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INTRODUCTION

- Olecranon fractures are common injuries of the upper extremity that frequently require operative fixation
- Surgery is often performed lateral or prone, presenting challenges for anesthesia and the surgical team to safely and appropriately position the patient.
- Prone and lateral positioning can be associated with increased complications in older patients, those with additional comorbidities or elevated body mass index.
- **We describe an easy and quick surgical set-up that provides good exposure to the operative site and stable positioning of the arm.**

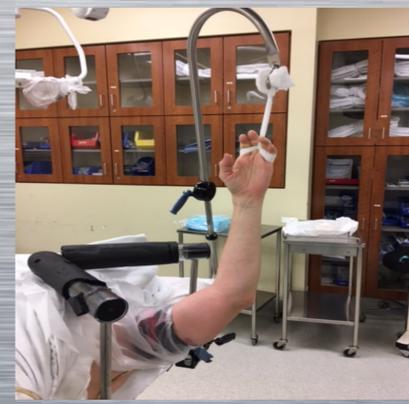
TECHNIQUE

- Patient is placed supine on the operative table with the body slightly eccentric toward the operative side with the shoulder hanging slightly over the edge
- Two L-shaped padded limb positioners or 'paint rollers' are secured to the edge of the bed on the operative side, one above the arm and one below the arm, with tips touching forming a triangle.
- The arm is draped over paint rollers with cubital fossa resting where the paint rollers meet (figure 1)
- Next the arm is hung for surgical preparation (figure 2)
- The arm is then cleaned and prepped

Figure 1



Figure 2



FIGURES

- After the arm is prepped a sterile stockinet is placed over the arm followed by an impermeable and upper extremity drape
- The stockinet is wrapped with ioban. Using an esmark the arm is exsanguinated and the tourniquet inflated.
- The arm is then draped over the paint rollers and stockinet is cut to allow easy, direct access to the olecranon (Figure 3)
- To further secure the arm, the esmark is wrapped around the paint rollers, behind proximal humerus, and tied (figure 4)

Figure 3

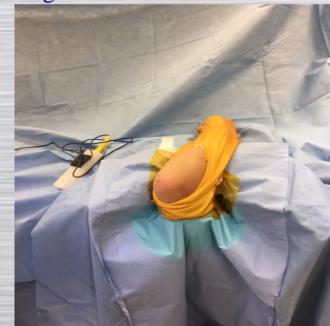
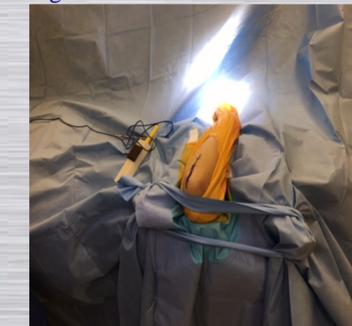


Figure 4



- The addition of the esmark allows the arm to stay in place during manipulation without requiring an assistant to hold
- Once secure the olecranon is easily accessible for operative fixation and fluoroscopic evaluation (figures 5A&B)

Figure 5

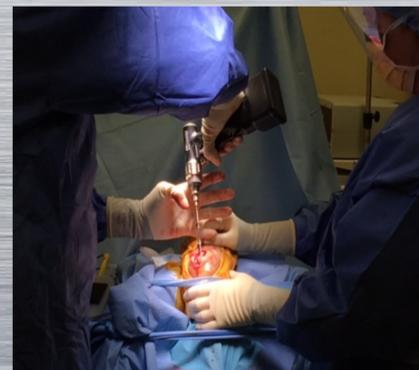


Figure 6



DISCUSSION

- Our technique for olecranon positioning allows for easy, quick operative set up without the increased risks associated with prone and lateral positioning.
- This position offers the option of sedation without the requirement of general anesthesia.
- **Our positioning allows for easy surgical and fluoroscopic (mini-C-arm) access without requiring a surgical assistant to hold or position the arm.**
- This position can be used for other elbow procedures requiring distal humeral or proximal ulnar access from posterior direction.

REFERENCES

- 1) Baecher, N; Edwards, S. Olecranon Fractures. *J Hand Surg Am.* 2013 Mar;38(3):593-604.
- 2) Chui, J; Craen, RA. "An update on the prone position: Continuing Professional Development." *Can J Anaesth.* 2016 Jun;63(6):737-67.
- 3) Hoppenfeld, Stanley, DeBoer, Piet, Buckley, Richard. *Surgical exposures in orthopaedics: The anatomic approach. The Elbow 111-137.* Lippincott Williams & Wilkins. 4e 2009. Philadelphia, PA.
- 4) Li, X; Eichinger, JK; Hartshorn, T; Zhou, H; Matzkin, EG; Warner, JP. A comparison of the lateral decubitus and beach-chair positions for shoulder surgery: advantages and complications. *J Am Acad Orthop Surg.* 2015 Jan;23(1):18-28.
- 5) Marchessault, Jeffrey A. *Orthopedics (Thorofare, N.J.): Posteromedial Elbow Approach for Treatment of Olecranon and Coronoid Fractures.* 29 Vol. SLACK Inc, 03/2006. Web. 20 Apr. 2017.
- 6) Matar, HE; Ali, AA; Buckley, S; Garlick, NI; Atkinson, HD. Surgical interventions for treating fractures of the olecranon in adults. *Cochrane Database Syst Rev.* 2014 Nov 26;(11):CD010144.
- 7) Rains, DD; Rooke, GA; Wahl, CJ. Pathomechanisms and complications related to patient positioning and anesthesia during shoulder arthroscopy. *Arthroscopy.* 2011 Apr;27(4):532-41.
- 8) Sahajpal, Deenesh, MD, Wright Thomas W. MD. Proximal Ulna Fractures. *J Hand Surg* 2009;34A:357-362.
- 9) Sorensen, Erik Elgaard, Kathrine Hoffmann Kusk, and Mette Gronkjaer. "Operating Room Nurses' Positioning Of Anesthetized Surgical Patients". *Journal of Clinical Nursing* 25.5-6 (2015): 690-698.
- 10) Wilkerson, JA; Rosenwasser, MP. Surgical techniques of olecranon fractures. *J Hand Surg Am.* 2014 Aug;39(8):1606-14.
- 11) Wood, T; Thomas, K; Farrokhyar, F; Risteovski, B; Bhandari, M; Petrisor, B. A survey of current practices and preferences for internal fixation of displaced olecranon fractures. *Can J Surg.* 2015 Aug;58(4):250-6.
- 12) Wong, Andrew, MD, Baratz, Mark, MD. Elbow Fracture: Distal Humerus. *Current Concepts. Journal of Hand surgery.* 2009. 34A: 176-190.