

Acute Upper Extremity Limb Ischemia due to a Proximal Humeral Fracture Treated with Staged Endovascular Revascularization

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A 60-year-old man with a history of cerebral infarction and hypertension, fell on the street the day before admission and injured his right shoulder. He noted persistent pain and discoloration of the right upper limb and visited a local hospital, where a right surgical neck humeral fracture was diagnosed. Finally, he was transferred to our hospital due to suspected acute arterial occlusion associated with a fracture.

On arrival, the right upper limb was pale with diminished finger sensation, though active motion was preserved. CT angiography confirmed a displaced right surgical neck humeral fracture; arterial continuity was maintained, without direct contact between the vessel and bone fragments. After discussion with the trauma orthopedic team, we planned temporary fracture reduction followed by emergent endovascular revascularization.

Via right femoral access, angiography demonstrated complete occlusion distal to the right axillary artery. Although we performed IVUS-guided wire crossing and balloon angioplasty, extensive residual thrombus was present, and we judged that it was difficult to complete revascularization in this session. A continuous infusion catheter was placed with heparin and argatroban, fasciotomy was performed, and repeat endovascular therapy was undertaken the next day. Angiography showed that blood flow had improved compared with the prior day. After repeated thrombus aspiration, a bare nitinol stent was deployed across the dissected segment, achieving improved distal flow.

Fracture fixation was performed the following day. After that, apixaban and prasugrel were started. Following wound care and rehabilitation, the patient was discharged on postoperative day 15. Mild residual motor impairment of the index finger persists without requiring further treatment.

Although traumatic acute limb ischemia is far more commonly reported in the lower extremity, upper-extremity cases are rare. We report the procedural details along with a review of the relevant literature.