functional capacity of the body systems. Also, impaired oral health and oral pathologies have negative effects on nutrition, esthetics, psychological status, and other social activities of daily life<sup>13</sup>.

Medical, psychological, socioeconomic status of the patient in addition to the dental status, must be considered while treating cystic lesions in elderly patients<sup>14</sup>. Different treatment procedures have been preferred; in 2003, Nishide et al.<sup>12</sup> treated a huge dentigerous cyst in a 72-year-old patient with irrigational therapy that involves periodic irrigation of the cyst with antibiotics. They claimed that the cystic cavity size rapidly diminished when compared with marsupialization and suggested this technique for geriatric patients because it does not require additional surgery.

According to Enislidis et al.<sup>9</sup>, all large mandibular cysts of any histologic type can be successfully treated, with no recurrence, by decompression and second-stage enucleation. Because our patient had severe osteoporosis that prevented her from staying in the dental unit for an extended period of time and showed poor tolerance to stress as a result of aging, we preferred decompression as the treatment option. Also, the cystic lesion, in our patient, reached a large size that could lead to pathologic fracture of the mandible. Thus, we considered decompression as more conservative, which can be easily and rapidly performed. Using this technique, we also attempted to limit intraoperative and postoperative discomfort of the patient. The chief explanation for the rapid regeneration of large cyst cavity in this patient without recurrence is that the residual cyst responded well to decompression.

Although this is a rare condition, a case of malignant transformation of cystic epithelium has been reported. Reports indicate that more than 50% of reported cases of malignant transformation originated from inflammatory periapical or residual cysts<sup>15</sup>. For this reason, the follow-up should continue for a long period of time; at least 1-year follow-up is needed to evaluate possible transformation.

## Conclusions

Decompression may be preferred over invasive surgical approaches in the treatment of huge residual cysts; especially in elderly patients with systemic diseases. Since chronic inflammation has been considered as a predisposing factor for malignancy, long-standing inflammatory cysts require particular attention, especially in elderly patients as in the case described herein.

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