

Combined multi-ligament instability in patients with chronic symptoms following rotational ankle injuries. A prospective cohort study

César de César Netto¹, Erik Jesus Huanuco Casas¹, Enrico Pozzessere¹, Nacime Salomão Barbachan Mansur²

1. Duke University, Durham, USA

2. Paulista School of Medicine, Federal University of Sao Paulo (UNIFESP) - Sao Paulo, SP, Brazil

Correspondence: Nacime Salomão Barbachan Mansur. **Email:** nacime@uol.com.br

Introduction: To prospectively quantify isolated versus combined ligamentous instability in symptomatic patients after rotational ankle injuries (RAI) and assess changes in patient-reported outcomes (PROs) after targeted surgical stabilization.

Methods: Adults with pain and/or subjective instability > 6 months after RAI who failed ≥ 3 months of nonoperative care were enrolled in a prospective cohort. All underwent diagnostic ankle arthroscopy and open stabilization based on standardized intraoperative criteria for lateral, syndesmotic, and deep deltoid instability; combined patterns were classified. PROs (VAS pain, EFAS, PCS, PROMIS-PF, and PROMIS-PI) were obtained preoperatively and at follow-up.

Results: Twenty-nine patients (30 ankles; age 36.1 years, BMI 31.2 kg/m²) were included; 90% followed a sprain and 10% fractures. The interval from injury to surgery was 58.4 months; the mean follow-up was 45.2 months. Instability prevalences were lateral 97%, syndesmotic 77%, and deep deltoid 83% (72% anterior, 28% combined anterior/posterior). Instability patterns were multidirectional (lateral/deltoid/syndesmotic) in 60%, rotational (lateral/deltoid) in 20%, anterolateral (lateral/syndesmotic) in 13%, and anteromedial (deltoid/syndesmotic) in 3.5%; isolated lateral instability occurred in 3.5%. Significant improvement ($p < 0.04$) in VAS (4.7 to 2.3), EFAS (6.2 to 9.5), PROMIS-PF (38.2 to 44), PROMIS-PI (62.1 to 54.8), and PCS (17.8 to 9.4) were noted. Three complications occurred (two minors, one major), all resolved after treatment.

Conclusion: In symptomatic patients after RAI, multi-ligament ankle instability predominated, most commonly multidirectional or rotational patterns. Arthroscopy-guided comprehensive stabilization yielded significant improvements in PROs with a low complication rate. Systematic assessment for combined instability is warranted, and larger comparative studies should validate these findings.

Keywords: Sprains and strains; Instability.

DOI: <https://doi.org/10.30795/jfootankle.2026.v20.2032>

This abstract was presented at the XXII Brazilian F&A Meeting 2026, held in São Paulo, Brazil, from April 18 to 21, 2026.