Clinical Tip: Modified Akin Osteotomy

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INTRODUCTION

The Akin osteotomy is a closing wedge osteotomy of the proximal phalanx widely used for the correction of hallux valgus of the interphalangeal joint and associated deformity of the metatarsophalangeal joint. Fixation of the proximal phalanx can be difficult and result in instability of the osteotomy. More obliquely positioned cuts from medial-proximal to lateral-distal increase the area of the osteotomy, facilitating fixation and theoretically speeding bone healing. Because the osteotomy involves a larger portion of the proximal phalanx, correction of the deformity occurs over a larger surface area and is less likely to be cosmetically noticeable.

The fixation is done with a 2-mm mini-fragment lag screw, which almost perpendicularly transfixes the osteotomy, promoting rigid fixation and allowing the patient to return to normal activities earlier. Most descriptions of the Akin osteotomy involve small fragment or cannulated screws and Kirschner wires or staple fixation. All of those are larger implants than the mini-fragment screw and often require removal.

TECHNIQUE

The shaft of the proximal phalanx is exposed through a 2-cm incision extended at the medial border (or through an extension of the incision used for the first metatarsal osteotomy). A medially-based wedge is removed by two oblique osteotomies from proximal-to-medial and lateral-to-distal, preserving the lateral cortex (Figure 1). The thickness of the wedge to be removed depends on the intended correction. Wedge closure and deformity correction are followed by osteotomy fixation with a 2-mm diameter mini-fragment lag screw (Figure 2). Soft tissue closure is performed as normal.

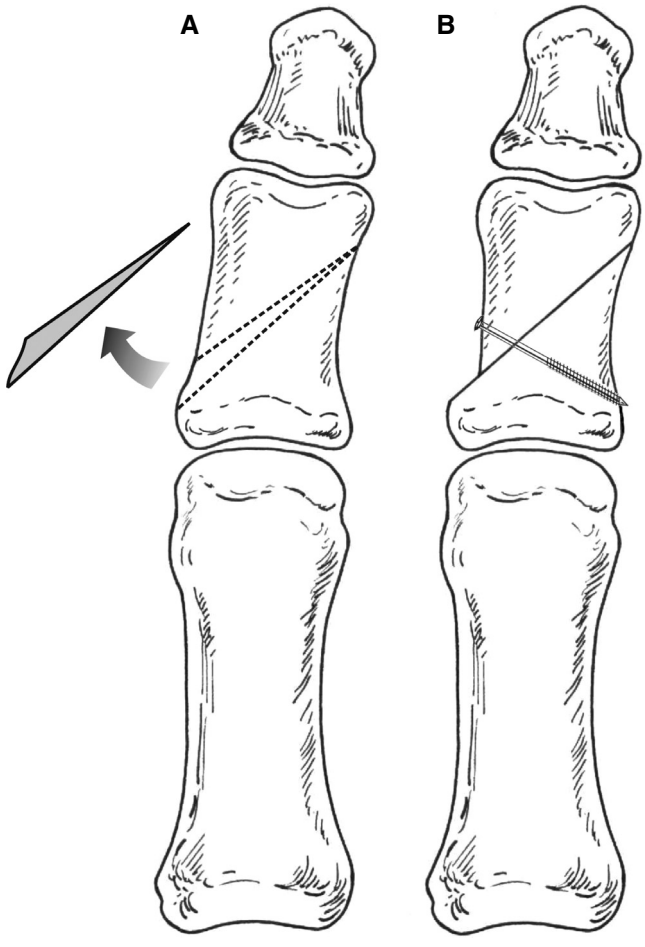

Fig. 1: Schematic of modified Akin osteotomy. Note the increased osteotomy obliquity and nearly perpendicular screw fixation to the axis

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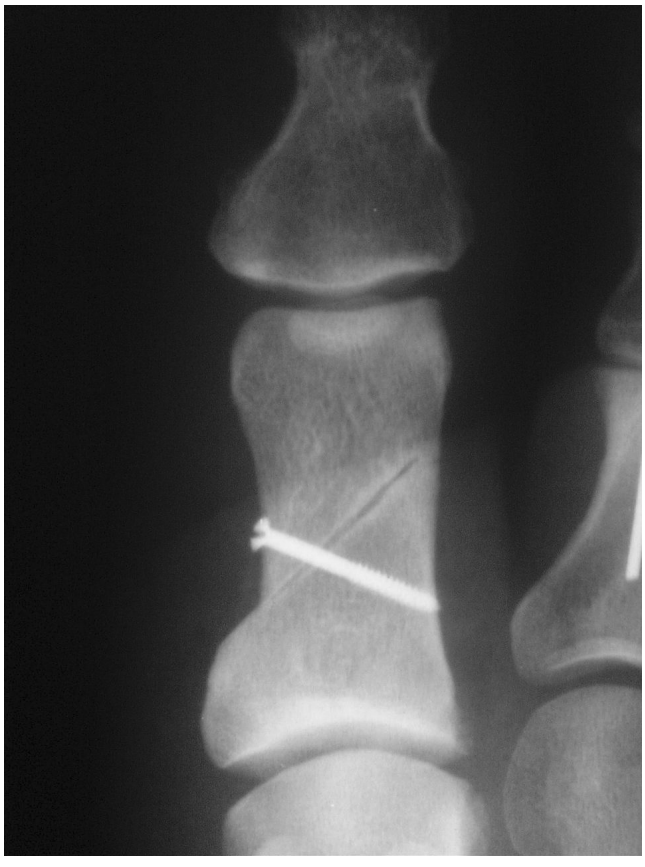

Fig. 2: Postoperative radiograph of the modified Akin osteotomy

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