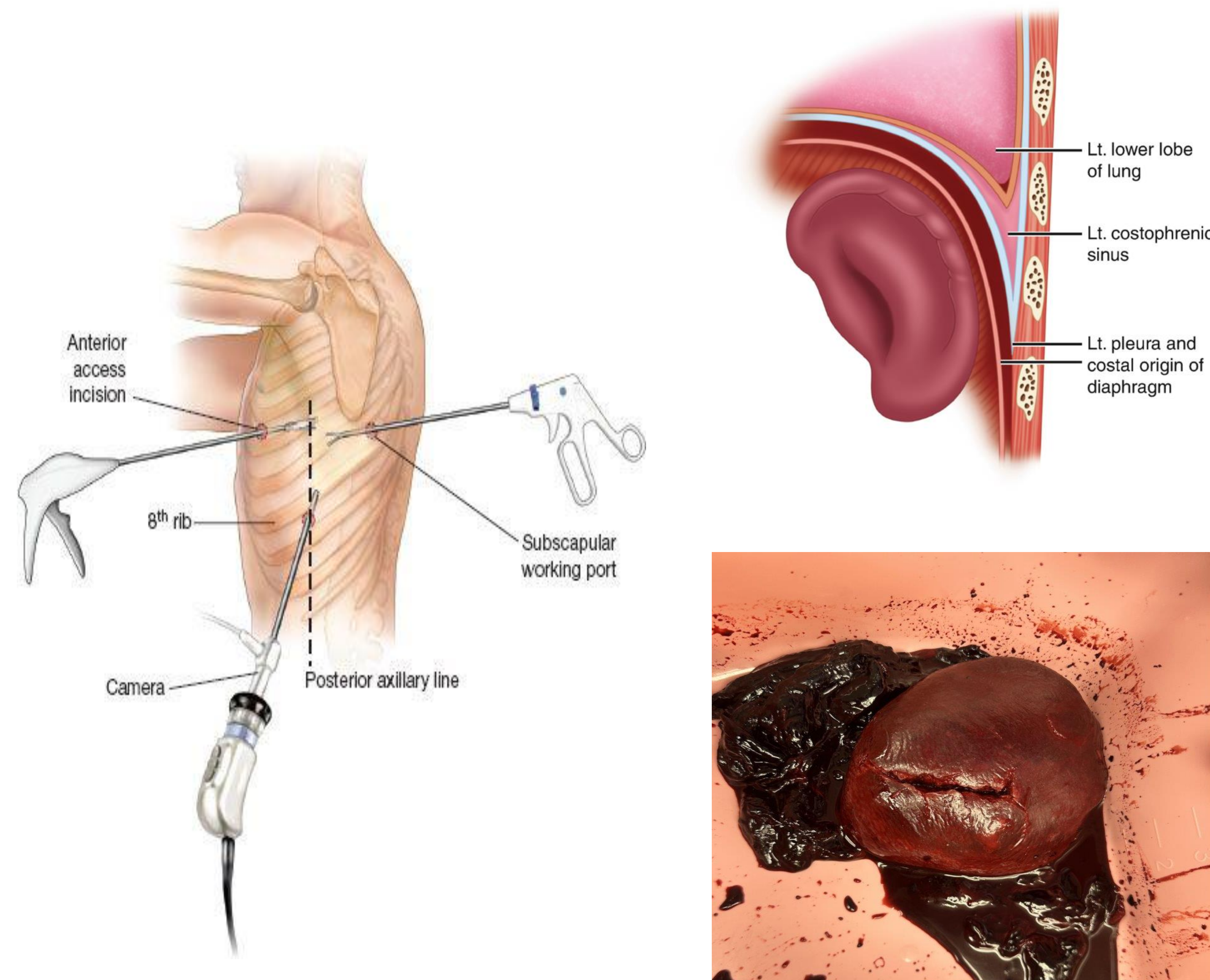


Splenic Laceration Sustained During Left Video-Assisted Thoracoscopic Surgery(VATS) in a Patient on VA ECMO

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Introduction

Patients undergoing Video Assisted Thoracoscopic Surgery (VATS) have been shown to have less perioperative complications with this minimally invasive approach compared with more traditional techniques. Splenic laceration is an extremely rare, but potentially fatal complication of the procedure.



Case Description

A 71-year-old male PMH HTN, CAD, MI, Cardiogenic shock s/p CABG on VA-ECMO presented for evacuation of left hemothorax by Left VATS. Patient presented to OR intubated, a bronchial blocker was placed for lung isolation and patient was positioned in right lateral decubitus position for procedure with no change in ECMO flow and patient remained hemodynamically stable. Twenty minutes into case patient had a precipitous drop in blood pressure and ECMO flow was severely reduced. TEE was placed which revealed an under filled heart. Patient was urgently flipped to supine position with no improvement in flow or hemodynamics. The chest was reopened via median sternotomy with no signs of an intra-thoracic bleed. Patient's abdomen was noted to be tense and distended. Acute care surgery was consulted for an exploratory laparotomy revealing a splenic laceration requiring splenectomy. Patient received multiple vasopressors, inotropes, over 30 blood products, and was brought to ICU with open chest and abdomen. Patient again returned to OR on POD2 for bleeding renal cyst requiring nephrectomy. The family withdrew care on POD 6 and the patient expired.

Discussion

While a small splenic laceration may present innocuously with a slow drop in hemoglobin in an otherwise hemodynamically stable patient, our case demonstrates a more extreme presentation comprised of severe hypotension, sudden severe drop in ECMO flow, and newly tense abdomen, which ultimately led to discovery of the splenic laceration. Furthermore, our case serves as a example of trouble shooting a severe drop in ECMO flow which may occur due to various reasons, such as obstruction from kinking of tubing , air emboli, increased intrathoracic pressure or, in our case, hypovolemia secondary to blood loss. We present this case to highlight the many challenges that exist in managing patients on ECMO during non-cardiac surgery.

Teaching Points

Splenic injury during VATS is an uncommon but potentially life-threatening complication and should remain on the differential when hemodynamic instability that is otherwise unexplainable occurs in this setting.

References

- Boffa DJ, Dhamija A, Kosinski AS, et al. Fewer complications result from a video-assisted approach to anatomic resection of clinical stage I lung cancer. *J Thorac Cardiovasc Surg.* 2014;148(2):637-643. doi:10.1016/j.jtcvs.2013.12.045
- Forti Parri SN, Guiducci GM, Domanico A, Tugnoli G. Splenic rupture after videothoracoscopic procedure: an unusual complication conservatively managed. *J Thorac Cardiovasc Surg.* 2014;148(5):e236-e237. doi:10.1016/j.jtcvs.2014.08.004
- Sidebotham D. Troubleshooting adult ECMO. *J Extra Corpor Technol.* 2011;43(1):P27-P32.