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Fracture calcaneus early weight bearing

Yasser Allam
Jeddah Clinic Hospital, Saudi Arabia

Introduction: Fracture of the heel bone is one if challenging injury whatever its type closed or open. There are many ways and studies for the treatment of this fracture either open reduction and internal fixation with plate and screws or with screws only or closed reduction and casting or percutaneous Pinning or external fixation either uniplanar or multiple planers or even with Ilizarov fixator. In all the above methods of treatment, the patient is not allowed to walk or to do weight bearing over affected limb until the fracture is healed completely and this may take about 12 to16 weeks.

Aim: The aim of this study is how to make the patient with fracture calcaneus (heel bone) able to walk and to do weight bearing not only as early as possible but even directly in the next day after surgery.

Method: Ilizarov frame was designed especially for this fracture composed if tow complete rings at the tibia and foot U-shape ring to the heel and foot and one distal flying complete ring. The complete rings of the tibia are fixed to it with two wires for each ring, the proximal ring is fixed to the upper third of the tibia about 8 centimeters distal to tibial tuberosity and the distal ring is fixed to the distal third of the tibia about 8 centimeters above the ankle joint and the heel U shape ring is fixed to the calcaneus with multiple olive wires which enable us to do reduction of all the fracture fragments in all directions and the two limbs of U shape ring is fixed with one or two wires to the distal third of metatarsal bones by this we did foot frame and fracture had been reduced and fixed but still the patient cannot walk or stand on the fractured limb and this is the aim of this study. So, we add the flying distal ring to the frame to act as a metallic heel instead of the fractured one. And to avoid fracture mechanical loading to fracture fragments which will lead to displacement we connect the flying ring with rods to the tibial rings by passing the heel ring this mean that all mechanical loads and stresses of weight bearing will be transmitted directly to the tibia and will not disturb the fracture reduction and healing.

Results: 23 fractures if the calcaneus treated with this method, 15 were unilateral and four patients were the bilateral calcaneal fracture. Tow from the bilateral calcaneal fracture had fracture spine which treated with spine team by fixation. All the patients including those with fracture spine and bilateral fracture calcaneus could move and ambulate in the next day of surgery. The healing time range is from 12 to 16 weeks. Follow up from five years to one year, No osteoarthritis noticed at ankle or subtalar 3D computed tomography post healing revealed healing in excellent anatomical position.

Recent Publications

1. Karasick D (2004) Nursemaid elbow revisited and a review of congenital radioulnar synostosis. Radiographics. 24(6):1068–1610.
2. Salter R B and Zaltz C (1971) Anatomic investigations of the mechanism of injury and pathologic anatomy of "pulled elbow" in young children. Clinical Orthopaedics and Related Research 77:134–143.
3. Macias C G, Bothner J and Wiebe R (1998) A comparison of supination/flexion to hyperpronation in the reduction of radial head subluxations. Pediatrics 102(1): e10.
4. Kaplan R E and Lillis K A (2002) Recurrent nursemaid's elbow (annular ligament displacement) treatment via telephone. Pediatrics 110(1 Pt 1):171–174.
5. Krul M, van der Wouden J C, Koes B W, Schellevis F G, van Suijlekom-Smit LWA (2010) Nursemaid's elbow: its diagnostic clues and preferred means of reduction. Journal of Family Practice 59(1): E5–E7.

Biography

Yasser Allam has his expertise evaluation in Orthopedic Surgery. His open and contextual evaluation model based on responsive constructivists creates new pathways for improving healthcare. He has built this model after years of experience in research, evaluation, teaching and administration both in hospital and education institutions. He started his experience with a case of infected non-united femoral shaft fracture and he got a job as a Scientific Office Director for the agent of Russian Ilizarov Scientific Center, Kurgan in Egypt.

allam.yaser@yahoo.com