

Impacted Foreign Body in the Infratemporal Region: Case Report

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Abstract

The incidence of retained foreign body deep in the maxillofacial region has increased greatly in recent years. Retained foreign bodies following a penetrating trauma may pose a diagnostic difficulty for an Oral and Maxillofacial surgeons. The case of XR-negative impacted foreign body located deep in the infratemporal region is described. The operation was carried out under local anesthesia and impacted by foreign body (plastic pen cap) was found by deep finger palpation, grasped with a hemostat and retrieved out successfully.

Keywords: Foreign bodies; Infratemporal region; XR-negative objects

Abbreviations: CT: Computerized Tomography

Introduction

Foreign bodies are often encountered by oral and maxillofacial surgeons and may present a diagnostic challenge to the trauma surgeon due to many factors such as the size of the object, the difficult access, and a close anatomic relationship of the foreign body to vital structures. They are usually a result of injuries or operations [1-3]. Fragments of broken instruments can be left behind and entire teeth or their fragments can be displaced during extraction. In particular, penetrating injuries represent a rare but a complex variety of craniofacial trauma. Generally, the penetrating material is stiff enough to cross through different anatomic structures during a particularly violent collision caused by a road or work accident or during an attack. The therapeutic strategy adopted for this type of patient depends mainly on diagnostic procedures such as skull radiograms in different projections, computerized tomography, magnetic resonance imaging, and, occasionally, echo tomography [1,4,5]. Removal of the foreign body can be delayed in approximately one third of all foreign bodies because they are initially radiologically missed or misdiagnosed [6]. The approach to this kind of injury should be sequential and multidisciplinary, beginning with the trauma unit that will provide maintenance of the airways, hemodynamic stabilization, and, but only if necessary, neurologic, ophthalmologic, and vascular evaluation [7]. The case of an infratemporal region impacted foreign body, caused by a stabbing weapon is presented.

Case Report

A 33-year-old male patient was admitted to ENT and Maxillofacial Surgery department with a complaint of painful swelling over his left cheek and evident limitation of mouth opening for three days. He gave a history of drunken brawl in which he got a stab on the left cheek area. On examination the patient was conscious and well oriented. His vital signs were normal. There was a small laceration measuring approximately 1.0 cm in the left parotidea-masseterical region (Figure 1). The lacerated area was swollen with a little bruise and there was no neurosensory dysfunction. The mouth opening was limited up to 1.5 cm and painful. The oral cavity clinical examination did not reveal any pathology: there was no open communication into the oral cavity. The CT scan examination showed 2.7 × 0.38 cm cylindrical XR-negative gaseous zone, which was at the depth of 3 cm from the skin in the infratemporal region with the distal end between condylar and coronoid processes (Figure 2a-c). As an additional finding left side maxillary sinusitis and hypertrophic rhinitis were revealed.

The patient was taken up for surgery under local anesthesia for wound revision. The 2 cm long incision was done from the upper point of wound laterally and parallel to facial nerve buccal branch. The skin and SMAS were excised and the deeper tissues were opened by blunt dissection. Finger was used as a tactile sensor in the surgical pocket to probe the object (Figure 3). His distal end was at the depth of 3-3.5 cm from skin. The tissue tunnel was performed, when the finger was kept approximately 1 minute in touch with foreign body edge. Once the finger was located precisely the embedded foreign body was grasped with a haemostat and was retrieved out successfully. The retrieved object was a plastic pen cap (Figure 4). It was estimated, that the stab was done by the pen with cap, and after pen removing the cap was stuck in the surrounding soft tissues, may be because of mandible movement at that moment. The wound was inspected for hemostasis, a rubber ribbon drain was inserted, and the wound was closed in layers. The patient was prescribed routine antibiotics. The drain was removed on the second postoperative day (Figure 5). Sutures were removed on the seventh postoperative day (Figure 6). No facial nerve branch injuries or salivary fistulas were observed in postoperative period.

Discussion

The incidence of retained foreign body deep in the maxillofacial region has increased greatly in recent years [1]. Retained foreign bodies following a penetrating trauma may pose a diagnostic difficulty for an Oral and Maxillofacial surgeons [2]. The foreign body can often modify the regional anatomy [8]. Inflammatory response in the tissues around a foreign body can add difficulties [9]. Patient history, physical examination, and radiographic examinations may not confirm the presence of a foreign body [5,10]. The clinical examination of the patient who presented an impacted object injury in the face should be carried out in a systematic manner [11]. The paranasal region is the most affected by this kind of injury, and it is important to observe the

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Figure 1: External view of patient before operation.

