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MANAGEMENT OF SCAPHOID FRACTURES

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Scaphoid fractures represent the most common carpal bone injury, accounting for approximately 60% of all carpal fractures. Due to the scaphoid's retrograde blood supply, managing these injuries poses unique clinical challenges, with a high risk of complications such as avascular necrosis (AVN) and nonunion if left untreated or poorly managed. Scaphoid fractures typically result from a fall onto an outstretched hand (FOOSH), presenting as localized tenderness in the anatomical snuffbox. Early and accurate diagnosis is critical, yet initial radiographs often miss occult fractures. Advancements in cross-sectional imaging, specifically Computed Tomography (CT) for structural displacement and Magnetic Resonance Imaging (MRI) for occult injuries and vascular status, have significantly enhanced diagnostic precision. Treatment stratification relies primarily on fracture location (distal pole, body, or proximal pole) and structural stability. While conservative casting or standard compression screws yield results in acute settings, management in the delayed period presents a particularly significant challenge when aseptic necrosis has already developed. In hand surgery, a unified standard of care for such neglected cases has not yet been established due to the diversity and complexity of individual clinical presentations.

This presentation focuses primarily on the surgical reconstruction of osteonecrosis of the proximal pole of the scaphoid in the delayed period. The proximal pole of the hamate bone closely resembles the proximal pole of the scaphoid in its geometric and structural characteristics. Based on this anatomical affinity, a new method is presented — ipsilateral autotransplantation of the proximal pole of the hamate bone combined with concurrent scapholunate ligament reconstruction. Injury chronicity, patient age, and the degree of radiocarpal osteoarthritis were utilized as the primary criteria for selecting patients and predicting the outcomes of this surgical strategy.

A retrospective analysis of the performed surgical interventions demonstrates the high clinical efficacy and uniqueness of this method. The study highlights that an adequate, targeted course of rehabilitation in the postoperative period is of critical importance for optimizing functional outcomes. Furthermore, risk factor analysis underscores that tobacco consumption sharply

increases the probability of developing pseudoarthrosis (nonunion) and recurrent necrosis, severely compromising graft integration.

Concurrent hamate autotransplantation and scapholunate ligamentous reconstruction represent an effective and structurally sound alternative for treating delayed fractures and aseptic necrosis of the proximal pole of the scaphoid. The clinical success of this procedure relies heavily on strict patient selection criteria, minimization of harmful habits (tobacco), and a rigorous postoperative rehabilitation protocol.

Keywords: Scaphoid fracture; Proximal pole osteonecrosis; Hamate autotransplantation; Scapholunate ligament; Hand surgery.