

Pulseless Open Elbow Dislocation

^{1,2}Teoh, Bryan; ^{1,2}I. P Faris

¹Faculty of Medical & Health Sciences (FMHS), Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia,

²Department of Orthopedics and Traumatology, Sarawak General Hospital, Jalan Hospital, Kuching, Malaysia,

INTRODUCTION:

Elbow joint is the 2nd most dislocated joint following trauma. Although associated neurovascular injury is a rare complication, clinical suspicion and subsequent management is of paramount importance.

We report a case of open posterior elbow dislocation with vascular injury.

REPORT:

A 31yo lady fell from an All-Terrain Vehicle, she was admitted to our Emergency Department (ETD) with a right elbow open dislocation. Clinically, her hand remained pink, saturation of all digits maintained 95% despite absence of pulses and doppler signal below the elbow. X-rays revealed a right posterior elbow dislocation.

Figure 1: Right upper limb and right elbow



Figure 2: Right Elbow X-ray in AP and Lateral Views.



We did not attempt manual reduction. She was urgently taken to surgery, operative findings were a transected brachial artery with segmental loss of 7.5cm, ruptured elbow collateral ligaments and common flexors and extensors torn from its origin. Artery repaired using an ipsilateral reverse saphenous vein graft (RSVG), soft tissues were approximated to their origins. An across elbow external fixator applied for stability. Post-operatively, her right hand remained pink, pulses and doppler signal returned.

The distal end of the brachial artery is more prominent, and pulsation is easily felt medial to the biceps tendon, in posterior dislocation, the artery becomes entrapped between the biceps tendon and the bony structures. The severity of the injury is related to the intensity of trauma and bony displacement. The dense periarticular arterial collaterals can provide residual flow to the hand. This network is divided into the medial, lateral, and posterior vascular arcade which provide extra and intraosseous blood supply.

CONCLUSION:

Although manual reduction is indicated in cases of closed dislocation, the maneuver of the already compromised circulation could result in an ischemic limb, without an operating room on standby results will be catastrophic. We conclude that manual reduction in a pink pulseless open dislocation of the elbow should be done in the operation room promptly.

REFERENCES:

1. Harnarayan, P., Cawich, S. O., Harnanan, D., & Budhooram, S. (2015). Brachial artery injury accompanying closed elbow dislocations. *International journal of surgery case reports*, 8C, 100–102. <https://doi.org/10.1016/j.ijscr.2014.12.009>