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AN UNUSUAL ETIOLOGY OF SUBMANDIBULAR SIALADENITIS: WOOD STICK INJURY

Otorhinolaryngology

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ABSTRACT

Recurrent sialadenitis of submandibular gland can have multiple causes, one of the rare being foreign bodies. Motor vehicle accidents, assaults, bullet wounds and iatrogenic surgical fault are the most common causes of traumatic foreign bodies. An effective method for the treatment of inflammatory salivary glands and obstructive disorders should be based on 2 important elements. First, the method should be able to accurately diagnose and locate the obstruction within the salivary gland ductal system. Second, it should allow for exploration and treatment of the salivary gland ductal system without morbidity. If went unrecognized during history taking and clinical examination, it can lead to a diagnostic dilemma. Hence a high clinical suspicion of the above is needed. Here we present a case of recurrent sialadenitis of right submandibular gland due to a wooden stick injury in the past.

KEYWORDS

Sialadenitis, foreign body, wooden stick.

INTRODUCTION

Recurrent swelling of the submandibular gland can occur, mainly from obstructive disorders such as sialolithiasis and inflammatory disorders of the ductal system.[1] Some other uncommon intraductal conditions, such as benign and malignant neoplasms,[2] congenital malformations, cyst development, and foreign bodies, can lead to mechanical blockage or disruption of the ductal system, stasis of salivation, and, consequently, sialoadenitis.[3] Foreign bodies such as chicken or fish bones, plastic objects, wooden sticks[4] and even pieces of grass have been described as rare causes of submandibular or neck masses.[5] Obstructive adenitis is a common disorder of submandibular gland. Sialolithiasis is the most common etiologic factor causing obstruction. If a sialolith is not detected, chronic obstruction of salivary glands is called nonspecific sialoadenitis. A foreign body within the submandibular gland secondary to oral cavity trauma is a very rare entity. We wanted to emphasize this rare, unique, yet possible, cause of sialoadenitis in a 39-year-old male patient and draw the reader's attention for a careful detection of foreign body after trauma to the head and neck region.

CASE REPORT

A 39-year old male patient reported to the outpatient clinic of Department of Otorhinolaryngology and Head-Neck surgery in AIIMS, Rishikesh with complaint of swelling over right submandibular gland region since past nine months. Patient had history of facial trauma when he accidentally fell from a height. Patient was managed conservatively on intravenous antibiotics and anti-inflammatory drugs. The swelling got reduced in size, but eventually patient had recurrent episodes of similar symptoms. There was history of pain and purulent discharge from floor of mouth. There was no history of increase in size of swelling while taking food, similar swelling on contralateral side or other swellings over face and neck region.

On examination, there was a distinct swelling on the right-side submandibular region of size approximately 3x3 cm, soft to firm in consistency, fluctuant, tender, mobile, with local rise of temperature, skin non-pinchable, non-pulsatile with indurated surrounding area. On bimanual palpation the right submandibular salivary gland was enlarged, palpable and tender. Right Wharton's duct was also palpable and tender. On squeezing the duct, pus came out from puncta. Pus on culture grew staphylococcus aureus sensitive to all anti-staphilococcal antibiotics.

An ultrasound scan of the submandibular gland was performed and revealed right submandibular gland enlargement with raised echotexture with an echogenic focus of size 14 x 10 mm at hilum, air densities and abscess formation, dilation of the right Wharton duct without any evidence of ductal obstruction. Patient was managed on intravenous antibiotics and anti-inflammatory drugs till acute infection subsided.

Contrast enhanced CT was done which revealed inflammation and edema in the right submandibular gland. (Figure 1)

Submandibular gland excision was planned in view of clinical and radiological findings as an elective procedure under general anaesthesia. Gland was found to be fibrosed along with surrounding tissue. While dissection, a foreign body was found embedded in the parenchyma of gland in form of a piece of wood stick about 3 cm in length, which is very uncommon finding as foreign bodies are frequently seen in duct of the gland only and not in the parenchyma. (Figure 2)

Patient showed uneventful postoperative recovery, discharged from hospital next day with oral antibiotics, analgesics for two days and follow up appointments.

On follow up appointments, the wound showed satisfactory healing with no evidence of local complications. Patient was scheduled for follow up appointment every month for one year.

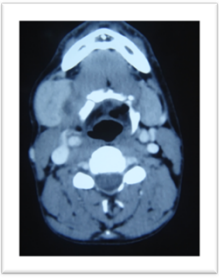

Figure 1: CECT showing right SMG enlargement

Figure 2: Submandibular gland with wooden stick

DISCUSSION

Foreign bodies may be ingested, inserted into a body cavity or deposited into the body by a traumatic or iatrogenic injury. Motor vehicle accidents, assaults, bullet wounds and iatrogenic surgical fault are the most common causes of traumatic foreign bodies.[3] Obstructive sialadenitis of submandibular gland is one of the most common cause of sialolithiasis. Review of literature revealed unusual foreign bodies that induced different presentations. Examples of foreign bodies were wooden stick, aluminium silicate, grass, black plastic tape.[3,4,9] Although sialolithiasis of submandibular gland is relatively common, foreign body-associated sialadenitis has been rarely reported in literature.

Chronic obstruction of a salivary gland without stone being detected is called nonspecific sialadenitis. Tissue reactions to foreign bodies are commonly encountered in the oral cavity as described by Hunter and Taljanovic; Stewart and Watson.[6,7] Introduction of the foreign body into the floor of the oral cavity may cause initial local pain, stay asymptomatic, induce local abscess formation or spread down to produce deep neck space infection as stated by Danforth and Brown in one of their articles.[8] In our case, a splinter of wood caused foreign body reaction and inflammation around the Wharton's duct and lead to obstruction and recurrent abscess formation.

Usually, history taking reveals the nature of the foreign body. Chou et al. suggested that some patients can be unaware of or have no memory of an injury by a foreign body that causes obstruction in the submandibular gland. In this particular case, patient didn't give any history of wooden stick piercing earlier but on more emphasization after surgery, patient remembered a maxillofacial trauma 9 months back by a wooden stick.

Although surgical management of chronic sialadenitis include gland excision, duct ligation, balloon sialodochoplasty. They have dysfunction and complication risk. Whereas conservative treatment options have less chance of success. Literature reports cases of associated deep neck abscess and para pharyngeal abscess requiring abscess drainage followed by excision of submandibular salivary gland and its duct. In our case we excised the gland by cervical approach.

It is important to explore the foreign bodies after trauma and patients who had open wounds should be followed carefully. With time, diagnoses of these foreign bodies are much more difficult because some materials such as wooden pieces cannot be detected radiologically as was seen in our case.

CONCLUSION

Unrecognized foreign bodies of submandibular gland can lead to chronic inflammation and require surgical excision. For trauma of head and neck region, penetrated foreign bodies must be explored and all suspected areas must be examined carefully for avoiding secondary problems and surgeries in future. Timely management and proper history can lead to better diagnosis and a more conservative management.

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