BRIEF REPORT

HEALING TIME OF TIBIAL FRACTURES IN UGANDAN AFRICANS

LEO J. DE SOUZA

It has often been said that fractures unite more rapidly in Africans than in Europeans. To test this hypothesis, we studied tibial fractures treated in Kampala over a three-year period. We excluded fractures involving the knee or ankle, those in patients aged less than 19 years or who had multiple injuries and those treated by internal fixation, as well as patients who were irregular in their follow-up.

There remained 125 fractures in 113 patients, of whom 82 had been involved in motor vehicle accidents. Three had bilateral injuries, seven had segmental fractures, and two of those were triple. There were 31 fractures of the upper third of the tibia, 49 of the middle third and 45 of the lower third. Fifty-three of the fractures were open (10 Type I, 23 Type II and 20 Type III; Gustilo and Anderson 1976); 26% were severely comminuted, 33% moderately and 15% mildly comminuted. The open fractures were treated by debridement and in all cases, after manipulation and reduction, an above-knee plaster cast was applied with the knee 15° flexed. Weight-bearing was supposed to be delayed until the fracture was considered to be stable, but only about 10% of the patients complied with this instruction.

The criteria for union were absence of mobility, tenderness or pain on stress at the fracture site, the ability to walk without plaster or crutches and radiological evidence of adequate callus with absence of redisplacement.

Results. There was only one case of non-union. All the other fractures united in an average of 10 weeks. Six of the open fractures became infected; they took longer to unite and included the single non-union. If these infected cases are excluded the average time for solid union was nine weeks. Severe injury, open fracture, fracture comminution and displacement also delayed healing, but not as significantly as infection.

Malunion, however, was common. Loss of position in plaster frequently occurred with occasional complete slip and no less than 90% of the 125 fractures had some degree of angulation at review, though in 62 of these it was 10° or less. Shortening was found in 77 fractures, 1.25 cm or less in 57 and from 1.25 cm to 2.5 cm in 20. It must, however, be borne in mind that 90% of the patients did not follow the advice to use crutches and avoid taking weight in the initial weeks; only 13 complied. The other 100 patients took full weight from the start, usually without crutches; consequently the plaster was soon wrecked (Fig. 1) and in 82 patients was ineffective for most of the time.

Discussion. It is clear that in the Ugandan African fractures unite rapidly, albeit not in good position. This series can be compared with Sarmiento's first 100 tibial fractures (Sarmiento 1967) treated in functional below-knee casts with early weight-bearing; these united in an average of 14.5 weeks. Our patients were treated between 1968 and 1971 before cast-bracing was widely accepted, but our study of them was delayed for many years by the political situation in Uganda. It is possible that the speed of union in our patients is a racial characteristic, but it is at least as likely that it is attributable to early function with minimal immobilisation.

REFERENCES
