Does Radiolucency in the Posterior Mandible below the Mandibular Canal Signify a Stafne Cyst — A Rare Case Report With a Diagnostic Challenge

Vijay Prakash Nautiyal[1], Amit Agarwal[2], Shashidhara Kamath K[3,*], Gagan Khare[4]

[1]Professor & HOD, [2,4]Reader, [3]Senior Lecturer
Dept. of Oral & Maxillofacial Surgery, Seema dental college and hospital, Rishikesh.

***Corresponding Author**
E-mail: Shashidhara.kamath@gmail.com

Abstract

A Stafne cyst is an asymptomatic lesion commonly located below the mandibular canal in the posterior mandible. Although we can observe mild notching along the medial surface of the mandible, in our case, aggressive resorption involved both the medial and lateral surfaces of the mandible, which led us to approach the lesion surgically, to confirm the diagnosis.

Key words: Asymptomatic, Salivary gland, Submandibular gland

Access this article online	
Quick Response Code:	Website: www.innovativepublication.com
	DOI: 10.5958/2395-6194.2016.00014.X

Introduction

In 1942, Stafne documented a series of radiolucent lesions that were evident radiographically. The lesions were well-circumscribed, unilocular, and located in the posterior mandible, between the angle and the first molar, below the level of the inferior alveolar nerve.[1]

In 1955, Jacob performed the first surgical exploration of a Stafne's defect, finding part of the submaxillar gland lodged in it.[2] At surgical exploration, they appeared as concavities on the lingual cortex and contained salivary gland tissue, often in continuity with the submandibular gland.[3] We present a similar case of a Stafne cyst with an unusual presentation, and our approach to manage the same.

Case Report

A 42-year-old male patient reported to our department with a dull continuous referred pain in the left submandibular region, with no noticeable aggravating or relieving factors. The patient did not have any systemic illness or any history of trauma or jaw surgery. Extraorally, no noticeable swelling was present in the left lower body on the mandible side of the jaw [Figure 1 - Preoperative extraoral]. Intraorally, a carious molar was present, which was nontender to percussion. Bimanual palpation of the left submandibular region revealed mild tenderness along the region on the medial side of the body of the mandible. No regional lymph nodes were palpable. An intraoral periapical radiograph (IOPAR) for treating posterior teeth [Figure 2 - Preoperative IOPAR] for root canal treatment revealed a radiolucent lesion periapically, which raised a query as to whether this might be a cystic lesion, hence, an orthopantomograph (OPG) was taken. The OPG revealed a monolocular radiolucent lesion in the lower border of left side of the mandible, below the mandibular canal. A CT scan revealed erosion of the medial side of the body on the left side of the body of the mandible [Figure 3 - 3D CT view of the mandible] [Figure 4 - CT view of the mandible]. This feature provided us the provisional diagnosis of a Stafne cyst, but as in other normal cases, the Stafne cyst revealed only mild notching along the medial surface of the mandible, whereas, in our case more erosion of the bone seemed to be evident, [Figure 5 - Resorption along the lateral surface of the mandible] so we decided to approach it surgically, to know the nature of lesion. The patient was operated under general anesthesia. Extraorally a Risdon incision was placed along left body region. A step-by-step surgical exposure was used, from the skin to the deeper layers, to approach the lower border of the mandible and then along the medial surface of the mandible. The site on exploration was bluish in color and was paper thin, indicating resorption of the bone, so to overcome the unpredictable resorption we decided to make a window on the lateral surface of the mandible to reduce the pressure of the submandibular gland on the mandible [Figure 6 - Prepared window along the lateral surface, to release pressure of the gland]. We excised part of the gland, which was entrapped in the bony cavity and sent it for histopathological examination, to confirm the type of entrapped tissue [Figure 7 - Histopathological view in 10x magnification] [Figure 8 - Histopathological view in 40x magnification]. As such there was no written evidence indicating that making a window on the lateral surface of the mandible released the pressure

on the submandibular gland, so hypothetically, the decision to make a window was done immediately and intraoperatively. Postoperatively the patient was relieved of the dull continuous referred pain along the left submandibular region and no further progressive resorption was observed postoperatively, for 12 months.

