Type III Acromioclavicular Joint Injuries: Conservative or Operative Treatment? A Systematic Review of Recent 10-year Studies

Agung Kenji Arnaya¹, Putu Astawa¹
¹Orthopaedics and Traumatology Department, Faculty of Medicine Udayana University, Sanglah General Hospital, Bali, Indonesia

INTRODUCTION: Commonly found in daily practice, acromioclavicular (AC) joint injury mostly presents as minor sprains and occurs five times more frequently in men than in women, with the highest incidence in the 20 to 30 years old age group. The management depends on its grade and severity but the treatment of choice for type III AC joint injury remains unclear. Considering the absence of an algorithm for correctly diagnosing and treating type III injuries, this systematic review aims to compare the conservative and operative treatment for this pathology.

MATERIALS AND METHODS: This systematic review was conducted based on the PRISMA guideline. Literature research was primarily performed using Pubmed, EMBASE, and Cochrane Library to search for studies on the management of type III acromioclavicular injuries up to July 23rd, 2019. The inclusion criteria were type III acromioclavicular injuries type III, with the intervention of conservative as compared to operative management. Outcomes were measured radiologically and by functional assessment using subjective questions (Poigenfurst’s Criteria and the Oxford Shoulder Score). Studies with the pathologies other than type III acromioclavicular injuries were excluded from the analysis.

RESULTS: A list of inclusion and exclusion criteria previously agreed by the authors was utilized to screen the full text. This selection process yielded 5 final articles from 2011-2017 to be included in this systematic review, with 173 patients undergoing conservative (68) and operative treatment (105). One of the studies were of level II. The mean basic data ranges of the studies were as follows: patients’ age was 25-54 years old, and the follow-up time ranged from 3 – 10 years. Surgical techniques are done by modified Weaver and Dunn technique, tight rope system, K-wire fixation, and coracoacromial ligament suturing, double button technique, and hook plate fixation. Three of the study reported that conservative treatment was superior and one study reported that nonoperative was better in radiographic evaluation, but not significant. Two studies that only performed operative treatment reported that the patient can return to normal activity around a few months and one study told that after removing hook plat the Constant-Murley shoulder function scores is significantly raised. Calcification as the complication happened more than 70% of patients in operative treatment and 30% in conservative.

DISCUSSION: Acromioclavicular joint injuries present mostly minor sprains, with the highest incidence in the 20-30 year old age group. The difficulty lies in the different definitions of type III acromioclavicular injuries used in the current studies. There are multiple classifications for the description of AC injuries and the common classifications for AC injuries are using Rockwood et al. classifications. Treatment for type 1 and 2 is conservative and type 4–6 is mainly surgical, but there is no clear consensus on treatment of type 3 injuries. Four study reported conservative treatment was superior and had better radiographic results (poigenfurst’s criteria and the oxford shoulder score). Operative treatment was comparable, but was associated with more complications, such as calcifications.

CONCLUSION: This systematic review reports successful outcome from 4 studies using conservative treatment. However, this review showed no conclusive evidence for the treatment. Therefore more study is expected in the future in order to assess the functional outcomes, using standard and validated measures, including patient assessed functional outcomes, as well as resource implications.

The Orthopaedic Journal of Sports Medicine, 7(11)(suppl 6)
DOI: 10.1177/2325967119S00469
©The Author(s) 2019