A MODIFIED TECHNIQUE FOR SUBTALAR ARTHRODESIS
C. R. HOWIE, G. E. FULFORD, K. STEWART

Technical problems with the Grice (1952) subtalar arthrodesis have led to modifications in technique. The senior author (GEF) described a method (Dennyson and Fulford 1976) involving clearing of the sinus tarsi, decortication of its apex, insertion of a screw through the neck of the talus into the calcaneum and packing the sinus with autogenous cancellous bone chips. We now present a modification of this technique which reduces morbidity without affecting the rate of union.

Technique. The approach to the sinus tarsi, insertion of the screw and wound closure are as described in the original communication (Dennyson and Fulford 1976). Once the sinus tarsi has been cleared of fat, instead of removing cortical bone from its apex, osteoperiosteal flaps based on the apex of the sinus are raised from the roof and the floor of the sinus. The margins of the flaps are defined by multiple perforations with a narrow gouge (Fig. 1). The perforations are then joined together with a broader gouge which is also used to undermine and raise the flaps (Fig. 2). The flaps are turned back across each other thus bridging the apex of the sinus (Fig. 3). The guide hole for the screw is made with an awl but not tapped, although an Osteo cortical screw is now used because it combines a broad thread with a flat head (the rounded head of an AO screw would protrude more above the neck of the talus and could impinge upon the front of the ankle joint). The tip of the screw must not protrude through the lateral cortex of the calcaneum. The sinus tarsi is tightly packed with cancellous allograft (Fig. 4), taken from a femoral head (instead of an autogenous graft from the patient’s iliac crest, which was used formerly). The wound is repaired and a padded below-knee weight-bearing cast is applied, well moulded around the heel. This cast is removed after six weeks.

Results. Of the 14 subtalar joints subjected to the modified technique of fusion all were in plaster for only six weeks, with an average stay in hospital of seven days (five to nine days). Twelve joints were fused by six weeks and one at 12 weeks, but in this patient the hindfoot valgus recurred. One joint failed to fuse; it was revised using the same technique and was united at six weeks (this revision is not included in the present series). There was no wound sepsis and none of the screws had to be removed.

Discussion. The modified technique reduces the morbidity because bone is not taken from the patient’s iliac crest but from local osteoperiosteal flaps and allografts; this reduces the amount of pain as well as allowing earlier mobilisation and discharge from hospital. It is likely that the osteoperiosteal flaps act as vascularised bone grafts and lead to early fusion while the allograft merely acts as packing to hold the flaps in position.

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REFERENCES