

Traumatic Vascular Injury Following Closed Midshaft Radius Ulna Fracture

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CASE REPORT:

A 15-year-old boy presented with pain, swelling and deformity of his left mid-forearm following a fall while breakdancing. Initial clinical examination of his left forearm, revealed moderate swelling and tenderness over the mid-forearm without evidence of bruising, open wound, or skin tenting. Radial and ulna pulses were palpable, hand was pink with normal capillary refill, and there was no neurological compromise. Radiographs reveal a comminuted fracture of the midshaft radius and ulna.

His fracture was immobilized in an above elbow slab and was discharged home. He was brought back for dynamic compression plating (DCP) of left radius ulna about 3 days post trauma.

Patient was put under general anaesthesia and the decision not to use a tourniquet was based on surgeon's preference. Henry's approach was used for the radius. There was moderate muscle contusion and swelling. We also noted a complete laceration of the radial artery at the level of the radius fracture associated with a tear of the flexor pollicis longus muscle.

There was a gap of 6cm between the proximal and distal ends of the radial artery which was thrombosed. Upon removal of thrombus, there was good flow at both ends. After plating of the radius and ulna, we decided to use the ipsilateral cephalic vein as interpositional graft for radial artery repair. There was no leak after end to end anastomoses with prolene 8/0. The radial pulse remained palpable at the wrist.

DISCUSSION:

Arterial injuries following closed forearm fractures are not uncommon. This is usually evident in cases of compound fractures or penetrating injuries.

According to Lee RE 1985, 9% of patients with single vessel injuries are undiagnosed clinically[1]. This is due to good retrograde

pulsation through the palmar arch. They are also not associated with ischemia unless the limb is dysvascular[2]. Routine use of tourniquet during surgery could also mask an arterial injury.

There is a debate on whether to repair or ligate a single vessel injury. Aftabuddin recommends ligation of a lacerated single vessel in the absence of ischemic symptoms[3]. He describes that the patency rate of repaired vessels is only 50% after 6 months to 6 years follow-up[3].

Some suggest to repair the vessel if it can be readily accomplished[1]. Patient can be more tolerant to future injury, reduce symptoms of cold ischemia and enhance nerve recovery[2]. Arterial repairs, even if followed by subsequent thrombosis, allows enough time for collateral circulation to develop[4].

CONCLUSION:

The decision to repair or ligate a single vessel injury in the forearm depends on multiple factors. However, in view of variations in anatomy, it is important to ascertain vascularity of the limb prior to ligation.

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