TREATMENT OF FRACTURES OF THE CALCANEUS

Many surgeons would agree that most of the operative techniques used in the management of limb fractures have been developed in Continental and North American centres. British orthopaedic practice has concentrated on the details of conservative management, with a much less radical use of open surgery. Conservative management has to be learnt: it is not treatment by neglect. A badly applied and inadequately supervised Thomas's splint is worse than no splint. Conservative management of fractures has been shown to be a most effective method.

Obviously there is a place for open operation when it can be shown that it is safe and leads to an improved functional result. Fractures that are notoriously difficult to treat, or that commonly result in permanent loss of function, have particularly stimulated the interest of advocates of open repair. Many bitter lessons have been learnt. Inadequate or imperfectly performed operations give results that are worse than those obtained by conservative methods.

One group of injuries with a poor prognosis is that in which a joint surface is distorted, with consequent impairment of movement, which may be painful. This is a particular problem in weight-bearing joints: examples are fractures of the lateral condyle of the tibia and fractures of the calcaneus.

These two injuries have some similarities. They are caused by the bone of one half of the joint being rammed down into the articular cartilage of the other half, fracturing it and driving articular cartilage with subchondral bone down into cancellous bone, which is pulped. The joint surface is thus distorted.

Commonly, these injuries have been treated conservatively. The emphasis has been on early movement without weight-bearing, in order to promote an early return of function: the expectation is that with normal healing processes, combined with movement, a reasonably smooth joint surface will be restored. A far from perfect final result has been accepted as reasonable for the difficult fracture.

Improved joint function can be achieved by better reshaping of the joint surface, provided the reconstruction does not delay mobilisation. We have learnt that it is possible to reconstruct a depressed lateral tibial condyle in such a way that mobilisation is not delayed, and an excellent result may be obtained, but this is an art that must be mastered: many attempts to reconstruct the joint surface are done so inadequately that the results are bad. There is nothing wrong with the idea; it is the execution which is at fault.

It would be fair to say that the majority of displaced fractures of the calcaneus are treated conservatively, with or without manipulation. Early movement of the ankle and foot joints is advocated. Deformity of the subtalar joint is accepted as inevitable. We expect our patients to understand that the injury is a severe one, but that in time a reasonable result may be expected.

What do we mean by a reasonable result? Olovson (1940) reported that in six months 50 per cent of patients had recovered; or put another way, 50 per cent had not recovered. At six years, 75 per cent had recovered: that is a long time. We tell our patients that improvement is likely to continue for two years at least. There is permanent functional disability in 20 per cent.

We have been satisfied if a man who has crushed his subtalar joint can get back to work early because early mobilisation has been practised; but whereas early mobilisation of a knee joint for a crushed tibial condyle restores a good range of knee movement, mobilisation of a crushed subtalar joint that has not been accurately reduced does not lead to a return of subtalar joint movement. The joint is stiff, though it may be painless.

Thus the commonly accepted final result is far from perfect and takes years to achieve; so it is not surprising that attempts have been made to improve it by operation. Hall and Pennal (1960) have shown that by early subtalar fusion, 90 per cent of patients can be returned to work in six months. They have a rigid hind foot. Palmer (1948) and Essex-Lopresti (1952) attacked the compressed subtalar joint and reduced it, in the belief that restoration of subtalar joint function is dependent on reconstitution of a proper joint surface. The observations of Essex-Lopresti in this are particularly revealing. He showed that it was possible by these means to restore subtalar movement, but only when the operation was done correctly. This is of paramount importance.

There is a further paper on the surgical management of these fractures in this issue of the Journal. It deserves careful study. The results in the preservation of subtalar joint movement and in an early return to work bear out the findings of Essex-Lopresti, and they show a significant improvement on the results of conservative management. However, let no one embark on such surgery without first reading the paper by Warrick and Bremner (1953) on the pathological anatomy of these fractures and a careful personal study of the anatomy of the calcaneus and subtalar joint. This is surgery in which the choice of case and exactness of technique decide the outcome.

E. L. TRICKEY.

REFERENCES


