Foreign bodies do strange things: the case of a shard of glass in the scapulo-thoracic space

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Glass foreign bodies following trauma are a common presentation to emergency departments. When retained, such foreign bodies may be associated with variable clinical presentations.

Case report

A 77-year-old lady presented to clinic with 6-month history of a painful lump in the right scapular region. She recalled having sustained a fall in the greenhouse 25 years previously and had presented to her local accident and emergency department on the day of injury. She had a penetrating glass injury just inferior to the lateral aspect of her right breast from which a shard of glass had been removed. She was discharged on the same day.

Twenty years later she started to experience pain in the right shoulder. She was unable to lie on that side as it was too painful. She was referred for a course of physiotherapy with no improvement in symptoms.

Twenty-three years later she could feel a lump behind her right shoulder, hence her referral to our department. An X-ray revealed a glass shard over 10 cm long on the right side of the chest in the subcutaneous tissue, outside of the ribcage (Figure 1). A CT scan confirmed the presence of foreign body which was seen to pass through the blade of the scapula in the extra-thoracic subcutaneous tissue (Figure 2).

Under a general anaesthetic, the glass shard was found to be adherent to the tissues and had partially worked its way through the blade of the scapula. It was removed in fragments and she made an uneventful postoperative recovery. At 6 weeks' follow up her wound was healed and she was now pain free. An X-ray showed residual glass deep in her back but she reported no symptoms or discomfort.

Discussion

The shard of glass was probably the deep end of a longer piece which had broken off, the superficial portion having been removed in the accident and emergency department 25 years ago. The remaining shard of glass had migrated over the years until it became subcutaneous and symptomatic. Its migration was probably propelled by the movement of the so-called scapulo-thoracic rhythm which is an integral part of shoulder abduction.¹

The likelihood is that the shard of glass migrated through the scapulo-thoracic space where it travelled eventually through the scapula causing shoulder symptoms. In normal subjects the concave scapula glides smoothly over the convex chest wall and disruption to this articulation can cause scapulo-thoracic crepitus or snapping scapula.²
The scapulothoracic space has been described as consisting of two regions, the space between the serratus anterior and the thoracic cage, which usually contains a bursa and a space between subscapularis and serratus anterior,\textsuperscript{2,3} based on cadaveric studies for arthroscopic port insertion. There are few indications for scapulothoracic arthroscopic surgery, but removal of foreign bodies such as bullets have been documented.\textsuperscript{4}

Migration of metallic foreign bodies from the shoulder region to other parts of the body including the heart, lung, spine, abdomen and eye have all been documented in the literature.\textsuperscript{5–7} However, to the best of our knowledge there is only one other documented case of migration of a large retained glass foreign body, and this did not involve the shoulder region. In that case, the entry wound was from the lower back and the glass shard was removed intra-abdominally after causing a bowel perforation.\textsuperscript{8}

Because of the length of time from initial presentation to surgery it is unclear whether our patient had a chest radiograph 25 years ago. Routine x-rays have been shown however to be unnecessary in superficial wounds that can be thoroughly explored.\textsuperscript{9} However, there is evidence to suggest that penetrating wounds often have the highest prevalence of retained glass,\textsuperscript{10} and therefore imaging such as plain radiographs should be considered at the time of presentation in wounds such as these.

Our case illustrates not only the importance of a good clinical history, but of appropriate radiological imaging in deciding the management of these patients.

Figure 1. Chest X-ray showing glass shard on the right side of chest in the extrathoracic space
Figure 2. CT scan saggital view showing glass shard through the scapula blade, lying extra-thoracic soft tissues

Figure 3. 3D CT reconstruction showing migration of glass shard through scapula

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