Appraisal

Critically Appraised Papers

Surgery for displaced fracture of the proximal humerus may not result in better outcomes than nonsurgical management

Synopsis


Question: Does surgical treatment improve patient-reported outcomes in adults with displaced fractures of the proximal humerus? Design: Randomised controlled trial with concealed allocation. Setting: Thirty-two acute hospitals in the United Kingdom. Participants: Adults presenting with a displaced fracture of the proximal humerus involving the surgical neck were included. Patients were excluded if they had an associated dislocation of the injured shoulder joint, if they had co-morbidities that precluded surgery or anaesthesia, or if illness was terminal. Randomisation of the 250 patients allocated 125 to the surgical group and 125 to the non-surgical group. Interventions: Both groups received rehabilitation care provided by physiotherapists in inpatient, outpatient and community settings. In addition, the surgical group received either internal fracture fixation or hemiarthroplasty (humeral head replacement). The nonsurgical group were given a sling for the injured arm for a suggested period of 3 weeks. Outcome measures: The primary outcome was the Oxford Shoulder Score at 6, 12 and 24 months after injury. The Oxford Shoulder Score provides a total score based on the patient’s subjective report of pain and function, ranging from 0 (worst outcome) to 48 (best outcome). Secondary outcome measures were health-related quality of life (Short-Form 12 health survey), complications related to the fracture and surgery, and mortality. Results: The primary analysis was completed on 231 participants. There were no between-group differences in the mean Oxford Shoulder Scores (mean difference 0.8 points, 95% CI –1.3 to 2.8) over the 2 years or at any time point. Over the 2 years there were also no significant differences between the groups in the physical or mental component scores of the Short-Form 12 survey, in fracture and surgical complications (30 participants in the surgical group vs 23 in the nonsurgical group), or in mortality (seven participants in the surgical group vs five in the nonsurgical group). Both groups received a median of eight sessions of physiotherapy, with more than 90% of physiotherapy sessions including prescribed exercise and advice. Conclusion: Surgical treatment for displaced fracture of the proximal humerus followed by physiotherapy rehabilitation did not improve clinical outcomes or reduce complications compared with simply providing a sling and providing physiotherapy rehabilitation.


Nicholas Taylor
Section Editor, Journal of Physiotherapy
http://dx.doi.org/10.1016/j.jphys.2015.05.003

Commentary

The decision for conservative or surgical management of proximal humeral fractures is widely discussed, and many displaced proximal humeral fractures (displacement of > 1 cm and/or 45 deg angulation of fracture parts) are typically considered for surgical intervention. Current evidence indicates that clinical outcomes are similar to conservative management and that complication rates are higher.1,2 The pragmatic trial by Rangan and colleagues adds high-quality evidence to this limited body of knowledge, with similar findings of no significant or clinically important differences between surgical and conservative management groups. Although of great value, the findings may not be generalisable to more complex patients. Eighty percent of people screened for eligibility were excluded, mostly due to confounding comorbidities, mental capacity or associated dislocation.

Physiotherapy aims to help patients with their functional recovery after fracture. No evidence-based physiotherapy guidelines are available for the treatment of people recovering from a proximal humeral fracture. For the trial by Rangan and colleagues, a general physiotherapy protocol with recommendations in six rehabilitation phases was developed and received by both groups.3 It represents current practice with pain management, staged progression in mobilisation of the upper limb in general and the glenohumeral joint, followed by progressive strengthening exercises and functional use of the arm.

Rehabilitation is recommended to be functional and activity based, and so is measurement of shoulder function.4 Rangan and colleagues used the patient-reported Oxford Shoulder Score as the primary outcome. The mean scores ranged from 35.6 (6 months) to 40.4 (2 years post-fracture) on a 48-point scale. This difference is around their 5-point minimal clinically important difference. This could inform us that little improvement may occur post active rehabilitation, but also that (more) responsive and functional measures should be used.5


Alexander TM van de Water
Department of Physiotherapy, Saxion University of Applied Sciences, Enschede, The Netherlands

References


http://dx.doi.org/10.1016/j.jphys.2015.05.008