ALTHOUGH MOST PEOPLE consider a leisurely round of golf a relatively safe activity, the incidence of injuries to the wrist is much higher in golf than in most other sports. Various studies of professional golfers have reported a 34–37% chance of wrist injury.1,2 Most injuries occur in the left wrist (of a right handed swinging golfer), which can be divided into two categories: (a) chronic overuse injuries such as tendinitis, impaction or impingement, stress fracture and nerve compression and (b) traumatic or acute injuries, such as fracture and ligament sprain or rupture. The following case review relates the clinical presentation of an amateur golfer who suffered a tear of the retaining retinaculum of the left extensor carpi ulnaris and the nature of the subsequent surgical repair and rehabilitation process.

Case Study

A 32 year-old, right-handed male injured his left wrist while playing golf. The injury occurred as he accelerated through ball impact from the downswing. At the moment of ball impact, he felt a pop in his left wrist, which was immediately painful and forced him to discontinue play. The golfer related that ulnar deviation of his wrist produced a painful popping sensation. The examination by an orthopedic surgeon at one day post-injury revealed that he was moderately tender along the extensor carpi ulnaris (ECU) tendon (Figure 1), with minimal tenderness over the ulnar aspect of the carpus and lunotriquetral ligament. He had full active and passive range-of-motion of his wrist, with extension to 75 degrees and flexion to 90 degrees. All fingers demonstrated full range-of-motion. His motor examination failed to reveal any evidence of extrinsic or intrinsic atrophy, and all musculotendinous units were functioning independently at a 5/5 strength level. Grip strength was 130 lbs. for the right extremity and 15 lbs. for the left extremity. Pinch strength was 26 lbs. for the right extremity and 22 lbs. for the left extremity. The sensory exam was normal, and x-rays failed to reveal any evidence of fracture or dislocation nor any evidence of static intercarpal instability. Provocative testing, including varus, valgus, wrist glide, and carpal tunnel tests, revealed subluxation of the ECU over the distal end of the ulna, especially with the forearm in supination and the wrist in ulnar deviation. The athlete was diagnosed with a rupture of the restraining retinaculum of the ECU tendon. Surgery was recommended, but the patient elected to delay the procedure for ten days, until his return from a golf trip.

In order to facilitate the athlete’s ability to play pain-free competitive golf, a protective strapping was fabricated. A half-moon shaped piece of 1/4-inch felt padding was placed medial to the distal ulna (Figure 2),...
which was secured by transverse strips of elastic athletic tape that encircled the wrist (Figure 3). In this manner, the ECU tendon was compressed and prevented from subluxation over the distal ulna during the ulnar deviation necessary to perform the golf swing. The athlete reported no pain during play on the golf course. He stated that his only adaptations to the injury were use of a looser club grip to limit supination during the swing follow-through and “club down” on his golf shots to control distance with a smooth swing. For example, he would use a 6-iron for a situation that would normally be estimated to represent a 7-iron distance. Ice was applied post-activity to limit pain and swelling.

The surgical procedure consisted of creating a sling from one strip of the retinaculum, encircling the ECU, and then closing the tear in the retinaculum. Post-surgery, the patient was placed in a posterior long-arm splint, with the wrist in a neutral position, for a period of three weeks. Subsequently, the patient was placed in a short-arm splint and rehabilitative exercises were initiated. The patient performed active and passive wrist range-of-motion exercises, along with general strengthening exercises, for wrist flexion and extension, abduction, and forearm supination and pronation. Therapeutic exercise was performed twice weekly for one month under the direction of a hand therapist. A home-exercise regimen was continued for the subsequent three months. Ulnar deviation was limited during the first two weeks of rehabilitative exercise and then progressively increased over the duration of the patient’s rehabilitation program. Four months post-surgery, the patient returned to his professional role as a physician assistant. Five months after surgery, he returned to full participation in golf with no adverse consequence. He continues to apply a preventative taping as a protective measure.

**Discussion**

The golf swing consists of five phases: (a) approach/set-up, (b) backswing, (c) transition, (d) downswing, and (e) follow-through. Each phase involves a unique movement and appropriate technique. The approach, or set-up, phase is the period of time during which the golfer positions himself or herself behind the ball and prepares to swing. The ball is placed slightly ahead of the body midline and far enough away from the body to allow for a slight bend in the knees, hips, and waist of the golfer. The golfer then shifts his or her weight onto the back leg and begins the backswing. The backswing is compared to coiling a spring. With a flat back, the torso is wound around, bringing the club head away from the ball and back over the right shoulder of a right-handed golfer. The transition phase consists of the short amount of time between backswing and downswing, i.e., as the club head reaches peak potential energy and then reverses its motion to accelerate toward the ball. The downswing is the uncoiling phase, during which the club head strikes the ball with maximal energy. The trunk unwinds and both elbows extend as contact is made. The follow-through phase is simply the continuation and eventual termination of the club’s motion after contact with