Metal frame for identification of bone graft harvest position

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BACKGROUND

Non-union is a common complication of scaphoid fractures.¹ The use of non-vascularised bone grafts (NVBGs) or vascularised bone grafts (VBGs) combined with internal fixation has been established as the treatment of choice for the management of scaphoid non-unions.^{2–4} A common site for pedicled VBG harvest for scaphoid non-unions is the volar ulnar aspect of the distal radius, based on the palmar carpal artery.²

TECHNIQUE

A 0.9mm K-wire is bent on one end using bending forceps in order to make a frame in the exact shape and size of the desired bone graft, leaving the other end of the K-wire long to be used as a handle (Fig 1). The frame is positioned in a way to include the palmar carpal artery, which travels along the distal border of the pronator quadratus (Fig 2), and the position of the frame is confirmed using x-rays (Fig 3). The outline of the frame is then marked using a permanent marker, the flap pedicle is dissected and the bone graft is harvested using osteotomes.

DISCUSSION

We have been using this simple technique to confirm the site of VBG harvest from the volar distal radius. Radiological confirmation of the

Figure 1 The metal frame made with a 0.9mm K-wire

Figure 2 Positioning of the frame on the distal radius

Figure 3 X-ray confirmation of the correct position of the frame

position is recommended to avoid potentially serious complications (eg harvesting bone too close to the radiocarpal or distal radioulnar joint). We believe that this technique can also have useful applications in VBG and NVBG harvesting from other commonly used sites such as the dorsal distal radius, iliac crest or distal femur.

References

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