Clinical Predictors of Concomitant Fracture in Patients with Shoulder Dislocation: A Systematic Review and Meta-Analysis

Authors: Ilaria Oldrini

Abstract: The shoulder is the most common dislocated large joint, making it a regular presentation to the Emergency Department. It is accepted practice to obtain plain radiographs before attempting to reduce a dislocated shoulder. Plain radiographs can confirm dislocation but are predominantly obtained to identify concomitant fracture of the humeral neck or shaft that might contraindicate attempts at closed reduction. However, the need to obtain pre-reduction radiographs risks delaying joint reduction, prolonging pain, and further compromising the soft tissues. A number of small studies have attempted to identify characteristics that predict the presence of a fracture that would contraindicate closed reduction of a dislocated shoulder. This project systematically reviews existing data to determine whether clinical features can be used to identify a group of patients that are so unlikely to have a concomitant fracture that their dislocated shoulder can be reduced without pre-reduction radiographs. This systematic literature review was conducted via a thorough search of various publication databases. A total of five studies were identified to include data on clinical features of patients presenting to the emergency department with a shoulder dislocation and a concomitant fracture. A statistical and meta-analysis was performed on these papers, and overall, the results of this study conclude that there is no singular clinical feature that can be used to confidently identify patients with or without a fracture. However, certain clinical features were found to have an association with an increased or decreased chance of a concomitant fracture. These features were age, sex, mechanism of injury and the presence of humeral ecchymosis. These clinical features could be further studied in combination to create a possible diagnostic algorithm to confidently identify patients at a high or low risk of concomitant fracture-dislocation.

Keywords: shoulder dislocation, shoulder fracture-dislocation, diagnostic algorithm, clinical feature, pre-reduction radiograph, emergency medicine

Conference Title: ICEM 2022: International Conference on Emergency Medicine

Conference Location: London, United Kingdom

Conference Dates: May 26-27, 2022