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CORR Insights®: Factors Associated with Reoperation after Fixation of Displaced Olecranon Fractures

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Where Are We Now?

Olecranon fractures occur commonly, and account for approximately 10% of upper extremity fractures in adults [10, 13]. Most displaced olecranon fractures are treated with open reduction and internal fixation (ORIF). Tension band wiring remains the most commonly

used method of internal fixation, although other methods of fixation are being used such as low-profile plating, intramedullary screw fixation, and locked intramedullary nailing [1, 2, 4, 7, 9]. But reoperations complicate the care of many (and in some series, most) patients treated with ORIF for olecranon fractures [3–5, 7, 12]. The factors resulting in these reoperations are not fully understood, and could be related to the fractures, the patients, or the implants used. Several reports [7, 9–11] identified different factors associated with reoperations including prominent hardware, arthrosis, infection, ulnar neuropathy, and older age. Efforts to reduce the frequency of these reoperations have focused on techniques to eliminate or reduce hardware prominence and wire migration such as the use of low profile

plates and intramedullary implants [1, 2, 4–6, 8]; these efforts have met with only mixed success.

Where Do We Need To Go?

In our attempt to reduce reoperation rates after ORIF of olecranon fractures, we need to investigate all of the different factors associated with reoperation.

In the current study, Claessen and colleagues confirmed the higher than usual rate of reoperation. The authors also confirmed that the type of implant did not affect the rate of reoperation. Wire or implant migration was the cause of reoperation in only 3% of the patients. After careful analysis of all factors studied, Claessen and colleagues concluded that personal factors were more influential in affecting the decision to reoperate than the fracture-related or implant-related factors. They also found that women and younger patients were more inclined to have a reoperation compared to men and older patients.

The importance of this study lies in its ability to shed light on the personal

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factors as being more significant than the technical factors. That is a game-changer in our understanding of this important issue. This study also points to the importance of counseling patients—especially women and younger patients who have an increased likelihood of needing a second procedure for implant removal.

In order to meet the challenge of reducing the rate of reoperation after ORIF of olecranon fractures, we still need followup studies that can investigate multiple elements of this very important topic. We need to investigate the use of other internal fixation devices that do not cause prominence, as all hardware currently used for this procedure result in some prominence. The promising good results regarding the use of multidirectional locking intramedullary nails, which could decrease the implant prominence, is encouraging [1, 2, 4]. Gehr and colleagues [4] demonstrated no implant removal after the use of a locked intramedullary nail in 73 patients at 1-year after surgery. But we need to scrutinize these implants carefully for clinical efficacy and cost-effectiveness.

How Do We Get There?

Although quite a few studies have evaluated patient- and fracture-related factors associated with reoperations

after olecranon ORIF [3, 5, 8, 10, 12], we still need more papers, and more-focused analyses on this topic. Specifically, we need to further understand why younger patients and women would undergo more reoperations compared to other patients. Perhaps some other studies such as national registries or database studies may shed some light on those confounding variables. Sifting through all the variables in the decision making process may be challenging since the decision to use a certain type of hardware depends mainly on the fracture and the surgeon's comfort with the use of certain method of fixation. That being so, we should strive to better understand the various factors that influence reoperations after olecranon ORIF. By doing so, we can develop certain precautions or plans that could contribute to reducing the rate of reoperation in these types of injuries.

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