A technique for K-wire assisted closed reduction and percutaneous screw fixation of phalangeal fractures

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BACKGROUND

Following open reduction and internal fixation of finger fractures, postoperative stiffness is a potential problem, occurring in up to 51% of cases.¹ Stiffness can be significantly reduced by using

closed reduction and Kirschner wire (K-wire) fixation,² although infection is a problem reportedly occurring in up to 18% of cases.³

We describe a simple method for phalangeal fracture (Fig 1) fixation. K-wires are used as a 'joystick' to aid closed reduction and provide temporary stabilisation before being sequentially replaced with low-profile screws through stab incisions.

TECHNIQUE

Initial longitudinal traction is applied to disimpact the fracture. A 1.2-mm K-wire is then passed percutaneously in the midaxial plane through one cortex only, which is used as a 'joystick' to obtain fracture reduction (Fig 2). Once the fracture has been reduced, the K-wire can be inserted further to engage the far cortex and to provide temporary stabilisation. A second parallel K-wire is then passed.

Figure 1 An oblique intra-articular fracture of the distal end of the proximal phalanx of the middle finger

Figure 2 K-wires can be used as a joystick to aid closed reduction then sequentially replaced with low-profile screws

Figure 3 An example of a restored joint line, held in place with two screws

When fracture reduction is radiographically confirmed, the K-wires can be sequentially replaced with low-profile headed 1.5-mm screws through stab incisions, which need only to be big enough to pass the screw heads (Fig 3). There is no need to drill, as the track of the K-wires is adequate.

DISCUSSION

This method is simple to use, provides more compression across the fracture than K-wires alone, with minimal soft tissue damage or periosteal stripping, potentially resulting in a lower risk of infection. The technique provides stable fixation and enables early active mobilisation, reducing stiffness and potentially resulting in improved functional outcome.

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Tension band wire stabilisation: an aid to femoral intramedullary nail fixation

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BACKGROUND

Tension band wire fixation techniques for fractures are well described in the literature and widely employed in clinical practice. We describe a technique that uses tension band principles to aid in maintaining the reduction of transverse femoral fractures, thereby simplifying the definitive intramedullary fixation.

TECHNIQUE

Using a direct lateral approach as for an open reduction of the fracture, two 4.5 mm unicortical screws are inserted, one either side of the fracture site. A Dall-Miles cable or equivalent can then be applied and tensioned to reduce and hold the fracture reduced while intramedullary nail fixation is undertaken (Fig 1). This construct can then be left in or removed at the surgeon's discretion.

DISCUSSION

This is a very simple and powerful technique for providing temporary femoral fracture stabilisation enabling a much simpler intramedullary nail fixation in potentially difficult cases. We have found this technique particularly useful in non-union cases that required a shortening osteotomy.

Figure 1

Biopsy of ureteric lesions using a semi-rigid ureteroscope through a ureteric access sheath

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BACKGROUND

Obtaining a tissue diagnosis from a ureteric lesion can be technically difficult. Inadequate tissue sampling with biopsy forceps is common and can delay diagnosis and treatment. The use of backloading biopsy forceps allows larger tissue samples to be obtained when compared with traditional biopsy forceps, which are limited by the diameter of the ureteroscopic working channel. However, backloaded biopsy forceps may reduce vision and hinder safe access of the ureter. The use of an access sheath can allow multiple passes to the ureteric lesion and can improve vision.

TECHNIQUE

Retrograde study and diagnostic ureteroscopy to assess a ureteric lesion is undertaken. A 12/14 Fr ureteric access sheath over a hydrophilic guidewire is then placed to the level of the lesion under fluoroscopic guidance. A Cook Medical's BIGopsy® backloading biopsy forceps is then used through a semi-rigid ureteroscope. The semi-rigid