# Research Week 2020

## Gigli saw olecranon osteotomy for distal humerus fractures: A cutting-edge technique

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## Abstract

Purpose

Olecranon osteotomy is commonly performed for open reduction and internal fixation of intraarticular distal humerus fractures, as it affords direct visualization of the articular surface to achieve anatomic reduction. Historically, a chevron osteotomy with an oscillating saw has been utilized. Recently, however, using a Gigli saw to complete the olecranon osteotomy has been suggested as a more efficient technique. The purpose of this study was to compare complication rates of the chevron and Gigli saw osteotomy techniques.

Methods

A 7-year retrospective chart review of all patients at our academic level 1 trauma center with operatively treated AO/OTA type 13C distal humerus fractures undergoing olecranon osteotomy was performed (2012-19; n=48). The primary outcome measure was overall complication rate, which included infection, arthrofibrosis, nerve injury, and all-cause reoperation. Between group differences in complication rates were assessed using t-tests and chi-squared tests.

Results

23 patients (48%) received an olecranon osteotomy with the Gigli saw technique. An overall complication rate of 56% was observed with the chevron technique, compared to 30% with the Gigli saw technique. This difference was not statistically significant ($p = 0.10$). However, patients with a chevron osteotomy were significantly more likely to develop arthrofibrosis ($p = 0.03$) or a nerve injury ($p = 0.02$).

Conclusion

Complications rates in the chevron and Gigli saw osteotomy groups were not statistically different. While fracture severity and reduction quality may impact complication rates,

the Gigli saw osteotomy technique does not appear to increase complication rates. This favorable safety profile, in combination with the speed and simplicity of the Gigli saw technique, warrants further study and consideration for utilization in clinical practice.