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Paraplegia Following Pneumonectomy and Descending Thoracic Aorta Mass Resection

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Comments
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Paraplegia Following Pneumonectomy and Descending Thoracic Aorta Mass Resection
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Discussion
The major intra-operative challenge of this case was the conflicting goals in fluid management for concomitant pneumonectomy and thoracic aorta resection. A conservative approach was taken to fluid management. Although it is difficult to be certain, lower intrathoracic volume and hypotension around the time of aortic clamping and release may have contributed to renal injury and SCI. Conversely, the patient’s favorable post-operative pulmonary function may have been attributable, at least in part, to the conservative fluid strategy.

Continuous fluid management decisions in the setting of recent pneumonectomy and acute kidney injury pose a post-operative challenge. The incidence of renal failure related to thoracic aorta surgery is as high as 1%. Indeed, this patient developed post-operative AKI. Intravascular volume maintenance is thought to reduce the risk of kidney injury. In the ICU, this patient was given three maintenance IV fluids and intermittent post-operative diuretics were treated with colloid boluses in order to strike a balance between conservative fluid management for optimal pulmonary function and aggressive fluid administration aimed at minimizing any further renal injury. Urine output was maintained and renal function returned without need for dialysis.

The incidence of SCI with surgical repair of the thoracic aorta may be up to 14%. Maintenance of adequate mean arterial pressure, and thus SCl perfusion pressure, is paramount in limiting SCI. Typically, first-line management for maintenance of MAP is fluid administration, then vasopressors. As discussed above, aggressive IV fluids were avoided; thus, vasopressors were used for isolated blood pressure goals. Furthermore, we chose CSF drainage for additional SCI treatment as this combination was felt to be the most evidence-based approach of the SCI therapy described in the literature.

Follow-Up Visit

Reference

Abbreviations
ALI: Acute Lung Injury; ATN: Acute Tubular Necrosis; CSDF: Central Saphenous Diverticulum; CR: Creatinine; DAA: Distal Aortic Aneurysm; DICE: Discharge; DEG: Decrease Endothelial Blood Loss; DHA: Distal Hemodynamic Analysis; GETA: General Endotracheal Anesthesia; Gtt: drip; IRA: Infrarenal; IS: Intradural; L: Lumbar; LBA: Lower Back Area; LHA: Lower Hemodyn; LIM: Lower Intimal Migration; MAP: Mean Arterial Pressure; PFRD: Pressure Ripple/Enhancement; POC: Post Operative Day; SG: Saphenous Cutdown; SCG: Spinal Cord Grafts; UO: Urine Output