

RARE CASE OF BRACHIAL ARTERY INJURY WITH COMPARTMENT SYNDROME, AND OCCULT ELBOW DISLOCATION

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Introduction: Vascular injuries of the upper limb make up less than 1% of all traumatic injuries. Blunt mechanism of injury is associated with higher morbidity and mortality compared to penetrating injuries¹, and can be associated with acute compartment syndrome. When these pathologies occur simultaneously with an occult elbow dislocation, it becomes a diagnostic challenge.

Discussion: A 71-year-old gentleman presented with a suspected elbow dislocation, compartment syndrome of right upper limb with a brachial artery injury. Findings revealed compartment syndrome of the forearm and arm, w a complete transection of the left brachial artery. There was also a torn capsule with a breach of the elbow joint. Upon passive motion, the elbow joint was stable. An end to end primary anastomosis was done without tension. Post anastomosis, the radial pulse was palpable, and the fingers became pink with a return to normal capillary refill time. Bedside handheld Doppler revealed a triphasic signal. This patient presented with two pathologies which were time sensitive, acute compartment syndrome and a vascular injury. Physical examination alone is less sensitive and less specific for vascular injuries. Pulse examination alone has a sensitivity of 74.4% and a specificity of 53.7% when compared to CT angiography results. Differentiating a pure acute compartment syndrome from one that is caused by a vascular injury is challenging. Hard signs are an absolute indication for vascular exploration, in view that such patients have a 90% incidence of vascular injury. Patients with soft signs on the other hand, have an incidence of 3-25%.¹ In the setting of soft sign, Lebowitz et al advocates usage of arterial pressure index (API), less than 0.9 warrants further investigation.

Conclusion: Upper extremity compartment syndrome with vascular injury is a challenge to diagnose. Physical examination, handheld Doppler, API and computerised tomographic angiography play a vital role in the diagnostic process.