

THE USE OF A TRACTION FRAME FOR INTRAMEDULLARY NAILING OF TIBIAL FRACTURES

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We present a simple traction frame that makes it possible to perform intramedullary nailing of tibial fractures on a normal operation table.

Keywords : internal fixation ; tibial fractures.

Mots-clés : ostéosynthèse ; fractures du tibia.

INTRODUCTION

The tibia is the most commonly fractured of all the long bones. The management of each fracture should be individualized. The pathoanatomy of the fracture, soft tissue damage, age, and co-operation of the patient must be carefully assessed.

In our department, for closed tibial fractures with little soft tissue damage, intramedullary nailing with an interlocking nail is the preferred method. For comminuted fractures and fractures with soft tissue damage or bony defects an external fixator is preferred for temporary stabilization.

DESCRIPTION OF THE INSTRUMENT

Our device (fig. 1a, b) consists of two horizontal frames made of hollow aluminum tubes which can glide in each other's frame. Vertically orientated bars are connected to the ends of the frame. At the proximal end, a cylindrical aluminum bar can glide over the vertical bars. With a handscrew it is possible to fix this knee support at a specific level. At the distal end, the vertically oriented frame can rotate around a coronal axis for valgus or varus corrections (fig. 2). On both sides a wide slot makes rotation of the calcaneus traction pin possible (fig. 3).

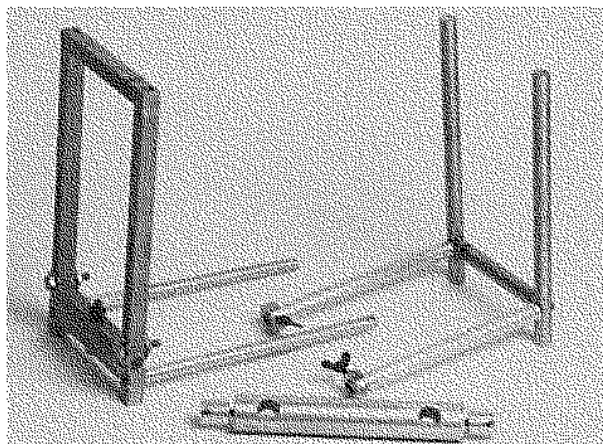
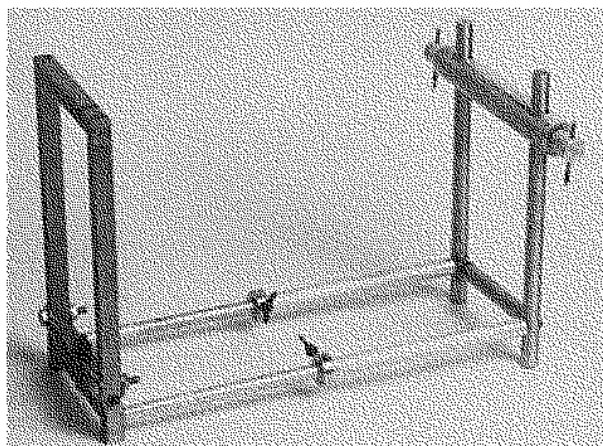


Fig. 1a, b. — The traction frame.

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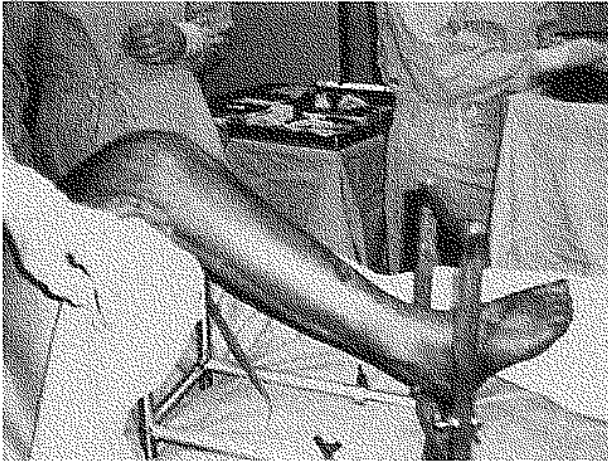


Fig. 2. — Positioning of the lower leg in the traction frame for intramedullary nailing.

