Reducing unnecessary fixation of midshaft clavicle fractures

Authors: Murray NJ, Johnson T, Packham IN, Crowther MAA, Chesser TJS
North Bristol NHS Trust, Bristol, UK
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Introduction:

- Displaced midshaft clavicle fractures have a non-union rate of 10-20%. Those who unite with conservative treatment have similar outcomes to those who undergo operative treatment, therefore protocols to identify potential non-unions are important to avoid unnecessary surgery.

Aim:

- To report of on one such protocol

Patients and Methods:

A protocol was introduced, where all isolated closed displaced midshaft clavicle fractures were initially managed non-operatively in a sling. At 2 weeks the patients were reviewed and those who were struggling with their symptoms were offered surgery, with the remainder mobilised as comfortable. All cases treated at one centre over a three-year period, with a minimum follow up of one-year underwent case note review. See figure 1.

Results:

Between 2015 and 2017 613 clavicle fractures were managed through clinic as demonstrated in table 1. 41 middle third clavicle fracture patients underwent early fixation. 8 were excluded as they were managed out with the protocol eg open fracture, tented skin. The number of days to operation

Table 1

Total clavicle fractures		613
Medial		11 (2%)
Middle		347 (56%)
Distal		255 (42%)
Middle third clavicle fractures		
Male		262 (75%)
Female		85 (25%)
Mean Age		41y (range 16-97y)
Displaced		225 (65%)

was 4-57 with a median of 15 days. 11 patients required late fixation for symptomatic delayed, non or mal union. 4 were excluded as they were treated outside the protocol eg from another hospital. Late surgery occurred at a mean of 378 days (range 193-494 days), 6 for symptomatic non-unions and 1 was a symptomatic malunion. The early operative rate was 10% (33 of 335 patients), and non-union or symptomatic malunion rate was 2%. This led to a total operative rate of 12%. See figure 2.

Figure 2

Conclusions:

A protocol for managing middle third clavicle fractures has demonstrated an effective means of managing these injuries. It is cost effective reducing the number of patients requiring fixation with a fixation rate of 12% whilst reducing the rate of symptomatic non and malunion (2%). The management pathway is simple, and could be introduced into any orthopaedic outpatient department with ease.