CLINICAL VIGNETTE

Anesthetic Management of a Patient with Acute Limb Ischemia in the Setting of Uncontrolled Hypertension

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Case

A 64-year-old man presented to the emergency department with right lower extremity ischemia after more than a week of worsening right leg numbness and weakness. The patient was a poor historian, and his evaluation was significant for acute RLE ischemia with neurovascular compromise, specifically occlusion of the right distal femoral artery. Vascular surgery advised emergent femoral cut-down and embolectomy given the high risk of limb loss. The patient was NPO for 8 hours, however left the hospital against medical advice for personal reasons. He returned 12 hours later with worsening leg pain and foot numbness, and was agreeable to emergency surgery. Unfortunately, he had eaten a full meal one hour before his return.

His vital signs included BP of 215/145 mmHg and HR of 85/min. We discussed the elevated risk for anesthetic complications with his recent meal, his elevated blood pressure and limited medical history. We placed a pre-induction arterial line and administered 2 mg midazolam and 30 mg of labetalol. The HR decreased to 70, although the blood pressure remained high, 205/130 mmHg. Room air arterial blood gas showed a pH of 7.30, PCO_2 of 36, PO_2 of 95, HCO3- of 20, and base excess of -5. Rapid sequence induction with propofol, succinylcholine, and fentanyl was performed, but he vomited before routine fasciculations secondary to succinylcholine. Oropharynx was suctioned as much as possible. Direct laryngoscopy was attempted, but the view was obstructed by gastric contents. The O_2 saturation dropped to 75% before glidescope intubation was successfully performed. Right internal jugular cordis was placed. Despite 1.5 MAC of sevoflurane, systolic blood pressure remained 200 mmHg and did not improve with another dose of labetalol. Bolus nitroglycerin was also without significant effect, but nicardipine drip reduced the blood pressure to 147/92 mmHg after 15 minutes.

Surgery performed a successful open thrombectomy of the following arteries: right common femoral, external iliac, superficial femoral, anterior tibial, and peroneal arteries (Figure 1). They also performed a four-compartment fasciotomy of the right lower extremity. At the end of surgery, the patient was able to follow commands. Blood gas demonstrated a pH of 7.35 with a base excess of -2. We extubated the patient and transferred him to the surgical intensive care unit, where he was discharged on postoperative day 3.

Figure 1. Thrombosis from right common femoral, external iliac, superficial femoral, anterior tibial and peroneal arteries.

Discussion

Acute limb ischemia is defined as a sudden decrease in limb perfusion that threatens limb viability, a surgical emergency.[1] Causes include acute thrombosis of a limb artery or bypass graft, embolism from the heart or diseased artery, dissection, and trauma.[2,3] Acute and critical limb ischemia has significant morbidity and mortality and needs to be promptly recognized and treated to avoid amputation. Perfusion should be thoroughly assessed using multiple methods, and patients considered for revascularization (angioplasty or bypass surgery) to restore perfusion. Underlying conditions that need to be assessed and treated include cardiovascular disease, diabetes, and infection.[3] A thorough medical history is important as vascular patients are amongst those with the highest perioperative risk.[4,5] If a patient has acute leg ischemia, it is important to categorize the condition using the classification system devised by the Society of Vascular Surgery and International Society of Cardiovascular Surgery.[3,6]

This case exemplifies an extremely high-risk patient (poor historian, poor follow up, no primary medical care, with presumed coexisting cardiovascular atherosclerosis), who initially declined emergency surgery, and then re-presented 12 hours later with a full stomach. Based on the classification of acute limb ischemia, he was category IIb which needed emergency revascularization to possibly salvage the extremity.[3,6] Rapid sequence induction was performed, with the plan for direct laryngoscopy to quickly secure the airway. However, we ultimately needed the glidescope due to an unanticipated difficult airway. Treating his pain did not decrease his severely elevated blood pressure, requiring intraoperative nicardipine drip. We placed a central line in the event of massive blood loss or potential need for vasoactive support with ischemic reperfusion injury, although the remainder of the patient's course was unremarkable.

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