

# RESIDUAL CYST: AN UNIQUE CASE REPORT OF MANDIBULAR ARCH

**Case Report**     **Souvik Paul<sup>1</sup>, Ajit Mishra<sup>2</sup>, Savita Ghom<sup>3</sup>, Arkaprava Banerjee<sup>4</sup>**

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## ABSTRACT

Residual radicular cyst is defined as an odontogenic cyst that persists after the associated tooth has been extracted or associated with a previous cyst that is not completely removed. These cysts are often asymptomatic and discovered incidentally during radiologic examinations of edentulous areas. It is mainly seen in age group between 20-52 years and more common in male. Here, we present a case of residual cyst in relation to 2nd premolar (35), first molar (36) & 2nd molar (37) of the mandible in a 51 years old female patient. OPG & CBCT shows a well-defined unilocular radiolucency with sclerotic borders. There was compression and displacement of the inferior nerve canal towards the lower border of mandible on the left side. The radiolucency measuring approximately 2.5 × 3.5 cm in relation to body of mandible. We also discussed clinical, radiographic, histopathological and therapeutic features of the case with a post-operative follow up to see the recurrence occurs or not.

**Key Words :** Jaw cysts, inflammatory cysts, cyst in mandible, FNAC, sclerotic borders.

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## INTRODUCTION

Cysts represent pathological cavities within the bone and are characterized by a thin lining of epithelial cells, which can originate from odontogenic or nonodontogenic sources.<sup>1</sup> A cyst contains fluid or semisolid material and is lined by an epithelium-lined sac. The epithelial cells first proliferate and later undergoes degeneration and liquefaction, leading to the formation of a cyst. There is equal pressure on the walls of the cyst from inside which is applied by the liquefied material. The cyst grows spherical in shape due to this reason, but in some cases the shape changes due to unequal resistance produced by the surrounding teeth. This may

also lead to displacement of teeth and sometimes even the cortical bone by the pressure produced during the expansion of the cyst.<sup>2</sup> The most common cystic lesions in the maxilla and mandible are the inflammatory cysts, which consists of 50 to 75% of all oral cysts. Residual cysts are inflammatory cysts of the jaws that develop when epithelium associated with a previous cyst is not completely removed. The most common source of a residual cyst in the jaw is a previous radicular cyst. In the context of an inflammatory cyst, a residual cyst is essentially a radicular cyst without the presence of the offending dentition. These cysts are often asymptomatic and discovered

incidentally during radiologic examinations of edentulous areas.<sup>3</sup> Residual cyst is common in patients older than 20 years with an average age of about 52 years. It is more common in male than female. Radiographically, residual cysts are present as corticated, unilocular, and expansile radiolucencies. If left untreated, residual cysts can cause significant bony expansion, displacement of adjacent teeth and structures, and root resorption of adjacent teeth.<sup>3</sup>

#### CASE REPORT:

A 51 years old female patient reported to the Department of Oral Medicine and Radiology, Maitri College of Dentistry and Research Centre, Anjora, Durg, India, with a chief complaint of slowly progressing painless swelling on the left posterior mandibular region which had gradually increased in size over the past two months (Fig 1). There was no active pus or bleeding points present. Patient had a history of extraction in the same area about ten years ago. The patient did not have any significant past medical history. On examination patient was of average height and moderately nourished female. On examination of the patient did not reveal any abnormality of significance. On extra-oral examination no gross deformity or facial asymmetry could be noted. Intra-oral examination revealed mesioproximal caries. On examination, a solitary, diffuse, firm, ovoid swelling in the lower left buccal vestibular region was seen in relation to 35,36,37 with  $2 \times 3 \times 1$  cm dimensions. Surface was smooth and margins were diffused (Fig 2). Mucosa over the swelling and adjacent area was normal. On palpation it was soft, fluctuant and non-tender. No signs of sinus opening or ulceration were noted. The provisional diagnosis of residual cyst was made after studying the case history and clinical findings. Odontogenic keratocyst, cystic ameloblastoma, cystic degeneration of adenomatoid odontogenic tumor were kept as the differential diagnosis. For Radiographic evaluation we went for Orthopantomogram and Cone beam computed tomography. Radiographic findings revealed a well-defined unilocular radiolucency with sclerotic borders. There was compression and displacement of the inferior nerve canal towards the lower border of mandible on the left side. The radiolucency measuring approximately  $2.5 \times 3.5$  cm was in relation to body of mandible. It extended anterior posteriorly from root of the second premolar to second molar region, superior

of the alveolar ridge to 6 mm above the lower border of the mandible, with intact cortical border. A hypodense mass measuring about detected (Fig 3, Fig 4).



