TRUE VERSUS PSEUDO “ISHIGURO” WIRING OF MALLET FRACTURES

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Dear Sir,

We read with interest the recent work by Akgun *et al.* (Akgun et al., 2016). The authors compared two approaches to Kirschner wire fixation of mallet fractures, based on the technique described by Ishiguro *et al.* (Ishiguro et al., 1997). Although our experience is more anecdotal than Akgun's study, we concur with their conclusion that two dorsal blocking wires does not necessarily add value to this procedure.

However, we also note the relatively high proportion of 10/36 (28%) of fair or poor outcomes, and that loss of fracture reduction may occur (2/19, 11% in the single blocking wire group) reported. We propose a possible factor in this.

Rather than this necessarily relating to the number of wires used to block, we question whether some poor outcomes may relate to the position in which the Kirschner wires are placed. Anecdotally, we have observed that there is a misconception amongst clinicians as to what constitutes “true Ishiguro” wiring, which we believe has consequences for the ease of insertion, rehabilitation and may affect outcome. In keeping with other treatments of

mallet injuries, it seems a common belief that the distal interphalangeal joint (DIPJ) must be wired in full extension, with the dorsal blocking wire(s) inserted to attempt to reduce the fragment. This is not what was described by Ishiguro *et al.* (Ishiguro et al., 1997). Akgun *et al.* recognised this, and placed the dorsal block wire first and then transfixed the DIPJ in partial flexion. However, their technique strays from the original description, with the dorsal blocking wire placed at 40 degrees to the middle phalanx, rather than parallel to it (see Figure 1).

Figure 1: Different interpretations of “Ishiguro” wiring. On the left, a “pseudo-Ishiguro” wiring, with the joint held in extension, and the red dorsal blocking Kirschner wire angled. The blue Kirschner wire tends to enter the fracture site, hindering reduction. The middle figure is after the images in Akgun *et al.* in which this is only partially corrected. The right figure is a “true Ishiguro” wiring after Ishiguro *et al.*, with the red blocking wire parallel to the middle phalanx and the DIPJ wired in a more flexed position.

Following Ishiguro's original technique is technically easier than the performing a "pseudo-Ishiguro", may facilitate fracture reduction by reducing the vector of *flexor digitorum profundus*' action that displaces the main distal phalanx in a volar direction, and actually facilitates rehabilitation by allowing immediate passive exercises to regain extension once the wires are removed. This latter point was noted in the original article (Ishiguro et al., 1997).

We have found Ishiguro *et al.*'s original paper to provide a clear and well-illustrated description of the technique that is essential reading for trainee hand surgeons, and we wonder whether following the technique more rigidly might have achieved better results?

REFERENCES

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