Clavicle: The Top Tips and Tricks I Learned in My Career

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I (and/or my co-authors) have something to disclose.

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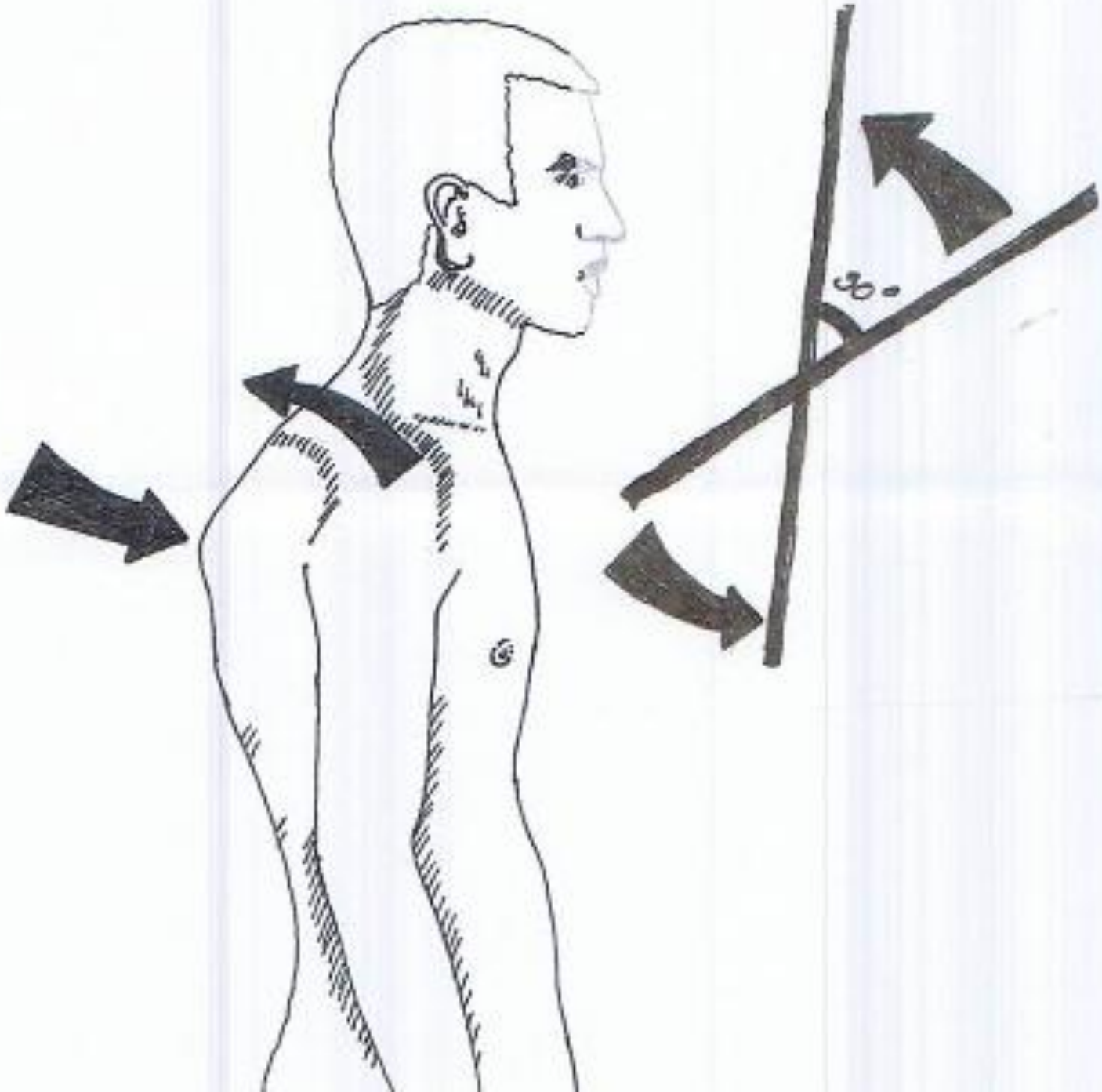
1. Scapular malposition is a major determinant of outcome

