

## Case Report

### **Stafne Bone Cyst- Case Report**

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**Abstract:** Stafne's cysts is often defined as static lesions located in the angle of the mandible. Defect ranges from 0.10% to 0.48%, with a male-to-female ratio of 4 to 1. Most of these painless lesions occur in the fifth and sixth decade of life. They are round or ovoid, and their sizes vary between 0.5 cm and 2.0 cm in diameter. This lesion is easily diagnosed from the radiographs as they appear at a typical site & shape and clearly distinguished from its surroundings. CT scans & MRI scans add as important tool in confirmation of these lesions. Consequently many authors have proposed that there is no need for surgical treatment of these bony defects. This article describes the case of a 50-year-old patient, in whom a Stafne cyst showed a significant enlargement, reaching a size that necessitated surgical intervention because of the risk of pathological fracture. A literature search showed similar cases, where progression in the size of a Stafne cyst could be radio graphically documented. Consequently, the recommended management of these pseudo cysts should be reconsidered.

**Keywords:** Stafne Bone Cyst; Idiopathic Bone Cyst; Bone Cavities; Pseudo cyst.

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### **INTRODUCTION**

Cystic lesions are one of the most common pathology of jaw bones. The inherited capacity of the cyst to enlarge makes the complete removal of the cyst along with its lining necessary. However, there are some cystic lesions which are said to be asymptomatic and requires no treatment as such unless they cause any problem to the patient.

Edward C Stafne was the first to describe "Stafne Bone Cyst" in 1942. He described them as "Bony Cavities" in the posterior mandible of 35 patients[1]. These cavities are asymptomatic and are found only during routine radiography below the inferior alveolar canal, located distal to 3<sup>rd</sup> mandibular molar in the mandible and inferiorly limited by the mandibular border. Some articles report the presence of cyst in the anterior region of the mandible[9-10]. They are radiolucent and unilateral, and rarely bilateral[11]. The absence of a cystic epithelial lining makes it a "Pseudo cyst". It has various other names like, Latent/ Static/ Idiopathic Bone Cyst, Cavity or Defect[2-4]. Stafne bone cyst is also referred as the Non- Neoplastic Bony Lesion[5].

Studies have found the incidence of Stafne's bone defect ranges from 0.10% to 0.48% [2,6,7] with a male-to-female ratio of 4 to 1[1,3]. Most of these painless lesions occur in the fifth and sixth decade of

life. They are round or ovoid, and their sizes vary between 0.5 cm and 2.0 cm in diameter[3,8]. This lesion is easily diagnosed from the radiographs as they appear at a typical site & shape and clearly distinguished from its surroundings. CT scans & MRI scans add as important tool in confirmation of these lesions[3,9,12,13].

### **CASE REPORT**

A 50 year old, female patient reported to the Department of Oral & Maxillofacial Surgery, Yenepoya Dental College, with a chief complaint of dull pain in the left lower back region of jaw since 3 months. Patient also complained of intermittent numbness in relation to the left angle of the mandible since 2 months and burning sensation in the mouth. Patient gave history of extraction of 36, 37, 38 three months back. Previous radiographs were not available by the patient. Intraoral examination revealed missing teeth and normal healthy mucosa. Slight tenderness was elicited by the patient on palpation on the buccal side in the mandibular posterior region.

A panoramic tomogram was taken for the patient in whom a unilocular radio lucency was noticed corresponding to the edentulous zone in the left posterior region of the mandible. It was located below the mandibular canal, with well - defined margins measuring approximately 1.5 x 1 cm in dimension.

Subsequently, a CBCT scan was taken to further evaluate the lesion. Results showed an oval-shaped, bony cavity with central perforation. The superior border of the lesion was in close proximity with the inferior border of the mandibular canal.



**Fig-1: Clinical Intraoral examination**



**Fig-2: Radiographic examination**



**Fig-3: CBCT scan**

A provisional diagnosis of Infected Cyst of the Left Mandible was considered. Since the patient was having constant pain & intermittent paresthesia, we decided to explore the pathological site under general anesthesia and hence a written informed consent was taken from the patient. Pre-operative evaluation with the routine investigations were done for the patient prior to the surgery.

An extra oral submandibular incision was placed to explore the surgical site. The bony defect was identified between the junction of body and angle of the mandible below the mandibular canal on the lingual side. During exploration, macroscopically, no epithelial lining could be seen. A small glandular mass occupying

the body cavity was excised and sent for histopathological examination. After debridement of bony cavity, the wound was closed in layers. Healing was uneventful. Histologically, the biopsy material showed glandular tissue with no evidence of pathology. Hence a final diagnosis was made as Stafne Bone Cyst.

## DISCUSSION

Since the time Edward C Stafne identified and named Stafne bone defect numerous cases have been reported. The exact pathogenesis is still obscure. Pressure resorption is postulated in some studies because of the inadequacy of the congenital theory, which does not explain why the lesions do not occur in childhood[14,16]. Local pressure of sublingual or submandibular gland to the bone induces the development of the defect according to this theory. Stafne suggested that the cavity could result from a failure of normal bone deposition in the region formerly occupied by cartilage[1]. Some authors suggested that a part of the salivary gland becomes entrapped during the development of the mandible[14,15]. In our case also, we were able to recover a small glandular mass from the body cavity, which was histologically proven as a salivary gland tissue.

