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BRIEF REPORT

A SIMPLE TECHNIQUE FOR ARTHRODESIS OF THE FIRST METATARSOPHALANGEAL JOINT

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Arthrodesis of the first metatarsophalangeal joint is often used to treat hallux rigidus and hallux valgus and, when correctly performed, the reported results have been excellent. Ideally the method of fixation should allow accurate positioning, it should result in firm fixation preferably with compression, and it should not require elaborate equipment (Fitzgerald and Wilkinson 1981). We have used a simple method of wiring based on the technique described by Lister (1978) for stabilising digits. Technique. The joint is exposed through a dorsal incision centred over the joint. The extensor tendon is retracted laterally and sufficient soft tissue cleared from the metatarsal and proximal phalanx to allow subsequent insertion of the wire loop. The joint surfaces and any osteophytes are removed with gouges and a rongeur, care being taken to maintain the general contour of the joint. A loop of 20 SWG wire is passed through transverse drill holes made in the bones about 1 cm from the joint. A 0.062-inch Kirschner wire is driven obliquely into the

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proximal phalanx from the joint surface; the toe is then placed in the desired position and the wire is driven back into the metatarsal using a power drill. At this stage the position of the toe can be adjusted if necessary by withdrawing the Kirschner wire and reinserting it until the ideal position for arthrodesis is obtained. The wire loop is then tightened and the ends cut short (Figs 1 and 2). Postoperatively the foot is elevated for a few days. Then a below-knee walking plaster is applied and retained for six weeks. The Kirschner wire is removed at that time if the arthrodesis is clinically and radiologically united (Figs 3 and 4).

**Results.** Fifty-one operations have been performed on 32 women and 11 men with a mean age of 56 years (range 33–79 years). Thirty-four operations were performed for hallux rigidus and all these joints were clinically and radiologically united in satisfactory position by three months after operation. Of 17 operations performed for hallux valgus, 15 achieved solid clinical and radiological union in satisfactory position; one patient who had both feet operated on developed painless fibrous union in both. Successful union was thus achieved in 96% of cases and no patient had symptoms attributable to malposition of the great toe.

**Discussion.** Failure following attempted arthrodesis of the first metatarsophalangeal joint may be due to non-union (though this is often asymptomatic) or to malposition. In particular medial rotation or insufficient valgus may result in excessive shoe pressure or lead to an increased incidence of degenerative changes in the interphalangeal joint (Fitzgerald and Wilkinson 1981). The technique described requires no special equipment, permits correction of position during the operation and maintains fixation with compression, thus avoiding most of the complications associated with previously described methods.

**REFERENCES**
