Pediatric Scapholunate Injuries

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Background

• Scapholunate ligament injuries are rare in the pediatric age group. So far only a few case reports have been published, and one larger series about percutaneous pinning of Geissler II injuries.
• There is no real standard protocol for the treatment of Geissler III and IV scapholunate ligament tears in this age group. Some authors have recommended non-operative treatment for partial tears, while others have recommended open ligamentous repair once the diagnosis of complete tear is confirmed by arthroscopy.
• We present a short-term outcome study of a group of pediatric patients with partial and complete SL ligament tears (Geissler III and IV).

Methods

• A retrospective review of the medical records of all pediatric patients treated for scapholunate ligament injuries.
• 23 patients (10 boys) with a Geissler score III (10) or IV (7) or tear proven with open surgery (6) were included.
• Pre and postoperative data including mechanism of injury, range of motion grip strength, pain and radiographic parameters.

Results

• The average age was 15.1 years (range 11.4-17.8). The average delay to surgery was 16 months (1 week -6.4 years).
• The mechanism of injury was fall on the outstretched hand (13), direct dorsal hit (6), axial load (1), and repetitive overuse (4).
• All patients had dorsal wrist pain at the level of the scapholunate joint. 14 had pain with Watson’s maneuver; 9 had a active scaphoid subluxation with the test.
• There were associated fractures, four involving the scaphoid. 8 patients had associated TFCC injuries, 6 had lunotriquetral ligament injury.
• 7 patients underwent magnetic resonance imaging; 10 were suggestive for scapholunate ligament injury.
• Surgical treatments were percutaneous pinning of the scapholunate joint (5), tri-ligament tenodesis (4), a form of dorsal capsulodesis (13) and/or direct repair of the dorsal scapholunate ligament (3), and volar capsulodesis for a volar tear (1).
• The average follow up was 2 years (4 months –7 years). The average Mayo Wrist Score (12 patients) changed from 69.1 (40-90) pre-operatively to 80.5 (60-90).
• Postoperatively, 11 patients had no pain, 7 occasional mild, and 4 had moderate to severe pain.
• Patients with pre-operative limited range of motion and grip strength due to pain had improved functionality after surgery. In other cases stiffness and motion were reduced, but most patients were able to return to their daily activities.
• The results of all patients are shown in table 1 on the right.

Conclusions

• Pediatric ligament injuries do occur.
• The mechanism of injury is not uniform.
• There is often a delay in diagnosis.
• Increased awareness of this injury pattern may improve outcome.