



CASE REPORT

“Spring in her step”—an unusual case of intra-osseous foreign body in the tibia

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Summary

Deep penetrative soft-tissue injuries associated with a pencil or a ballpoint pen are uncommon but have been documented in medical literature.^{1,2} We present an injury with a ballpoint pen that penetrated the soft tissues and the cortex of the proximal third of the tibia.

Case report

A 63-year old lady attended the Accident and Emergency Department with a history of having fallen on to her left knee and landing on her handbag. Initial examination revealed a small transverse laceration measuring about 1 cm just above the level of the tibia tuberosity of her injured knee (Fig. 1). The patient was able to fully weight bear and had full range of movement of her injured knee with some pain only during flexion. There were no palpable masses or any evidence of the presence of a foreign body. There was a small puncture hole in her handbag which inside was stained with ink. The patient

admitted to the existence of a pen inside her handbag, which was now missing.

Radiographs showed part of the pen embedded in bone at the level of the wound (Figs. 2 and 3). The husband of the patient later produced the remains of the pen (Fig. 4).

Intravenous antibiotics (1.5 g cefuroxime) and tetanus toxoid were administered. The patient was transferred to the operating theatre within 6 h post injury. Skin debridement was performed and the remains of the pen were removed (Fig. 5). Specimens were collected for culture and sensitivity, but no organisms were isolated. The patient remained in hospital for a further 48 h, for administration of intravenous antibiotics. The full recovery of the patient was uneventful.

Discussion

In the professional literature available, no report has been found to describe such an unusual pattern of injury.

The penetration characteristics of a ballpoint pen (low-surface area of impact, stiff rod that does not allow energy to be absorbed by flexion forces and length that allows skin penetration prior to widening of the wound) have been well described by McKinnell et al.² The second most important factor in

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Figure 1 Wound at the level of the tibia tuberosity.

allowing penetration is the location of impact. Over the proximal third of the tibia, the skin is tightly stretched with little underlying soft tissues. The cortical bone over the tibia tuberosity is minimal

in thickness allowing the pen to penetrate it and drive down to cancellous bone.

As with any injury, it is important to assess it in relation to the history as given by the patient.



Figures 2 and 3 A–P and lateral radiographs of the knee.



Figure 4 The remains of the pen that were found by the husband of the patient.



Figure 5 The parts of the pen that were embedded in bone.

References

1. Lee ASW, So KT, Wong HL, Lau S. Penetrating pencil injury: an unusual case of child abuse. *Child Abuse Negl* 1998; 22(7):749–52.
2. McKinnell TH, Mandal A, Erdmann M. The pen is mightier than the sword. *Injury* 2004;35(12):1314–5.