

Introduction

- Angiosarcomas are the most common primary cardiac tumor
- Overall poor prognosis with median survival 16 months
- Arise in the right atrium and often lead to hemodynamic instability
- Surgical resection with CPB is the mainstay of therapy
- Awake femoral cannulation under local anesthesia offers a strategy to safely initiate CPB before anesthesia induction during a vulnerable hemodynamic window.
- This report describes awake femoral cannulation under local anesthesia in a patient with biopsy-proven cardiac angiosarcoma

Case Description

- 39-year-old male with no prior medical history presented with acute right-sided, stabbing chest pain, dyspnea, and lightheadedness
- Transthoracic echocardiography revealed a 6.8 × 3.7 cm fixed, solid, spherical mass in the right atrium
- Admitted to the ICU for IV fluids and heparin infusion
- Hospital day 3: patient acutely decompensated
- CT pulmonary angiogram demonstrated bilateral pulmonary emboli with worsening right ventricular strain
- Pericardial fluid biopsy confirmed primary cardiac angiosarcoma
- Due to hemodynamic instability and risk of cardiovascular collapse, the decision was made to perform an awake femoral artery and vein cannulation under local anesthesia and then initiate CPB before the induction of general anesthesia
- Heparin was administered with an activated clotting time (ACT) goal of >450 seconds
- Local anesthetic was administered. No IV medication was required
- Femoral cannulation with a 17 French arterial catheter and 23 French venous catheter was achieved via the Seldinger technique under ultrasound guidance
- With cannulas in place and satisfactory ACT, CPB was initiated and general anesthesia was promptly induced with 200mcg of fentanyl, 2mg of midazolam, 150mg of propofol, and 100mg of rocuronium

Figures/Tables

Table 1 — Prior Uses of Awake Femoral Cannulation Before CPB

Pathology	Why Awake (Risk if Induced)	Outcome
Current Study (massive PE secondary to cardiac angiosarcoma)	Collapse risk from hemodynamic instability	Collapse avoided
Ruptured ascending aortic aneurysm	Collapse risk from hemodynamic instability	Collapse avoided; ↑ bleeding due to heparinization
Pseudoaneurysm w/ tracheal deviation	Expected airway obstruction during induction	Awake cannulation preserved ventilation until CPB
Severe aortic valve disease	Severe cardiac compromise → induction instability	Stable transition to CPB under local anesthesia
Type A aortic dissection w/ tamponade	Tamponade physiology → induction collapse risk	Safe CPB initiation prior to sternotomy

