INTRODUCTION

Stafne bone cyst is a rare and asymptomatic bone depression usually discovered incidentally on routine radiographs of the jaws.[1–3] Different terms have been used in the literature to describe this clinical entity. They include Stafne defect, Stafne’s idiopathic bone cavity, Stafne bone cavity, Stafne bone cyst, lingual mandibular salivary gland depression, lingual mandibular cortical defect, latent bone cyst, or static bone cyst.

This entity was first described in 1942 by Stafne where its various names were derived.[3] The etiology of Stafne bone cyst is unknown that it is thought to be a normal anatomical variation with some investigators postulating that it is a depression formed by ectopic salivary gland tissue associated with the submandibular gland. Others opined mechanical pressure by the surrounding tissue or facial artery as possible etiology of this developmental variant.[4]

In addition, it is often referred to as a pseudocyst because it has no epithelial lining and mostly occurs in the mandibular molar region.[1] It is associated with the submandibular gland and usually seen below the inferior alveolar neurovascular canal.[3] Rarely, is it seen in the apical region of the premolars or canines of the anterior mandible and can be linked to the sublingual glands above the mylohyoid muscle.[6]

There is a paucity of reports of this in the Saudi Arabian population, as literature search as such did not reveal any previous report of such clinical entity in our country. Therefore, we report a case of Stafne bone cyst as an incidental finding in a 25-year-old patient who was originally referred for management of a dental abscess to our center.

CASE REPORT

A 25-year-old male patient presented to our facility with a painful swelling on the right side of the mandible which the patient claimed was noticed 3 months prior to presentation. Panoramic radiograph showed grossly carious lower right first molar with periapical granuloma. In close relation with this, periapical pathology was a rounded well-defined radiolucency below the inferior alveolar canal. The patient had an extraction of the right lower first molar and was prescribed antibiotics. The apical pathology resolved completely after the extraction. A diagnosis of Stafne bone cyst was made as incidental finding following further investigation of the radiolucency below the inferior alveolar canal with computed tomographic scan.

Key words: Mandible, Stafne bone cyst, submandibular gland
Intraoral examination revealed buccal bony expansion of the right mandible in relation to the grossly carious lower right first molar tooth.

Panoramic X-ray of the mandible showed that pulpal and apical involvement of the grossly carious lower right molar tooth with well-defined oval radiolucency also discovered beneath the periapical radiolucency just below the mandibular canal. Computed tomography (CT) scans, axial [Figure 1] and sagittal [Figure 2], with three-dimensional (3D) reconstruction [Figure 3] highlighted bony defect measuring about (3.2 by 1.5) cm on the lingual surface of the right side of the mandible in relation with the lower first molar. A provisional diagnosis of apical periodontitis secondary to dental caries of the lower right first molar and that of ameloblastoma, odontogenic keratocyst, and static bone cyst was made for the oval lingual cyst.

The treatment done included the extraction of the offending tooth and curettage of the periapical lesion. Concurrently, a biopsy of the oval cyst was attempted which on entering the cavity revealed no lining. However, the cavity was curetted and sent for histopathological examination which reported no specific lesion seen. He was placed on antibiotics and analgesic, and the presenting condition improved. He was followed up for 3 years with complete resorption of the buccal bone expansion.

**DISCUSSION**

Stafne bone cyst is a very rare developmental anomaly and usually seen between the age group of 11 and 30 years,[1,7] with gender predilection toward males. The prevalence of Stafne bone cyst in the published studies varies from 0.10% to 0.48%.[8] The present case report was seen in a 25-year-old man confirming the literature report on the epidemiology of this bony defect.

Although the defect is developmental, it is not present at birth showing that the development occurs at a later age.[9] This has resulted in academic debate as to whether the defect is developmental or congenital as congenital defects should be present at birth.[10] Stafne, who first reported this clinical entity, suggested that the defect is congenital and is due to the lack of union in areas that contain the mandibular precursor, the Meckel’s cartilage.[3] However, since this lesion is absent in the newborn and with the histology sometimes showing salivary tissue, it is most likely related to the salivary glands.

The universal agreement on the etiopathogenesis of Stafne bone cyst now is the “glandular hypothesis.” This hypothesis states that a hyperplastic or hypertrophic lobe of the submandibular, sublingual, or parotid salivary gland exerts pressure on the lingual or buccal cortex of the mandibular body or ramus to create a focal bony resorption with subsequent bone cavity formation.[11] This theory has been supported by the location of these defects in the ramus and...
anterior regions of the mandible.\textsuperscript{6,10} The ramus region has been reported to be associated with the parotid gland,\textsuperscript{10} while the anterior region is linked with the sublingual gland.\textsuperscript{6}

In the current report, the defect was seen in the mandibular body region related to the location of the submandibular gland.

Stafne bone cyst is mostly an incidental finding on radiographs taken for other complaints of the patient as in our case, the patient presented with pain in relation to the carious lower right molar.

Usually, it is investigated by plain radiographs where the lesion is seen as an ovoid, unilocular radiolucency. The margins are generally well demarcated and sclerotic. CT scan which can give a 3D image can also be carried out if available.

Previously, when such a bony defect has been seen in the ramus of mandible, sialography has been used to detect the amount of parotid gland tissue in the ramal defect.\textsuperscript{8} Currently, however, sialography is considered unreliable in the diagnosis as most defects are empty devoid of any salivary tissue.\textsuperscript{8} In the present case, the cavity was found to be empty of any definitive tissue. However, the clinical picture of the Stafne bone cyst was masked by the odontogenic pathology from the lower first molar with its associated buccal expansion. There has been an earlier report of the finding of Stafne bone cyst with buccal expansion.\textsuperscript{11}

Since the defect is asymptomatic and not progressive, no treatment is usually necessary.\textsuperscript{8} However, periodic radiographic follow-up is recommended to detect any pathological changes.\textsuperscript{8} Our patient has been followed up for 3 years without any changes and the buccal expansion totally resolved.

CONCLUSION

Stafne bone cyst is a rare and incidental clinical finding. This report suggests that it is necessary to differentiate the lesion from others such as aneurysmal bone cyst and ameloblastoma by clinical and radiographic investigations such as CT and biopsy, especially with associated symptoms. Long-term follow-up is essential for the early identification of more sinister pathology if the initial diagnosis was inaccurate.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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