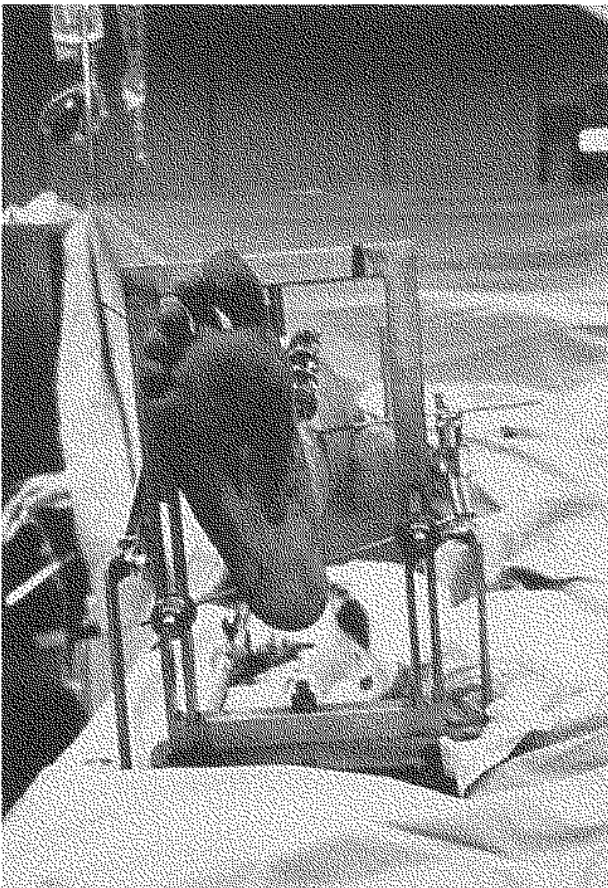


Fig. 3. — On both sides a wide slot makes rotation of the calcaneous traction pin possible.

Traction is applied to the tibia, by pulling on the distal horizontal frame. The traction is then maintained by locking the two horizontal frames with a handscrew.

RESULTS AND DISCUSSION

We have now used this tibial traction frame for more than 4 years as an aid in reducing tibial fractures and in holding the reduction while performing intramedullary nailing of the tibia. Because of its compactness the traction frame is easy to sterilize by autoclave.

This instrument saves time in dealing with difficult tibial fractures. There is no need for a special traction table to perform an intramedullary nailing of the tibia. For the polytraumatized patient, immediate stabilization of these fractures can be carried out on the same operating table. This device allows easier access in both planes for the image intensifier, which is not the case with most of the traction tables where intraoperative imaging of tibial shaft fractures can be difficult.

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SAMENVATTING

P. A. REYNDERS-FREDERIX, P. L. O. BROOS en G. FABRY. Het gebruik van een traktiekader in de operatieve behandeling van tibiafracturen.

Wij stellen een traktiekader voor om de reductie van tibiafracturen te behouden tijdens het plaatsen van een mergpen. Door zijn compactheid kan het apparaat gemakkelijk geautoclaveerd worden.

Met dit traktiekader kunnen intramedullaire nagelingen van tibiafracturen op een gewone operatietafel uitgevoerd worden.

Door zijn constructie in aluminium bestaat er een volledige röntgen doorlaatbaarheid.

RÉSUMÉ

P. A. REYNDERS-FREDERIX, P. L. O. BROOS et G. FABRY. L'utilisation d'un cadre de traction pour le traitement chirurgical des fractures du tibia.

Les auteurs présentent un cadre de traction stabilisant la réduction des fractures du tibia pendant l'enclouage centro-médullaire.

L'appareil (qui est très compact) peut être correctement autoclavé. Grâce à sa construction en aluminium il est perméable aux rayons X.