A simple technique to reduce surgeon radiation exposure during the use of the mini C-arm fluoroscope

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None of the authors have any commercial interest in the product described in this technical note.

BACKGROUND

The mini C-arm fluoroscope can provide intraoperative contemporaneous single and continuous screening radiographic images, and has become an important resource for hand surgery. There have been limited studies investigating the amount of radiation to which the surgical team is exposed when using the mini C-arm fluoroscope.^{1,2} For this reason, the lead author has developed a technique allowing mobilisation of the insensate patient hand when screening the stability of a fracture.

TECHNIQUE

Three ½ inch × 4 inch Suture Strip® wound closure strips (Derma Sciences, Maidenhead, UK) are attached to the fractured finger: two in a longitudinal fashion to the distal phalanx and one circumferentially at the level of the distal interphalangeal joint. The surgeon can hold or place a clip on to the end of the Suture Strips®. A second clip, forceps or marker is placed into the palm at the level of the metacarpal phalangeal joint, allowing for mobilisation of the finger without exposure of the surgeon to the radiation field (Fig 1).

DISCUSSION

This simple technique minimises surgeon exposure to radiation when using a mini C-arm fluoroscope.

References

1. Giordano BD, Ryder S, Baumhauer JF, DiGiovanni BF. Exposure to direct and scatter radiation with use of mini-c-arm fluoroscopy. *J Bone Joint Surg Am* 2007; **89**: 948–952.
2. Giordano BD, Baumhauer JF, Morgan TL, Reichtine GR. Patient and surgeon radiation exposure: comparison of standard and mini-c-arm fluoroscopy. *J Bone Joint Surg Am* 2009; **91**: 297–304.

Figure 1 Demonstrating the position of the Suture Strips® on the finger in full extension (left) and flexion (right)

Stryker® intracompartmental pressure monitor in the triage of circumferential limb burns

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BACKGROUND

Compartment syndrome is a life and limb threatening emergency associated with circumferential limb burns. Immediate surgical decompression is the treatment of choice but the diagnosis can be difficult to make in the unconscious patient.

Following a boat explosion, 23 patients, with a mean burn area of 24%, were transferred to Royal Perth Hospital in 12 hours. Many of the patients were sedated. Seven had circumferential limb burns that would potentially require decompression. To assist with the clinical assessment, the Stryker® (Kalamazoo, MI, US) pressure device (Fig 1) was used.

TECHNIQUE

The device was inserted into the compartments of the affected limbs (16 in total). A pressure of 30mmHg was used as the threshold for

Figure 1 Stryker® device

Figure 2 Lower limb escharotomies

Figure 3 Contour defect after escharotomy

decompression and standard escharotomy incisions were performed in theatre (Fig 2).

DISCUSSION

Compartment pressure greater than 30mmHg for eight hours or more can cause cell death by interference with the microcirculation.¹ Immediate surgical decompression is required to prevent complications, including death. Seven patients had burns that would have warranted escharotomy based on signs and symptoms alone.

Escharotomies can cause severe bleeding and often leave a significant contour defect (Fig 3) that adversely affects the physical and psychological state of the patient long term. Two of the seven patients in our series were found to have normal compartment pressures on repeat measurements and so escharotomy was avoided.

To our knowledge, this was the first use of the Stryker® pressure monitor in a mass burn disaster. We advocate the use of this device in the assessment of all circumferential limb burns.

References

1. Tiwari A, Haq AI, Myint F, Hamilton G. Acute compartment syndromes. *Br J Surg* 2002; **89**: 397–412.

Greater palatine block in the treatment of acute epistaxis

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BACKGROUND

Epistaxis is a common acute presentation to otolaryngology units. In a significant proportion of cases, effective cauterity with silver nitrate can be carried out, reducing the necessity for nasal packing. In some cases, bleeding is too brisk to allow localisation of a bleeding point

Figure 1 Location of the greater palatine foramen

or effective silver nitrate cauterity. We describe a method of reducing nasal blood flow to facilitate more effective nasal cauterity.

TECHNIQUE

The technique involves infiltration of local anaesthetic and adrenaline into the region of the greater palatine foramen to induce vasospasm in

Figure 2 Infiltration point