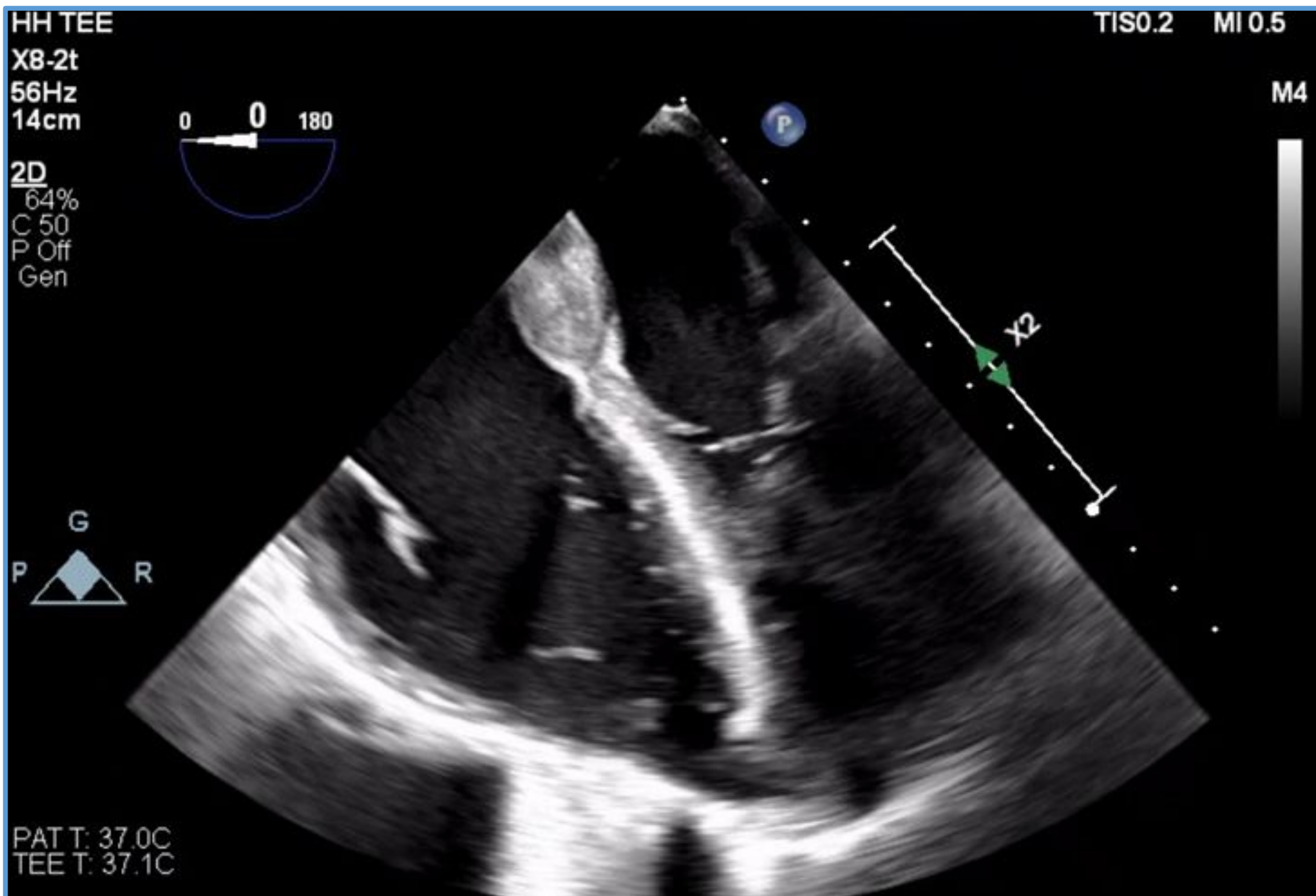
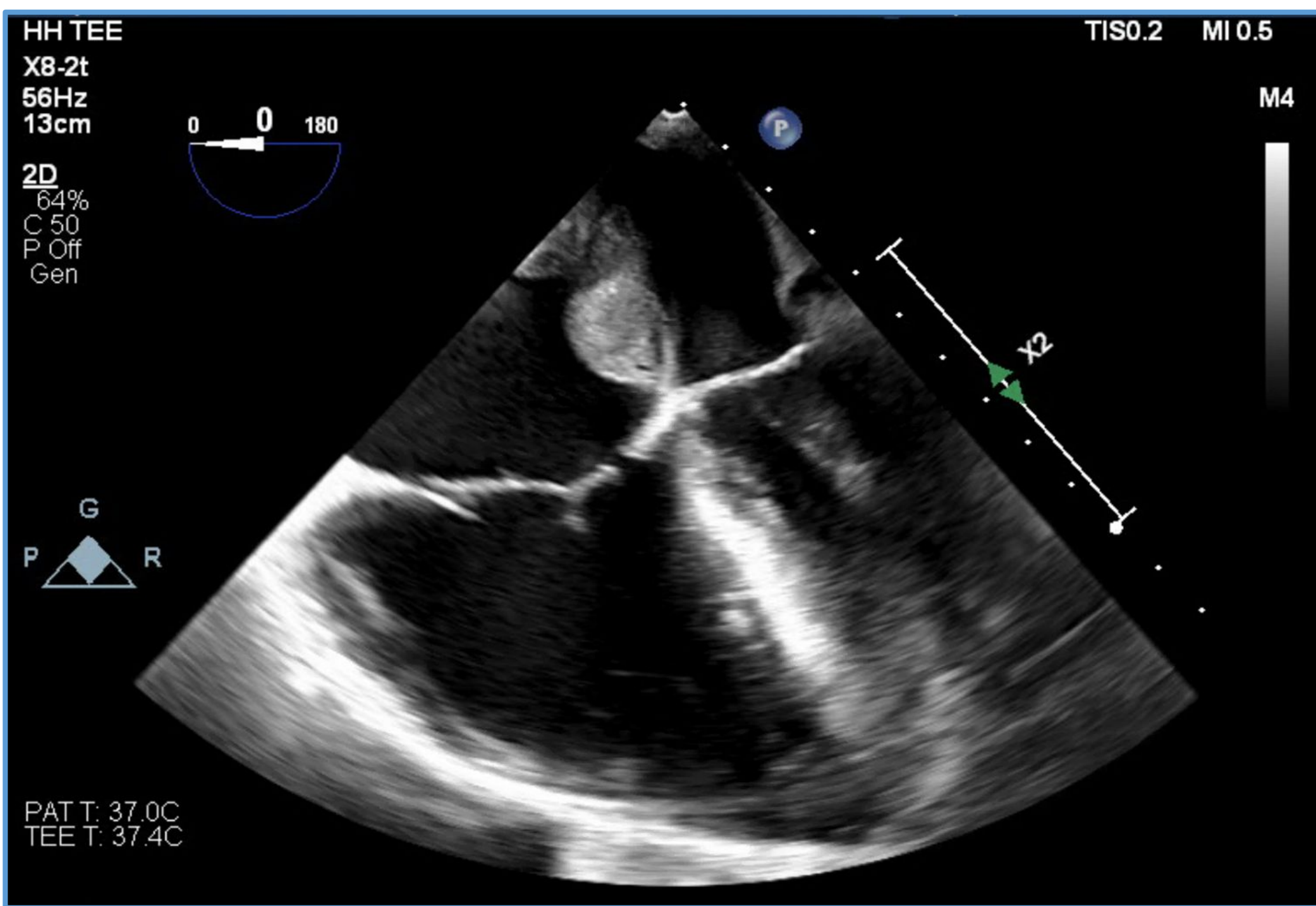


