A simple technique for the reduction of phalangeal condylar fractures in children

D Markeson, S Iyer

Heatherwood and Wexham Park Hospitals NHS Foundation Trust, UK

CORRESPONDENCE TO

Daniel Markeson, E: danmarkeson@hotmail.com

BACKGROUND

Phalangeal unicondylar intra-articular fractures are difficult to reduce and hold in adults and even more complex to manage in children (Fig 1). Furthermore, anatomical reduction of the joint surface is extremely critical in children as even half a millimetre of displacement can lead to significant angulation and consequently premature joint degeneration due to joint surface incongruity.¹ In many cases it is impossible to reduce condylar fractures by ligamentotaxis alone and therefore open reduction and internal fixation is required.

Figure 1 Lateral and anteroposterior x-rays of the right thumb showing a displaced unicondylar phalangeal fracture

TECHNIQUE

Our simple and practical technique involves using a standard atraumatic non-puncturing towel clip, present in most sterile theatre packs, to reduce the fracture (Fig 2), enabling a closed reduction and fixation. The reduction is held in the surgeon's non-dominant hand with a controlled force and two 0.9mm K-wires are used to fix the fracture (Fig 3).

DISCUSSION

Pointed clamps and Rampley sponge-holding forceps can both be used to reduce unicondylar phalangeal fractures in adults.² In children, however, it would be difficult to use a sponge-holder because of its size and pointed clamps could cut through the bone. Due to its size and distribution of force, the atraumatic towel clip is ideal to reduce these fractures. The force is transient, over a wide area and controlled by the surgeon's hand (the ratchets of the clip are never engaged) so there is no skin damage. We have used this technique successfully on several Weiss type I/II unicondylar phalangeal fractures.³

Figure 2 Photograph demonstrating the positioning of the towel clip required to reduce the fracture

Figure 3 Lateral and anteroposterior image intensifier pictures demonstrating reduction of the fracture and fixation with two 0.9mm K-wires

References

1. Rang M, Wenger DR. Intra-articular Fractures. In: Wenger DR, Pring ME. *Rang's Children's Fractures*. 3rd edn. Philadelphia, PA: Lippincott Williams & Wilkins; 2005. pp157.
2. Roche SJ, Sproule JA, Murthy GE. Unicondylar phalangeal fracture reduction using a sponge-holding forceps: a safe and effective technique. *J Hand Surg Eur Vol* 2010; **35**: 509–511.
3. Weiss AP, Hastings H. Distal unicondylar fractures of the proximal phalanx. *J Hand Surg Am* 1993; **18**: 594–599.