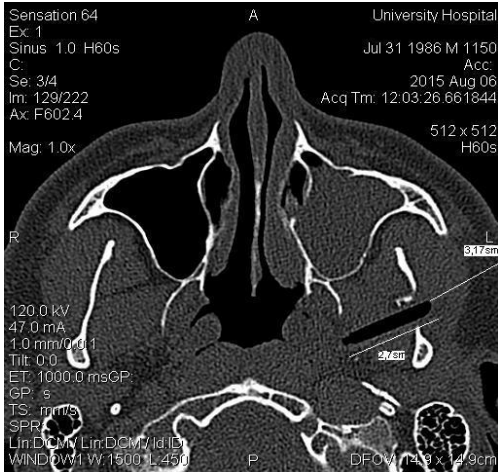


Figure 2a: CT of the head: axial plane.



Figure 2b: CT of the head: coronal plane.

major anatomic structures, such as the facial nerve and the parotid gland and duct [12].

Metallic objects are radiopaque and mostly are clearly visible on plain radiographs itself [13]. Though a surgeon might still desire a CT scan for precise location and accurate diagnosis of these metallic objects [9]. Wood or bamboo foreign bodies are difficult to diagnose if they are placed very deeply [14]. Radiological examination including three dimensional CT enables the surgeon to choose the optimal surgical approach to remove the foreign body, thereby avoiding purulent inflammatory complications [15]. Wooden or bamboo foreign bodies in both fat and soft tissues may present in CT patterns simulating as different as a gas bubble or a bone fragment [13,14]. In our case plastic

pen cap has shown the gas cylinder that was observed deep in the infratemporal region, horizontally, close to the nasopharynx.

Foreign bodies may migrate within the tissues and become symptomatic after a certain time lapse. In these cases, it is very difficult to correlate the direct relation between the suspected foreign body and the present clinical symptoms. One should therefore suspect a foreign body when presented with a laceration due to a blow [16]. In our case, the patient gave a history of drunken brawl in which he got a stab on the left cheek area, which gave us an idea for knife injury and, as a result, mandible fracture or any remaining foreign body. Removal

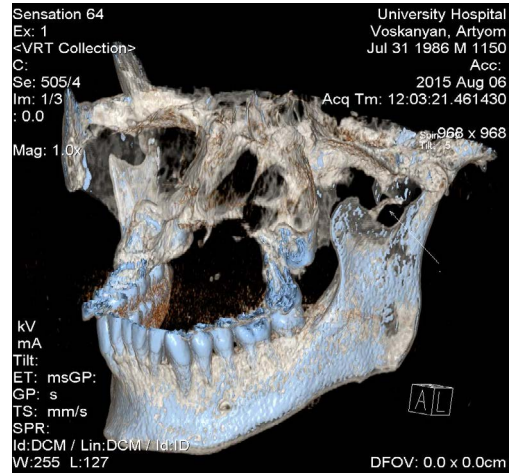


Figure 2c: CT of the head: 3-D reconstruction.



Figure 3: The intralesional palpation.



Figure 4: Removed plastic pen cap.



Figure 5: External view of patient on second postoperative day.



Figure 6: External view of patient on seventh postoperative day.

of the foreign bodies can be delayed because of a misdiagnosis or because of their asymptomatic behavior [6]. In the reported case the patient complained of painful swelling over his left cheek and evident limitation of mouth opening for 3 days. The first thing we thought was the mandible condyle fracture, as a result of knife injury, and CT scan examination was organized.

Treatment of penetrating lesions located in the maxillofacial region can vary according to the lesion's etiology, the nature of the retained foreign body, the site of the lesion, as well as extension of damage to soft and hard tissues of the region and neighboring structures [2]. It should initially prioritize the patient's stabilization with evaluation and maintenance of the upper airways, followed by hemodynamic control and neurologic evaluation [17]. Only after this treatment the foreign body should be carefully removed, preferably under general anesthesia [5,18]. When the impacted object is superficially confirmed by imaging examinations and it is not near any major vessel, the removal under local anesthesia can be performed. In presented case we have carried out operation under local anesthesia in spite of the fact, that impacted foreign body was located deep in the infratemporal region. The finger is the most sensitive probe and will readily palpate the buried foreign body [19]. If a long curved hemostat is passed along the line of finger, the foreign body can be grasped and removed by an experienced surgeon through a relatively small wound. In such manner we have done the reported operation.

