



Introduction

- Type A aortic dissection is associated with mortality rates as high as 1 to 2 percent per hour after symptom onset¹
- Life-threatening complications include cardiac tamponade from hemopericardium, aortic regurgitation, stroke, aortic rupture, myocardial infarction¹
- Open surgical procedures - mainstay of treatment
 - Endovascular approach not well described in literature
 - An alternative for high-risk patients
- Learning Objectives:
 - Understand clinical and anesthetic indications of endovascular repair for Type A Aortic Dissection

Clinical Case

- 85 Y/F who underwent Endo-Bentall (TEVAR and TAVR) procedure
- PMH: A-fib (Eliquis), HTN, DVT (LUE), breast cancer (1989, s/p double mastectomy)
- CC: Transferred to UMMC after OSH TTE revealed incidental 6.4 cm dilated ascending aorta aneurysm
- Preoperative Work-up:
 - CTA chest: Ascending aorta - 5.3 cm. Largest portion of aneurysm - 7.3 cm.
 - Serosanguineous fluid within pericardium. No evidence of extension of intimal flap and abdominal aorta.
 - TEE: Left sided pleural effusion and atheroma in aortic arch
 - TTE: Normal Bi-V function, trace MR, moderate TR, small pericardial effusion
 - Carotid duplex: Mild b/l plaque.
 - CTA Coronaries: Mild non-obstructive coronary artery atherosclerosis.

Operative Imaging

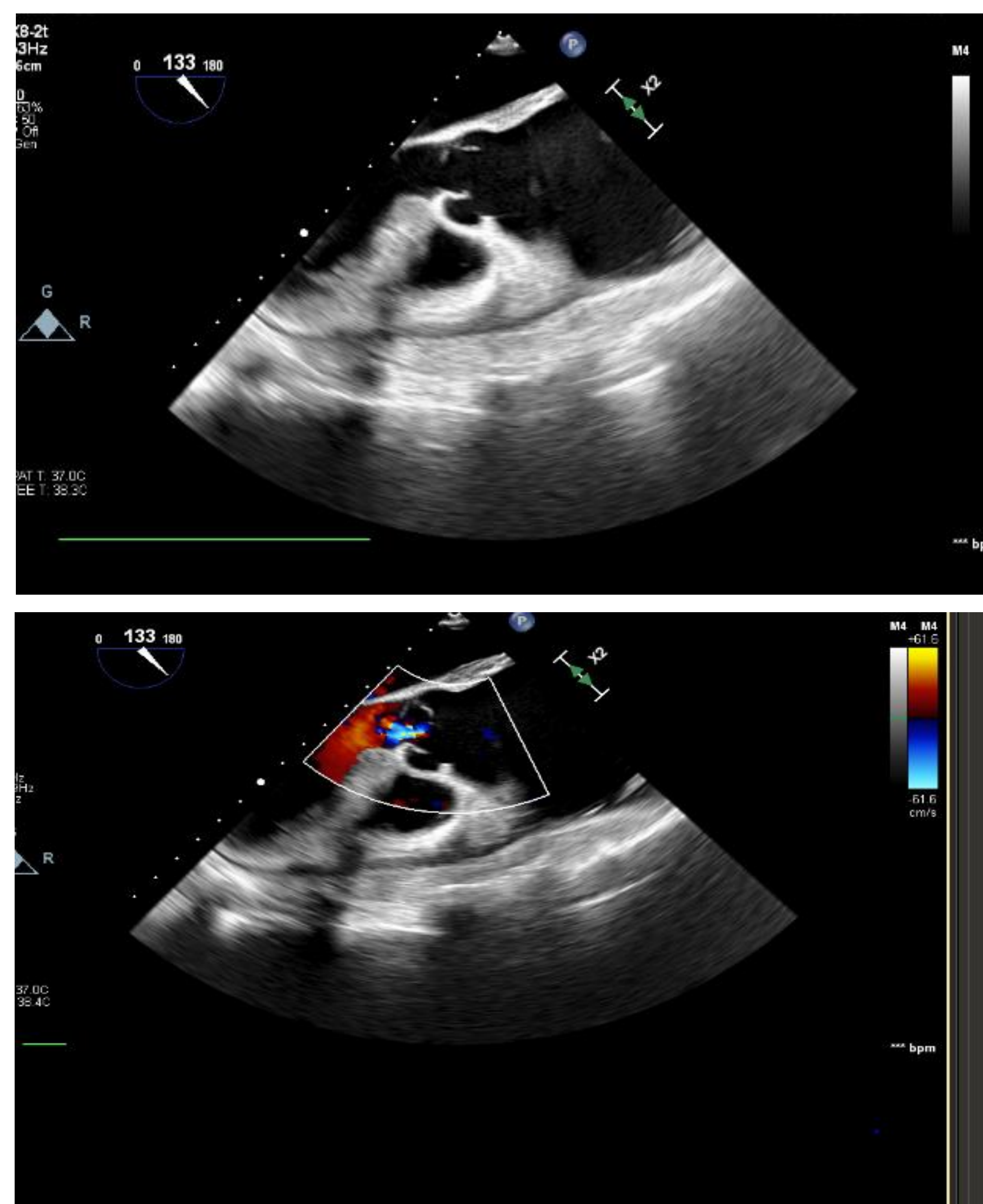


Figure 1. Perioperative (top) and postoperative – color flow (bottom) TEE



Figure 2. CTA Chest showing ascending aortic arch dilation

- Operative Course:
 - Airway: 1 attempt, 7.0 Cuffed Glidescope
 - Access: Left Femoral Arterial Line & Right Femoral Central Line (Size: 9 Fr, MAC), No PA cath
 - Blood Products: 2 units PRBCs and 225 mL Cell Saver
 - Fluids: 4000 mL Crystalloid and 450 mL UOP
 - Infusions: Norepinephrine 0.06 mcg/kg/min, Propofol 20 mcg/kg/min
 - Cerebral oximetry monitoring utilized
 - Antibiotics: Cefazolin
 - Paralytic: Rocuronium 50 mg
 - Neuromuscular blockade reversal administered in CSICU
 - Extubated in the ICU
 - Full neurologic recovery

Discussion

- Endovascular repair offers shorter operative time, recovery period, and less stress on the heart
- No need for hypothermic circulatory arrest, less coagulopathy, and lower transfusion requirement
- Less invasive monitoring required – no need for B/L art lines; no ACP/RCP lines
- General anesthesia deemed challenging due to risk of cardiovascular events
- Femoral vein central line provided view of fluoroscopic field
- Cerebral oximetry monitoring proved useful for arch involvement
- Intraoperative neurologic monitoring is essential
- Risks vs. Benefits of extubation in the OR vs. ICU
- Ethical dilemma – in case of inadvertent intraop event – should we convert to open or not?

References