Retained foreign body in the cheek presenting as recurrent sinus – A case report

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Abstract
Foreign bodies are often encountered by oral and maxillofacial surgeons and may present a diagnostic challenge, due to many factors such as the size of the object, the difficult access and a close anatomical relationship of the foreign body to vital structures. We report a case of recurrent sinus of the cheek caused by an occult wooden splinter, its diagnosis and clinical management.

Key words: Retained wooden body; Recurrent sinus; Osteomyelitis.

Introduction
Pathological sinuses in the maxillofacial region are frequently encountered in clinical practice (1). Embedded foreign bodies induce a reparative granuloma formation, which surrounds them, making their detection by the naked eye difficult during surgery. This fact explains the failure to detect the wooden foreign body in spite of several surgical interventions. Wood, because of its organic nature and porosity provides a good medium for microbial agents like clostridium tetani. Wood acting as a foreign body and complications arising due to retained wooden splinters like abscess, fistula formation or necrotising fasciitis has been reported in the literature (2, 3).
Retained wooden splinter in the cheek region

Foreign bodies are often encountered by oral and maxillofacial surgeons and may present a diagnostic challenge, due to many factors such as the size of the object, the difficult access and a close anatomical relationship of the foreign body to vital structures (1, 3).

Penetrating foreign bodies may present a diagnostic and management challenge to maxillofacial surgeon (4). Approximately one third of all foreign bodies are initially missed. In case of a wooden foreign body only 15% are well visualized on plain radiographs and are therefore missed or misdiagnosed as osteomyelitis of facial bones (5). Usually wood belongs to one of the most frequent foreign body material to be encountered and lacerations and perforations with foreign bodies are common (1). Trauma being the most common cause of retained wooden bodies. Retained wooden body in the maxillofacial region provide a good medium for microbial growth, infection resulting from these retained wooden bodies will cause chronic draining extra oral sinus (1, 5).

We report a case of recurrent sinus of the cheek caused by an occult wooden splinter, its diagnosis and clinical management which would usually be misdiagnosed as osteomyelitis.

Case report
A 12-year-old boy presented to our hospital with a chief complaint of chronic draining sinus in the right cheek region (figure 1). His history included an accidental fall from the tree few years previously, resulting in a sharp wooden splinter piercing his face. He then visited an ophthalmologist who was unable to detect any foreign body. The Ophthalmologist dressed and sutured the wound and prescribed antibiotics, analgesics and a tetanus toxoid injection without performing any other investigations. Many years after this treatment, a small painful diffuse swelling with a draining sinus appeared on the left cheek. The swelling was located below the original site of the injury. At this stage he reported at our hospital for further consultation and treatment.

Figure 1: Extraoral view of the patient

Figure 2: Extraoral swelling and draining sinus over the cheek

On examination, the patient was healthy with vital signs within normal limits. Extra-oral examination revealed a diffuse swelling of $3 \times 4$ cm on the left side of the face extending 2cm from the external acoustic meatus towards the ala of the nose 1.5 cm below the infraorbital margin (figure 2).

The skin over the swelling was smooth; shiny with a solitary draining sinus and a scar near the sinus. On palpation, the left submandibular lymph nodes were tender.
Retained wooden splinter in the cheek region

and palpable. Intra-oral examination failed to reveal any abnormality in dental or periodontal tissues. Based on the history and clinical presentation a differential diagnosis of osteomyelitis was considered and radiographs were advised.

Figure 3: Computed Tomogram showing the radio-opaque mass in the infra-orbital region which measured the size of 1.5 cm

Figure 4: Surgical exploration of the draining solitary sinus

Periapical and panoramic radiographs failed to reveal the presence of any wooden splinter but excluded the possibility of any dental or periodontal foci of infection as the cause of sinus. Haematological investigations were advised, which yielded normal values except total WBC count, which had increased to 13,000 cells/ cu.mm (normal 4,000–11,000 cells/ cu.mm). Thus, patient was advised the computed tomography (CT) for further investigation. The CT showed radio-opaque mass in the infra-orbital region which measured the size of 1.5 cm; (figure 3) the structure was thought to be a foreign body (wooden body).

Figure 5: Retrieved wooden splinter

The patient was scheduled for surgery. Under general anesthesia, a surgical exploration of the draining solitary sinus was performed. A small incision was made in the eyebrow just above the mass and blunt dissection was made and wooden body has been retrieved (figure 4) and surrounding purulent exudate was removed.

On closer inspection, a fibrous capsule was detected which on exploration yielded the wooden splinter (Figure 5). The wooden splinter was subsequently removed and the wound was cleaned, debrided, irrigated with betadine and sutured. Post-operative antibiotics (Amoxicillin 500 mg TID for five days) and anti-inflammatory analgesics (Ibuprofen 400 mg TID for five days) were prescribed. A specimen of wooden body sent for bacteriology showed only Moreaxella. The patient was followed up with no post-operative complications.
Retained wooden splinter in the cheek region

Discussion

Foreign bodies can penetrate soft tissues through open wounds and lacerations sustained during trauma or by direct impact against them. Such wounds harbouring foreign bodies may appear to be deceptively minor and may not be accompanied by any major symptoms. But if these foreign bodies are left undetected in the tissues they can result in serious sequelae days, months or even years after initial trauma. Penetrating retained wooden bodies acts as foreign body, usually dirty and carry many microorganisms. Because of their porous consistency and organic nature, provide a good medium for the growth of the microbial agents. Infection resulting from the retained wooden body may lead to complications such as abscess and fistula formation.

The choice of the imaging studies in the evaluation of wooden bodies are controversial issue, standard radiographs fail to identify retained foreign bodies as experienced in the present case. With the use of computed tomography several clinicians are able to detect the penetrating wooden bodies, also allowed the detection of associated problems such as fractures and abscess.

Conclusions

In conclusion, our case illustrates that application of the advanced diagnostic procedures like CT is justified and perhaps even mandatory when a foreign body is suspected. CT with variable window width is extremely useful and therefore should be performed first. In our case computed tomography enables one to choose the optimal surgical approach and to remove the foreign body thereby avoiding the inflammatory complications like brain abscess and tetanus.

References