

# Foreign Body in the Zygomatic Region from an Assault

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## ABSTRACT

**Objective:** Foreign body in the maxillofacial region may be implanted traumatically, iatrogenically, or inadvertently. This article presents a case of stab injury on the face of a 25-year-old male with a biro pen and its consequent retention for two years within the facial tissues before removal. This foreign body elicited several episodes of pain, swelling and pus discharge for which patient took numerous analgesics and antibiotics with little relief.

**Findings:** Facial asymmetry with swelling around the left zygomatic region with a discharging sinus on the central aspect of the swelling. The immediate surrounding skin appeared darker. An impression of foreign body retention was made. Radiograph showed a linear radiopaque object extending downward from the left zygomatic arch to the lateral side of the left maxilla. Patient could not afford a CT. From the presenting history, examination and the radiograph, foreign body retention was confirmed with a planned exploration. Consent was obtained and exploration under local anaesthesia extracted a 4.5cm broken part of a biro pen from the injury site. The lumen of the biro was filled with blood-stained pus. The area was irrigated thoroughly and sutures were placed. The post op review one year after was uneventful.

**Conclusion:** Stab injuries to the face can result in retention of the stab object. This necessitates the use of the appropriate imaging technique and a thorough search of the injury site during treatment to prevent prolonged retention of such objects and related complications.

**Keywords:** Biro, facial injury, foreign body, retention, stab injury,

## INTRODUCTION

Within the maxillofacial region, foreign bodies have been found in different areas like maxillary antrum (Anders, 1989), the parotid gland (Guillermo et al., 1990; Hajime et al., 1999), orbit (Ioannis et al., 1991), and floor of mouth (Moore et al., 1993). Foreign bodies have reported different parts of body like the heart (Leitman & Vered, 2015), spleen (Simbarashe et al., 2019), spinal canal (Dilip et al., 2018), and liver (Renato et al., 2018), presenting with a variety of symptoms.

Trauma to maxillofacial region especially after road traffic accidents has been cited as a major cause of embedment of foreign body (Rudagi et al., 2013). Accidental fall<sup>3</sup> and assault<sup>11</sup> have also been reported.

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Following trauma, some foreign particles get embedded and may remain undetected for a long

time while some others elicit signs and symptoms of pain, swelling and pus discharging sinus. While some foreign objects remain within the tissues where they get embedded, others can migrate to distant sites (Dilip et al., 2018).

Several factors like difficult access, the inflammatory response of the around tissues, the size of the object and a close anatomy to vital structures can pose a diagnostic and treatment challenge to the maxillofacial surgeon (Dominguete et al., 2013). Another important factor is a misleading history (Acharya & Padhiary, 2012). To overcome these challenges, the use of appropriate imaging techniques to locate the exact positions of embedded foreign bodies is very important to adequately manage these conditions and avoid complications associated with retention.

The objective of this manuscript is to present a rare case of a retained foreign body in form of a broken transparent outer cover of a writing pen used as a stab object on the zygomatic region of a

25-year-old man two years earlier which was removed under local anaesthesia.

### Case presentation

This 25-year-old male patient presented with a two-year history of intermittent episodes of swelling, pain and pus discharge from the left zygomatic region. Prior to this experience, he was involved in an assault where he was stabbed with a biro pen on his left facial region. Immediately after the incidence, he was treated by cleaning of the resultant wound and given analgesics and antibiotics. The wound healed well with complete closure of the affected skin. About two months later, he had pain at the same area and swelling developed. In few days, there was pus discharge and patient had another course of analgesics and antibiotics. This episode repeated up to three to four times before presentation to the hospital for management. Examination showed a 1cm by 2cm swelling on the left zygomatic region (Figure 1).



Figure 1: Pre-operative picture of left zygomatic region

The swelling was oval in shape, slightly raised above the surrounding skin which appeared shiny. It was soft to touch and very tender. An impression of foreign body was made considering the history and clinical presentation. Plain radiograph showed a vertical object extending from the left zygomatic region to the lateral side of the left maxilla. It had a central radiolucent outline with two radiopacity on both sides (Figure 2). This confirmed the diagnosis. The decision for surgical exploration to extract the foreign body was reached. Patient's consent was obtained.

With patient well seated on the dental chair, the object (Figure 3) was retrieved along with surrounding granulation tissues under local anaesthesia through an incision made on the swelling.

The foreign object was a broken transparent outer part of a biro pen with the writing end intact. Approximately 4.5cm in length. The lumen was filled with frank pus with some blood stain (Figure 4). The operated site was irrigated thoroughly and sutured. The healing was uneventful and post op review was satisfactory.



Figure 2: Plain radiograph showed a vertical object extending from the left zygomatic region to the lateral side of the left maxilla.





Figure 3: Plain radiograph (Posterior-Anterior view) Jaws



Figure 4: Intra-operative view of foreign body



Figure 5: Extracted foreign body

## DISCUSSION

Retained foreign bodies following penetrating trauma may pose a difficult diagnostic problem<sup>14</sup>. Foreign bodies embedded in deeper tissues are missed by surgeon eyes (Rudagi et al., 2013). When in doubt, radiograph, CT or other

investigative means could be employed to rule out the presence of foreign bodies. Retained foreign bodies could be a source of health challenge especially when located close to or within vital organs like the heart, the brain, kidney and abdomen. The location of foreign bodies within

the facial region, though less traumatic to the patient in comparison could also be of much concern to the affected patient. This was the case with this patient. He took various courses of antibiotics and analgesics with no relief as long as the foreign body was retained within the tissues. Numerous episodes of swelling, pain and pus discharge through the facial sinus was his experience for two years. The diagnosis of a foreign body in this case didn't pose much challenge considering the presenting history, examination and radiographic findings. This is in line with an author's report (Rudagi et al., 2013) that the presence of foreign body should be considered in any wound that continues to have purulent drainage, develops a chronic draining sinus, or when purulent drainage from an abscess yields sterile cultures. Plain radiograph could still be useful in locating radiopaque foreign bodies especially when there is economic challenge. This patient could not afford a CT, hence plain radiograph became the only option to locate the object. A report stated that grit particles, pebbles, stones, glass pieces being denser materials can be detected on plain radiograph, whereas wooden foreign bodies, bamboo sticks, thorns are best visualized by computed tomography (Anderson et al., 1982). In some cases where the foreign objects defy radiological identification, retrieval becomes much more difficult especially when other means of locating the objects are not available. A case of 9-year interval between injury and final removal have been reported (Robinson et al., 1997). There are no well-defined retrieval techniques for foreign bodies in the maxillofacial region. The method employed for removal will largely depend on the location, the size, the depth, proximity to vital structures and also the availability of retrieval apparatus. The foreign body was removed with moderate effort using large artery forceps as the chronic infective process had isolated the object. Infection associated with retained foreign bodies in the facial region have been reported (Anderson et al., 1982). This necessitate the need for a thorough wound examination, debridement and investigation of traumatic facial injuries to prevent the unwanted consequences of retention.

## CONCLUSION

Stab injuries to the face can result in retention of the stab object. This emphasize the need for a thorough search of the injury site to prevent prolonged retention of such objects and avoid the complications associated with retention.

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## Conflict of interest

The authors declare that they have no conflicts of interest.

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