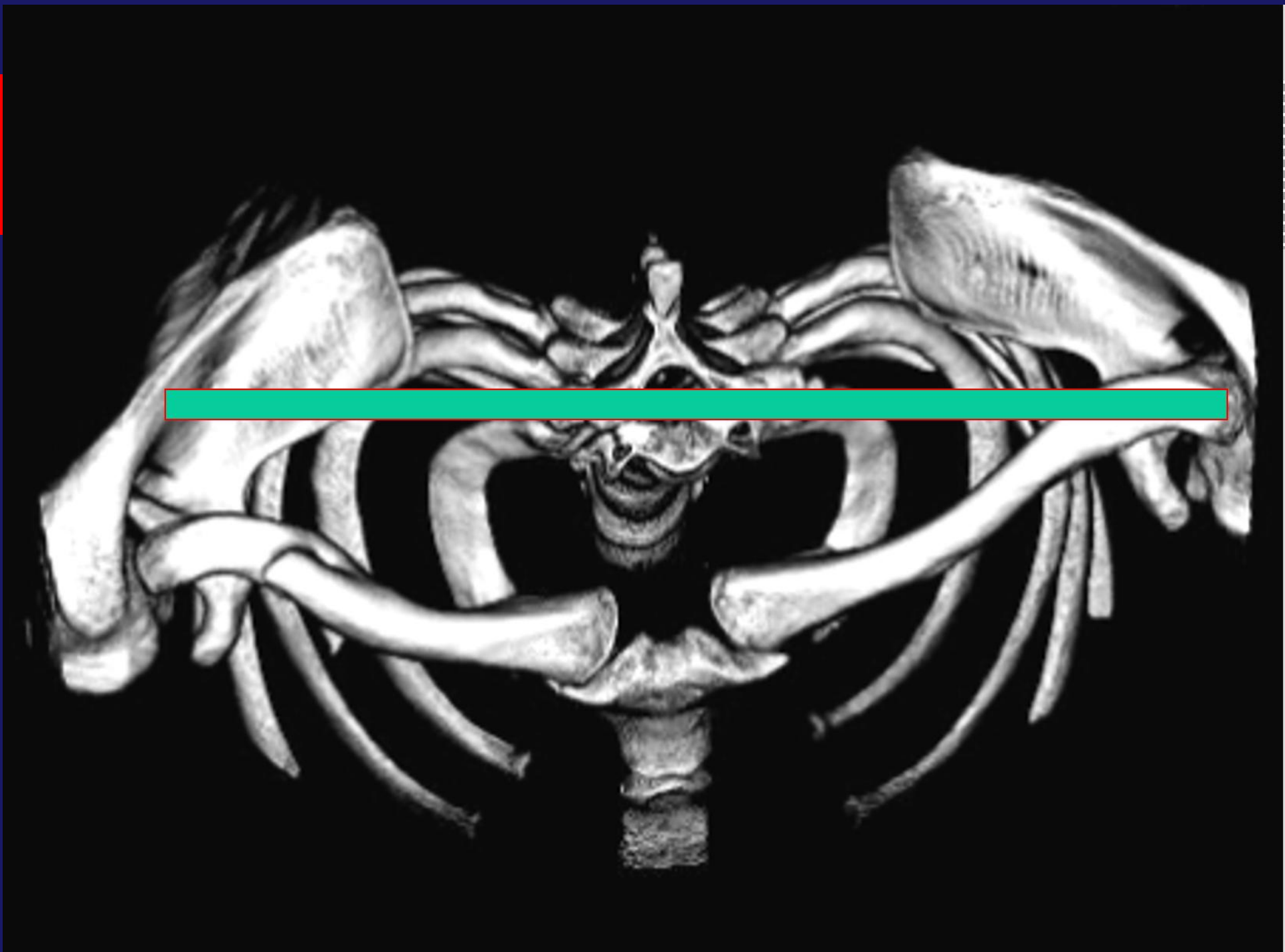

30°

Journal of Shoulder and Elbow Surgery
Volume 22, Issue 2, February 2013, Pages 240-246

Shoulder

The radiographic quantification of scapular malalignment after malunion of displaced clavicular shaft fractures

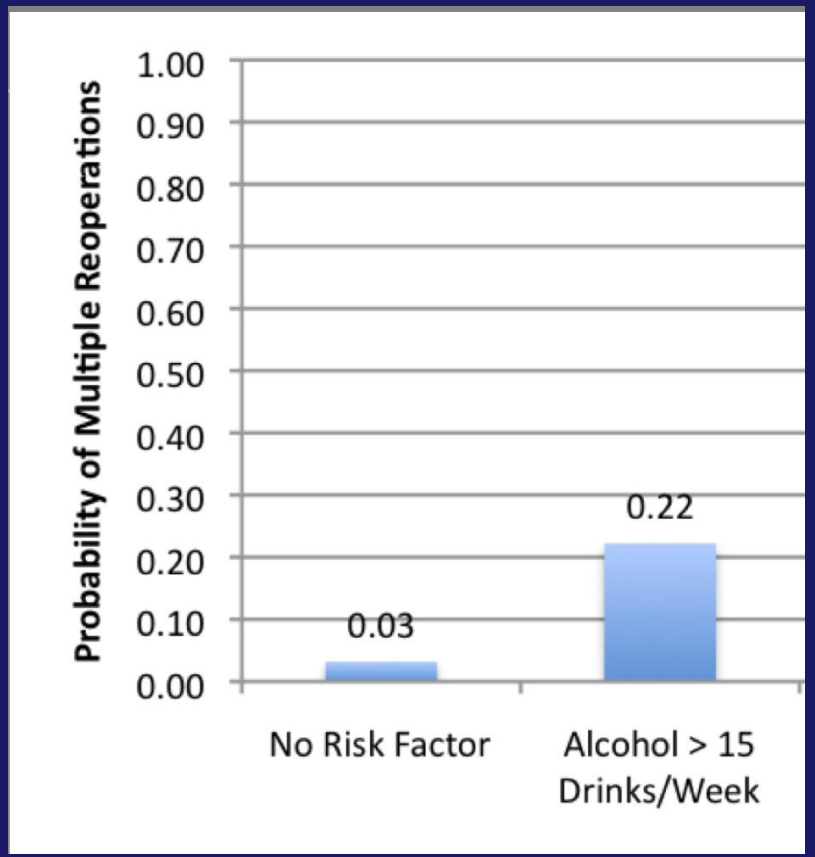
Bill Ristevski MD, MSc, FRCSC(C) [a], Jeremy A. Hall MD, MEd, FRCS(C) [b], Dawn Pearce MD [c], Jeff Potter MD [d], Michael Farrugia MD [e], Michael D. McKee MD, FRCS(C) [b]



