

# Shoulder and Humerus Injuries

Lars Bjoernsen  
Alexander Ebinger

## REFERENCES

- Sewell MD, Al-Hadithy N, Le Leu A, Lambert SM: Instability of the sternoclavicular joint: current concepts in classification, treatment and outcomes. *Bone Joint J* 95: 721, 2013. [PMID: 23723264]
- Glass ER, Thompson JD, Cole PA, Gause TM 2nd, Altman GT: Treatment of sternoclavicular joint dislocations: a systematic review of 251 dislocations in 24 case series. *J Trauma* 70: 1294, 2011. [PMID: 21610444]
- Groh GI, Wirth MA: Management of traumatic sternoclavicular joint injuries. *J Am Acad Orthop Surg* 19: 1, 2011. [PMID: 21205762]
- Boesmueller S, Wech M, Tiefenboeck TM, et al: Incidence, characteristics, and long-term follow-up of sternoclavicular injuries: an epidemiologic analysis of 92 cases. *J Trauma Acute Care Surg* 80: 289, 2016. [PMID: 26491798]
- Gobet R, Meuli M, Altermatt S, Jenni V, Willi UV: Medial clavicular epiphysiolysis in children: the so-called sterno-clavicular dislocation. *Emerg Radiol* 10: 252, 2004. [PMID: 15290471]
- Blakeley CJ, Harrison HL, Siow S, et al: The use of bedside ultrasound to diagnose posterior sterno-clavicular dislocation. *Emerg Med J* 28: 542, 2011. [PMID: 20581378]
- Bengtzen RR, Petering RC: Point-of-care ultrasound diagnosis of posterior sternoclavicular joint dislocation. *J Emerg Med* 52: 513, 2017. [PMID: 28087089]
- Macdonald PB, Lapointe P: Acromioclavicular and sternoclavicular joint injuries. *Orthop Clin North Am* 39: 535, 2008. [PMID: 18803982]
- Van Tongel A, McRae S, Gilhen A, et al: Management of anterior sternoclavicular dislocation: a survey of orthopaedic surgeons. *Acta Orthop Belg* 78: 164, 2012. [PMID: 22696984]
- Kirby JC, Edwards E, Kamali Moaveni A: Management and functional outcomes following sternoclavicular joint dislocation. *Injury* 46: 1906, 2015. [PMID: 26169233]
- Zlowodzki M, Zelle BA, Cole PA, Jeray K, McKee MD, Evidence-Based Orthopaedic Trauma Working Group: Treatment of acute midshaft clavicle fractures: systematic review of 2144 fractures: on behalf of the Evidence-Based Orthopaedic Trauma Working Group. *J Orthop Trauma* 19: 504, 2005. [PMID: 16056089]
- Ahrens PM, Garlick NI, Barber J, et al: The clavicle trial: a multicenter randomized controlled trial comparing operative with nonoperative treatment of displaced midshaft clavicle fractures. *J Bone Joint Surg Am* 99: 1345, 2017. [PMID: 28816894]
- Waldmann S, Benninger E, Meier C: Nonoperative treatment of midshaft clavicle fractures in adults. *Open Orthop J* 12: 1, 2018. [PMID: 29430265]
- Robinson CM, Court-Brown CM, McQueen MM, Wakefield AE: Estimating the risk of nonunion following nonoperative treatment of a clavicular fracture. *J Bone Joint Surg Am* 86-A: 1359, 2004. [PMID: 15252081]
- Wick M, Muller EJ, Kollig E, Muhr G: Midshaft fractures of the clavicle with a shortening of more than 2 cm predispose to nonunion. *Arch Orthop Trauma Surg* 121: 207, 2001. [PMID: 11317682]
- Sambandam B, Gupta R, Kumar S, et al: Fracture of distal end clavicle: a review. *J Clin Orthop Trauma* 5: 65, 2014. [PMID: 25983473]
- van der Meijden OA, Gaskill TR, Millett PJ: Treatment of clavicle fractures: current concepts review. *J Shoulder Elbow Surg* 21: 423, 2012. [PMID: 22063756]
- Anderson K: Evaluation and treatment of distal clavicle fractures. *Clin Sports Med* 22: 319, 2003. [PMID: 12825533]
- Cole PA: Scapular fractures. *Orthop Clin North Am* 33: 1, 2002. [PMID: 11832310]
- Lapner PC, Uhthoff HK, Papp S: Scapula fractures. *Orthop Clin North Am* 39: 459, 2008. [PMID: 18803976]
- Baldwin KD, Ohman-Strickland P, Mehta S, Hume E: Scapula fractures: a marker for concomitant injury? A retrospective review of data in the National Trauma Database. *J Trauma* 65: 430, 2008. [PMID: 18695481]
- Zlowodzki M, Bhandari M, Zelle BA, Kregor PJ, Cole PA: Treatment of scapula fractures: systematic review of 520 fractures in 22 case series. *J Orthop Trauma* 20: 230, 2006. [PMID: 16648708]
- Lavelle WF, Uhl R: Scapulothoracic dissociation. *Orthopedics* 33: 417, 2010. [PMID: 20806751]
- Flanagin BA, Leslie MP: Scapulothoracic dissociation. *Orthop Clin North Am* 44: 1, 2013. [PMID: 23174321]
- Simovitch R, Sanders B, Ozbaydar M, Lavery K, Warner JJ: Acromioclavicular joint injuries: diagnosis and management. *J Am Acad Orthop Surg* 17: 207, 2009. [PMID: 19307670]
- Babhulkar A, Pawaskar A: Acromioclavicular joint dislocations. *Curr Rev Musculoskelet Med* 7: 33, 2014. [PMID: 24431027]
- Mazzocca AD, Arciero RA, Bicos J: Evaluation and treatment of acromioclavicular joint injuries. *Am J Sports Med* 35: 316, 2007. [PMID: 17251175]
- Li X, Ma R, Bedi A, Dines DM, Altchek DW, Dines JS: Management of acromioclavicular joint injuries. *J Bone Joint Surg Am* 96: 73, 2014. [PMID: 24382728]
- Beitzel K, Cote MP, Apostolakis J, et al: Current concepts in the treatment of acromioclavicular joint dislocations. *Arthroscopy* 29: 387, 2013. [PMID: 23369483]
- Modi CS, Beazley J, Zywiell MG, et al: Controversies relating to the management of acromioclavicular joint dislocations. *Bone Joint J* 95-b: 1595, 2013. [PMID: 24293587]
- Hendey GW: Managing anterior shoulder dislocation. *Ann Emerg Med* 67: 76, 2016. [PMID: 26277437]
