herniation have been shown to occur more frequently than in young adults (Aronson and Dunsmore 1963, Maistrelli et al. 1987). The diagnosis was not suggested before surgery in our case and in previous ones (Hirabayashi et al, 1990). The lesion should be considered in the differential diagnosis of epidural tumor or hematoma, especially when the patient is elderly.

References

Aronson H, Dunsmore R H. Herniated upper lumbar discs. J Bone Joint Surg (Am) 1963; 45: 311-7.

Harada Y, Nakahara S. A pathologic study of lumbar disc herniation in the elderly. Spine 1989; 14: 1020-4.

Hirabayashi S, Kumano K, Tsuiki T, Eguchi M, Ikeda S. A dorsally displaced free fragment of lumbar disc herniation and its interesting histologic findings. Spine 1990; 15: 1231-3.

Lichtor T. Posterior epidural migration of extruded lumbar disc. Surg Neurol 1989; 32: 311-2.

Lombardi V. Lumbar spinal block by posterior rotation of anulus fibrosus. J Neurosurg 1973; 39: 642-4.

Lutz J D, Smith R R, Jones H M. CT myelography of a fragment of a lumbar disc sequestrated posterior to the thecal sac. AJNR 1990; 1: 610-1.

Maistrelli G L, Vaughan P A, Evans D C, Barrington T W. Lumbar disc herniation in the elderly. Spine 1987; 12: 63-6.

Peacock A. Observation on the postnatal structure of the intervertebral disc in man. J Anat 1952; 86: 162-78.

Removal of a broken solid intramedullary interlocking nail A technical note

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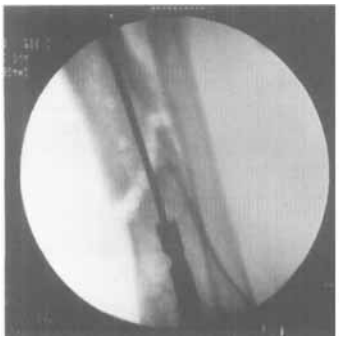
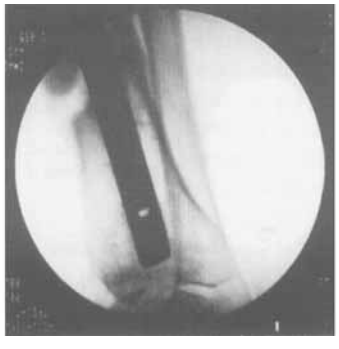
A 25-year-old Dutch soldier was injured in a car accident in Bosnia. He sustained an open transverse tibial fracture with a butterfly fragment and medial malleolar fracture of the right leg. The patient was operated on with open reduction and fixation of the fracture with a plate. Because of nonunion the plate was removed and an unreamed, intramedullary nailing with an 8-mm solid distally locked nail was performed. Autogenous bone-grafting was performed and an oblique osteotomy of the fibula was also carried out. After 4 months there was no union and the nail had migrated proximally blocking extension of the knee. We decided to replace the nail, but several days before the operation the nail broke through one of the distal holes.

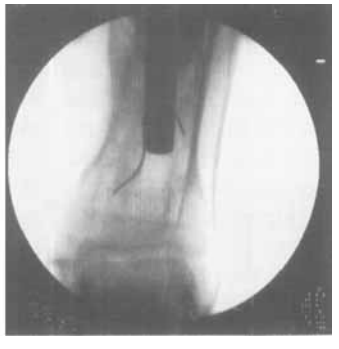
A standard slotted nail was modified to glide over the 8 mm solid nail. First, the proximal part of the solid nail was removed. Then a guide wire was used as a conductor for the slotted nail. The slotted nail was moved over the distal part of the solid nail, while the distal interlocking bolt was still in place to prevent the distal end of the solid nail pushing into the ankle joint. After removal of the interlocking bolt, the slotted nail was advanced, so that the boltholes fell exactly over each other. To couple both nails, a thin flexible iron wire was brought in and both nails were removed. This was replaced with a 14 mm slotted nail after additional reaming and union occurred 2 months later.



Distal tibia, the proximal part of the solid nail is replaced by a guide wire.



Distal tibia, the custom-made slotted nail glides over the solid nail untill both boltholes fall exactly over each other.



After coupling both nails with an iron wire, the nails were removed.