Fig. 1: Pre-operative extra oral

Fig. 2: Pre-operative IOPAR

Fig. 3: 3D CT view of the manible

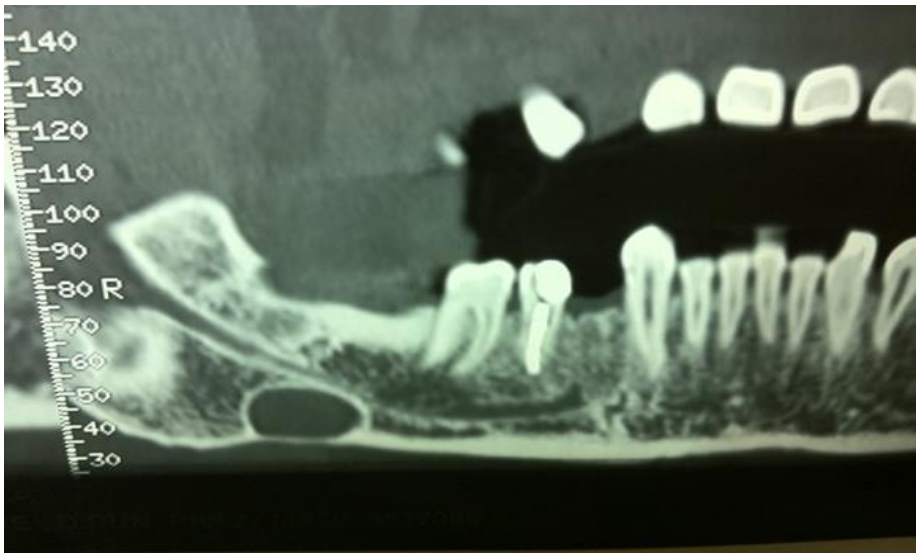

Fig. 4: CT View of mandible

Fig. 5: Resorption along lateral surface of manible

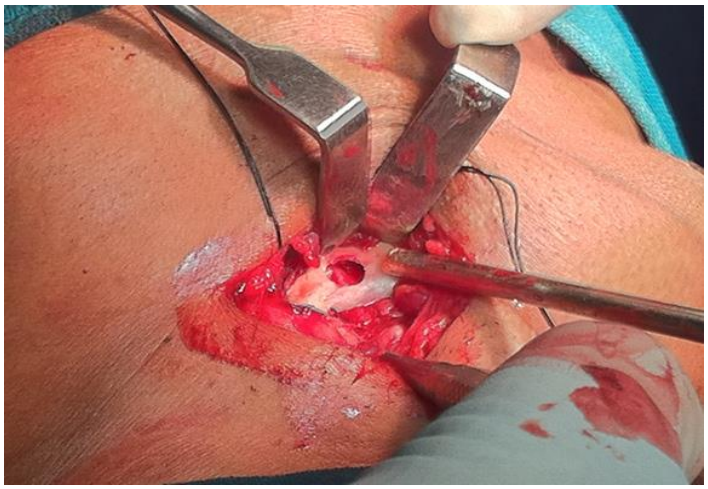

Fig. 6: Prepared window along lateral surface to release pressure of gland

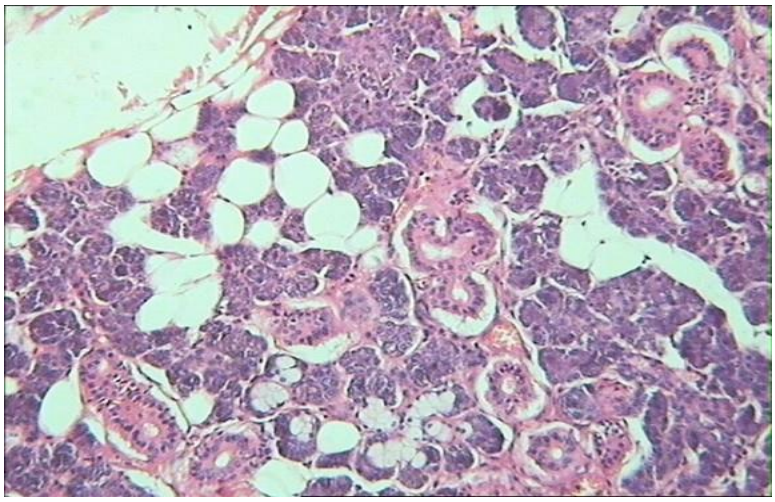

Fig. 7: Histopathological view 10X magnification

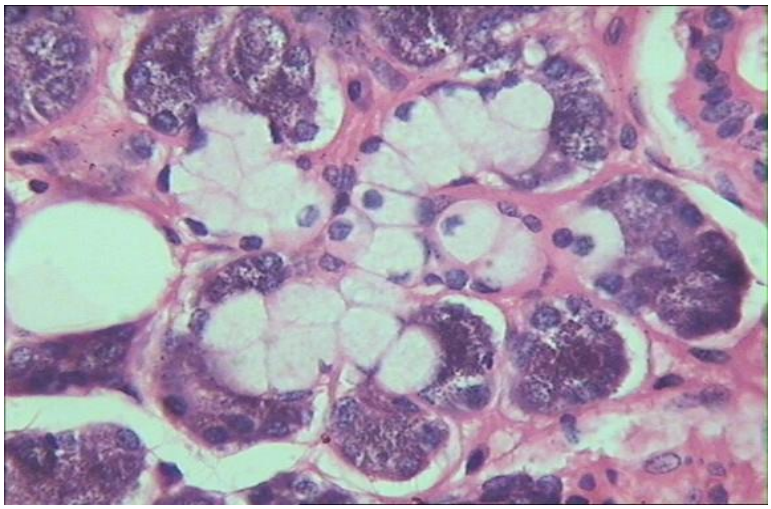

Fig. 8: Histopathological view 40X magnification

Discussion

Stafne's bone cavity (SBC) is classified as a pseudo cyst of the jaw and is known under a variety of names, including static bone cavity, latent bone cavity, idiopathic bone cavity, lingual mandibular bone concavity, and lingual mandibular bone depression.[4]