- Kahn JH, Mehta SD: The role of post-reduction radiographs after shoulder dislocation. *J Emerg Med* 33: 169, 2007. [PMID: 17692769]
- Ong S, Kelly AM, Gunn B: Failed validation of the quebec shoulder dislocation rule for young adult patients in an Australian emergency department. *CJEM* 13: 150, 2011. [PMID: 21524370]
- Orloski J, Eskin B, Allegra PC, Allegra JR: Do all patients with shoulder dislocations need prereluction x-rays? *Am J Emerg Med* 29: 609, 2011. [PMID: 20825841]
- Janitzky AA, Akyol C, Kesapli M, et al: Anterior shoulder dislocations in busy emergency departments: the External Rotation Without Sedation and Analgesia (ERWOSA) method may be the first choice for reduction. *Medicine (Baltimore)* 94: e1852, 2015. [PMID: 26632681]
- Guler O, Ekinci S, Akyildiz F, et al: Comparison of four different reduction methods for anterior dislocation of the shoulder. *J Orthop Surg Res* 10: 80, 2015. [PMID: 26016671]
- Moharari RS, Khademhosseini P, Espandar R, et al: Intra-articular lidocaine versus intravenous meperidine/diazepam in anterior shoulder dislocation: a randomised clinical trial. *Emerg Med J* 25: 262, 2008. [PMID: 18434457]
- Jiang N, Hu Y, Zhang KR, Zhang S, Bin Y: Intra-articular lidocaine versus intravenous analgesia and sedation for manual closed reduction of acute anterior shoulder dislocation: an updated meta-analysis. *J Clin Anesth* 26: 350, 2014. [PMID: 25066879]
- Beeson MS: Complications of shoulder dislocation. *Am J Emerg Med* 17: 288, 1999. [PMID: 10337892]
- Warme WJ, Arciero RA, Taylor DC: Anterior shoulder instability in sport: current management recommendations. *Sports Med* 28: 209, 1999. [PMID: 10541443]
- Cleeman E, Flatow EL: Shoulder dislocations in the young patient. *Orthop Clin North Am* 31: 217, 2000. [PMID: 10736391]
- Stayner LR, Cummings J, Andersen J, Jobe CM: Shoulder dislocations in patients older than 40 years of age. *Orthop Clin North Am* 31: 231, 2000. [PMID: 10736392]
- Walton J, Paxinos A, Tzannes A, Callanan M, Hayes K, Murrell GA: The unstable shoulder in the adolescent athlete. *Am J Sports Med* 30: 758, 2002. [PMID: 12239016]
- Itoi E, Hatakeyama Y, Sato T, et al: Immobilization in external rotation after shoulder dislocation reduces the risk of recurrence: a randomized controlled trial. *J Bone Joint Surg Am* 89: 2124, 2007. [PMID: 17908886]
- Alkaduhimi H, van der Linde JA, Willigenburg NW, et al: A systematic comparison of the closed shoulder reduction techniques. *Arch Orthop Trauma Surg* 137: 589, 2017. [PMID: 28251280]
- Cunningham NJ: Techniques for reduction of antero-inferior shoulder dislocation. *Emerg Med Australas* 17: 463, 2005. [PMID: 16302939]
- Wen DY: Current concepts in the treatment of anterior shoulder dislocations. *Am J Emerg Med* 17: 401, 1999. [PMID: 10452444]
- Westin CD, Gill EA, Noyes ME, Hubbard M: Anterior shoulder dislocation. A simple and rapid method for reduction. *Am J Sports Med* 23: 369, 1995. [PMID: 7661270]
- Kothari RU, Dronen SC: Prospective evaluation of the scapular manipulation technique in reducing anterior shoulder dislocations. *Ann Emerg Med* 21: 1349, 1992. [PMID: 1416331]
- Sayegh FE, Kenanidis EI, Papavasiliou KA, et al: Reduction of acute anterior dislocations: a prospective randomized study comparing a new technique with the Hippocratic and Kocher methods. *J Bone Joint Surg Am* 91: 2775, 2009. [PMID: 19952238]
- Beattie TF, Steedman DJ, McGowan A, Robertson CE: A comparison of the Milch and Kocher techniques for acute anterior dislocation of the shoulder. *Injury* 17: 349, 1986. [PMID: 3533776]
- Kowalsky MS, Levine WN: Traumatic posterior glenohumeral dislocation: classification, pathoanatomy, diagnosis, and treatment. *Orthop Clin North Am* 39: 519, 2008. [PMID: 18803981]
- Khmel'nitskaya E, Lamont LE, Taylor SA, Lorich DG, Dines DM, Dines JS: Evaluation and management of proximal humerus fractures. *Adv Orthop* 2012: 861598, 2012. [PMID: 23316376]
- Chu SP, Kelsey JL, Keegan TH, et al: Risk factors for proximal humerus fracture. *Am J Epidemiol* 160: 360, 2004. [PMID: 15286021]
- Gaebler C, McQueen MM, Court-Brown CM: Minimally displaced proximal humeral fractures: epidemiology and outcome in 507 cases. *Acta Orthop Scand* 74: 580, 2003. [PMID: 14620980]
- Handoll HH, Brorson S: Interventions for treating proximal humeral fractures in adults. *Cochrane Database Syst Rev* 11: CD000434, 2015. [PMID: 26560014]
- Schumaier A, Grawe B: Proximal humerus fractures: evaluation and management in the elderly patient. *Geriatr Orthop Surg Rehabil* 9: 2151458517750516, 2018. [PMID: 29399372]
- Steinhaus ME, Dare DM, Gulotta LV: Displaced proximal humerus fractures: is a sling as good as a plate? *HSS J* 12: 287, 2016. [PMID: 27703425]
- Shrader MW: Proximal humerus and humeral shaft fractures in children. *Hand Clin* 23: 431, 2007. [PMID: 18054670]
- Shao YC, Harwood P, Grotz MR, Limb D, Giannoudis PV: Radial nerve palsy associated with fractures of the shaft of the humerus: a systematic review. *J Bone Joint Surg Br* 87: 1647, 2005. [PMID: 16326879]
- Schoch BS, Padegimas EM, Maltenfort M, et al: Humeral shaft fractures: national trends in management. *J Orthop Traumatol* 18: 259, 2017. [PMID: 28484909]
- Clement ND: Management of humeral shaft fractures; non-operative versus operative. *Arch Trauma Res* 4: e28013, 2015. [PMID: 26401493]

