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Elbow Dislocation with No Associated Fractures: A Systematic Review of the Current Practice

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Abstract

Background: A simple elbow dislocation (SED) is defined as an elbow dislocation with no associated fracture. It is the second most dislocated joint after the shoulder and represents 25% of all elbow injuries. Currently, treatment protocols are varied and yield inconsistent outcomes. The objective of this study was to conduct a systematic review on published literature to analyse the clinical outcomes of different rehabilitation protocols in both conservative and surgical treatments, aiming to identify which approach yields the best clinical outcomes.

Methods: The systematic review was conducted using protocols from PRISMA for systematic reviews and Cochrane Handbook for Systematic Review of Interventions. Following PICO analysis and identification of Medical Subject Headings (MeSH), keywords were used with Boolean operators to search for literature from online medical databases. Studies were selected using title-abstract and full-text screening based on inclusion-exclusion criteria. Only peer-reviewed literature was included. Quality assessment methods including Cochrane Risk of Bias tool, Coleman score, MINORS, and AMSTAR were used to validate the methodology of the included studies. Data extracted included outcome measures such as clinical outcome scores (MEPS, OES, Q-DASH), elbow range of motion (ROM), time return to work, pain scores. Outcomes were categorised into conservative or surgical and further subdivided based on time of immobilisation and incorporation of physiotherapy. Data illustration was performed in Excel and followed by comparative analysis.

Results: A total of 18 studies, involving 3,278 patients were included. Studies were primarily retrospective cohort studies and systematic reviews. Quality of evidence for non-randomised studies ranged from moderate to high, low-quality studies were excluded from the data extraction and analysis. Randomised studies had low risk of bias. The conservative management group comprised of 2,629 patients, 904 had early mobilisation at ≤ 7 days and 1,725 were mobilised at > 7 days. This was followed with variations in use of physiotherapy. Respectively, mean MEP score was 95.3 and 93.7, with mean elbow flexion-extension ROM of 135.7° and 133.1°. Surgical treatment was ligament repair or

reconstruction and comprised of 649 patients. Post-surgery 282 had variations of early physiotherapy and 367 without. Respectively, mean MEP score was 93.4 and 91.6, with mean elbow flexion-extension ROM of 129.7° and 120°. Given inadequate reporting and varying follow-up durations between studies, the impact on recovery time was not established.

Conclusions: Shorter durations of immobilisation consistently demonstrated the most favourable outcomes, particularly when coupled with physiotherapy. Regardless, all treatment groups demonstrated good functional outcomes, suggesting management should be tailored according to patient needs and personal recovery goals. Future research should adopt unified reporting methods, particularly in follow-up timing and outcome measurement units. Additional data is needed to evaluate the impact of rehabilitation protocols after surgical treatment for SEDs.

Keywords: Simple Elbow Dislocation | Treatment | Management | Outcomes

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