Retained Metallic Foreign body- A Diagnostic and Surgical Challenge

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ABSTRACT

The most common causes of foreign body in orofacial region is either trauma or iatrogenic. These cases show the significance of proper case history and radiographic examination for correct diagnosis. Their identification and removal from the tissue is often necessary and challenging. The treatment sequence consisted of the foreign body approach and removal, the wound exploration, irrigation and suture. The entire foreign body was successfully removed in both cases. Since the aetiology of both differ, the treatment also differs, in accidental foreign body impaction treatment is only confined to symptomatic treatment but in the self-injurious behaviour, a psychological counselling of patient is required to prevent repetition of the habit. Two cases of unusual foreign body in orofacial region are reported with their diagnostic and surgical challenge.

Keywords: foreign body, orofacial, surgical, trauma

Introduction

Foreign bodies are seldom encountered by oral & maxillofacial surgeons.[1] The most common cause is either trauma or iatrogenic. It becomes a challenging task if a patient comes with a different chief complaint and it turns out with an accidental finding of foreign body in orofacial region. The size and the type of object, anatomical relation of the foreign body to vital structures, the difficult access is also contributory factor which makes its removal quite difficult.[2] Foreign bodies can be inert or irritating. Removal of organic foreign body is sometimes mandatory as it may cause secondary infection, which might result in abscess and fistula formation.But inert objects may not cause a significant inflammation to warrant their removal.[3] Forgotten or missed foreign body is a common problem in patients. A proper case history can lead to correct diagnosis. But the removal may present challenge to the surgeon. Diagnosis of these cases is often made accidently on routine radiographic examination. Their identification and removal from the tissue is often necessary. The search of a foreign body in a large area increases the risk of damage to adjacent anatomical structures. Thus it should be properly identified and localized for proper treatment plan for which radiographs play a vital role. In this paper, we present 2 typical cases of unusual foreign bodies in the orofacial region which were accidentally diagnosed and also presenting the intraoperative procedural difficulties encountered by the surgeon due to the close proximity of the foreign bodies to vital structures.

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Case Report 1

A 48 year old male presented with a chief complaint of pain in the right cheek region since last many years. Pain was associated with routine daily activities like washing face, shaving or touching in that region of face which was mild in intensity. It was learned that the patient had trauma on right side of his face 20 years back due to a flying metal object while he was sitting next to ongoing carpentry work. He suffered an extraoral wound in his right nasolabial region, which he got dressed and sutured from a local doctor. After that he had pain intermittently which subsided gradually and felt only on touching/ pressing that region while washing face or during shaving. No

history of any associated swelling in that region. Patient was medically fit. On extra oral examination a horizontal scar present in right nasolabial region 1 cm lateral to right ala of nose (approximately 1 cm in length) shown in (fig.1) with slight tenderness present on palpation.

Fig 1: Extra oral scar in right nasolabial region

On intraoral palpation there was slight tenderness present in the right buccal vestibule in 13, 14 region. Intraoral-IOPA view was advised (fig2) which revealed presence of an irregular rectangular radiopaque object present in the premolar region.

Fig 2: IOPA with 13,14

The IOPA was repeated and similar finding was observed. Complete blood investigations were done to prepare the patient for foreign object removal under local anaesthesia through intraoral approach. Vestibular incision was given in 13, 14 region above the mucogingival fold (fig 3).

Fig 3: Vestibular incision

Layer wise dissection was done exposing the bone. Reflection was increased towards labial soft tissues. Firm mass was palpated in labial tissues & accordingly exposed (fig4).

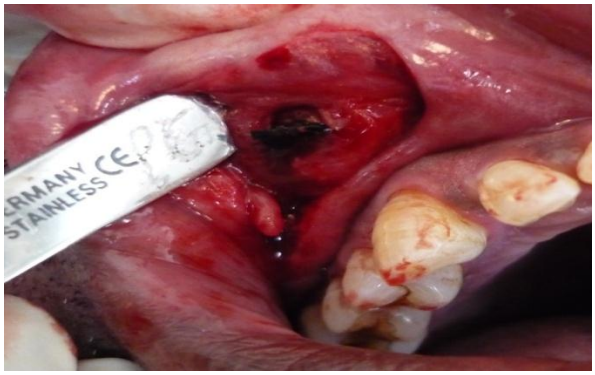

Fig 4: Exposed foreign body

The foreign object was identified & removed which measured 10*5mm(fig5).