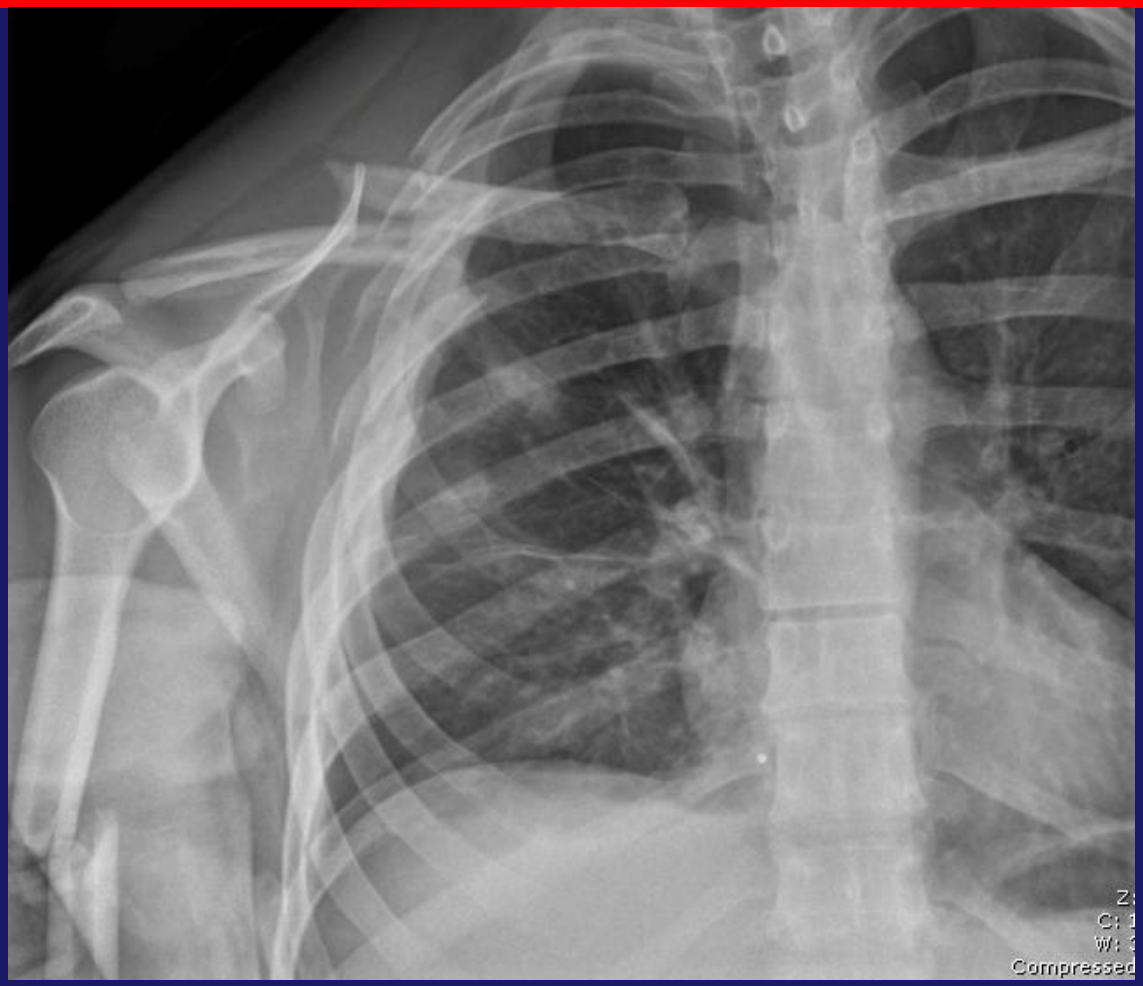
2. Beware operating on a substance abuser with a clavicle fracture

