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The Literature

McKee MD, Pedersen EM, Jones C, et al. Deficits following nonoperative treatment of displaced midshaft clavicular fractures. J Bone Joint Surg Am. 2006;88(1):35–40.
Hillen RJ, Schraa ER, van Essen T, Burger BJ, Veeger DH. Long-term follow-up of conservatively treated midshaft clavicular fractures on functional outcome. J Orthop. 2019 Sep 11;18:80-85.
Liu W, Xiao J, Ji F, Xie Y, Hao Y. Intrinsic and extrinsic risk factors for nonunion after nonoperative treatment of midshaft clavicle fractures. Orthopaedics & Traumatology: Surgery & Research, 2015, Vol.101 (2), p.197-200.

Clavicle shaft fracture

Tips & Tricks from ESTES Education in collaboration with the Skeletal trauma section

The Problem

Clavicle fracture are among the most common injuries

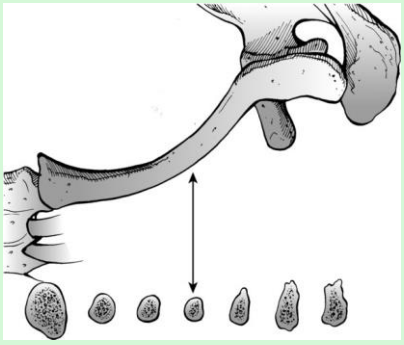
The Challenge

Numerous expertise on treatment management

The Evidence

- 2.6% of all fractures, collision sports, cycling
- Clavicle is described as “a strut for muscles to attach to”
- S-shaped when viewed from above, flat superior surface, in cross-section medial: tubular, lateral ellipsoid
- Deforming forces defined by attached muscles
- Danger zone in the mid third with brachial plexus and subclavian vessels in close relation
- Plate removal approx. 15-30%, prefer > 1 year postop to ensure complete healing

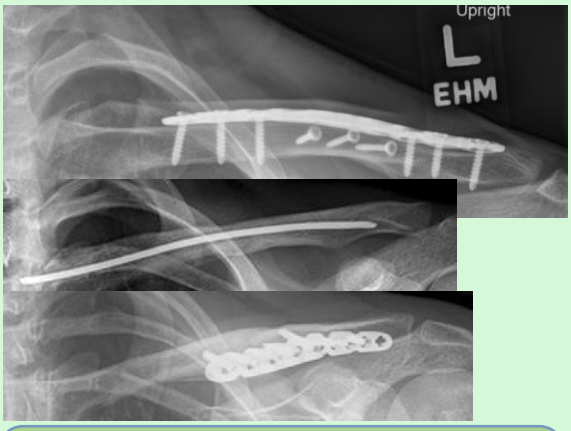
Tips & Tricks



The cross-section of the clavicle changes towards lateral – keep in mind during screw placement

Deciding factors for treatment strategy

- Cosmetic: bump versus scar
- Shoulder function
- Risk for nonunion (amount of displacement, smoking, fracture comminution,…)
- Associate injuries (esp. thoracic injuries) and polytrauma



IM Implants (no rotational locking)
ORIF with plate superiorly or anteriorly (no high quality evidence regarding superiority one above the other

Conclusion

Fracture fixation reduces risk for nonunion and might improve return to work, requires, however, hardware removal in one-third of cases.