The incidence of a Stafne bone cavity was found to range from 0.009 to 0.48%. They were usually found as asymptomatic incidental radiological findings and mostly affected males in their fifth to seventh decades of life.[5]

The first report of the Stafne bone cavity in the premolar region was issued by Richard and Ziskind, in 1957. The sublingual gland or aberrant salivary gland tissue was also associated with this bony cavity in the anterior mandible. They were innocuous convexities in the lingual cortex of the mandible that would be of no consequence if they did not appear as radiolucencies.[6] It would be difficult to distinguish them from more serious conditions such as cysts and benign or malignant tumors.[5]

Asymptomatic lesions are most commonly diagnosed accidently by routine radiographic examination, or when the lesion gets infected secondarily. Whenever a patient reports of dull radiating pain in the submandibular region, our main examination is directed toward the presence of a carious tooth with a periapical infection, and our treatment is directed toward removing the infection associated with this tooth.

When we took an IOPAR for treating the posterior tooth for RCT, a periapical radiolucent lesion drew our attention and a question arose whether this might be a cystic lesion, and hence, an OPG was advised. As we examined the OPG, a monolocular radiolucent lesion below the mandibular canal gave an approximate provisional diagnosis of a Stafne cyst in the left body of the mandible. As the CT examination revealed erosion along the medial surface of the mandible, it was important at the time to treat the lesion or approach it surgically. Hence, the lesion was excised to exclude any cyst or tumor-like lesion. The site on exploration was

bluish in color and was paper thin, indicating resorption of the bone, so to overcome the unpredictable resorption we decided to make a window on the lateral surface of mandible, to reduce the pressure of the submandibular gland on the mandible. The tissue that was entrapped in the bony cavity was excised and, showed the presence of serous and mucous cells histopathologically, which confirmed that it was the submandibular salivary gland, helping to diagnose it as a Stafne cyst. As such, there was no written evidence indicating that making a window on the lateral surface of the mandible released the pressure from the submandibular gland, so hypothetically the decision to make a window was done immediately and intraoperatively.

The re-sounding question is why there is pressure resorption only at a single site on the medial surface of the mandible and in a majority of Stafne cysts reveals only notching along the medial surface of mandible, rather than in our case, where it was through resorption of the bone. This, puts us in dilemma and dire confusion as to how to approach it and what would be the best line of treatment. However, as we created a window, to reduce the pressure of the gland over the mandible, it proved to be fruitful for us, as in this case of a Stafne cyst patient, who had symptomatic dull continuous pain and postoperatively the patient's pain was relieved. Therefore, we thought it was worth mentioning this surgical experience, as to the best of our knowledge, there is no mention of any such surgical plan for the Stafne cyst.

This experience leads us to a conclusion that some decisions do not go as planned before surgery, as we have to take decisions intraoperatively for the best outcome in favor of the patient.

Summary and Conclusion

Progressive resorption of the mandible below the inferior alveolar canal has to be approached surgically to avoid any dilemma in the diagnosis. Although a radiographic situation was suggested for a Stafne cyst, the progressive resorption of the mandible due to pressure from the submandibular gland was relieved because of a window created along the pressure site of the mandible, however, it would be appropriate to describe it as a mode of treatment after we treat many more similar cases surgically.

Conflicts of Interested: Nil
Source of Support: None

References

1. Smith MH, Brooks SL, Eldevik OP, Helman JI. Anterior mandibular lingual salivary gland defect: A report of a case diagnosed with cone-beam computed tomography and magnetic resonance imaging. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007;103:e71-8.
2. Herbozo Silva P, Briones Sindermann D, Martinez Rondanelli B. Giant mandibular bone defect: Report of a case. J Oral Maxillofac Surg 2006;64:145-50.
3. Apruzzese D, Longoni S. Stafne cyst in an anterior location. J Oral Maxillofac Surg 1999;57:333-8.
4. Bornstein MM, Wiest R, Balsiger R, Reichart PA. Anterior Stafne's bone cavity mimicking a periapical lesion of endodontic origin: Report of two cases. J Endod 2009;35:1598-602.
5. Sekerci AE, Sisman Y, Etoz M, Aksu Y. Aberrant location of salivary gland inclusion: Report of a case with review of the literature. European Journal of Radiology Extra 2011;79:e27-31.
6. Voss PJ, Metzger MC, Schulze D, Loeffelbein DJ, Pautke C, Hohlweg-Majert B. Anterior lingual mandibular bone cavity as a diagnostic challenge: Two case reports. J Oral Maxillofac Surg 2010;68:201-4.