Major Complication

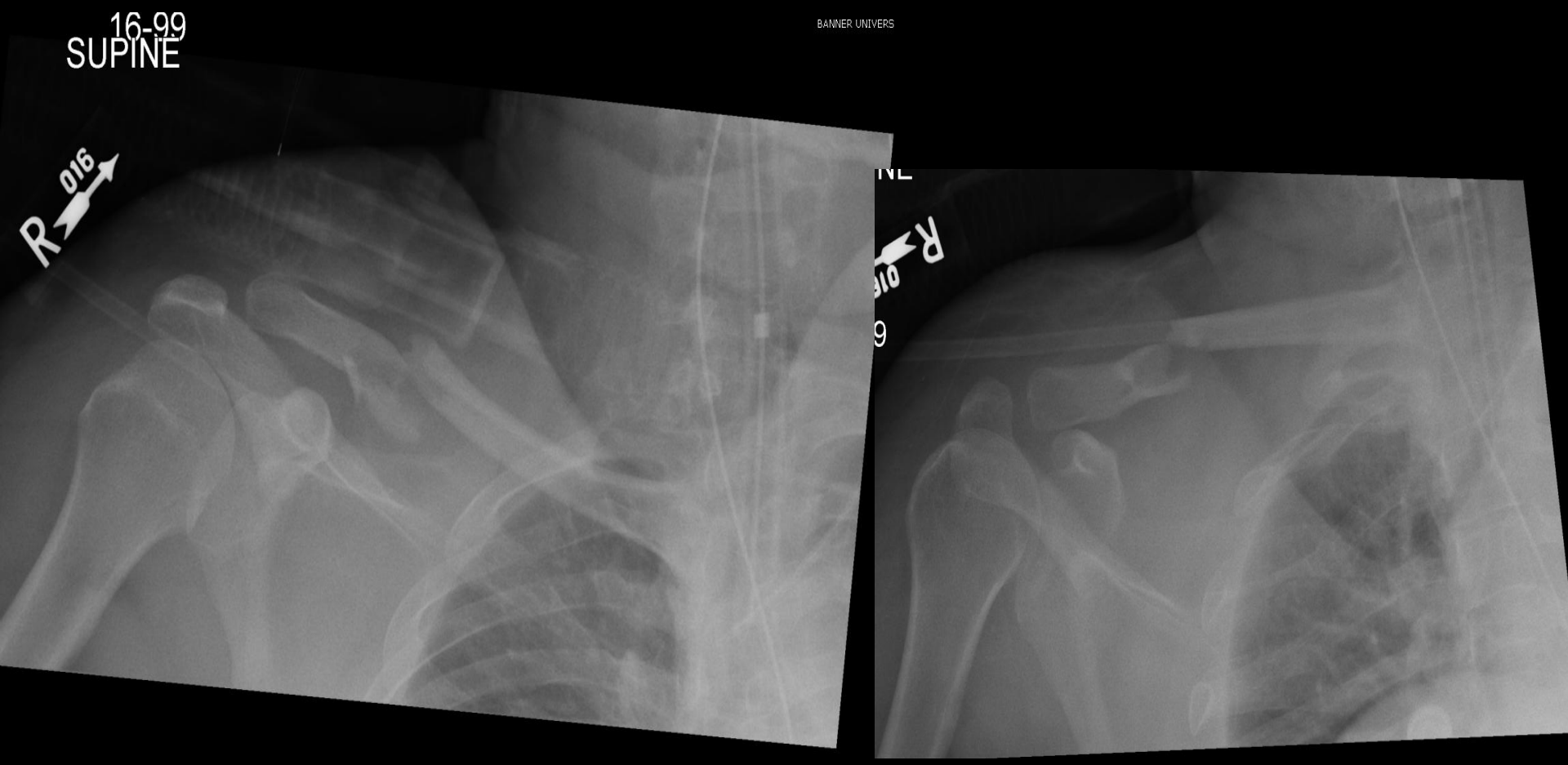
- Schemitsch L. et al. JOT 2016
- 234 cases of clavicle fixation
- Normal: 3%
- Substance abuser: 22 %
- p=0.001



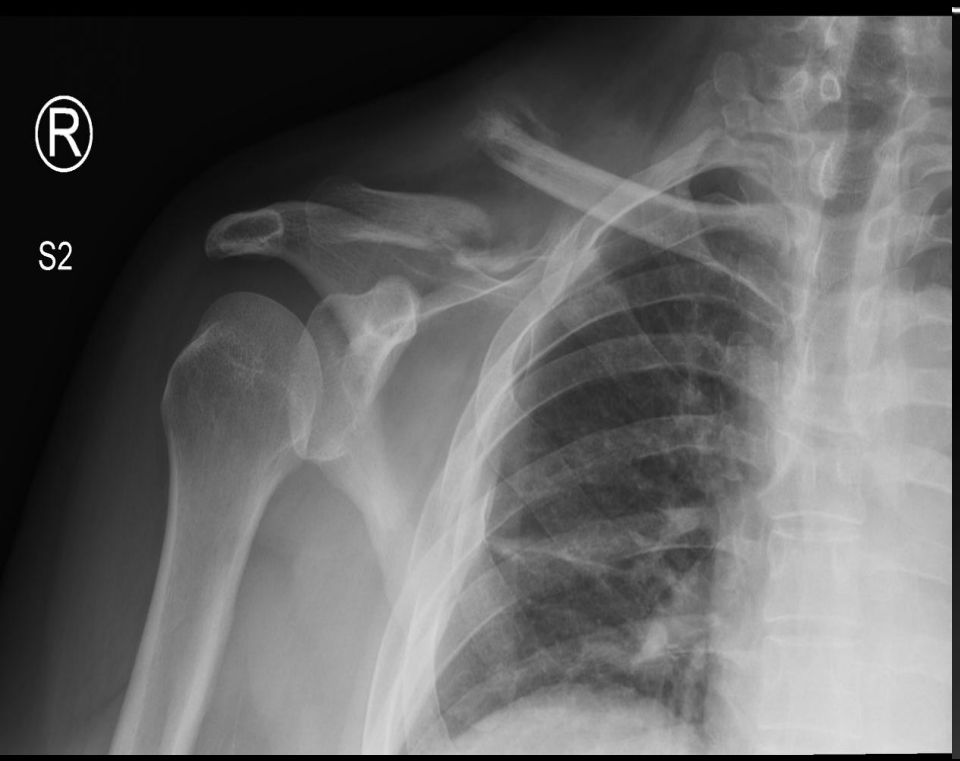
3. It is safe to allow immediate weight bearing following ORIF of clavicle fractures