Stafne bone defect has anterior and posterior variety. The posterior variant is most common in occurrence and is located between the mandibular angle and first mandibular molar tooth below the inferior dental canal. The diagnosis of this defect is usually incidental, since patients do not usually present clinical symptoms[17] although, some patients can present with some symptoms. In our case, the patient presented with dull pain and intermittent paresthesia. This could be due to a low grade infection of the salivary gland and paresthesia could be explained by the compression of exposed neurovascular bundle by this infected tissue.

Literature shows various treatment modalities for Stafne Cysts. Routinely, no surgical treatment is done and the patient is kept under observation by periodic clinical and radiological examination[18]. In cases, where there is a progressive enlargement of the bony defect with perforation of the cortical plates, a surgical exploration may be required to rule out the possibility of any pathological conditions[19]. In our case, since the patient complained of pain and intermittent numbness for 3-4 months, we decided to surgically explore the site. We could also recover a glandular mass which was histologically proven as a salivary gland tissue. This strengthens our diagnosis as Stafne Bone cyst. As there was no epithelial lining recovered, it could have been caused by the presence of salivary gland tissue.

## CONCLUSION

Stafne bones cysts are basically diagnosed on routine radiological examinations and usually do not require any active surgical treatment and should be kept

under observation. However, sometimes, if they are associated with symptoms like pain and paresthesia, a surgical exploration may be required to rule out other pathological condition.

#### REFERENCES

1. Stafne EC; Bone cavities situated near the angle of the mandible. *J Am Dent Assoc*, 1942; 29:1969–72.
2. Correll RW, Jensen JL, Rhyne RR; Lingual cortical mandibular defects: a radiographic incidence study. *Oral Surg Oral Med Oral Pathol*, 1980; 50:287–91.3.
3. de Courten A, Küffer R, Samson J, Lombardi T; Anterior lingual mandibular salivary gland defect (Stafne defect) presenting as a residual cyst. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 2002; 94:460–4.4.
4. Quesada-Gomez C, Valmaseda-Castellon E, Berini-Aytes L, et al.; Stafnebone cavity: a retrospective study of 11 cases. *Med Oral Patol Oral Cir Bucal*, 2006; 11:E277–80.
5. Weiss P, Baumhoer D, Lambrecht JT, et al. Pseudocysts of the jaw: review of the literature and therapeutic recommendations for practitioners (in German). *Die Quintessenz*, 2011; 62:931–9.13.
6. Smith N, Looch FC, Todd M, Whaites E; Stafne's bone cavity: a review of the literature and report of two cases. *Clin Radiol* 1985; 36:297-9.
7. Silva PH, Sindermann B, Rondanelli DM; Giant mandibular bone defect; report of case. *J Oral Maxillofac Surg*, 2000; 64:145-5.
8. Karmioli M, Walsh IU; Incidence of static bone defect of the mandible. *Oral Surg Oral Med Oral Pathol* 1991; 26(2):225-8.
9. Sisman Y, Etoz OA, Mavili E, Sahman H, Ertas ET; Anterior Stafne bone defect mimicking a residual cyst: a case report. *Dentomaxillofac Radiol*, 2010; 39:124–6.6
10. Katz J, Chaushu G, Rotstein I; Stafne's bone cavity in the anterior mandible: a possible diagnostic challenge. *J Endod* 2001; 27:304–7
11. Queiroz LM, Rocha RS, de Medeiros KB, da Silveira É, Lins RU; Anterior bilateral presentation of Stafne defect: an unusual case report. *J Oral Maxillofac Surg*, 2004; 62:613–5.
12. Ariji E, Fujiwara N, Tabata O, Nakayama E, Kanda S, Shiratsuchi Y, Oka M; Stafne's bone cavity. Classification based on outline and content determined by computed tomography. *Oral Surg Oral Med Oral Pathol*, 1993; 76:375–80
13. Segev Y, Puterman M, Bodner L; Stafne bone cavity—magnetic resonance imaging. *Med Oral Patol Oral Cir Bucal*, 2006; 11:E345–7.15
14. Choukas NC, Toto PD; Etiology of static bone defects of the mandible. *J Oral Surg Anesth Hosp Dent Serv* 1960; 18:16-20.
15. Seward GR; Salivary gland inclusions in the mandible. *Br Dent J*, 1960; 108:321-5.
16. Samson J, Schneck G, Brocheriou C, Kuffer R, Rougier M; Intramandibular salivary inclusions and ectopia (author's transl). *Rev Stomatol Chir Maxillofac*, 1982; 83:13-7.
17. Gómez CQ, Castellón EV, Aytés LB, Escoda CG; Stafne bone cavity: a retrospective study of 11 cases. *Med Oral Patol Oral Cir Bucal*, 2006; 11:277-80.
18. Amaral WJ, Jacobs DS; Aberrant salivary gland defect in the mandible: report of a case. *Oral Surg*, 1961; 14: 748e752.
19. Richard EL, Ziskind J; Aberrant salivary gland tissue in mandible. *Oral Surg*, 1957; 10(10):1086-1090.
20. Colbert S, Brennan PA, Theaker J, Evans B; Squamous cell carcinoma arising in dentigerous cysts. *J Craniomaxillofac Surg*, 2012; 40(8):e355-e357.