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LETTER TO THE EDITOR

Early Clinical Outcomes of Polyaxial Locking Cap Plate Fixation for Displaced Olecranon Fractures

Dear Editor

We read with great interest the article titled, "Early Clinical Outcomes of Polyaxial Locking Cap Plate Fixation for Displaced Olecranon Fractures" by Gutman *et al.*[1] The authors demonstrate promising short-term results with polyaxial locking plates, emphasizing high union rates and functional recovery. We commend their efforts to advance fixation strategies for these challenging fractures, and we offer the following commentary.

Study design was retrospective (Level IV evidence) with no control group, and the sample size was relatively small (24 patients, of whom 19 had documented functional outcomes). As the authors acknowledge, a 79% follow-up rate introduces some risk of bias, and the limited cohort size hinders subgroup analysis by fracture type. The absence of a comparison group means we cannot definitively conclude that the polyaxial locking-cap plate is superior to traditional fixation methods. For instance, in a Level I randomized trial, Duckworth *et al.* found no significant difference in 1-year functional outcomes between TBW and conventional plate fixation for isolated olecranon fractures.[2] Authors' excellent DASH and Single Assessment Numeric Evaluation (SANE) scores at short-term follow-up are comparable to those in both the TBW and plating arms of that RCT.[2] Thus, without a direct comparator, it remains unclear whether the observed outcomes reflect an advantage of the locking-cap design or the generally favorable results of olecranon ORIF when appropriately applied. Additionally, follow-up in the present study was limited to roughly 1–2 years, so potential late issues – such as implant-related irritation beyond 2 years or arthritic changes – were not captured. In prior plating studies with longer follow-up, hardware prominence symptoms often emerge over time, sometimes impacting range of motion and necessitating implant removal.[3,4] Authors report zero hardware removals in the early postoperative period, but whether this low reoperation rate persists with long-term retention of the locking-cap plates is an open question.

Looking ahead, we agree with the authors that further investigation is warranted. In particular, randomized controlled trials (RCTs) or well-designed comparative studies should be pursued to rigorously evaluate polyaxial locking-cap plates against standard techniques. One priority would be an RCT comparing the locking-cap plate to TBW in simple transverse fractures and to modern locked plating (including variable-angle designs) in comminuted fractures. Such a study could clarify if the polyaxial locking-cap construct offers any measurable improvements in union rate, elbow function, or complication profile. Key endpoints should include hardware-related complications and reoperation rates, as these differ between fixation methods in the literature. Notoriously, TBW fixation often leads to symptomatic hardware requiring removal – reported in roughly 30–50% of cases in active patients.[2,5] Plating tends to reduce this problem, but not eliminate it: for example, Duckworth's trial [2] saw a 22% implant removal rate for plates at 1 year, and other series report plate removal in up to 40% of patients over longer follow-up.[4] In Authors' study, the 0% hardware removal rate at 2 years is a promising signal that the locking-cap design might mitigate irritation. However, only with larger numbers and extended surveillance can we determine if this implant truly allows improved hardware retention compared to conventional approaches. We also suggest tracking outcomes beyond union, such as subtle losses of motion or patient-reported elbow scores at more than 5 years, to ensure that excellent early outcomes translate into durable long-term success.

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