Figure 1 — TEE images before and after resection of cardiac angiosarcoma. Top left - before resection, systole. Top right - after resection, systole. Bottom left - before dissection, diastole. Bottom right - after resection, diastole.

Discussion

- Primary cardiac tumors are rare; emergent CPB initiation is challenging when hemodynamic collapse risk is high
- Awake femoral cannulation enables rapid CPB while maintaining spontaneous ventilation and preload
- Similar cannulation strategies have been reported in obstructive cardiac pathologies (large atrial/ventricular masses, obstructive myxoma, severe RV failure) to prevent hemodynamic compromise during induction
- Early peripheral cannulation has been used to avoid circulatory arrest, difficult airway management, and rapid decompensation.
- Choice of anesthesia for peripheral cannulation include local, regional, and spinal
- In our case, awake local femoral cannulation minimized the risk of cardiovascular collapse and enabled controlled induction once CPB was established
- Technique may be especially valuable in angiosarcoma and other pathologies with tamponade physiology or SVC obstruction risk

Table 2 - Analgesic Techniques for Awake Femoro-Femoral Cannulation

Technique	Benefits	Limitations
Local infiltration	Fastest; universally available	May not provide full comfort → patient movement possible
Regional blocks (femoral ± ilioinguinal/iliohypogastric)	Strong procedural comfort; better tolerance if cannulation prolonged	Requires time, ultrasound, skilled provider
Spinal anesthesia	Dense anesthesia / immobility	Decrease sympathetic tone → hypotension risk

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