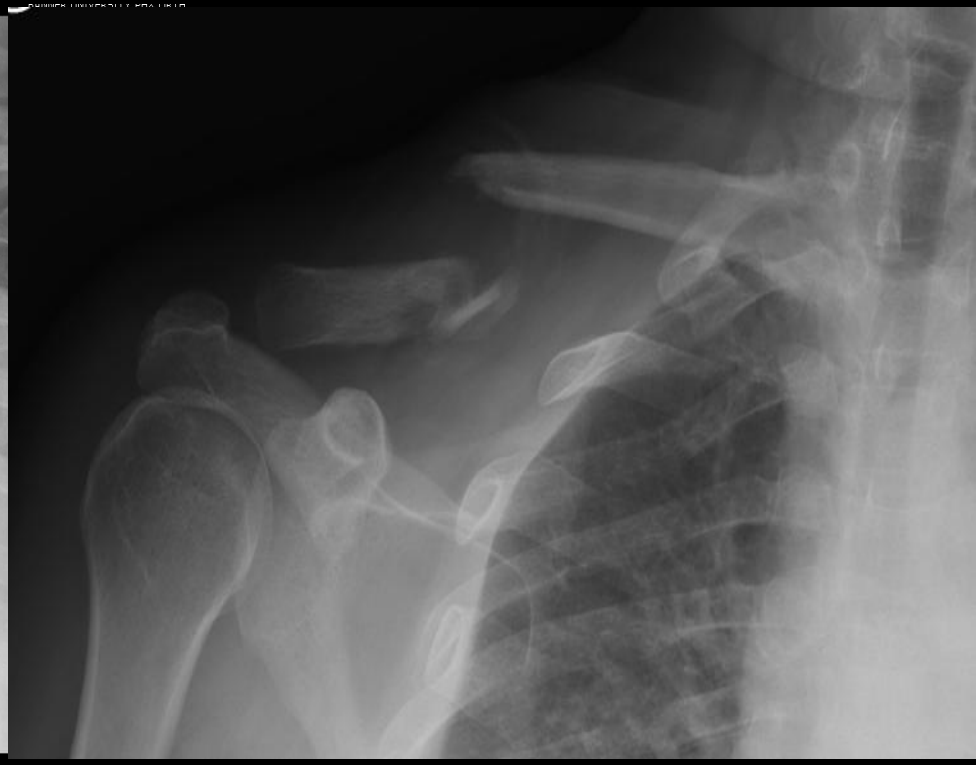


Initial Supine Trauma Films

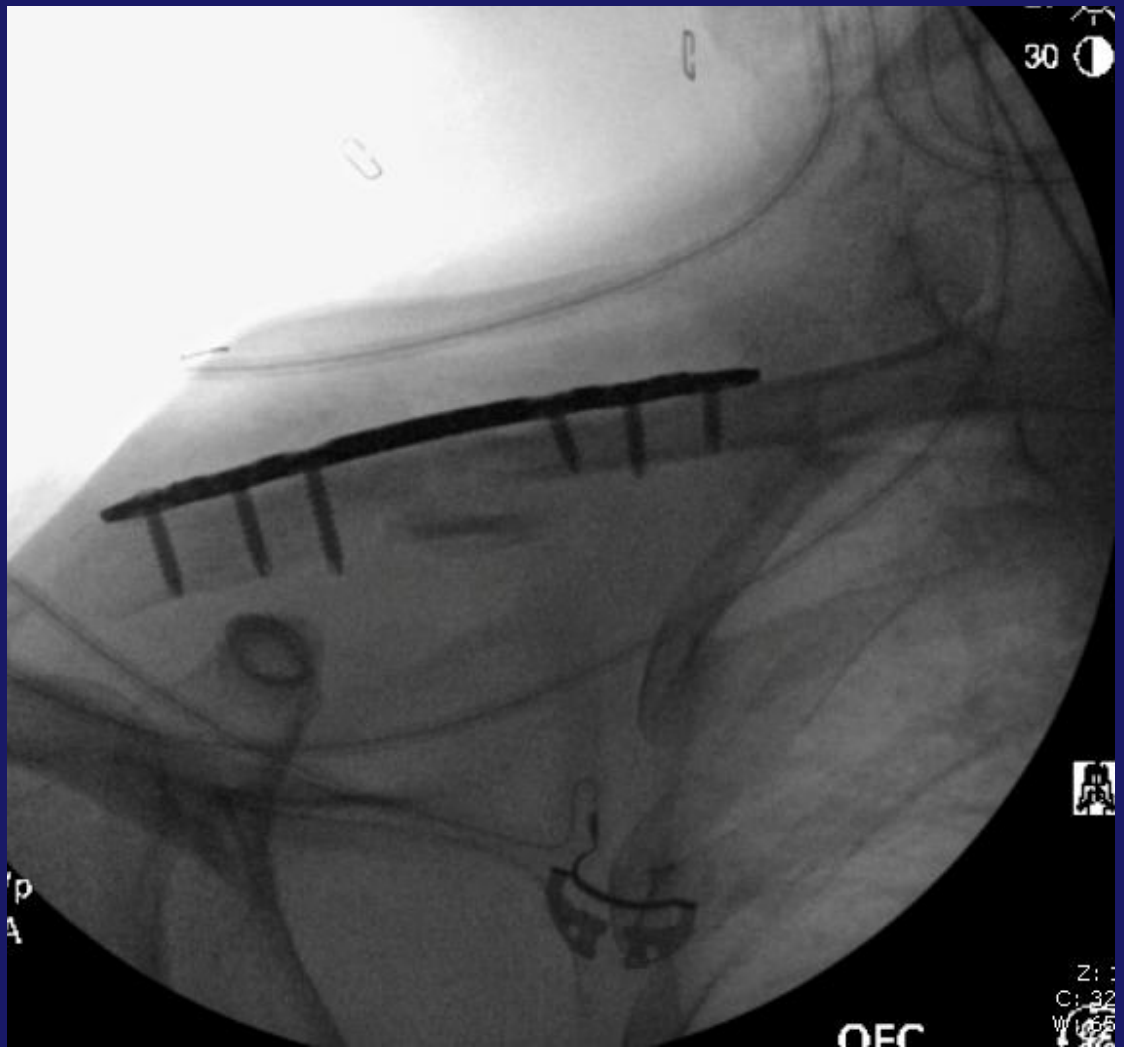


Upright radiographs two weeks later





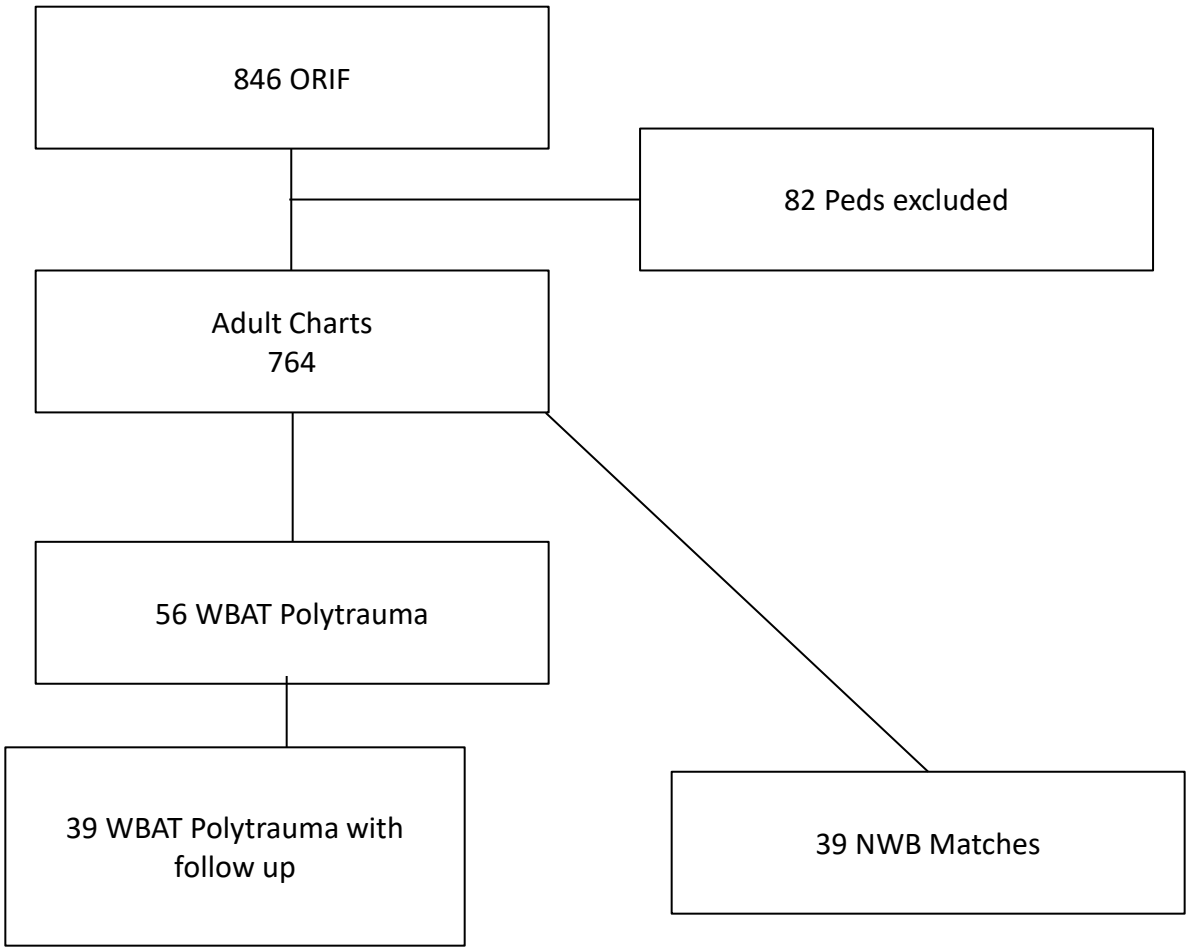
Intra-operative radiograph



Immediate Weight Bearing After Surgical Fixation of Clavicle Fractures in Polytraumatized Patients: A Retrospective Cohort Study

