

# OrthoDome: Volar Approach to Scaphoid Nonunion ORIF: Case Presentation and Surgical Technique

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Background

Operative treatment of scaphoid nonunions typically involves open reduction and internal fixation (ORIF) combined with bone grafting.<sup>1</sup> Vascularized bone grafts are often employed to reduce the risk of avascular necrosis. For waist and proximal pole nonunions, both nonvascularized and vascularized bone grafts are used based on surgeons' preference with studies showing comparable outcomes.<sup>2</sup> Headless compression screws are commonly utilized for fixation; however, recent studies suggest that plate fixation offers superior rotational stability.<sup>3</sup>

## Purpose

In this surgical technique video, we present a scaphoid nonunion ORIF with a volar approach using a volar scaphoid plate. This video provides a comprehensive guide to preoperative evaluation, intraoperative pearls and pitfalls, and postoperative rehabilitation protocol.

## Methods

This video explores the anatomy and surgical indications for a 36-year-old male with a scaphoid waist fracture who initially opted for nonoperative treatment, which failed and resulted in a scaphoid waist nonunion with bone loss. Our operative technique describes the approach for scaphoid volar plating, correcting dorsal intercalated segmental instability, insertion of vascular pedicle, and cancellous bone grafting.

## Results

Postoperative radiographs show corrected scaphoid alignment. Patient was placed in a thumb spica cast for the first 6 weeks then transitioned into a thumb spica splint for another 4 weeks. The patient began occupational therapy at 7 weeks. A CT scan at 6.5 weeks confirmed 75% healing, after which the patient was cleared to start occupational therapy and return to progressive activity.

## Conclusion

This case presentation highlights the technique and effectiveness of volar ORIF for scaphoid waist nonunion with cancellous bone graft and insertion of vascular pedicle. Proper surgical technique and rehabilitation can restore alignment and function while minimizing complications such as persistent nonunion, carpal malalignment, and hardware impingement. Scaphoid plating provides a stable and reliable construct in the setting of bone loss due to nonunion and can be performed safely with proper surgical technique.

## References

1. Kawamura K, Chung KC. Treatment of scaphoid fractures and nonunions. *J Hand Surg Am.* 2008;33(6):988-997. doi:10.1016/j.jhsa.2008.04.026
2. Karaismailoglu B, Fatih Guven M, Erenler M, Botanlioglu H. The use of pedicled vascularized bone grafts in the treatment of scaphoid nonunion: clinical results, graft options and indications. *EFORT Open Rev.* 2020;5(1):1-8. Published 2020 Jan 29. doi:10.1302/2058-5241.5.190021
3. Lemke KA, Mannambeth RV, Carman CJ, Csongvay S. Volar Plating of Scaphoid Fractures: A Retrospective Case Series. *Hand (N Y).* 2023;18(2\_suppl):46S-51S. doi:10.1177/15589447221075674