

Better Outcome for Suture Button Compared to Single Syndesmotic Screw for Syndesmosis Injury: 5- Year Results of a Randomized Controlled Trial

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Purpose: Two years after surgery, patients treated with suture button (SB) for acute syndesmotic injury had better outcomes than patients treated with syndesmotic screw (SS); higher American Orthopaedic Foot & Ankle Society Ankle-Hindfoot Scale (AOFAS), higher Olerud-Molander Ankle score (OMA), and less pain on walking and in rest measured on a visual analog scale (VAS). The SB group also had a lower malreduction rate. This is a report of the results after 5 years.

Methods: 97 patients with acute syndesmotic injury were randomized to SS or SB. Patients were evaluated at 6 weeks, 6 months, and 1, 2, and 5 years. The 5-year follow-up rate was 84%. The primary outcome was AOFAS score. Secondary outcome measures included OMA score, VAS, EuroQol 5 Dimensions (EQ-5D), range of motion, complications, reoperations, and radiologic results. We used the Mann-Whitney U test for AOFAS and OMA data analyses. CT scans of both ankles were obtained after surgery, and after 1, 2, and 5 years.

Results: At 5 years, the SB group had higher AOFAS scores (100 [interquartile range (IQR) 92 to 100] vs 90 [IQR 85 to 100], $P=0.006$) and OMA score (100 [IQR 95 to 100] vs 95 [IQR 75 to 100], $P=0.006$). The SS group had a higher prevalence of ankle osteoarthritis (OA) (65% v. 35%, odds ratio [OR] 3.5, confidence interval [CI]: 1.3 to 8.7, $P=0.009$), and talar osteophytes (66% vs 34%, OR 3.4, CI: 1.3 to 8.8, $P=0.009$). On axial CT we measured a significantly smaller mean difference in the tibiofibular anterior distance between injured and noninjured ankles in the SB group (0.1 mm vs 1.2 mm, $P=0.02$). We did not find significant differences in EQ-5D or VAS, and there was no difference in reoperations between the groups.

Conclusion: Five years after syndesmotic injury treated with either SB or SS, we found better AOFAS and OMA scores, and lower incidence of ankle OA, in the SB group. These long-term results favor the use of suture buttons when restoring an acute syndesmotic injury.