

# Unsuspected Brachial Artery Injury

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## Abstract

Significant traumatic arterial injury can be missed in the absence of classical signs of ischemia, especially when collateral blood supply is good. We present a case of nearly missed brachial artery injury managed successfully by surgical repair of the artery.

## CASE REPORT

A 20-year old man presented with lacerations to the right after smashing his hand through a glass window under the influence of cocaine, ecstasy, amphetamine and alcohol. On arrival in emergency department, his pulse rate was 60 beats per minute; blood pressure was 90/40 mmHg, oxygen saturation of 99% and GCS score of 15/15. Examination of the arm showed lacerations in the antecubital fossa with sensory and motor deficit in the right hand. The radial and ulnar pulses were not palpable however, the hand appeared well perfused. There were no Doppler signals in the distal arms arteries. The forearm was quite swollen and tender to touch indicating increased intracompartment pressure.

Under general anaesthesia wound exploration was carried out through lazy S incision, which showed complete transection of the brachial artery and 80 % transection of the median nerve. Long saphenous vein (LSV) was harvested and reverse LSV interposition grafting was done to repair the brachial artery with 7/0 prolene with immediate recovery of distal radial pulse. Median nerve was repaired with 8/0 ethilon. Flexor and extensor forearm fasciotomies were also done. The patient had an uneventful and went home on fifth postoperative day after closure of the fasciotomies.

## DISCUSSION

Significant arterial injury without classical signs of ischemia is quite unusual. However in areas with extensive collateral circulation, there may be masking of these signs as happened in our case e.g. in the elbow where the radial and ulnar collateral arteries can carry the blood to corresponding radial and ulnar arteries in case of brachial artery injury distal to

their origin. However whether the blood flow is sufficient enough remains debatable.

Moreover, vessel spasm or presence of compartment syndrome as in our case can make it more difficult to arrive at a diagnosis of arterial injury. However, the presence of even mild symptoms should raise suspicion of arterial injury and encourage surgical exploration, because a number of these patients later develop claudication, if left untreated<sup>1, 2</sup>.

Though arteriography remains the gold standard of arterial injuries, however is unnecessary when the presence and the location of the injury is obvious. According to the recommendations by Snyder et al<sup>3</sup> and Martin et al<sup>4</sup>, since early repair of arterial injuries in an ischemic extremity is necessary to maintain a functional extremity, diagnostic studies such as arteriography may contribute to a delay in the operative repair. Hence Doppler ultrasound, which is non-invasive, is quite useful and swift method of diagnosis.

## CORRESPONDENCE TO

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