## 2 SECTION 22: Orthopedics

63. Gosler MW, Testroote M, Morrenhof JW, Janzing HM: Surgical versus non-surgical interventions for treating humeral shaft fractures in adults. *Cochrane Database Syst Rev* 1: Cd008832, 2012. [PMID: 22258990]
64. Carroll EA, Schweppe M, Langfitt M, Miller AN, Halvorson JJ: Management of humeral shaft fractures. *J Am Acad Orthop Surg* 20: 423, 2012. [PMID: 22751161]
65. van Dongen R, Cohen SP, van Kleef M, Mekhail N, Huygen F: Traumatic plexus lesion. *Pain Pract* 11: 414, 2011. [PMID: 21447077]
66. Birch R: Injuries to the brachial plexus: controversies and possibilities. *Neurosurg Clin North Am* 12: 285, 2001. [PMID: 11525207]
67. Eichinger JK, Galvin JW: Management of complications after total shoulder arthroplasty. *Curr Rev Musculoskelet Med* 8: 83, 2015. [PMID: 25672497]
68. Bohsali KI, Wirth MA, Rockwood CA Jr: Complications of total shoulder arthroplasty. *J Bone Joint Surg Am* 88: 2279, 2006. [PMID: 17015609]
69. Sperling JW, Kozak TK, Hanssen AD, Cofield RH: Infection after shoulder arthroplasty. *Clin Orthop Relat Res* 382: 206, 2001. [PMID: 11153989]
70. Topolski MS, Chin PY, Sperling JW, et al: Revision shoulder arthroplasty with positive intraoperative cultures: the value of preoperative studies and intraoperative histology. *J Shoulder Elbow Surg* 15: 402, 2006. [PMID: 16831641]