



Original article

Evaluation of interobserver agreement in Albertoni's classification for mallet finger[☆]



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ABSTRACT

Objective: To measure the reliability of Albertoni's classification for mallet finger.

Methods: Agreement study. Forty-three radiographs of patients with mallet finger were assessed by 19 responders (12 hand surgeons and seven residents). Injuries were classified by Albertoni's classification. For agreement comparison, lesions were grouped as: (A) tendon avulsion; (B) avulsion fracture; (C) fracture of the dorsal lip; and (D) physis injury—and subgroups (each group divided into two subgroups). Agreement was assessed by Fleiss's modification for kappa statistics.

Results: Agreement was excellent for Group A ($k=0.95$ (0.93–0.97)) and remained good when separated into A1 and A2. Group B was moderate ($k=0.42$ (0.39–0.44)) and poor when separated into B1 and B2. In the Group C, agreement was good ($k=0.72$ (0.70–0.74)), but when separated into C1 and C2, it became moderate. Group D was always poor ($k=0.16$ (0.14–0.19)). The general agreement was moderate, with ($k=0.57$ (0.56–0.58)).

Conclusion: Albertoni's classification evaluated for interobserver agreement is considered a reproducible classification by the method used in the research.

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Avaliação de concordância interobservador da classificação de Albertoni para dedo em martelo

R E S U M O

Palavras-chave:

Traumatismos dos tendões
Traumatismos dos dedos
Reprodutibilidade dos testes
Classificação
Ruptura
Deformidades adquiridas da mão

Objetivo: Avaliar a reprodutibilidade da classificação de Albertoni para dedo em martelo.

Métodos: Foi feita uma avaliação por meio de questionário no qual foram avaliadas 43 radiografias em perfil da articulação interfalângica distal de dedos da mão, com lesão tipo dedo em martelo. Todas as lesões foram caracterizadas pela classificação de Albertoni, por 19 entrevistados (12 cirurgiões de mão e sete residentes). Foi então avaliada a concordância com o coeficiente Kappa generalizado, separadas por grupos – (A) avulsão tendínea; (B) fratura avulsão; (C) fratura do lábio dorsal e (D) lesão fisária – e por subgrupos (cada grupo dividido em 1 e 2).

Resultados: A concordância foi excelente para o grupo A ($k=0,95$ [0,93-0,97]) e manteve-se boa quando separados em A1 e A2. No grupo B, a concordância foi moderada ($k=0,42$ [0,39-0,44]), e foi ruim quando separada em B1 e B2. No grupo C, a concordância foi boa ($k=0,72$ [0,70-0,74]), mas quando separada em C1 e C2 se tornou moderada. No grupo D foi sempre ruim ($k=0,16$ [0,14-0,19]). A concordância geral foi moderada ($k=0,57$ [0,56-0,58]).

Conclusão: Pela avaliação da concordância geral, a classificação de Albertoni é considerada reprodutível pelo método usado na pesquisa.

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Introduction

Lesions of the extensor mechanism of the fingers are among the most prevalent in the orthopedic practice. The terminal extensor tendon, formed by the union of two lateral slips, is inserted into the dorsal surface at the base of the distal phalanx. Injury of this tendon, or intra-articular fractures at the base of the distal phalanx, lead to a flexion deformity of the distal interphalangeal joint (DIPJ) known as mallet finger.¹ This lesion mainly affects the young population; it is common in sporting practices and may lead to a significant functional deficit if not treated properly.

Several clinical classifications have been described, aiming to categorize this condition. In 1957, Pratt et al.² classified mallet finger based on the etiology: laceration, crushing, and indirect trauma. In 1984, Wehbé and Schneider described a system that categorized these lesions into three types.³ Doyle et al.⁴ have also described another system widely used in the literature. In Brazil, Albertoni's⁵ clinical-radiological classification, described in 1986, is widely used.

A good quality classification should primarily be written in simple language and provide reliable guidelines to aid in treatment, prognosis, and reducing the possibility of complications. Moreover, it must be feasible, reliable, and reproducible; the latter characteristic is measured by interobserver agreement.^{1,6} A classification is reproducible when several individuals are able to reproduce the same result at any time, anywhere.¹ Thus, it becomes possible to compare the results of different centers with different patients and the respective outcomes for each type of treatment.

Reproducibility studies are classic in the literature when measuring the quality of classification systems, especially in

orthopedics. These studies usually include few observers, due to the difficulty in maintaining a reliable assessment. Any classification system worsens its agreement as the number of observers and categories increase. The low experience of observers in the assessed condition and multicenter studies also tend to decrease agreement.

No studies on the reproducibility of the Albertoni classification were retrieved in the literature, nor any study on the reproducibility of any mallet finger classification.

The authors conjectured that this classification has good interobserver agreement. This study is aimed at evaluating the interobserver agreement of the Albertoni classification for mallet finger, and to quantify its reproducibility in the management of this condition.

Materials

This study was approved by the Research Ethics Committee of the institution where it was conducted (under CAAE No. 49960815.8.0000.5505).

A questionnaire survey was carried out in which 43 photographs of DIPJ radiographs in lateral view of hands with mallet finger injury were assessed. All radiographs were considered by the researchers to be of good quality.

The Albertoni classification was presented at the beginning of the questionnaire. It divides the lesions according to findings on a DIPJ radiograph in lateral view, categorizing them into four types: (A), pure tendon lesion without fracture; (B), bone avulsion lesion; (C), lesion associated with fracture of the dorsal region of the base of the distal phalanx, comprising one-third or more of the articular surface; and (D), epiphyseal detachment in children. Each type is divided into two

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