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Biomechanics of the talotarsal joint and the role of extra-osseous talotarsal stabilization

Michael E Graham

Graham International Implant Institute, USA

The foot is the foundation of the weight-bearing body and the alignment or misalignment of the hindfoot positively or negatively impacts the biomechanical function within the foot but also the knees, hips and back. The talotarsal joint is the “foundation joint” of the body. This complex joint must be taken into consideration as a partial dislocation or instability within this joint leads to a prolonged period of foot pronation and is named as the primary etiologic factor in the development of the majority of foot deformities such as plantar fasciitis, posterior tibial tendon dysfunction, hallux valgus/hallux limitus deformities. The majority of medical attention is directed to symptom-relief rather than etiologic-resolution. Traditional treatment options will be presented as well as an in depth review of extra-osseous talotarsal stabilization. Finally, the significance of aligned feet to balanced knees, hips and back will be established.

mg@grahamiii.com

Double angle barrel plate in the management of proximal hip disorders

N K Magu

Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, India

Angled blade plates and a DHS have traditionally been used in the management of extra capsular & intra-capsular femoral neck fractures; and intertrochanteric osteotomies. Implant cut out, intra-articular penetration of blade and non-union are the common complications. The author has innovated a 120 degree double angle barrel plate. The implant when used with traditional Dynamic hip screw permits guided collapse to achieve union in acute and neglected femoral neck fractures, fractures with failed osteosynthesis; and delayed union of intertrochanteric osteotomies with remarkable results. The implant has overcome the technical difficulties of seating blade of the standard 120 degree AO double angle blade plate in the inferior quadrant of the head of the femur, has zero incidence of intra-articular penetration and implant cut out; and proved its usefulness in preserving the head of the femur in patients with failed osteosynthesis. The limitation of performing lateralization of distal femoral fragment is currently under study to prevent genu valgum and shortening likely with medicalization. The implant has become the gold standard in performing an intertrochanteric osteotomy in neglected femoral neck fractures and the ones with failed osteosynthesis. The principle of innovation and results of hip disorders shall be presented.

nkmagu@rediffmail.com