Removal of minute foreign bodies

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SUMMARY

The precise localization and surgical removal of the broken tip of an acupuncture needle is reported. The needle was suspected of causing chronic suppuration and sinus formation in the patient's leg. A localizing guide-wire was inserted pre-operatively under fluoroscopic control. Subsequent surgical removal of the foreign body was carried out swiftly and simply with the aid of an image intensifier.

Key words: foreign body, localizing guide-wire, surgical removal

procedures be frustrating for the surgeon, but significant tissue damage can result. This accounts for the standard teaching that the surgeon should weigh the potential harm of leaving the foreign body *in situ* against the risk of attempting removal.

Various imaging modalities have been used to detect foreign bodies in tissues. Plain radiographs remain the initial screening method for suspected radio-opaque foreign bodies. Radiolucent foreign bodies may be detected by ultrasound, computed tomography or magnetic resonance imaging.¹⁻⁴ The use of these imaging modalities in addition to good light, ample time, proper anaesthesia and a

CASE HISTORY

A 42-year-old man presented with a chronic discharging sinus in his right calf. A tiny radio-opaque foreign body was noted on the plain radiograph of his leg (Fig. 1). This was thought to be the broken tip of an acupuncture needle used for treating him a few months earlier. In the absence of any other significant finding, a decision was taken to explore the soft tissue of his calf and remove the foreign body.

Pre-operatively, the foreign body was accurately localized by a mammographic wire inserted under fluoroscopic control (Fig. 2). During the operation, a small cylinder of tissue was dissected around the guide-wire down to its tip and excised. A radiograph of the excised material confirmed the presence of the foreign body within it (Fig. 3). No residual foreign body was seen on a post-operative radiograph of the patient's leg.

DISCUSSION

Surgical exploration and removal of minute foreign bodies in soft tissues without prior localization is difficult and often unsuccessful. Not only can such

Fig. 1. Foreign body in soft tissue of the patient's leg.

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Fig. 2. Foreign body localized by guide-wire.

Fig. 3. Foreign body within excised soft-tissue.

bloodless field is recognized as invaluable for the accurate localization and removal of foreign bodies.⁵ We found that the localizing guide-wire technique, in addition to these other techniques, rendered such a procedure simple, swift, safe and successful. Other workers have reported similar experiences.⁶

Using radiological imaging techniques to localize foreign bodies to simplify their removal is not new, but its practice seems to be under-utilized when healing does not take place with the foreign body

in situ. The necessary radiographic equipment is available in most hospitals and using any less successful method for foreign body removal may be considered unsatisfactory and could lead to an accusation of negligent practice. Therefore this method of removing small foreign bodies, where the associated wound has not healed, requires further publicity.

REFERENCES

1. Flom L.L. & Ellis G.L. (1992) Radiologic evaluation of foreign bodies. *Emergency Medicine Clinics of North America* **10**, 163–177.
2. Ginsburg M.J., Ellis G.L. & Flom L.L. (1990) Detection of soft tissue foreign bodies by plain radiography, xerography, computed tomography and ultrasonography. *Annals of Emergency Medicine* **19**, 701–703.
3. Remedios D., Charlesworth C. & de Lacey G. (1993) Imaging of foreign bodies. *Imaging* **5**, 171–179.
4. Humphrey G., Super P., Dalton M., Glazer G. & Touquet R. (1993) Retained glass foreign bodies: confirmation and localisation by computerised tomography and ultrasonography. *Injury: International Journal of the Care of the Injured* **24**, 493–494.
5. Scurr J.H. (1992) *Bailey & Love's Short Practice of Surgery*, 21st edn. p. 10. Chapman & Hall Medical, London.
6. Shemen L.J., Schechter L.S. & Godfrey N. (1992) Needle-wire localisation of an infratemporal fossa foreign body using computed tomography. *Archives of Otolaryngology — Head & Neck Surgery* **118**, 1337–1339.