Osteolysis after Latarjet: A Systematic Review

Michael Braman[1]; Peter Klug[1]; Elizabeth Ludwig[3]; Andrew Diederich[2]; Gordon Lents[2]; Rachel Long[2]; Bryan Vopat[2]; Erik Henkelman[2]; Matthew Vopat[2]
[1]University of Kansas Medical Center School of Medicine, Kansas City, KS [2]University of Kansas Medical Center Department of Orthopedic Surgery and Sports Medicine, Kansas City, KS, [3]University of Kansas, Lawrence, KS
mbraman2@kumc.edu

Disclosures: M. Braman: None. P. Klug: None. E. Ludwig: None. A. Diederich: None. G. Lents: None. R. Long: None. B. Vopat: None. E. Henkelman: None. M. Vopat: None.

ABSTRACT INTRODUCTION: Anterior glenohumeral joint dislocation is one of the most common joint dislocations in contact sports. Bristow-Latarjet refers to the two original procedures involving an osteotomy and transfer of the coracoid process, the Bristow procedure and the Latarjet procedure, as well as a variety of modifications from these original procedures. Although the Latarjet has been deemed an effective and reliable treatment for anterior shoulder instability, a complication rate of 30% and reoperation rate of 7% has been reported. The clinical significance and incidence of post-operative osteolysis following Latarjet procedure has been a consistent area of inquiry in the clinical literature. The purpose of this paper is to evaluate the causes, and clinical sequelae of osteolysis after the Latarjet procedure will help improve the clinical treatment of recurrent shoulder instability. The secondary purpose of this study was to evaluate different fixation methods within the Latarjet procedure and compare their outcomes biomechanically.

METHODS: A systematic review was conducted according to Preferred Reporting for Systematic Review and Meta-Analyses guidelines. An electronic search of PubMED, EMBASE, Web of Science, Cochrane Central, and OVID was performed. All papers were screened by title and abstract for inclusion and exclusion criteria

RESULTS SECTION: 2021 articles were extracted from the databases in June 2023 for title and abstract screening. 45 articles were included after applying inclusion and exclusion criteria within this review. 4 articles included were biomechanical based, and 41 articles included were clinical studies. Osteolysis was linked with increased probability of recurrent instability and negative outcomes following Latarjet fixation. Arthroscopic techniques illustrated lower overall rates of osteolysis and recurrent instability when compared to open techniques. Endobutton fixation demonstrated lower osteolysis when compared to single screw and two screw fixation. Endobutton demonstrated lowered equivalent stress within biomechanical studies when compared to screw and plate fixation.

DISCUSSION: Osteolysis was generally linked with increased probability of recurrent instability and negative outcomes following Latarjet procedure. Arthroscopic techniques and Endobutton fixation demonstrated the lowest amount of osteolysis when compared to screw fixation and open fixation. Biomechanical studies demonstrated higher equivalent stress in screw and plate fixation when compared to Endobutton fixation. Further studies must be conducted connecting osteolysis with recurrent instability outcomes.

SIGNIFICANCE/CLINICAL RELEVANCE: This research evaluates osteolysis as a potential method of failure and possible need for revision fixation after Laterjet procedure. Additionally, it explores what operative techniques and devices have the lowest rate of osteolysis occurrence.

REFERENCES: n/a

ACKNOWLEDGEMENTS: n/a