‘FISH BONE’: THE REASON BEHIND SUBMANDIBULAR SIALADENITIS - 
A UNIQUE CASE REPORT

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Abstract

There are various sequelae to obstructive salivary gland diseases. However salivary gland dysfunction and sialadenitis are the most common ones. Obstructive sialadenitis is commonly caused due to strictures, mucous plugs, polyps etc. We here report a unique case of submandibular sialadenitis due to an intra glandular lodgement of fish bone. The diagnostic modalities, surgical techniques and treatment challenges are discussed at length in this article with special emphasis on the changing trends in non-invasive submandibular imaging.

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INTRODUCTION

Salivary gland dysfunction and sialadenitis comprise of the most common sequelae of obstructive salivary gland diseases [¹]. Obstructive sialadenitis is most commonly caused by endogenous sialololiths, strictures, mucous plugs and polyps [²,³]. Exogenous causes like foreign body within the submandibular gland are relatively uncommon. Most of the obstruction occurs
in the Wharton’s duct followed by the Stenson’s duct [1]. However the occurrence of fish bone travelling through the floor of the mouth, deep into the submandibular salivary gland is a rare case scenario.

**CASE REPORT**

A 24 year old male reported to our hospital with a history of painful swelling with respect to the right submandibular region and floor of the mouth since one month. According to the patient, the swelling and pain increased during meals. Patient gives a history of fish bone that got stuck in the floor of the mouth three months ago while eating food. Patient also says the fish bone disappeared after drinking water and did not cause any problem for another two months. Patient presented with no significant medical history, no reported drug allergies and patient’s general health conditions were satisfactory.

On clinical examination, mild asymmetry of the face was observed as result of swelling over the right submandibular region. The swelling measured about 2x2 cm. Skin overlying the swelling appeared normal. No penetrating injuries were observed dextra orally. Intra orally mucosa over the swelling appeared pale pinkish. On palpation freely movable palpable swelling noticed with no attachment or fixation either to mucosa, overlying skin, or bone and no surrounding indurations noticed. No tenderness or bleeding seen intra orally. The mouth opening was adequate and intra oral examination reveals healthy, non carious molars and premolars on the affected side. Pus discharge from Wharton’s duct was positive. Decreased salivary flow in the right Wharton’s duct compared to the left was noticed on milking of the gland. However the precise cause of the swelling could not be traced by any of the investigations done, including occlusal film and panoramic radiographs.

Later it was an USG that demonstrated a foreign body in the submandibular gland where the duct originates. The foreign body was observed to be narrow and slender, with a length of around 2 cm. USG also showed fibrosis of the gland and change in the ductal pattern. (Fig 1)
Excision of submandibular gland was carried out and a detailed examination of the gland revealed the fish bone at the junction where Wharton’s duct originated from the gland. Fish bone located was compatible with the USG findings. (Fig 3)

Closure was done in layers with 3-0 vicryl and 2-0 ethilon. Patient’s hospital stay was uneventful and he was discharged within four days postoperatively with necessary instructions and orders. The histopathology report shows non-specific chronic sialadenitis of the submandibular gland. Regular recall and follow up done on a weekly basis for the first one month after discharge, followed by a monthly follow up for the next six months. The patient recovered and swelling subsided with no other complaints. (Fig 4&5)
DISCUSSION

According to a published data base submandibular obstructions are caused by a variety of foreign bodies like glass, grass blades, hair, vegetal nidus, limb of a shrimp, pine needle and splinter of wood. 11 Out of the total reported 22 cases, the locations of the foreign bodies found were 14 from the Wharton’s duct, 1 in the intra glandular duct, 1 found penetrating the gland itself \(^1\). Yu et al. reported that in the reviewed cases of obstructive submandibular sialadenitis, 5 out of 128 patients were having foreign bodies in which all of them were surrounded by a sialolith \(^{10}\). Most recently Su et al reported a case of obstructive sialadenitis of submandibular gland caused by foreign body which was diagnosed as a sialolith after USG and later confirmed as foreign body after diagnostic sialadenoscopy was done. Then the intra glandular fish bone and surrounded sialolith were successfully removed by wire basket \(^{1}\).

A case of retrograde ingestion of the vegetal nidus (foreign body) embedded in the intra glandular duct was reported in literature where affected gland was excised. According to marchal et al the retrograde ingress of the foreign body is extremely rare, Firstly because the ductal orifice is comparitively small, can be twisted in many directions & secondly because of the constant salivary flow towards the other direction \(^{10}\). Sialoendoscopy was first introduced in the 1990s as an advancement in endoscopic techniques \(^{13,14}\). It was observed that in majority of the cases sialolithiasis & mucus plugs were the prime reason for ductal stenosis which was readily detected by Sialoendoscopy \(^{11,12}\). According to recent literature along with Sialography, Ultrasonography too is a quick and noninvasive diagnostic imaging technique.
with minimal or no risk of radiation exposure that uses sound waves and electric impulses. It was originally used for soft-tissue evaluation. The innovative study was made in 1981 by Ord et al in the imaging of maxillofacial fractures when they used USG for evaluation of orbital fractures [14]. It is said that USG is as accurate as any other diagnostic imaging modalities of the present day and it can be successfully used right from the diagnosis to treatment plan of maxillofacial fractures, pathologies, space infections and foreign body impaction [14]. The main advantage of USG was zero radiation exposure, minimal expense and a sensitivity of a 59.1–93.7%, specificity of 86.7 % - 100% in sialolithiasis detection as compared to other diagnostic imaging modalities like CT or MRI. [6-9]. In the above discussed case, with the help of Ultrasonography the location of the foreign body was traced to be within the gland instead of the duct, thereby need of further investigations with sialography or sialoendoscopy could be easily avoided. According to literature sialadenitis caused by the retrograde ingestion of fishbone or intraglandular fishbone is a rare phenomenon. Even today a traditional USG is still beneficial, a diagnostic technique par excellence in comparison to other imaging modalities [15]. Ultrasonography simplifies the task of locating the foreign body and also aids in precise planning of the further treatment modalities. However facilities like Sialodenoscopy and MRI can definitely contribute in identifying the foreign body, finding the exact location and in successful removal as well, hence their significance in the same regard cannot be neglected [16].

CONCLUSION

Submandibular sialadenitis caused by intraglandular fish bone as has been discussed is a rare occurrence. However a combination of sophisticated evaluation techniques and surgeon’s skills are needed to make the right diagnosis and treatment plan. The importance of USG as a diagnostic modality in that regard has to be highlighted. The surgeon needs to be aware of scenarios as mentioned above and be prepared at all times to deal with such complications with ease, expertise and skills unknown to a novice.

Conflict of Interest Statement

There is no conflict of interest.
REFERENCES