Ben Watzig, PGY-2
Faculty Advisor: Dr. Dehghan
Co-Investigators: Dr. Michael McKee, Dr. Nicholas Frane, Clayton Hui, Dr. Arjun Vohra, Sorka MS3

Results


846 ORIF
82 Peds excluded
Adult Charts
764
56 WBAT Polytrauma
39 WBAT Polytrauma with follow up
39 NWB Matches

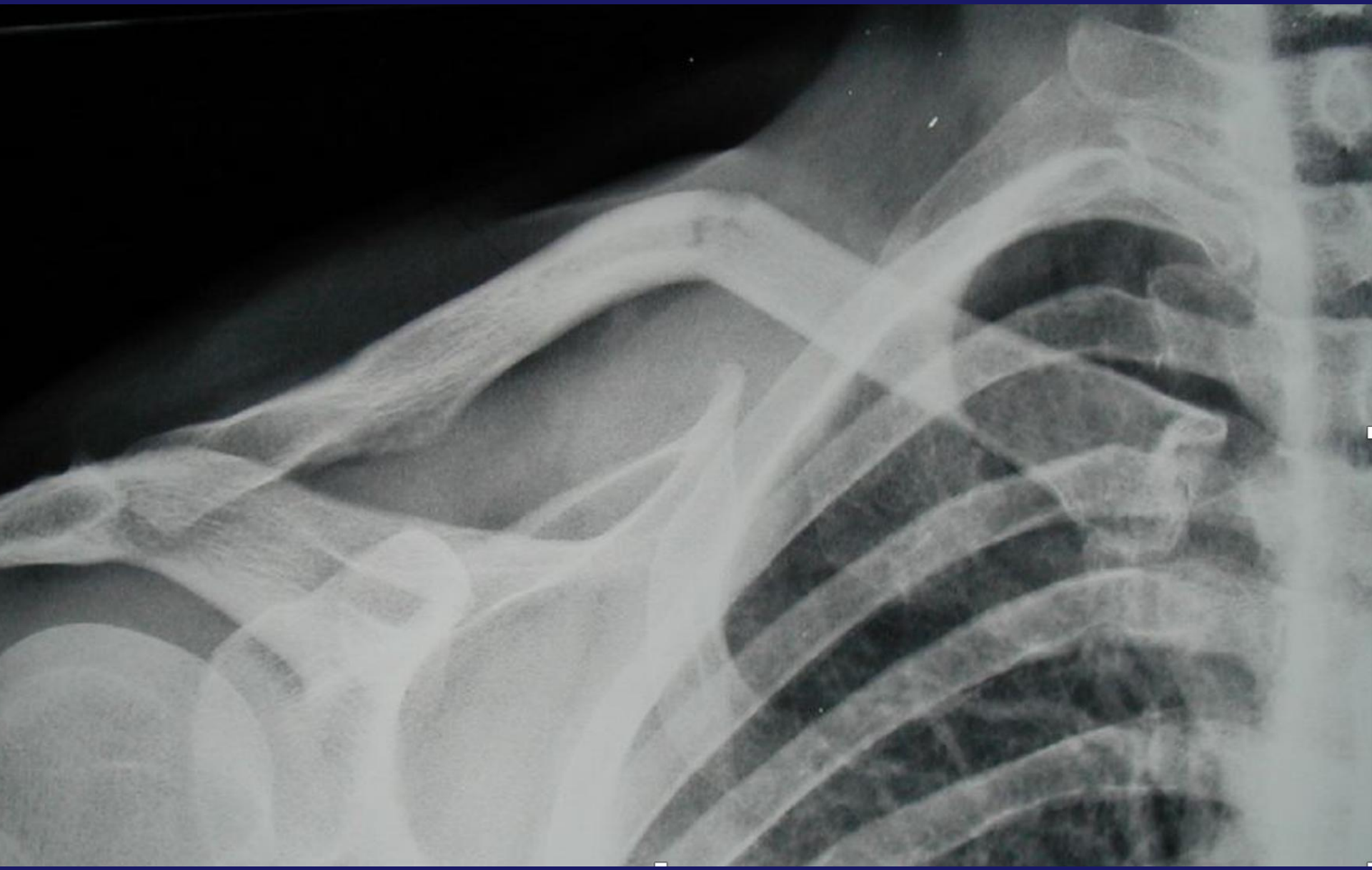
Outcomes

	WBAT (39)	NWB (39)
Fixation failure:	1	2
Deep infection:	0	0
Superficial infection:	1	1
Reoperation:	1	1
Time to union:	13.5 w	13.6 w

- No difference in any outcome measure

4. Most adolescent clavicle fractures can be treated non-operatively but some should be fixed

- 14 year old boy
- Dominant arm
- High level golfer



Case Reports > J Orthop Trauma. 2017 Apr;31(4):e130-e132.
doi: 10.1097/BOT.0000000000000765.

Clavicular Refracture at the Site of Angular Malunion in Young Athletes

Matthew J Furey [1], Radovan Zdero, Michael D McKee

Figure 1. Patient 1: Radiograph demonstrating re-fracture at the site of previous malunion. Approximate angulation was 50 degrees.

