Rara Avis: Stafne’s Bone Cyst of Mandible—A Case Report

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Abstract
Stafne’s bone cyst (SBC) are static lesions that are commonly located at the angle of the mandible. Males are affected more as compared with females with an incidence ranging from 0.10% to 0.48%. Stafne bone cysts are usually asymptomatic. Panoramic radiograph of the cyst shows a well-defined radiolucency on the left side of the mandible which lies below the inferior alveolar canal. These lesions are detected easily with routine intraoral radiographs, as these lesions are usually present at particular sites with a clear demarcation from the surroundings. Cone-beam computed tomography (CBCT) is a useful diagnostic tool that helps to confirm its diagnosis. This article describes the incidental finding in a 55-year-old male patient incidentally when patient was advised for intraoral radiography during a routine dental checkup. The patient was advised orthopantomograph in which an oval cystic lesion was evident. For a clear diagnosis, the patient was referred for the CBCT, which confirmed the presence of SC which is benign and radiographically seen as a unilocular lesion.

Keywords: Bone cyst, Computed tomography, Case report, Mandible, Panoramic, Stafne.

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Introduction
The most frequent pathology of jaw bones is the cystic lesions. Cysts that are not lined by epithelium are known as pseudocysts.¹,² Cysts have an inherited capacity to enlarge and hence the lining needs to be removed along with the cyst. Cystic lesions which are asymptomatic need not be treated unless patient encounters any problem related to it. Edward Stafne first described Stafne’s bone cyst (SBC) or Stafne bone defect (SBD) in 1942, he incidentally found 35 asymptomatic unilateral radiolucent cavities in the posterior region of the mandible. Cystic lesions were located between the third molar and the angle of mandible, below the level of inferior alveolar canal and above the base of the mandible. Different terms have been given to describe this lesion, including ectopic or aberrant salivary gland; latent, idiopathic or static defect, cyst or cavity; mandibular salivary gland inclusion; lingual mandibular bone cavity, concavity or depression; and Stafne cyst, defect or cavity.²,³ Upon radiographic diagnosis, it has been found that the incidence of lingual variant is in the posterior region is between 0.10% and 0.48%. Studies done on the cadaver revealed that the incidence of this cystic lesion may be more than 6.06%. Predilection for males is the fifth or sixth decade. When we study SBD in the literature, it is considered a lingual variant of the posterior region. According to Choudhary B. Anurag et al, 2016, the posterior lingual variant is seven times more frequent than the anterior, it is more commonly located between the incisor and the premolar areas, above the insertion of the mylohyoid muscle. In this article, cone-beam computed tomography (CBCT) is used as a diagnostic tool for exploring SBDs along with intraoral and panoramic radiograph.

Case Description
A 55-year-old male patient reported to the Department of Periodontology, Guru Nanak Dev Dental College & Research Institute, Sunam, Punjab, India. He was having a chief complaint of a history of bleeding gums while brushing for 3 months along with sensitivity to hot and cold foodstuffs in the lower jaw for the past 2 months with no other systemic abnormality. The patient had not undergone any previous dental treatment. Patient did not have any facial asymmetry.

Intraoral examination revealed generalized attrition, a periodontal pocket on the mesial surface of the lower left third molar and chronic generalized periodontitis. On palpation, there was no evidence of tenderness on the buccal side of the mandibular posterior region. The patient was advised for a routine panoramic radiograph under same institute (Fig. 1). A single unilocular radiolucency was revealed in the OPG which was ovoid in the left mandibular posterior region of the size 5 × 5 × 5 mm approximately. It was located below the level of inferior alveolar canal. Defect was not painful on palpation. The patient was advised CBCT for further evaluation. Cone-beam computed tomography results showed no missing teeth in the arch. Incisal and occlusal surfaces showed generalized attrition. Mandibular posterior teeth showed generalized horizontal crestal bone loss till the coronal third of root and mandibular anterior teeth showed bone loss till the middle third of root. Tooth number 37 showed PDL space widening that surrounds the mesial and distal roots which proved inflammatory periodontal involvement. The mentioned tooth involved advanced horizontal bone loss on the distal surface of the distal root of tooth extending up to apical third level of the root that states localized severe periodontitis. A small focus of root caries is seen which is not encroaching the root canal system is also evident on the coronal third of distal surface.

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of distal root. Cone-beam computed tomography shows a well-defined radiolucency on the left side of the mandible, measuring approximately $5 \times 5 \times 5$ mm at its greatest dimension and lies below the inferior alveolar canal (Figs 2 to 5). It also shows dehiscence of the lingual cortical plate SBD Stafne cyst.

**Discussion**

As we all know SBCs are considered pseudocysts but they produce cystic appearances on radiographs. These are usually misdiagnosed as solitary bone cyst. But the distinguishing feature between SBCs and solitary bone is that SBCs usually lie below the level of inferior alveolar canal, whereas solitary bone cyst lies above the canal. Edward Stafne described the cyst as SBD in 1942. According to Stafne, when bone could not replace the cartilage, it resulted in cavity formation. Typical SBCs were mostly found at mandibular posterior region, included glandular tissue as contents. Upon radiographic diagnosis, it was found that the posterior variant of SBC has an incidence of between 0.08 and 0.48%. The etiology of SBC is uncertain. It is widely accepted that glandular tissue exerts a pressure on the lingual cortex of the mandible which causes a depression in the lingual bone. Stafne bone defects are mostly detected after the mandibular bone is completely formed. According to a theory, the pressure exerted from an adjacent salivary gland creates cavity. Posterior variant of SBCs is due to the submandibular salivary gland, whereas anterior variant is due to sublingual gland. SBCs are those cystic lesions which are unilocular in shape, with radiolucent cavities, and they are diagnosed incidentally during routine intraoral radiographic examinations as they are usually asymptomatic in nature. It mostly affects males in their fifth or sixth decade of life.

Four types of SBD have been documented. The most common site being a molar region of the mandible near its angle followed by incisor canine premolar region of the mandible, lingual, and buccal aspect of mandibular ascending ramus. Literature shows that most (80–90%) of these SBCs are likely to be found in the molar region of the mandible at the angle of mandible in relation to the mandibular canal. Orthopantomograph shows these cystic lesions as radiolucent cavities with a well-defined border at the angle of the mandible, below the level of the inferior alveolar canal in the case of posterior variants.

Cone-beam computed tomography is considered as a noninvasive, easy procedure which helps to provide a definitive diagnosis. As CBCT allows to examine one of the most suspicious radiolucent cystic lesions with minimal exposure of radiations and speed accuracy, it can be considered for SBCs diagnosis better than CT imaging. It can also be used during routine follow-ups. Langlais RP in 1976 reported CBCT as a complementary diagnostic procedure for SBDs since other jaw pathologies could be distinguished with this method. In this article, panoramic radiograph and CBCT have been used for the diagnosis of this defect.

Usually, the SBD are asymptomatic and does not require any treatment, perhaps, because of its static nature. However, yearly panoramic radiograph can be advised, but no definitive treatment has been listed.
CONCLUSION

In this case report, static bone defect is an incidental finding with no clinical and pathological signs. Conservative treatment is indicated to patient. Although the diagnosis of SBC can be easily made with intraoral radiographs and panoramic radiographs, sometimes, confirmatory tests are also required. In such cases, CBCT imaging can be a definitive diagnostic procedure which exposes patients with lesser ionizing radiations than the CT imaging.

REFERENCES


