Missed Embedded Large Glass Foreign Bodies in the Body

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ABSTRACT

Background: Impaled foreign body in traumatic wounds is often a common finding in the Accident and Emergency room of hospitals especially when the mechanism of injury is penetrating. These Foreign bodies can be missed if they are embedded and radiolucent. A high index of suspicion, thorough examination, and appropriate investigations is required for appropriate diagnosis and treatment. Setting: University of Port Harcourt Teaching Hospital Port Harcourt. Case Report: This is a case of a 28-year old soldier who presented with symptoms from missed embedded multiple glass foreign body following injury from a road traffic crash four months earlier. He had further clinical assessment and successful wound exploration to remove the missed foreign body. Conclusion: Missed foreign body in traumatic wounds is possible especially if embedded. A high index of suspicion, thorough clinical assessment and appropriate investigations, are required to identify such objects to enable appropriate and complete treatment.

Keywords: Impaled foreign body, Missed foreign body, High Index of Suspicion

1. INTRODUCTION

Impaled foreign bodies (FB) in the limb following trauma is often encountered in the emergency department. These may be missed if embedded or not looked for. Retained FB may be metal, vegetable, plastic or small pieces of glass(1,2). On presentation, metallic foreign bodies are easily detected by plain radiography. However, ultrasonography and occasionally, computed tomography and magnetic resonance imaging may be required where vegetable, glass or plastic materials and other radiolucent materials are suspected to be embedded in the limb. In this article, we report the case of a young man in whom large pieces of glass were discovered embedded in his arms for four months causing intermittently discharging sinus. This is very unusual given the dimensions of the pieces of glass recovered from the arm.

2. CASE REPORT

MR. A M is a 28-year-old soldier who was a front seat passenger in a vehicle that crashed into the bush at top speed. He sustained a laceration on his right arm in addition to bruises all over the body but no loss of consciousness. He was taken to a health care facility where the wound was sutured, and he was discharged some few days later. He returned to his routine but became worried when the sutured wound healed with a residual intermittently discharging sinus. He continued dressing the sinus without any improvement.

He presented to us on account of the intermittently discharging sinus on the scar four months after the index injury. Physical examination revealed a wide oblique scar measuring about 15cm x 2cm on the anterolateral surface of the lower part of his right arm (Figure 1).

**Figure 1. Patient on presentation with healed scars with embedded FB**

The neurovascular status of the limb was intact. An X-ray was done and showed several foreign bodies in the muscle plane of the arm, but no fractures or evidence of osteomyelitis (Figure 2).

**Figure 2. Plain Radiograph of embedded FB**

He was prepared for wound exploration which was done with the extraction of several pieces of mirror glass, the three measuring 12cmx3cm, 10cm x 6cm and 8cm x 4cm respectively (Figure 3). Postoperative recovery was uneventful.

**Figure 3. Removed embedded FB**

3. **DISCUSSION**

Patients with traumatic wounds are regularly attended to in the accident and emergency units of hospitals. Some of these patients have foreign bodies embedded in the wounds and may be missed as attention is turned to resuscitation and control of hemorrhage in the acute post-trauma phase. Consequently, these FBs may not be discovered until much later. Studies have indicated that up to 25%-38% of patients with retained foreign bodies present weeks, months or even years after the initial injury\(^{(1,2)}\). Monu et al. reported in a series of cases of patients whose foreign bodies became symptomatic after 10 years of the initial injury and in whom neoplastic lesions were suspected until exploration revealed the foreign bodies\(^{(3)}\).

Foreign bodies embedded in the limb may be obvious and symptomatic; they may be symptomatic without being obvious or even asymptomatic. The symptoms include pain, warmth, swelling, neurologic symptoms and sensation of a foreign body. These objects may cause cellulitis, abscess formation or fistula formation as well as synovitis or osteomyelitis if adjacent joint or osseous structures become involved\(^{(4)}\). Our patient presented with a painless sinus.

Imaging studies are not routinely ordered in obvious soft tissue injuries where the fracture is not suspected, this seems to be the case in the index patient who had

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no imaging studies done at the time of injury. This pitfall was highlighted by Levine and his colleagues in a retrospective review of 490 cases of foreign bodies in the limbs. They reported that radiographs were ordered in only 50% of the time and radiograph had a sensitivity of nearly 100% for detecting metal but missed 95% of wood 25% of glass foreign bodies\(^{(5)}\). Although not all of glass foreign bodies are radiopaque, the buck coating of the multiple pieces of mirror fragments apparently enhanced the visibility of the foreign bodies on plain radiograph in this patient. It is, however, interesting that those large pieces of glass with several sharp margins and points did not cause any neural or vascular damage giving their close proximity to these structures in the limb.

Neither the patient nor the attending physician suspected the presence of a foreign body in the wound, and indeed the patient did not experience any discomfort but for the sinus as such may never have presented to the hospital. With the foregoing and since missed foreign bodies frequently result in physician malpractice litigations; it is, therefore, appropriate that every injury should be evaluated for the presence of a retained foreign body\(^{(5)}\). This will include a high index of suspicion on the part of physicians attending to wounds and the routine request for plain X-ray examination even when the fracture is not likely. Even when radiographs are negative ultrasonography may be required in suspicious cases because studies have demonstrated that high-resolution ultrasonography is the main imaging tool used for the detection and localization of non-radiopaque foreign bodies in soft tissue\(^{(2)}\). Not all foreign bodies embedded in the soft tissue of the arms and legs need removal. There are many veterans of war who have such objects which were asymptomatic and threaten no complications\(^{(6)}\).

Baldan et al. after reviewing the experience of surgeons affiliated with the International Committee of the Red Cross and Red Crescent (ICRC) in the management of war wounds involving more than 36000 cases concluded that ill-advised removal of metallic foreign bodies causes unnecessary new surgical trauma with possible complications\(^{(6)}\). The indications for foreign body removal according to Baldan and Colleagues recommendations include the presence of neurovascular compromise, functional impairment, chronic pain, evidence of infection, cosmetic deformity and patient’s request\(^{(7)}\). In this particular patient, his reason for seeking further medical care in our facility was as a result of the recurrent draining sinus at the wound site.

4. CONCLUSION

The presence of embedded foreign body should be considered in every wound in the acute phase and painful swellings in the limb after the healing of the primary wound. A deliberate search for foreign bodies and routine X-ray examination in such instances should be encouraged. Further imaging with ultrasonography should not be withheld when the circumstances surrounding the injury suggest the possibility embedded in a radiolucent foreign body.

DECLARATIONS

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