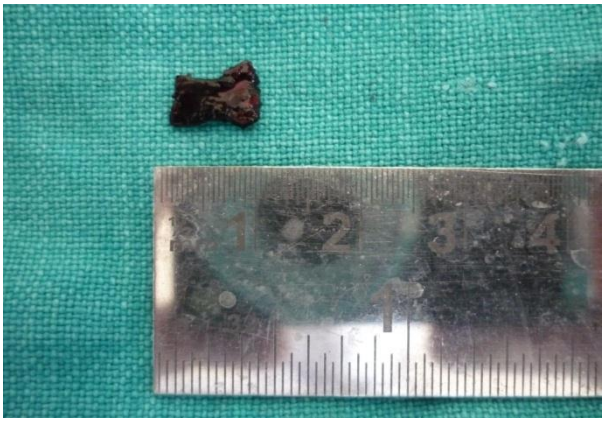

Fig 5: Foreign body measuring 10*5mm

Two layer suturing was done using 3-0 vicryl sutures after haemostasis was achieved. The patient was discharged and prescribed antibiotics and analgesics for 5 days. Follow up was done. The healing was uneventful and patient was free of pain.

Case Report 2

30 year old female came with a chief complaint of missing teeth in upper front tooth region and want them to be rehabilitated. History of trauma in the same region 25 years back followed by which maxillary anterior deciduous teeth were avulsed. Patient medical and dental history was not contributory. Intraoral examination revealed midline diastema with high frenal attachment (fig 6).

Fig 6: Intraoral midline diastema present

Gingival recession with 11, 21 was seen and grade 3 mobility with 21. Patient was advised IOPA which revealed irregular shape radiopaque material present in periapical region of 21 and was surrounded by well-defined radiolucency suggestive of foreign body in relation to 11, 21 (fig 7).

Fig 7: IOPA showing irregular shape radiopaque material.

On further questioning she revealed that she had the habit of putting small wires in her childhood in the socket of 51,61 when she had trauma 25 years back. Patient was explained that it was mandatory to remove the foreign body. She got ready for the extraction of 21 only. Extraction of 21 was done but no foreign body was retrieved through the socket so a window was created in buccal cortex just apical to the extraction site (fig 8)

Fig 8: Window in buccal cortex and removal of the foreign object was done completely that was found to be small metallic wires

Fig 9: Complete removal of foreign body

After irrigation with betadine and achieving haemostasis suturing was done. Antibiotic and analgesics were prescribed for 5 days. Follow up was done after 5 days for suture removal. Healing was uneventful.

Discussion

Foreign body sometimes known as FB (Latin: Corpus alienum) is any object originating outside the body. Motor vehicle accidents, assaults, bullet wounds and iatrogenic surgical fault are the most common cause of foreign body impaction in the oral and maxillofacial region.[4] Tissue reaction to foreign bodies are commonly encountered in the oral cavity (Stewart and Watson, 1990) thus, making the diagnosis easy. But it becomes a challenge when patient is asymptomatic as seen in case 2 because inert objects such as steel and glass may not cause a significant inflammation to warrant their removal and was diagnosed accidentally on radiograph. Presence of self-mutilation or self-injurious behaviour as seen in case 2 might go un-noticed if proper history is not taken, in such conditions clinicians usually tend to consider presence of foreign body as accidental injury rather than self-mutilation injuries.[5,6]

Radiographic examination is helpful especially when the foreign body is metallic or radiopaque. Hunter and Taljanovic[7] summarized many radiographic methods to be followed to localize a radiopaque foreign object as parallax views, vertex occlusal views, triangulation techniques, stereo radiography and tomography. The visibility of different materials on plain radiographs depends upon their ability to attenuate X-rays; foreign bodies may be visualized, depending on their inherent radiodensity and closeness with the tissue in which they are embedded. Metallic objects, unless made of aluminium, are opaque on radiographs, so are most animal bones and all glass foreign bodies. It is essential that the surgeon know every detail of the local anatomy and the precise application of the surgical technique, specially the foreign body region dissection. In case 1 important anatomical structure close to the surgical site is maxillary sinus. At times detection of soft tissue foreign bodies may be difficult even when strongly suggested by history and physical examination thus presenting a diagnostic challenge even to the experienced surgeon.[8] In case 1, the history offered a suggestion of an external foreign body. Actually, the patient presented a small scar in right nasolabial region approximately 1cm. This clinical suggestion was made by important radiographic findings, once the signs of the radiographs in respective projections showed to be suitable with the clinical findings. The treatment sequence consisted of the foreign body approach and removal, the wound exploration, irrigation and suture. The entire foreign body was successfully removed in both cases.

Conclusion

Ease of treatment can be achieved by proper thorough case history and relevant and accurate radiographic diagnosis. Since the aetiology of both differ, the treatment also differs, in accidental foreign body impaction treatment is only confined to symptomatic treatment but in the self injurious behaviour, a psychological counselling of patient is required to prevent repetition of the habit.

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