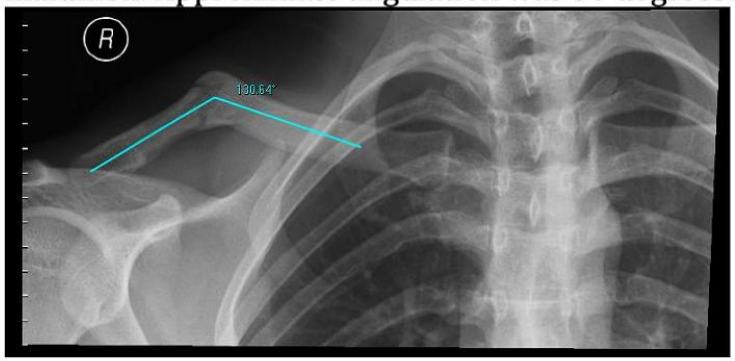
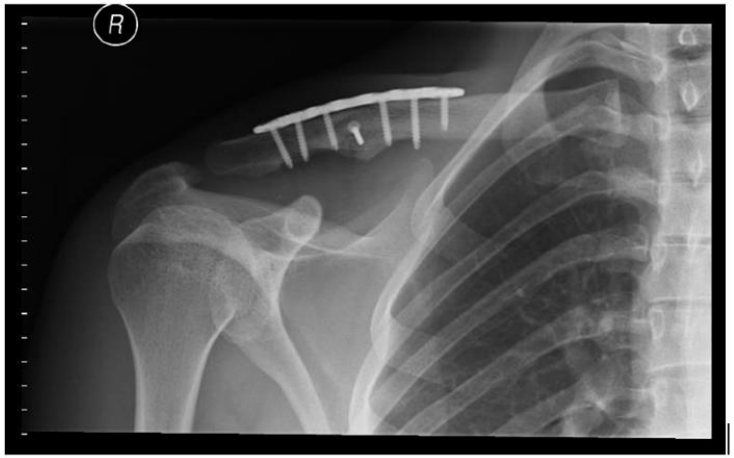


Figure 2. Patient 1: Post surgical reduction and fixation of mid-shaft angulated malunion of the clavicle



Current Concepts Review

Clavicular Fractures in the Adolescent

Midhat Patel, MD, Benton E. Heyworth, MD, Niloofar Dehghan, MD, FRCS, Charles T. Mehlman, DO, MPH, ATC, and Michael D. McKee, MD, FRCS

- Current evidence suggests that the majority of clavicular fractures in adolescents can and should be treated nonoperatively.
- Although rare, in certain patients or fracture patterns, nonoperative management may be associated with delayed healing, prolonged disability, and/or poor functional outcome requiring secondary reconstruction.
- When warranted, primary open reduction and internal fixation with plate and screw application has consistently good outcomes with a low complication rate, with the most common complication being implant-related symptoms requiring a secondary surgical procedure for implant removal.
- Prospective, comparative studies examining operative and nonoperative treatment, including measures of early return to function, injury burden, return to athletic activity, complication and reoperation rates, and shoulder-girdle-specific, long-term outcome measures are warranted to further elucidate which fractures may benefit from primary fixation.

The treatment of clavicular fractures in adolescents (from 10 to 18 years of age) has traditionally been nonoperative, but it is clear that an increasing number of orthopaedic surgeons are recommending operative treatment for these injuries. This is based, at least in part, on multiple, high-quality, comparative trials in adults[1]. These studies demonstrated that primary operative repair of displaced midshaft clavicular fractures

informed, joint decision with their patients and patients' families with regard to the optimal treatment for clavicular injury.

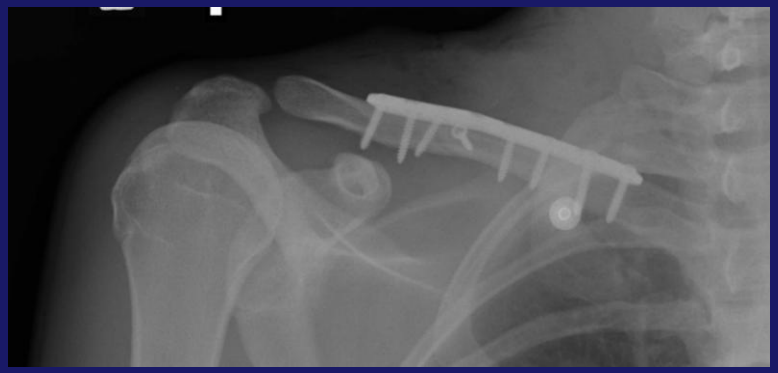
Epidemiology

Clavicular fractures account for 10% to 15% of all fractures in children[7,8]. In an epidemiological review of all upper-

5. Fixing a Clavicle Fracture is a Finesse Operation With a Narrow Risk-Benefit Ratio

Surgical Risk-Benefit Ratio

- Life saving
- Non-op Rx bad
- Indestructible
- Reconstruction difficult
- Ratio: ++++



- Improves U/E function
- Non-op Rx good
- Can fall apart
- Reconstruction reasonable
- Ratio: +