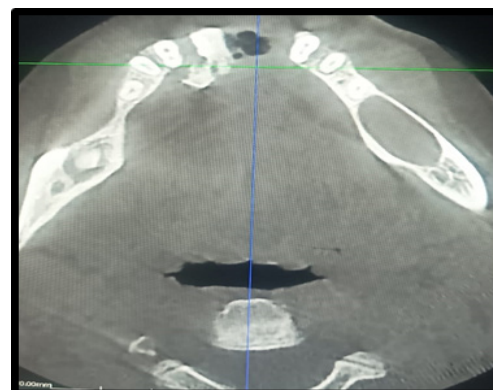
**Fig. 1:** 51 years old female patient, with a chief complaint of slowly progressing painless swelling on the left posterior mandibular region



**Fig. 2:** Intraoral site of swelling of lower left back region



**Fig. 3:** OPG revealed a well-defined unilocular radiolucency with sclerotic borders.



**Fig. 4:** CBCT shows intact cortical border

A fine-needle aspiration revealed a dark-red coloured, blood-tinged, and highly viscous fluid. Cytological examination of the aspirate was suggestive of blood containing cystic fluid (Fig 5).



**Fig. 5:** FNAC revealed a dark-red coloured, blood-tinged, and highly viscous fluid.

## MANGEMENT :

After informing the patient regarding the findings it was decided to go for enucleation and curettage. Patient was taken for surgery with the due aseptic precaution by prophylactic antibiotic coverage. A Proper anesthetized area was achieved before surgery by 2% lignocaine with 1:80,000 adrenaline. Incision was placed using no.11 bard parker blade with handle from distal aspect of second premolar. Mucoperiosteal flap was raised followed by extraction of the root stump. Then the cyst was enucleated and aggressive curettage was done (Fig 6). The excised area was then irrigated with povidine iodine and 0.9% normal saline solution. The flap was closed with 3-0 non absorbable silk suture. Simple interrupted sutures were placed on the incision margins. Primary haemostasis was achieved and post-surgical instruction were given. The sectioned gross specimen revealed yellowish, solidified pus like material surrounded by a thin-layered soft capsule (Fig 7). The excised tissue specimen was sent for histopathological evaluation. Based on the clinical and histopathological findings we arrived at a final diagnosis of bilateral residual cyst.



**Fig. 6** Cyst enucleation and curettage done



**Fig. 7:** sectioned gross specimen revealed yellowish, solidified pus like material surrounded by a thin-layered soft capsule

## 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>4</sup> Reports indicate that the occurrence of coexisting diseases increases from 20% to 90% from 20-30 to 70-80 years. Elderly population generally suffers from bone and joint diseases, hypertension, diabetes mellitus, cancer, stroke, along with other degenerative diseases. 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>5</sup> Residual radicular cyst is defined as an odontogenic cyst that persists after the associated tooth has been extracted. It is generally believed that the majority of them represent slowly resolving radicular cysts.<sup>6,7</sup> The origin of residual cyst is thought to be from the epithelial rests of Malassez, while, in some cases, it arises from the respiratory epithelium of the maxillary sinus when the periapical lesion communicates with the sinus wall. It may also come from oral epithelium from a fistulas tract or oral epithelium proliferating apically from a periodontal pocket.<sup>8</sup> The epithelium may be derived from the surface epithelium or from the epithelium of adjacent glands or hair follicles.<sup>9</sup> The radiographic appearance of residual cysts resembles the unicystic ameloblastoma, odontogenic keratocyst, but the histopathological findings are different for these two. Odontogenic keratocyst shows keratinized stratified odontogenic epithelium with the rete peg formation



and presence of daughter cysts. In unicystic ameloblastoma neoplastic proliferation of odontogenic epithelial cells with reverse polarity of the nuclei and the overlying cells are loosely arranged, which resembles stellate reticulum.<sup>10</sup> The treatment of residual cysts depends on the size and localization of the lesion, the bone integrity of the cystic wall and proximity to vital structures. The surgical approach to the cystic lesion is either marsupialization or enucleation while care should be excised to maintain and preserve the contour of edentulous ridge. In the case presented here, due to the smaller size and intact cortical lining, enucleation of the cyst was performed. Also if the cortex of the lesion is intact, usually there will be complete bone repair, hence no bone grafting was required to rebuild the post-op bone cavity. True residual cysts do not recur after appropriate treatment and thus are known to have an excellent prognosis.<sup>9</sup>

#### **CONCLUSION:**

Residual radicular cyst is defined as an odontogenic cyst that persists after the associated tooth has been extracted or associated with a previous cyst that is not completely removed. These cysts are often asymptomatic and discovered incidentally during radiologic examinations of edentulous areas. The choice of treatment depends on factors such as extent of the lesion, its relation to the surrounding structures, clinical characteristics of the lesion and systemic condition of the patient. The surgical treatments include total enucleation, marsupialization, or decompression or a combination of these techniques. This case of ours summarizes the clinical features, histopathological features and radicular features and the management.

#### **CONFLICT OF INTEREST:**

The authors declared that there is no conflict of interest.

#### **CONSENT:**

Written informed consent was obtained from the patient for the publications of this case report and any accompanying images.

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