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Treatment of inferior patellar pole fracture in adults: synthesis of clinical evidence

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ADMINISTRATIVE INFORMATION

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INTRODUCTION

Review question / Objective What is the available clinical evidence on the most effective treatment methods for inferior patella fractures in adults?

Background The paper reviews recent clinical evidence on the treatment of fractures of the inferior pole of the patella (FPIP) in adults, a condition that affects the knee's extensor mechanism and can significantly impair mobility and quality of life. These fractures, often caused by trauma or sudden muscle contraction, are common in active adults and require stable fixation to enable early rehabilitation. Despite various surgical techniques—such as tension-band wiring, suture anchors, and plating—there is no clear consensus on the ideal method, with outcomes influenced by fracture type, surgeon experience, and risk of complications like patella baja or reoperation. This review synthesizes findings from the last five years to support evidence-based clinical decision-making.

Rationale The rationale for the study lies in the clinical importance of effectively treating fractures of the inferior pole of the patella (FPIP), which directly compromise knee extension and functional mobility. Despite the relatively high frequency of these injuries, especially among active adults, there is no universally accepted surgical technique, and treatment choices vary widely depending on fracture characteristics, surgeon experience, and complication risks. Given the functional impact of FPIP and the diversity of available fixation methods, synthesizing recent clinical evidence is essential to guide therapeutic decisions and improve outcomes.

METHODS

Strategy of data synthesis The strategy of data synthesis used in the study was an integrative literature review. The authors conducted a structured search in the PUBMED database using the terms: inferior[title] AND pole[title] AND patella[title] AND fracture[title], with a time frame of

the last five years. All types of studies were initially considered, regardless of methodological design.

Eligibility criteria The eligibility criteria for inclusion in this review required studies to be indexed in the PUBMED database, published within the last five years, and have titles containing the terms "inferior," "pole," "patella," and "fracture." Only studies that specifically addressed the treatment of inferior pole fractures of the patella (FPIP) in adults were considered. All methodological designs were initially included, but studies that did not directly relate to FPIP treatment in adults were excluded after screening titles and abstracts.

Source of evidence screening and selection The source of evidence screening and selection involved a structured search in the PUBMED database using a predefined strategy targeting titles with the terms “inferior,” “pole,” “patella,” and “fracture,” limited to the last five years. An initial set of 22 studies was identified. Titles and abstracts were then reviewed to assess relevance to the treatment of inferior pole patellar fractures in adults. Following this screening, 6 studies were excluded for not meeting the inclusion criteria, resulting in 16 articles selected for full-text analysis and inclusion in the final synthesis.

Data management Data management in this review involved organizing the selected studies after screening into a structured table that summarized key information from each article. For each of the 16 included studies, the authors extracted and recorded data such as authorship, title, study type, number of patients, and main clinical conclusions. This systematic organization allowed for comparative analysis of treatment methods, outcomes, and complications, facilitating the synthesis of converging and diverging evidence regarding the management of inferior pole patellar fractures in adults.

Reporting results / Analysis of the evidence The results will be reported through a descriptive and comparative analysis of the 16 selected studies, focusing on the effectiveness, safety, and clinical outcomes of different surgical techniques for treating inferior pole fractures of the patella (FPIP) in adults. The studies will be summarized in a table and then discussed in detail, highlighting points of convergence—such as the importance of stable fixation for early rehabilitation and bone healing—and divergence, including differences in complication rates, need for reoperation, and functional outcomes depending on the method used. The analysis will be emphasize that while several techniques showed satisfactory results, no single approach proved superior in all aspects, reinforcing the importance of individualizing treatment based on fracture type, surgeon expertise, and risk of complications.

Presentation of the results The results will be presented in two main formats: a summary table and a narrative synthesis. The table will be organize the key information from each of the 16 selected studies, including authors, study titles, design, sample size, and main conclusions. This allowed for a clear visual comparison of the different treatment methods and their outcomes. In the narrative section, the results will be grouped and discussed thematically, emphasizing common findings—such as the effectiveness of stable fixation techniques—and highlighting variations in techniques, complication rates, and clinical outcomes. This structure facilitated a comprehensive and comparative understanding of the evidence.

Language restriction Only texts in english were selected.

Country(ies) involved Brazil - Departamento de Ortopedia e Traumatologia do Hospital Geral de Carapicuíba, Carapicuíba - SP.

Keywords Orthopedics, Traumatology, Knee, Surgery, Fractures, Patella.

Contributions of each author

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