

Hallux Rigidus and Post Operative Dynamic Splinting: a Case Report

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ABSTRACT

Athletes often develop hallux rigidus as the long term sequelae of acute traumatic injuries of the metatarsophalangeal joint or chronic repeated micro-trauma of the joint surface. Patients with joint space preservation and painful dorsal osteophytes are considered to be optimal candidates for a motion preserving debridement arthroplasty referred to as a cheilectomy. The literature consensus has long assumed that pain reduction is predictable result of properly selected surgical patients but that improvement in the arc of functional motion should not be expected. For most athletes the failure to restore greater arcs of motion post operatively often precludes return to pre-disability levels of sports performance.

The **purpose** of this case report was to assess the efficacy of post operative dynamic splinting in correcting the arthrofibrosis and chronic contracture associated with hallux rigidus after cheilectomy (debridement arthroplasty) of the metatarsal phalangeal joint (MTJ).

A 40-year-old male patient presented with insidious development of chronic pain and flexion contracture of the right MTJ. A cheilectomy was performed with unremarkable results, however contracture remained.

Dynamic splinting was used as a home therapy to achieve increased time at end range (of motion) with low-load, prolonged-duration of stretch. This modality was worn daily for two months. After two months, the patient's MTJ extension progressed from 30° to 55° in active range of motion following daily use.. The biomechanical modality of dynamic splinting achieved increased time at end range with calibrated, changeable tension to achieve a 83% increase in active range of motion.