

## Lingual Mandibular Bone Defect: A Case Report of Stafne Cyst

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### Abstract

Stafne cyst, also known as the stafne bone cavity is a concavity in the lingual cortex of mandible containing salivary gland tissue. These radiolucent areas are usually cortical defects occurred as a result of extension of the submandibular gland. This cyst is incidentally detected on the radiographs ordered for the other reasons. Our case report is on a male patient aged 44 years admitted to another center with the complaints of the pain in the jaw and left side of the face, and who underwent panoramic radiographic examination of the mandible, in addition to dental and mandible tomographies. Radiological findings correlate with Stafne cyst. Tegretol was commenced with the provisional diagnosis of atypical facial pain and trigeminal neuralgia. Panoramic radiography of the mandible was scheduled 6 months later for the follow up of the cyst.

**Keywords:** Mandibular bone defect; Stafne cyst; Odontotherapy

### Introduction

Stafne cyst, also known as the stafne bone cavity is a concavity in the lingual cortex of mandible containing salivary gland tissue. Edward Stafne originally described it as 35 radiolucent lesions on the intraoral dental films [1].

These radiolucent areas are usually cortical defects occurring as a result of extension of the submandibular gland [2]. In most of the published surgical series, salivary gland tissue has been seen in the bony cavity, although presence of the muscle, fat [3] lymphatic tissue, pleomorphic adenoma [4] and vessels were defined [5]. Some of the cavities are empty [6]. This cyst is incidentally detected on the radiographs ordered for the other reasons. On radiograms, these cysts are generally unilateral, oval or round, well-contoured, located anterior to the angulus and under the inferior alveolar canal [7]. This appearance is pathognomonic for stafne cyst. Besides the radiological examinations, sialography may be helpful in showing the salivary gland tissue in the cavity for the diagnosis.

### Case Report

A male patient aged 44 years admitted to another center with the complaints of the pain in the jaw and left side of the face, and underwent panoramic radiograph of the mandible. Dental and mandible tomographies were ordered when the patient was referred to our hospital. On panoramic mandible radiography, a sclerotic contoured, unilocular and radiolucent oval shaped formation was seen at the left side, beginning at the level of the apex of the second molar tooth, running to the angulus, separated with a very thin sclerotic bone from the lower side of the mandible (Figure 1). The patient did not have any history of systemic disease or trauma. The formation was asymptomatic and no regional lymphadenopathy was found. On intraoral examination,



Figure 1: Panoramic Mandible Radiography

mucosa in the region was seen to be predominant. On palpation, there was no loss of integrity in the buccal and lingual regions. Based on the existing data, presumable diagnosis of stafne was made. In the , medial cortex had a deformed appearance at the level of mandible angulus (Figure 2), it was observed that submandibular fat filled the space in this segment and the appearance was consistent with the static bone cavity, stafne cyst (Figure 1).

No any pathological finding was found in ENT examination of the patient. He was referred to the Neurology Clinic due to his facial pain. No any pathology was found to cause pain on the brain MRI (Figure 2). Tegretol was commenced with the presumable diagnosis of atypical facial pain and trigeminal neuralgia. Panoramic radiography of the mandible was scheduled 6 months later for follow up of the cyst.

### Discussion

There are many of another terms for stafne cyst, including stafne bone cavity, developmental bone defect of the mandible, lingual salivary gland depression of the mandible, aberrant salivary gland defect, lingual cortical mandible defect, embryonic mandible defect, submandibular salivary gland inclusion and combinations of these

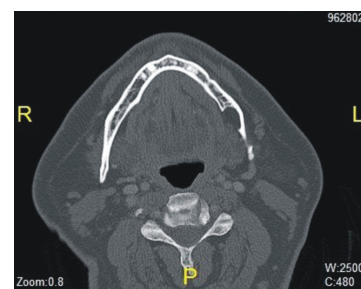


Figure 2: Brain MRI.

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terms [5,8-10]. Radiologic findings of Stafne bone cavity were described as an oval shaped radiolucent appearance which is surrounded by sclerotic bone cortical and located near the angulus mandible and under the inferior alveolar canal, showing continuity with the body of the mandible. Incidence of the formation was reported to vary between 0.1% and 0.48% in a study including patients in a single center [11]. However, in a study from our country conducted in a single center, this formation was detected in 8 panoramic radiographies of 1472 patients [12]. Philipsen et al. [13] reported the incidence as 0.009% in the posterior and 0.15% in the anterior located cavities. Four different variants were reported that can be classified as the posterior, anterior, ramus and buccal ramus located cavities according to place of the formation [13]. Occasionally, lingual defect is palpable this may be helpful in confirming the diagnosis [14]. Some authors correlate Stafne bone cyst with any salivary gland [2], while others limit it to the submandibular gland, even to the anterior lingual mandibular defect of the sublingual gland [15].

Although the pathogenesis is yet to be clarified, the theory proposing that it is congenital is predominant. Accordingly, this formation develops by a part of the salivary gland to contact and is attached to this area during the development and ossification of the mandibula. However, in some cases published in the literature, stafne cyst was reported to be detected in a 59 years old patient, which was absent on the radiographies obtained 20 years ago, confirming that the cyst might occur developmentally [16]. In general, the cyst develops following extension of the salivary gland tissue to the mandible cortex. This may hold true for each of the three major salivary glands. Regression is seen in the cyst cavity after excision of the herniated salivary gland tissue [17].

Stafne cyst is usually seen in the middle-aged men. Its prevalence is between 0.10% and 0.48%. It is incidentally detected, because it is asymptomatic. Besides panoramic mandible radiograph and tomography, sialography is diagnostic especially if it is performed for the submandibular gland. MRI is not frequently used for Stafne cyst. However, whether tissue in the cyst is soft or adipose tissue can be determined by CT, while MRI can determine whether the relation of tissue is in the form of regression or herniation [17]. Therefore, although the diagnosis can be made with more inexpensive methods, MRI can be used in some specific cases to establish diagnosis of Stafne cyst. The differential diagnosis includes traumatic bone cyst, simple bone cyst, periapical cyst, dentigerous cyst, odontogenic keratocyst, nonossified fibroma, nonossified fibroma, fibrous dysplasia, ameloblastoma, metastasis, giant cell tumors, vascular malformations, focal osteoporotic marrow defect and basal cell nevus syndrome.

## Conclusion

Stafne is incidentally detected and does not lead to any complaint. Thus, its actual prevalence is unknown. In addition, its etiology is yet not to be clarified. We don't frequently encounter it in our clinic. These patients are in general incidentally identified by their dentists from the radiographs ordered during the odontotherapy. Treatment is not necessary since it doesn't lead to any symptom.

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