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Arthroscopic Ankle Arthrodesis: The New Gold Standard

Presenting:

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Precis/Summary:
As compared to numerous open ankle arthrodesis techniques reported in the literature, arthroscopic ankle arthrodesis has emerged as the new gold standard for the treatment of end stage ankle arthritis. Advancements in arthroscopic instrumentation and cannulated screw designs simplify the surgical technique and preserve soft tissue envelope resulting in higher union rate, shorter union time and fewer complications.

Abstract:

Introduction:
Aim of this retrospective single center study was to evaluate influence of arthroscopic technique on union rate, union time and complication rates compared to traditional open methods for ankle arthrodesis reported in literature.

Methods:
100 consecutive arthroscopic ankle arthrodeses in 95 patients (5 bilateral cases) with disabling ankle arthritis were reviewed. Etiology included posttraumatic arthritis (48), osteoarthritis (31), rheumatoid arthritis (11), osteochondral lesions (3), Charcot arthropathy (3), flail ankles (3) and psoriatic arthritis (1). Non-invasive distractor was used. No tourniquet was needed. All procedures were performed on out-patient basis. Preparation of tibio-talar surfaces to vascular subchondral bone was achieved with specialized abraders, curettes and osteotomes designed for ankle joint. Under fluoroscopic guidance, two cannulated screws were inserted under compression mode. Screw design apparently did not influence union rate. In five cases, tibio-talo-calcaneal nails were used thereby including subtalar arthrodesis. Two additional cases of rheumatoid arthritis had concomitant subtalar arthrodesis.

Results:
Between 1991 and 2007, 95 patients (63 males, 32 females) were treated for end stage arthritis of 53 left and 47 right ankles (5 bilateral). The mean age at operation was 60 years, 7 months (26 to 87 years). The mean follow-up was 5 years 1 month (7 mths to 17 yrs). Two patients are deceased.
Average clinical and radiographic union time was 9.8 weeks (4 to 22 weeks). Arthrodesis rate was 95%. There were 5 cases of nonunion, two requiring open arthrodesis. Other complications included one case delayed union which healed with ultrasound stimulator, one screw loosening requiring reinsertion, one screw migration after union requiring removal, one medial incision bursitis requiring excision, one medial incision cellulitis treated with oral antibiotics, and two stress fractures treated in cast.
Post operative AOFAS scores were obtained in 90 patients. There were 60 patients with excellent, 17 with good, 8 with fair and 5 with poor clinical results.