Arthroscopic Subtalar Arthrodesis

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Summary:
Subtalar joint is involved in arthralgia of hindfoot in variety of conditions. In many cases when non-surgical management fails, arthrodesis may remain the only viable treatment option. Arthroscopic arthrodesis has obvious advantages over open procedure. A retrospective analysis of Arthroscopic Subtalar Arthrodesis is presented.

Introduction:
Arthroscopy of subtalar joint has evolved as a diagnostic tool as well as therapeutic option for treatment for selected diagnoses. Availability of small joint arthroscope and corresponding instruments has made this feasible. Author has developed an easier to use subtalar joint distracter to facilitate subtalar arthroscopy. In majority of patients, internal fixation is achieved with cannulated screws.

Methods:
Since 1993, Arthroscopic Subtalar Arthrodesis was performed on 41 consecutive patients with symptomatic subtalar pathology. Due to one patient lost to follow up. 40 cases were included in the study. Etiology included 24 posttraumatic arthritis, 7 tibialis posterior tendon insufficiency, 2 rheumatoid arthritis, 2 Charcot arthropathy, 2 osteochondral lesions, 1 tarsal coalition, 1 pes cavovarus and 1 degenerative arthritis. A subtalar joint distracter is applied on lateral aspect to facilitate introduction of small joint arthroscope and instruments. No tourniquet was needed in any patient. Preparation of talo-calcaneal surfaces to vascular subchondral bone was achieved using motorized shavers, abraders and manual curettes. Curved osteotomes were used in sclerotic surfaces. The rest of the procedure was performed under fluroscopy guidance. The distracter now was used as a compression device. Guide wires from a cannulated screw system were inserted from non-weight bearing planter calcaneal surface or posterior calcaneal process across the subtalar joint with particular attention to posterior facet. Compression across arhrodesis site was achieved with cannulated screws of various designs. Postoperative care included non-weight bearing immobilization for 2 weeks followed by partial weight bearing with cam-walker until union.

Results:
Average time until union was 10 weeks as determined by serial Xrays and clinical findings. Arthrodesis rate has been 97.5%. Complications included removal of two screws after completion of arthrodesis, one case of delayed lateral fibular impingement requiring further surgery, and one case of nonunion requiring open arthrodesis. There were no infections or neurovascular injuries.

Conclusion:
Arthroscopic subtalar joint arthrodesis is now feasible with obvious advantages of preservation of soft tissue envelope, less pain, higher arthrodesis rate, lower arthrodesis time and lower complication rate as compared to open methods. No tourniquet is needed and all surgeries are performed on outpatient basis. New distracter developed by the author and various compression screw designs simplify the surgical technique and provide reliable compression. This technique is particularly useful to achieve in situ fusions in post traumatic subtalar arthritis following calcaneal fractures.