The wound should be explored, followed by hemostasis, copious irrigation with saline solution and suture for planes [20]. It is advisable to prescribe antibiotics before and after surgery, as well as tetanus prophylaxis [7,16,18].

Conclusion

Timely removal of impacted foreign bodies in the maxillofacial region may avoid functional, allergic and infective complications. This case demonstrated foreign body retrieval which was impacted in the infratemporal region. Preoperative CT imaging is a prerequisite for the diagnosis and accurate localization of the foreign body. The case describes, that intralesional finger palpation could be a sensitive and helpful probe for foreign bodies finding and removal.

Conflict of interests

Authors have no conflict of interests to declare

References

1. Gui H, Yang H, Shen SG, Xu B, Zhang S, et al. (2013) Image-guided surgical navigation for removal of foreign bodies in the deep maxillofacial region. *J Oral Maxillofac Surg* 71: 1563-1571.
2. Ruskin JD, Delmore MM, Feinberg SE (1992) Post traumatic facial swellings and draining sinus tract. *J Oral Maxillofac Surg* 50: 1320-1323.
3. Holmes PJ, Miller JR, Gutta R, Louis PJ (2005) Intraoperative imaging techniques: a guide to retrieval of foreign bodies. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 100: 614-618.
4. Agrillo A, Sassano P, Mustazza MC, Filiaci F (2006) Complex-type penetrating injuries of craniomaxillofacial region. *J Craniofac Surg* 17: 442-446.
5. de Santana Santos T, Avelar RL, Melo AR, de Moraes HH, Dourado E (2011) Current Approach in the Management of Patients With Foreign Bodies in the Maxillofacial Region. *J Oral Maxillofac Surg* 69: 2376-2382.
6. Robinson PD, Rajayogeswaran V, Orr R (1997) Unlikely foreign bodies in unusual facial sites. *Br J Oral Maxillofac Surg* 35: 36-39.
7. Harris AMP, Wood RE, Nortje CJ, Grotepass F (1988) Deliberately inflicted, penetrating injuries of the maxillofacial region (Jael's syndrome). Report of 4 cases. *J Cranio Maxillofac Surg* 16:60-63.
8. Rao LP, Peter S, Sreekumar KP, Lyer S (2014) A "pen" in the neck: An unusual foreign body and unusual path of entry. *Indian J Dent Res* 25: 111-114.
9. Eggers G, Haag C, Hassfeld S (2005) Image guided retrieval of foreign bodies. *Br J Oral Maxillofac Surg* 43: 404-409.
10. Tabariai E, Sandhu S, Alexander G, Townsend R, Julian R et al. (2010) Management of facial penetrating injury- A case report. *J Oral Maxillofac Surg* 68: 182-187.
11. Hudson DA (1992) Impacted knife injuries of the face. *Br J Plast Surg* 45:222-224.
12. Cohen MA, Boyes-Varley G (1986) Penetrating injuries to the maxillofacial region. *J Oral Maxillofac Surg* 44: 197-202.
13. Pyhtinen J, Ilkko E, Lähde S (1995) Wooden foreign bodies in CT. Case reports and experimental studies. *Acta Radiol* 36: 148-151.
14. Olusanya AA, Akinmoladun VI (2013) Orbito-anthro-cervical foreign body impaction: reminder of a CT scan and ultrasonography pitfall. *Afr J Med Med Sci* 42: 189-192.
15. Potapov AA, Eropkin SV, Kornienko VN, Arutyunov NV, Yeolchiyan SA, et al. (1999) Late diagnosis and removal of a large wooden foreign body in the cranio-orbital region. *J Craniofac Surg* 7: 311-314.
16. Santos Tde S, Melo AR, de Moraes HH, Avelar RL, Becker OE, et al. (2011) Impacted foreign bodies in the maxillofacial region-diagnosis and treatment. *J Craniofac Surg* 22: 1404-1408.
17. Gussack GS, Jurkovich GJ (1988) Penetrating facial trauma: a management plan. *South Med J* 81:297-302.
18. Daya NP, Liversage HL (2004) Penetrating stab wound injuries to the face. *SADJ* 59: 55-59.
19. Vikram A, Mowar A, Kumar S (2012) Wooden Foreign Body Embedded in the Zygomatic Region for 2 Years. *J Maxillofac Oral Surg* 11: 96-100.
20. Shinohara EH, Heringer L, Carvalho Junior JP (2001) Impacted knife injuries in the maxillofacial region: report of 2 cases. *J Oral Maxillofac Surg* 59: 1221-1223.