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Case Report

SURGICAL MANAGEMENT OF STAFNEY BONE DEFECT – A CASE REPORT

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A R T I C L E I N F O

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A B S T R A C T

Stafne bone cavity is a rare mandibular defect with unknown etiology, often defined as static lesions located in the angle of the mandible. It is characterized by a round or ovoid, well-defined border, unilocular radiolucency. Controversy always remained amongst the maxillofacial surgerons whther to go for surgical intervention or not. This article describes the case of a 37-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 radiographically documented. Consequently, the recommended management of these pseudocysts should be reconsidered.

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INTRODUCTION

Stafne bone cavity is a rare mandibular defect with unknown etiology. SBC was first described by Edward Stafne in 1942, who reported asymptomatic unilateral radiolucent defects in the posterior region of the mandible. The cavity appears as round or ovoid, well-demarcated, unilocular radiolucency were located between the mandibular angle and the third molar, below the inferior alveolar canal and above the mandibular base.[18] These lesions are usually discovered by chance, mostly through conventional radiological examinations, and are often erroneously identified as traumatic lesions or mass lesions of the chin.[19] Epidemiological data has shown an increased incidence of Stafne bone cyst in the middle aged males. The prevalence of Stafne bone cyst in published series has been reported to be from 0.10 to 0.48 % .[6,12] However the incidence is much lower for bone cavity in the ramus of the mandible.

CASE REPORT

In 2017,a 37- year -old asymptomatic male was refered to VYWS Dental College And Hospital, Amravati in order to undergo routine panoramic radiograph. Radiological examination revealed a discrete round radiolucency at the angle of mandible. As these radiographic findings were consistent with a stafney bone defect, no operative treatment was conducted and the lesion was monitored. In, 2019 patient complained of pain, swelling, submandibular lymphadenopathy and trismus.

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Patient also complained of difficulty in deglutition. Extraoral examination revealed hard submandibular gland on palpation with three clinically inflammed nodes which were soft mobile but tender. Intraoral examination revealed partially erupting 48 and badly carious 47. Then the patient was reffered to radiology department for routine OPG and routine biochemistry.

The OPG (fig 1) revealed single radiolucency in right mandibular body ramus region of size 3*3 cm approximately, 47 badly carious, 48 mesioangular impaction and also 38 impacted. Cone beam computerized tomography (CBCT) was found appropriate for further evaluation (Fig 3 and Fig 4). In 3D axiosaggital coronal section revealed a bony cavity medially below inferior canal and very tappering thin lateral cortical plate from right lower 46 to angle region. In axial section, examination uptohyoid bone revealed deep lobe of submandibular salivary gland with 3 subandibular nodes 1.3*2 cm approximately in size noticed. On soft tissue examination patient adviced to undergo FNAC to confirm diagnosis. FNAC revealed submandibularsailadinities. A diagnosis of idiopathic bone defect with deep lobe of infected submandibular salivary gland was made. Further evaluation with MRI was not considered necessary as the FNAC showed glandular tissue on HP examination.

