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COMPARISON BETWEEN ANATOMICAL LIGAMENT REPAIR AND RECONSTRUCTION WITH MINI-ANCHORS IN ULNAR COLLATERAL LIGAMENT INJURIES OF THE THUMB: A SYSTEMATIC REVIEW

Freitas, LAR; Favero, M.

Corresponding author:

LINCOLN FREITAS

lincolnarf@gmail.com

Author Affiliation:

MARIA AMÉLIA LINS HOSPITAL
(FHEMIG).

ADMINISTRATIVE INFORMATION

Support - OWN.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 January 2026 and was last updated on 23 January 2026.

INTRODUCTION

Review question / Objective The objective of this study is to compare different surgical techniques, regarding mechanical resistance, pull-out strength and clinical outcome, of UCL reconstructions of the thumb and to evaluate whether there is superiority among them.

Rationale Surgical treatment of these lesions is often divided into primary repair using intrasubstance suture, pull-out or bone tunnel versus fixation with mini-anchor with or without the need for tendon autograft. However, there are practical problems in the surgeon's day-to-day practice, such as infection along the Kirschner wire tract, which can cause complications and compromise the final surgical outcome. In addition, we can lose stability in techniques such as the transosseous tunnel, since reconstruction pull-out and residual instability are serious and possible complications. Thus, this study is important in defining which fixation technique most closely

resembles the resistance of the original UCL, thus determining the reconstruction with the greatest mechanical resistance to tensile forces.

Condition being studied COMPARISON BETWEEN ANATOMICAL LIGAMENT REPAIR AND RECONSTRUCTION WITH MINI-ANCHORS IN ULNAR COLLATERAL LIGAMENT INJURIES OF THE THUMB.

METHODS

Search strategy A systematic review was conducted following a rigorous search and selection protocol to ensure clinical relevance, effectiveness of surgical techniques, and the best final clinical outcome.

Keywords and their combinations: "Thumb UCL, Suture Anchors, Skier's Thumb, Gamekeeper's Thumb, Biomechanics e Stener Lesion" were used as a search strategy in major medical databases such as PubMed/MEDLINE, Science Direct (Elsevier), and Cochrane Library.

Inclusion criteria included: description of surgical techniques used, evaluation of clinical outcome, absence of previous injury to the evaluated thumb, and biomechanical clinical tests. Conversely, case reports were used as an exclusion criterion.

Initially, 42 potentially relevant articles were identified. After reading titles and abstracts, 24 articles were excluded (case reports, lack of technical details, or clinical outcome). Thus, the final sample consisted of a total of 18 articles that met the inclusion criteria.

Participant or population Adults aged 18-65 years, with no previous thumb injuries.

Intervention Compare surgical techniques for anatomical ligament repair or reconstruction with mini-anchors in ulnar collateral ligament injuries of the thumb.

Comparator COMPARISON BETWEEN ANATOMICAL LIGAMENT REPAIR AND RECONSTRUCTION WITH MINI-ANCHORS IN ULNAR COLLATERAL LIGAMENT INJURIES OF THE THUMB.

Study designs to be included A SYSTEMATIC REVIEW.

Eligibility criteria Inclusion criteria included: description of surgical techniques used, evaluation of clinical outcome, absence of previous injury to the evaluated thumb, and biomechanical clinical tests. Conversely, case reports were used as an exclusion criterion.

Information sources Keywords and their combinations: "Thumb UCL, Suture Anchors, Skier's Thumb, Gamekeeper's Thumb, Biomechanics e Stener Lesion" were used as a search strategy in major medical databases such as PubMed/MEDLINE, Science Direct (Elsevier), and Cochrane Library.

Main outcome(s) Initially, 42 potentially relevant articles were identified. After reading titles and abstracts, 24 articles were excluded (case reports, lack of technical details, or clinical outcome). Thus, the final sample consisted of a total of 18 articles that met the inclusion criteria.

Additional outcome(s) Stener lesions present an absolute surgical indication due to the mechanical barrier to healing. Mini-anchors are superior to traditional repair because they guarantee fixation in the anatomical footprint with a lower rate of soft tissue complications. Ligament reconstruction using this method is effective even in late stages,

restoring pinch strength (96-98%) and avoiding the morbidity of arthrodesis in young and active patients.

Quality assessment / Risk of bias analysis

Temporal and technological bias

Includes older studies and varied technologies, which can confuse current effectiveness with obsolete techniques.

Strategy of data synthesis Applied narrative synthesis.

Subgroup analysis Does not fit.

Sensitivity analysis Separating clinical and biomechanical evidence; synthesizing each domain separately.

Language restriction Chinese.

Country(ies) involved Brazil.

Keywords Thumb UCL, Suture Anchors, Skier's Thumb, Gamekeeper's Thumb, Biomechanics e Stener Lesion.

Contributions of each author

Author 1 - LINCOLN FREITAS.

Email: lincolnarf@gmail.com

Author 2 - MATHEUS FAVERO.

Email: matheus_favero@yahoo.com.br