Female genitourinary tumors rarely metastasize to the lungs, causing only 2% of surgically treated cases. 5-year survival after resection is close to 50% in these patients making surgical resection a beneficial treatment (1,2). Our case focuses on a patient with metastatic cervical cancer to the left lung, pulmonary artery and vein, and pericardium in whom cardiopulmonary bypass (CPB) was required to perform a pneumonectomy.

A thoracic epidural was placed prior to surgery for postoperative pain management. General anesthesia was induced and a right radial arterial line was placed along with a left IJ central line. Lung isolation was achieved using a 37 French left DBLT. During dissection, the patient experienced two episodes of hemodynamically unstable VT which was treated with internal defibrillation. After the second incident of VT, the decision was made to go on CPB for the remainder of the case. The left lung and the involved portion of the pulmonary artery, vein, and pericardium were then resected. Due to the tumor’s location, both the phrenic and recurrent laryngeal nerves on the left were resected as well. The patient was separated from CPB without complications or the need for inotropes or vasoactive agents. She was extubated in the operating room and transferred to the ICU in stable condition. Surgical margins were free of tumor cells. Final pathology revealed squamous cell carcinoma consistent with cervical cancer. Postoperatively, the patient experienced dysphasia and subsequently underwent laryngoscopy that revealed a paralyzed vocal cord secondary to recurrent laryngeal nerve ligation. She was discharged home on postoperative day 5 with no other complications.

A hallmark of great anesthesia care for pneumonectomies is limiting total intravenous fluids. Those patients that receive greater than 2000 cc of IVF have worse outcomes than those patients receiving less (3). Unfortunately, our patient’s anatomy required the use of CPB to safely remove the tumor. While CPB provides a safe operative field, it comes at the cost of a 1500cc pump prime. Maneuvers such as retrograde autologous prime (RAP) can and should be utilized to minimize the CPB prime. Additionally, early extubation after a pneumonectomy is desirable so positive pressure ventilation, which can lead to suture line dehiscence and pneumomediastinum, can be avoided. Hence, the benefits of good pain control using a carefully placed thoracic epidural outweighed the risks of neuraxial analgesia in the setting of anticoagulation for CPB. The ventricular tachycardia the patient experienced during dissection was most likely due to direct cardiac stimulation and without the use of bypass the operation would not have been able to progress.

Strict fluid management and good epidural analgesia allowed the patient to be extubated in the operating room and avoid postoperative positive pressure ventilation. Also, communication before, during, and after this case between anesthesia, surgery, perfusion, and nursing helped make this case successful and render the patient cancer free.

References