

CASE REPORT

> THE PATIENT

12-year-old girl

> SIGNS & SYMPTOMS

- Bilateral wrist pain
- Limited range of motion
- Tenderness to palpation

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The authors reported no
potential conflict of interest
relevant to this article.

> THE CASE

A 12-year-old girl presented to my office (JH) with bilateral wrist pain. She had fallen on both wrists palmar-flexed and then, while trying to get up, landed on both wrists dorsi-flexed. The patient did not hear any “pops,” but felt immediate pain when her wrists hyperextended. Hand, wrist, and forearm x-rays were negative bilaterally for fractures. She was placed in bilateral thumb spica splints.

At follow-up one week later, the patient reported 6/10 pain in her left wrist and 7/10 pain in her right wrist. The pain increased to 10/10 bilaterally with movement and was not relieved by icing or nonsteroidal anti-inflammatory drugs. On physical exam, there was bilateral swelling of the wrists without ecchymosis or erythema. The patient had limited passive and active range of motion, especially during wrist extension. She also had tenderness to palpation over the anatomical snuff box, extending proximally to the distal radius bilaterally. She had no tenderness over the ulna or metacarpals, no loss of sensation in any area nerves, and she was neurovascularly intact bilaterally.

Based on the mechanism of injury, undetected fracture or full thickness ligament tear were both possible. Because of this, and because magnetic resonance imaging (MRI) entails no radiation exposure, MRI was chosen for additional imaging of both wrists.

THE DIAGNOSIS

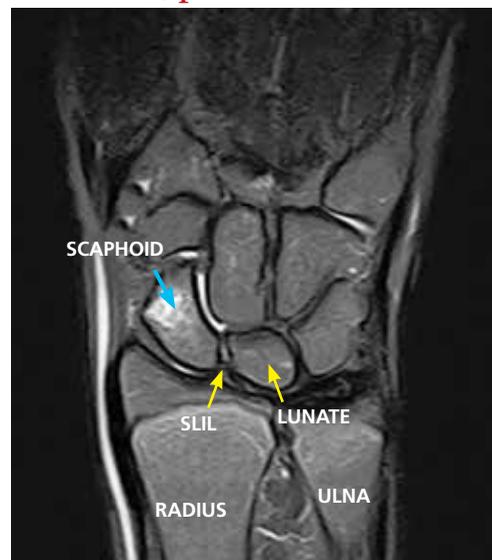
The MRI revealed bilateral, nondisplaced, extra-articular fractures extending through the scaphoid waist, with surrounding bone marrow edema. In the right wrist, the patient also had a low-grade partial tear of the membranous portion of the scapholunate interosseous ligament (SLIL) at the scaphoid attachment (FIGURE 1). In the left wrist, she also had a low-grade sprain of the SLIL without tear (FIGURE 2).

DISCUSSION

Carpal fractures account for 6% of all fractures.¹ Scaphoid fractures are the most common carpal bone fracture among all

FIGURE 1

The right wrist suffered a fracture, plus...

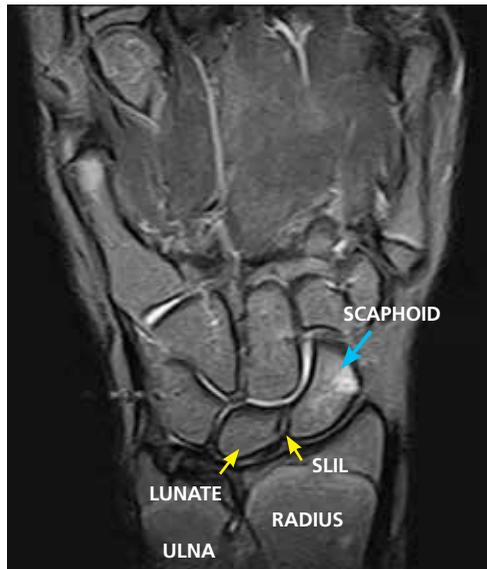


Magnetic resonance imaging scan of the patient's right wrist showed a nondisplaced fracture of the scaphoid waist (blue arrow) and a partial tear of the scapholunate interosseous ligament (SLIL).

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FIGURE 2

Findings on the left wrist were similar to the right



Magnetic resonance imaging scan of the patient's left wrist also showed a nondisplaced fracture of the scaphoid waist (blue arrow), as well as a low-grade sprain of the scapholunate interosseous ligament (SLIL) without a tear.

age groups, but account for only 0.4% of all pediatric fractures.¹⁻³ They're commonly missed on x-rays because they are usually nondisplaced and hidden by other structures superimposed on the image.^{1,2,4} Undetected, scaphoid fractures can cause prolonged interruption to the bone's architecture, leading to avascular necrosis of the proximal portion of the scaphoid bone.^{5,6}

■ **Bilateral scaphoid fractures** are extremely rare and account for less than 1% of all scaphoid fractures.⁷ Very few of these cases have been published in the literature, and those that have been published have talked about the fractures being secondary to chronic stress fractures and as being treated with internal fixation (regardless of whether the fractures were nondisplaced or if the ligaments were intact).⁶⁻⁹

■ **Our patient** was placed in bilateral fiberglass short-arm thumb spica casts. We tried conservative treatment measures first because she had help with her activities of daily living (ADLs). At a follow-up visit 2 weeks later, we switched the casts to long-

arm thumb spica casts because of the patient's ability to pronate and supinate her wrists in the short-arm versions. After one month of wearing the long-arm casts, we placed her back in bilateral short-arm casts for 2 weeks. Eight weeks after the fall, we removed the short-arm casts for reevaluation.

We obtained x-rays to assess for any new changes to the wrist and specifically the scaphoid bones. The x-rays showed almost completely healed scaphoid bones with good alignment, but the patient still had 5/10 pain in the left wrist and 8/10 pain in the right wrist with movement. We placed her in adjustable thermoformable polymer braces, which were removed when she bathed.

■ **Due to the uniqueness of her injuries**, our patient had weekly visits with her primary care provider (PCP) for the first 2 months of treatment, followed by bimonthly visits for the remainder. At 10 weeks after the fall, her pain with movement was almost gone and she began physical therapy. She also began removing the braces during sedentary activity in order to practice range-of-motion exercises to prevent excessive stiffness in her wrists. Our patient regained full strength and range of motion one month later.

■ **One other published case report** describes the successful union of bilateral scaphoid fractures using bilateral long-arm casts followed by short-arm casts.⁷ Similar to our patient's case, full union of the scaphoid bones was achieved within 12 weeks.⁷ Together, these cases suggest that conservative treatment methods are a viable alternative to surgery.

TAKEAWAY

For patients presenting with wrist pain after trauma to the wrists, assess anatomical snuff-box tenderness and obtain x-rays. Do not be falsely reassured by negative x-rays in the presence of a positive physical exam, however, as scaphoid fractures are often hidden on x-rays. If tenderness at the anatomical snuff-box is present and doesn't subside within a few days, apply a short-arm thumb splint and obtain subsequent imaging.

If bilateral, nondisplaced, stable scaphoid fractures are diagnosed, conservative

➤ Scaphoid fractures are commonly missed on x-rays because they are usually nondisplaced and hidden by other structures superimposed on the image.

➤ If tenderness at the anatomical snuffbox is present and doesn't subside within a few days, apply a short-arm thumb splint and obtain subsequent imaging.

treatment with long-arm and short-arm casts is a viable alternative to surgery. This treatment decision should be made on an individual basis, however, as it requires the patient to have frequent PCP visits, assistance with ADLs, and complete adherence to the treatment plan. **JFP**

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