

Displaced clavicle fractures in teens show good outcomes with conservative care

Orthopedics Today, April 2014

 ADD TOPIC TO EMAIL ALERTS

Although several studies on conservatively treated, displaced and shortened clavicle fractures have shown poor results in adults, research published in *Journal of Bone & Joint Surgery* indicates that most adolescent patients with these fractures were satisfied and returned to sports activity following nonoperative care.

“Overall, outcomes were good,” **Jacob F. Schulz, MD**, of the Children’s Hospital at Montefiore, Bronx, NY, told *Orthopedics Today*. “All fractures achieved complete union. Most patients were satisfied and went back to sports at the same level or higher, and there was little pain among them.”

He added that a comparison of the injured to uninjured limbs showed a “small limitation in strength” with an 8% loss in external rotation strength and an 11% drop in abduction endurance strength. “There was some residual shortening from side to side, but it did not appear to make a functional difference,” Schulz said. “There was one child who did not rate her shoulder highly, and two patients with mild pain out of the 16 [patients].”

Retrospective study

Schulz and colleagues conducted a retrospective study of 12 male and four female



A 13-year-old right-handed girl fell and sustained a midshaft left clavicle fracture with displacement and 11.8 mm of shortening..



The same patient is shown 1 month later.

Images: Schulz JF

patients with an average age of 14.2 years who sustained isolated, displaced midshaft clavicle fractures between 2009 and 2011. All patients were treated with a sling at Rady Children's Hospital in San Diego, where Schulz was completing his fellowship in pediatric orthopedics. Most of the fractures occurred on the patients' nondominant side. No patients underwent physical

therapy, and the group had an average follow-up of 2 years.

Final radiographs showed union of the fracture site. Although an average shortening of 11.75 mm was seen radiographically, on clinical exam a significant length difference between the two sides was not observed.



After 2 years, the patient had complete union, no pain and symmetric strength despite nearly 12 mm of shortening. She returned to full activity.

The investigators also found no significant differences between the injured and noninjured shoulders regarding range of motion for forward flexion, abduction, external rotation (ER) and internal rotation (IR); maximal strength testing for IR, abduction and forward flexion; and endurance strength testing for IR, ER and forward flexion.

Overall, the mean Quick DASH score was 4.5 ± 8.4 points and the average SANE score was 91.1 points. According to the study, the mean Constant score (although not validated in a teenage population) was comparable between the injured and noninjured shoulders. Schulz noted that 15 patients were satisfied with their treatment results.

Limitations and next steps

“It is dangerous to extrapolate adult literature to pediatrics and, based on our results, we believe that few of these fractures need surgery. It is incumbent upon the surgeon to demonstrate a need or definable goal before considering operative management,” he said.

The study was limited by its retrospective nature, prevalence of injury to the nondominant arm and exclusion of clavicle fractures that were operated on during the study period.

“It is a limitation that these children were not included in the study” Schulz said. “The next step would be a randomized controlled trial comparing operative vs. nonoperative intervention in children with severely displaced and shortened fractures.” – *by Renee Blisard Buddle*

Reference:

Schulz J. *J Bone Joint Surg Am.* 2013; doi:10.2106/JBJS.L.01390.

For more information:

Jacob F. Schulz, MD, can be reached at The Children’s Hospital at Montefiore, 3415 Bainbridge Ave. at Gun Hill Rd., Bronx, NY 10467; email: schulz.jacob@gmail.com.

Disclosure: Schulz has no relevant financial disclosures.

 ADD TOPIC TO EMAIL ALERTS