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Can posterior malleolus fracture classification influence treatment choice?

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Introduction: To evaluate the intra- and interobserver reproducibility of three classifications of posterior malleolus fractures (PMF) and to analyze the relationship of treatment choice and surgical approach with the classifications.

Methods: Computed tomography of the ankle of 50 patients was evaluated by ten observers, four orthopedists specialized in foot and ankle surgery, and six non-specialist orthopedists, with an interval of two weeks between evaluations. The evaluators classified PMF according to the Mason, Haraguchi, and Bartoníček/Rammelt classifications and assessed how they would treat PMF—conservatively or surgically (in this case, by which access route they would use). Cronbach's alpha was used to assess intraobserver agreement, and the Kappa test was used to assess interobserver agreement. The correlation of decision-making and access route was analyzed using the Chi-Square Test (Q^2).

Results: Intraobserver reproducibility ranged from 0.53 to 0.95 (0.78 ± 0.12) for the Haraguchi classification, from 0.47 to 0.95 (0.74 ± 0.17) for Mason, and from 0.53 to 0.94 (0.72 ± 0.12) for Bartoníček/Rammelt, representing an adequate agreement for all. For the experts, the mean ratings for Haraguchi, Mason, and Bartoníček/Rammelt classifications were 0.86, 0.84, and 0.75, representing good, good, and adequate, respectively. For the group of non-specialists, the means were 0.72, 0.68, and 0.70, representing an adequate, average, and adequate classification, respectively. Interobserver reproducibility was considered reasonable for Haraguchi (0.38) and moderate for Mason (0.42) and Bartoníček/Rammelt (0.43). When analyzing decision-making and the access route, all classifications showed a large effect size (V > 0.50).

Conclusion: The three classifications were adequate for intraobserver and reasonable or moderate for interobserver. All showed a great effect on the therapeutic decision, with Bartoníček/Rammelt being the highest values.

Keywords: Classification; Ankle fractures; Reproducibility of results.

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