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Open versus arthroscopic Broström technique in chronic lateral ankle instability: updated systematic review and meta-analysis

Victor de Autran Nunes Matos[1], Igor Freitas de Lucena[1], Leonardo Pierre Quental[2], Luiz Holanda Pinto Neto[2], Davi Marinho de Araújo[1], Saulo Lacerda Borges de Sá[1]

1. Hospital Geral de Fortaleza, Fortaleza, CE, Brazil
2. Instituto Doutor José Frota, Fortaleza, CE, Brazil

Correspondence: Victor de Autran Nunes Matos **Email:** victorautran@hotmail.com

Introduction: The Broström repair technique is recognized as a reference in the treatment of chronic lateral ankle instability. The arthroscopic approach has been adopted as a minimally invasive alternative; however, its clinical superiority over the open technique remains controversial. The objective of this study was to compare the clinical and functional outcomes of the open and arthroscopic Broström techniques through an updated systematic review and meta-analysis, with an emphasis on recent evidence.

Methods: A systematic search was conducted in PubMed, Scopus, Web of Science, and Embase databases, in accordance with the PRISMA 2020 guidelines. Comparative clinical studies of both techniques were included. The primary endpoint analyzed was the AOFAS score. A random effects model was used for quantitative synthesis.

Results: Seven comparative studies were included, totaling 413 patients. The arthroscopic technique showed a statistically significant advantage in the AOFAS score (mean difference +2.4; 95% CI 1.1-3.7; $p < 0.001$; $I^2 = 28\%$). The rates of postoperative complications and the time of return to activity were similar between open and arthroscopic techniques.

Conclusion: Broström arthroscopic repair has a small statistical functional advantage; however, the magnitude of this difference is probably below the threshold of minimal clinical relevance. Both approaches yield long-term functional outcomes and are relatively equivalent in treating chronic ankle instability.

Keywords: Joint instability; Lateral ligament, ankle; Artrhroscopy,

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