Lateral Clavicular Fractures

- 15-25% of all clavicle fractures
- Majority minimally displaced\(^1\)
- Majority progress to early union and successful clinical result

1. Robinson CM. Fractures of the clavicle: Epidemiology and Classification. JBIJS(Br) 1998;80:476-84
Controversies

- Operative Versus Nonoperative management
- Incidence of nonunion
- Which fractures do we fix?
- Methods of fixation
Classification

- Allman Group 2
- Neer and Craig\(^2,3\)
- I-Intact CC Ligament
- II-At the level of CCL
- III-Intraarticular
- IV-Ligament intact to periosteum
- V-Comminuted

Type 1 and 3 fractures

- Minimally displaced
- Intact CC ligaments prevent displacement\(^2\)
- Treatment of choice – non operative
- Sling favourable to Figure of 8\(^4\)
- Increased risk of OA\(^5\)
- Lateral clavicle excision if symptomatic\(^6,7\)

4. Anderson K. Acta Orthop Scan 1987;58:71-4
5. Robinson CM. JBJS (Am) 2004;86:778-82
Type II

- Early studies – high rates of nonunion\(^2\)
- 2 contemporary studies, rates of non union \(22-37\%\)\(^5,6\)
- Incidence may be lower \(11.5\%\) \(^8\)
- Middle aged and elderly – Minimal symptoms and reasonable patient satisfaction\(^5,6\)
- Few 14% may require delayed operative intervention
- Younger patients – pain and reduced function in 14%\(^5\).
- Does operative intervention results in better union and functional outcomes?

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Coracoclavicular screws

- Bosworth 1941 – for ACJ Subluxation
- Technically demanding
- High rates of fixation failure 6/70 cases in 6 series – screw cutout and loosening
- limits shoulder movement and requires removal

10. Kavanagh TG. JBJS(Br) 1985;67:492-3
Plate and Hook plate

- Dynamic Compression Plate\textsuperscript{15}
- locking plates\textsuperscript{16}
- Hook plate\textsuperscript{17,18,19}
- Concerns are shoulder stiffness, erosion of the acromion, fracture and the need for removal after union\textsuperscript{20}

17. Meda PV. Injury 2006;37:277-83
Sling and Suture Techniques

- Steel wire\(^{21}\)
- Mersilene tape\(^{21}\)
- Dacron arterial graft\(^{22}\)
- Endobutton techniques with use of nonabsorbable suture/fibrewire\(^{23}\)

21. Chen CH. J Trauma 2002;52:72-8
22. Webber MC. Injury 2000;31:175-9
Conclusions and Summary

- Retrospective small case series
- Good outcomes with operative treatment of type II fractures
- No RCTs comparing operative Vs nonoperative Rx and only one study comparing different methods of fixation
- I and III treated nonoperatively
- Type II – elderly people with low functional demands – nonoperative
- Younger people, athletes, higher functional demands – operation
- Methods – level IV and V evidence, Therefore one method has not been shown to be superior to another.