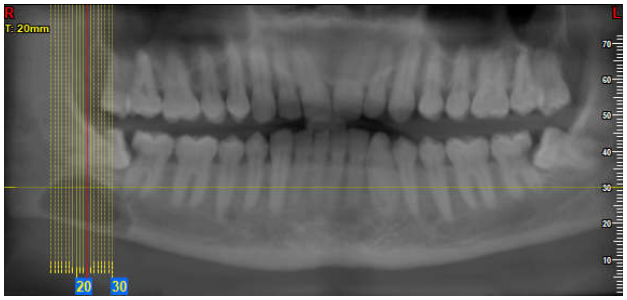

Fig 1

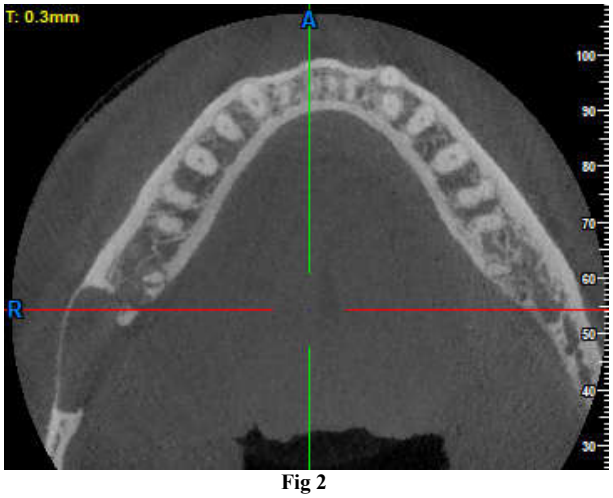

Fig 2

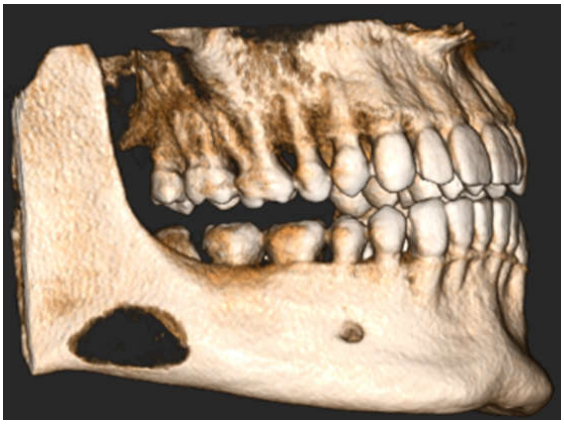

Fig 3

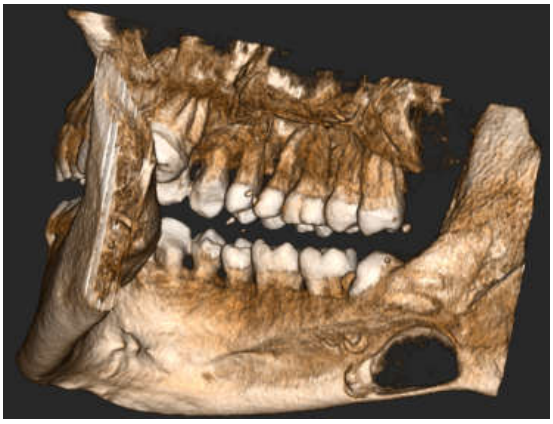

Fig 4

Patient improved with augmentin 1 gmBD, anti inflammatory and proton inhibitors. Patient was adviced surgical removal of third molar and root canal treatment with 47. He underwent the procedure and was kept under follow up. Post operatively during third week he still complained of pain and swelling in submandibular region. Inspite of the repeated counseling patient did not improve and we decided to undergo for surgical management.

In 2019, the area was operated on under general anaesthesia. An extraoral submandibular approach (Risdon) 2 finger below angle and lower border of mandible is taken to avoid injury to marginal mandibular branch of facial nerve. Dissection was carried out on subplatysmal plane, marginal mandibular branch of facial nerve was identified and it was retracted superiorly along with the facial vein, which was cut, ligated and reflected along deepcervical fascia. Anterior and posterior belly of diagastric was identified. The cystic lesion was identified at the angle of the mandible (fig 5). Macroscopically, no epithelial lining could be seen. A space-occupying lesion i.e submandibular gland was removed from the defect in the mandible. The excess tissue was removed and sent for histopathological examination. After this the bony cavity was irrigated, small bleeders were ligated, reconstruction plate (fig6) was fixed, 2 screws anterior and 3 screws posterior were placed. Haemostasis achieved and closure was done in layers , small corrugated drain was put. Patient tolerated the procedure well. Post operative healing was uneventful.

The histopathological examination showed normal salivary gland with ducts in the removed mass. There were no signs of inflammation. Therefore, the results were consistent with the diagnosis of a Stafne cavity.

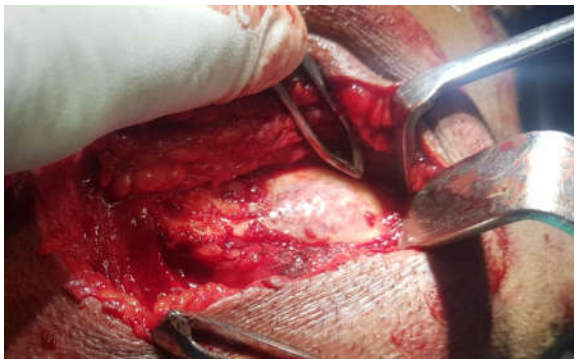

Fig 5

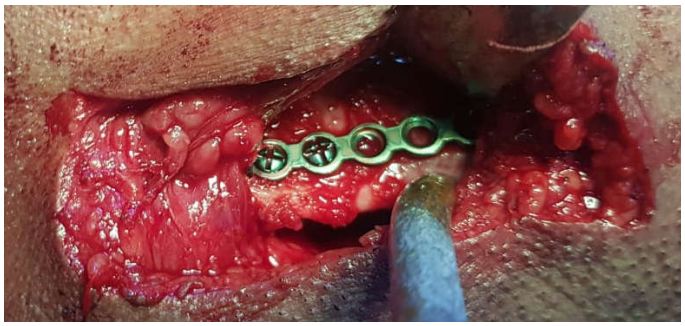

Fig 6

DISCUSSION

The pathogenesis of Stafney bone defect is not fully understood. Although most authors believe it has a congenital origin, others consider it as a developmental entity.[17]Stafne suggested that it could be related to a congenital defect due to entrapment of a glandular tissue portion during mandibular development.[18] According to this, the submandibular salivary gland is responsible for development of posterior Stafeny bone defect, whereas entrapment of sublingual salivary gland causes anterior stafney bone defect.[10]

The following management for Stafne cavities is possible:

1. No surgical treatment; clinical and radiographical control examinations (3D CT and MRI for differential diagnostics) (Amaral and Jacobs, 1961)[1]
2. Surgical treatment and histological examination for diagnostic confirmation. (Richard and Ziskind, 1957)[14]
3. Indication for surgical treatment depending on the size and dynamics of the lesion.(H.Shibata *et al*, 1991)[15]

If the defect is identified as a Stafne cyst, a radiograph should be repeated after 12 months in order to enable an assessment of the dynamics of the process. If a growth in size of the defect or a change in the structure of the bone is identified, there is an indication for surgical intervention. In doing so a definite diagnosis, based on the histological examination, is possible. Further indication for surgical intervention is if the defect reaches a critical size for the stability of the mandible. (Christopher Prechtl *et al*, 2012)[4]

Enlargement of a Stafne cyst represents a rare clinical course of this pseudocyst. The diagnosis of the cause of an enlarging radiolucency at the angle of the mandible with loss of cortical plates cannot be made radiologically and requires histological examination to exclude malignant tumours, ameloblastomas, or squamous cell carcinoma arising in dentigerous cysts, necessitating surgical intervention. (Colbert *et al*., 2012; Pirklbauer *et al*., 2012)[5].

CONCLUSION

In our opinion whenever cyst of such a large size is present , one should open and separate the content, do histopathology, agument mandible with bone graft and put osteosynthesis plate to strengthen the cortical bone for any future events.

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