Nanoscope Wrist Arthroscopy With Open Scaphoid Nonunion Resection

Michael J Moses, Jadie Elizabeth DeTolla, Ali Azad, Dylan T Lowe, Nader Paksima[1]
[1]NYU Langone Medical Center

Purpose

Demonstrate the role of nanoscope arthroscopy in the management of scaphoid nonunions.

Case Overview

The case presentation of a 22-year-old right hand–dominant female gymnast who fell onto her wrist 1 year ago is discussed. She was seen at an outside hospital and diagnosed with a scaphoid fracture 2 months postinjury, and a thumb spica cast was applied. Imaging studies obtained at the time of presentation were notable for scaphoid nonunion of the proximal pole with osteonecrosis. In addition, CT scan and MRI findings were concerning for disruption of the scapholunate ligament. The patient was indicated for wrist arthroscopy with resection of the proximal pole scaphoid fragment, repair of the scapholunate ligament, and posterior interosseous nerve neurectomy.

Method/Technique

Arthroscopy portals were made, and the nanoscope was introduced, revealing that the articular surface of the radius and scaphoid were intact. The scapholunate ligament was intact, with some fraying observed on the dorsal aspect. An incision was made, incorporating the radial midcarpal and 3-4 portals. The extensor retinaculum overlying the third compartment was released, and the vertical septum between the third and fourth compartment was released. The posterior interosseous nerve was identified on the floor of the radial fourth compartment and cauterized. The wrist capsule was exposed, and the proximal pole nonunion was identified. A 0.035-in Kirschner wire was inserted in the nonunion site, with the proximal pole fragment involving only the proximal one-half of the scapholunate interval and ligament. The dorsal scapholunate ligament was carefully resected off the proximal pole fracture fragment, and the fracture fragment was resected. The nonunion site was débrided with the use of a curet. Stress radiographs were obtained in multiple planes, and carpal alignment was deemed acceptable. A micro-mitek suture anchor was placed in the nonunion bed, and the scapholunate ligament was repaired.

Results

At most recent follow-up, the patient was pain free and without limitations in range of motion.

Conclusion

This technique is a treatment option for visualizing the articular surface and ligamentous anatomy during proximal pole scaphoid nonunion resection.