

Return to Play and Complications After Hook of the Hamate Fracture Surgery

Anchal Bansal, BS,* Douglas Carlan, MD,† John Moley,* Heather Goodson,† Charles A. Goldfarb, MD*

Purpose The purpose of this study was to evaluate the efficacy of hook of the hamate excision for fracture in a large cohort of patients to better understand recovery time and complications.

Methods We retrospectively reviewed the medical records of patients treated with surgical excision for hook of the hamate fractures at 2 different centers. We collected information on demographics, clinical presentation, and postoperative complications. Continuous outcome variables included time to surgery, return to play, and return to activity.

Results Our cohort of 81 patients had a median age of 22 years and was composed of 74 athletes including 57 baseball players and 8 golfers. The median time to return to play was 6 weeks (range, 1–36 weeks) after surgery; 11 patients (14%) had a return at 12 weeks or longer. Seventy-eight patients returned to preinjury activity levels. Twelve patients with a full recovery continued to experience some level of intermittent, nonspecific pain in the affected hand, although this was not severe enough to require additional treatment. We observed a 25% incidence of postoperative complications with the majority consisting of transient ulnar nerve dysfunction. Complications were more common among nonathletes, those presenting with nonunions, and those experiencing longer intervals between injury and surgery.

Conclusions In most cases, surgical excision as treatment for hook of the hamate fractures is safe and allows a relatively rapid return to play. However, we found a higher incidence of complications, including transient ulnar nerve dysfunction, than has been previously reported. In addition, there is a group of patients with delayed return to play and continued discomfort after surgery. These findings should inform the discussion with surgical candidates. (*J Hand Surg Am.* 2017;42(10):803–809. Copyright © 2017 by the American Society for Surgery of the Hand. All rights reserved.)

Type of study/level of evidence Therapeutic IV.

Key words Hook of hamate, fractures, complications, recovery time.

FRACTURES OF THE HOOK OF THE HAMATE constitute 2% to 4% of carpal bone fractures but disproportionately affects athletes of certain sports, particularly baseball, golf, hockey, and tennis.^{1–4} The

volar and radially projecting hook of the hamate is at risk in athletes participating in sports requiring gripping² or those sustaining a direct impact to the proximal palm.¹ Whereas some patients may present with acute symptoms consistent with a hook of the hamate fracture, others present with chronic, worsening discomfort without an identifiable trauma. A displaced hook fracture is anatomically important because it may impinge on the ulnar nerve and ring and little finger flexor tendons. Consequently, the injury can also present with any combination of pain, weakened grip, and ulnar nerve paresthesias.^{1,5,6} Given this constellation of symptoms, it may be misdiagnosed,¹ especially in chronic cases for

From the *Department of Orthopaedic Surgery, Washington University School of Medicine at Barnes Jewish Hospital, St. Louis, MO; and the †Eaton Orthopedics, St. Petersburg, FL.

Received for publication August 22, 2016; accepted in revised form June 30, 2017.

Funding for this study was provided by the National Institutes of Health's Clinical and Translational Science Awards (UL1TR002345, KL2TR002346, and TL1TR002344).

Corresponding author: Charles A. Goldfarb, MD, Washington University Orthopedics, 660 S. Euclid Ave., Campus Box 8233, St. Louis, MO 63110; e-mail: goldfarbc@wudosis.wustl.edu.

0363-5023/17/4210-0005\$36.00/0
<http://dx.doi.org/10.1016/j.jhssa.2017.06.108>

which a traumatic mechanism is not immediately identifiable.⁶

Recent studies have demonstrated that nonsurgical treatment (typically casting) for patients with an acute onset of symptoms may be appropriate but has a high risk of nonunion^{3,7} due to limited vascular supply to the watershed area of the hook-body intersection together with *in vivo* tendinous forces.⁶ Surgical options include excision of the hook fragment or open reduction internal fixation. Previous studies concluded that simple excision of the fracture was superior to open reduction internal fixation, given shorter associated recovery times and minimal to no difference in functional outcome.^{2,3,8} Consequently, excision is the approach favored by most surgeons.^{2,3,8}

The rarity of this injury is a limiting factor in attaining sufficiently large samples to allow statistically meaningful analysis. As a result, there are limited data regarding the clinical course of this injury or risk factors for a poor prognosis, including postoperative complications and adverse events. The purpose of this investigation was to describe the clinical outcomes associated with surgical excision of hook of the hamate fracture in an athletic population and to identify relevant risk factors affecting outcome.

METHODS

Following institutional review board approval, we identified patients treated with an excision of the hook of hamate between 2007 and 2015 for an acute fracture or nonunion. We included patients treated by a hand surgeon at Washington University School of Medicine, Barnes Jewish Hospital in St. Louis, Missouri (3 hand surgeons) and Eaton Orthopedics in St. Petersburg, Florida (1 hand surgeon).

Our initial cohort included all patients with a Current Procedural Terminology code of 25210 (carpectomy: 1 bone) and diagnosis code of 814.08 (fracture of hamate bone). We manually reviewed the charts to confirm accurate diagnosis and procedure. Patients were excluded if the surgical notes indicated a procedure other than excision of the hamate or if they had multiple injuries treated concurrently at the time of hamate excision.

Initial data collection was performed through chart review. In the case of missing data, we attempted to contact patients by telephone. In some cases, such as with professional athletes, return to play (RTP) information was available as a part of the public record and, when no other information was available, this was used. If outcomes and RTP could not be

determined by any of these means, patients were excluded from the analysis.

Initial data points were age at injury, sex, dominant and injured hand, mechanism of injury, sport, level of play, hitting side (baseball players), imaging modalities, time from injury or symptom onset to diagnosis, treatment, time from injury (or symptom onset) to surgery, time from surgery to RTP, development of postoperative complications, and time from surgery to full recovery, defined as the absence of pain related to surgery. If nonsurgical care was undertaken (whether immobilization or other modalities), it was deemed a failure if the patient had continued clinical symptoms after 6 weeks. The median time at diagnosis of nonunion for patients with chronic symptoms was 87 days. Patients were deemed to be fully recovered when there was documentation of no further complaints, no or minimal pain, without any additional follow-up appointments. Sensory nerve deficits were confirmed with elevated 2-point discrimination and motor deficits were confirmed with decreased strength on manual muscle testing. The RTP was based upon a full return to preinjury activity levels. Patients were coded as being an “athlete” if they played a sport on an organized team. Athletes who played recreationally, on a club team, or at the high school or collegiate levels were designated as amateurs, and those playing in the minor leagues or at the professional level were designated as professional athletes.

Surgical technique

The 2 senior authors (D.C. and C.A.G.), both hand fellowship-trained surgeons, utilized the same surgical technique. A longitudinal incision was made over the ulnar palm, beginning at the wrist crease and extending distally approximately 4 cm. The palmaris brevis was retracted or divided as necessary for exposure of the ulnar tunnel. The ulnar nerve proper, the motor branch of the ulnar nerve, the sensory branch of the ulnar nerve, and the ulnar artery were identified and gently mobilized to expose the hook of the hamate. The hook was sharply exposed while the adjacent ulnar neurovascular bundle and the contents of the carpal tunnel were protected. The hook of the hamate was mobilized and excised with an osteotome and/or a rongeur, after which the sharp edges from the body were smoothed with a rongeur. After skin closure, the patient was placed in a resting orthosis for 2 weeks for comfort before a gradual increase in activities was instituted.

Download English Version:

<https://daneshyari.com/en/article/5709569>

Download Persian Version:

<https://daneshyari.com/article/5709569>

[Daneshyari.com](https://daneshyari.com)