Objective: Aortic injuries during non-aortic related diagnostic and therapeutic procedures are rare but may be catastrophic. We report a thoracic aortic injury during thoracentesis and summarize our management paradigm for diagnosis and treatment.

Methods: An aortic injury was suspected during thoracostomy tube (7.5 F) placement for workup for recurrent lung cancer and pleural effusion drainage with a flash of blood. An arterial pressure was transduced through the tube and confirmed intra-arterial position. The tube was clamped and an urgent computed tomography scan was completed, which localized the injury to the thoracic aorta at the level of T10 vertebral body and showed a peri-aortic hematoma. The patient was expeditiously taken to the hybrid endovascular suite for endovascular thoracic aortic repair. Under local anesthesia and intravenous sedation, bilateral percutaneous common femoral access was gained. Intravascular ultrasound was used for accurate identification of the injury level and precise deployment of the endograft, Zenith Alpha™ Thoracic Endovascular Graft proximal component 28-155 mm was deployed to seal the injury site. Next, the thoracostomy tube was removed while the patient remained hemodynamically stable throughout the procedure.

Results: Completion imaging showed no evidence of extravasation and no endoleak. The patient did well postoperatively and was discharged on day 2.

Conclusion: Endovascular thoracic aortic repair is a feasible and effective option after catheter associated aortic puncture injury during thoracentesis. Intravascular ultrasound can be utilized for delineation of the injury and to facilitate stent-graft deployment.