

Orthopaedic Dilemma: Absolute need for fracture surgery on a leg with arterial circulatory compromise

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INTRODUCTION

In the setting of severe trauma, damage control Orthopaedics (DCO) is favourable, as an endeavour for decontamination and initial fracture stabilization. Vascular compromise due to intimal injury is not uncommon and poses a treatment dilemma for subsequent definitive fracture fixation once patient stabilizes. It is concerning that there is significant risk of regression leading to arterial occlusion during reduction and fixation surgery to restore anatomical alignment.

REPORT:

A 35 years-old woman presented to us following a road traffic accident with intraabdominal injuries and ipsilateral open comminuted fractures of the left femur and tibial plateau with left popliteal arterial occlusion. 1st stage knee spanning external fixation over left lower was performed for decontamination, initial stabilization of fractures and attempt for restoration of blood flow. Definitive 2nd stage surgery (Minimally invasive plate osteosynthesis – MIPO proximal lateral tibia plating and antegrade nailing of the femur). Preoperatively, patient was given anticoagulation treatment for 14 days prior, followed by low dose of aspirin for 3 months duration. Pre and post op circulation were monitored by handheld doppler ultrasound and pulse oximeter. Fortunately, circulation maintained stable throughout.

DISCUSSION:

Amputation is a detrimental complication that should be avoided especially in young and active individuals. It is ideal to have a dedicated Trauma Specialized Team which includes experienced Orthopaedic, Plastic and Vascular surgeons to attend to such cases. Unfortunately, in our center the services are not yet set up needing urgent referral and transport to bigger centers. Compromised patient might not be stable for transport by road.



Figure 1. CT angiography showing left popliteal artery occlusion & post knee spanning external fixation x-rays.



Figure 2. Post operative x-rays of the femur (antegrade nail) and tibia (proximal lateral tibia plate).

CONCLUSION:

Post traumatic vascular injury with long bone fracture requires careful management by multidisciplinary teams. Definitive fracture fixation poses unique risk of worsening the vascular injury if not done carefully, hence in our case, MIPO plating, and femoral nailing were employed. Exercise caution during traction for antegrade nailing to avoid further intimal injury. Serial neurovascular examinations need to be performed for determining if limb is salvageable.

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