

Introduction

- Apical HCM is a variant of cardiomyopathy where the thickening of the myocardium is concentrated to the apex of the heart
- This variant of HCM causes less LVOT obstruction than the more classic type, however there are other intraoperative effects to consider, including **diastolic dysfunction, ischemia, and arrhythmias**
- Here, we report a patient with apical HCM undergoing total knee replacement

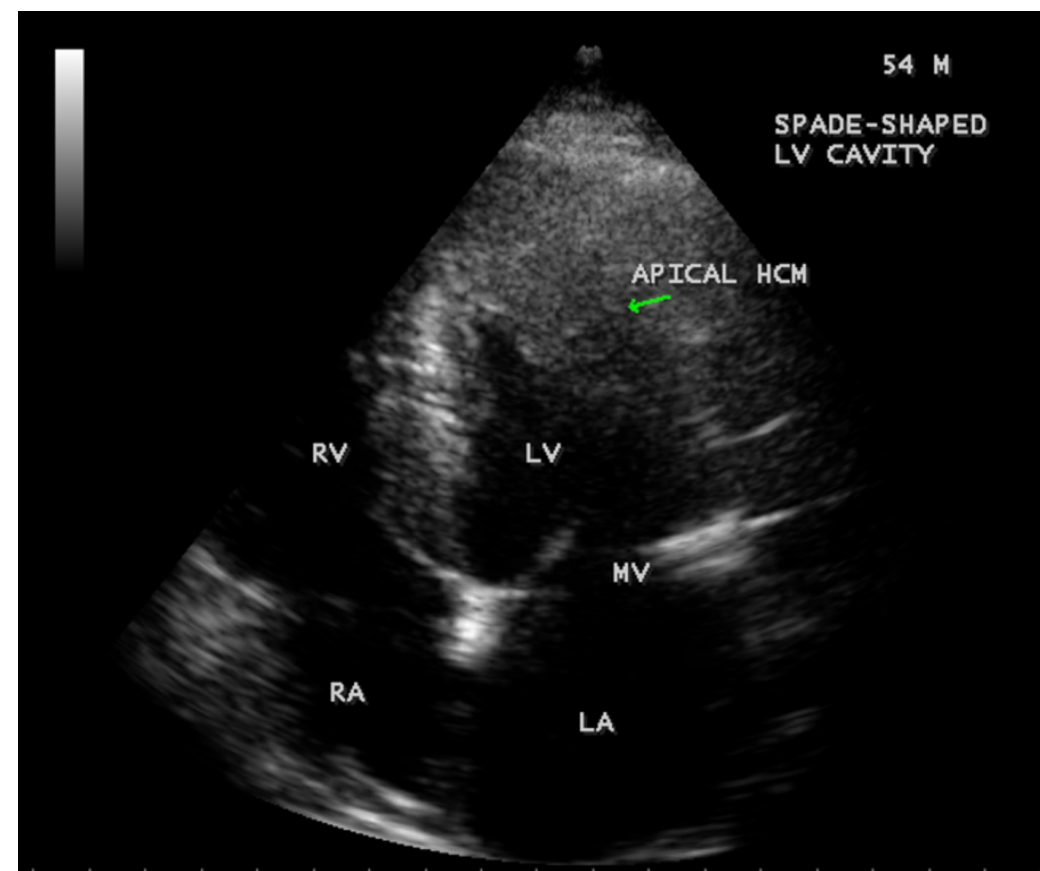


Figure 1. TTE image of apical hypertrophic cardiomyopathy and the characteristic **spade shaped left ventricle** seen in apical four chamber view

Materials and Methods

- A literature review was performed investigating apical hypertrophic cardiomyopathy in patients undergoing total joint replacement
- The patient gave verbal consent to write this case report
- This case report does not contain any patient identifiable information; therefore, it is exempt from IRB review as per Colorado Multiple Institutional Review Board (COMIRB) policy

Case Report

- 54-year-old male with OSA, GERD, obesity, and bilateral knee osteoarthritis presented for right total knee arthroplasty
- He had been hospitalized one month prior for chest pain with workup revealing “moderate concentric LVH and mild apical hypertrophy” on TTE
- Patient had also been admitted several times after ambulatory surgery with flash pulmonary edema and elevated RVSPs that improved with diuresis
- Due to his history of cardiopulmonary complications after surgery, and the recent acute finding of apical HCM, we elected to proceed with a **primary neuraxial anesthetic with sedation**
- The patient received a preoperative epidural and an adductor canal block. The epidural was slowly bolused with 2% lidocaine with epinephrine until the patient was comfortable
- Sedation included a dexmedetomidine infusion, and intravenous fluids were limited to 500 mL to avoid any potential for pulmonary edema
- He was stable throughout the case and did not require any support until PACU, where he had mild bradycardia with hypotension that was treated with glycopyrrolate and phenylephrine. We suspect this was due to the dexmedetomidine infusion and the epidural
- He was transferred to the floor after three hours in PACU and was then discharged on POD1 in stable condition

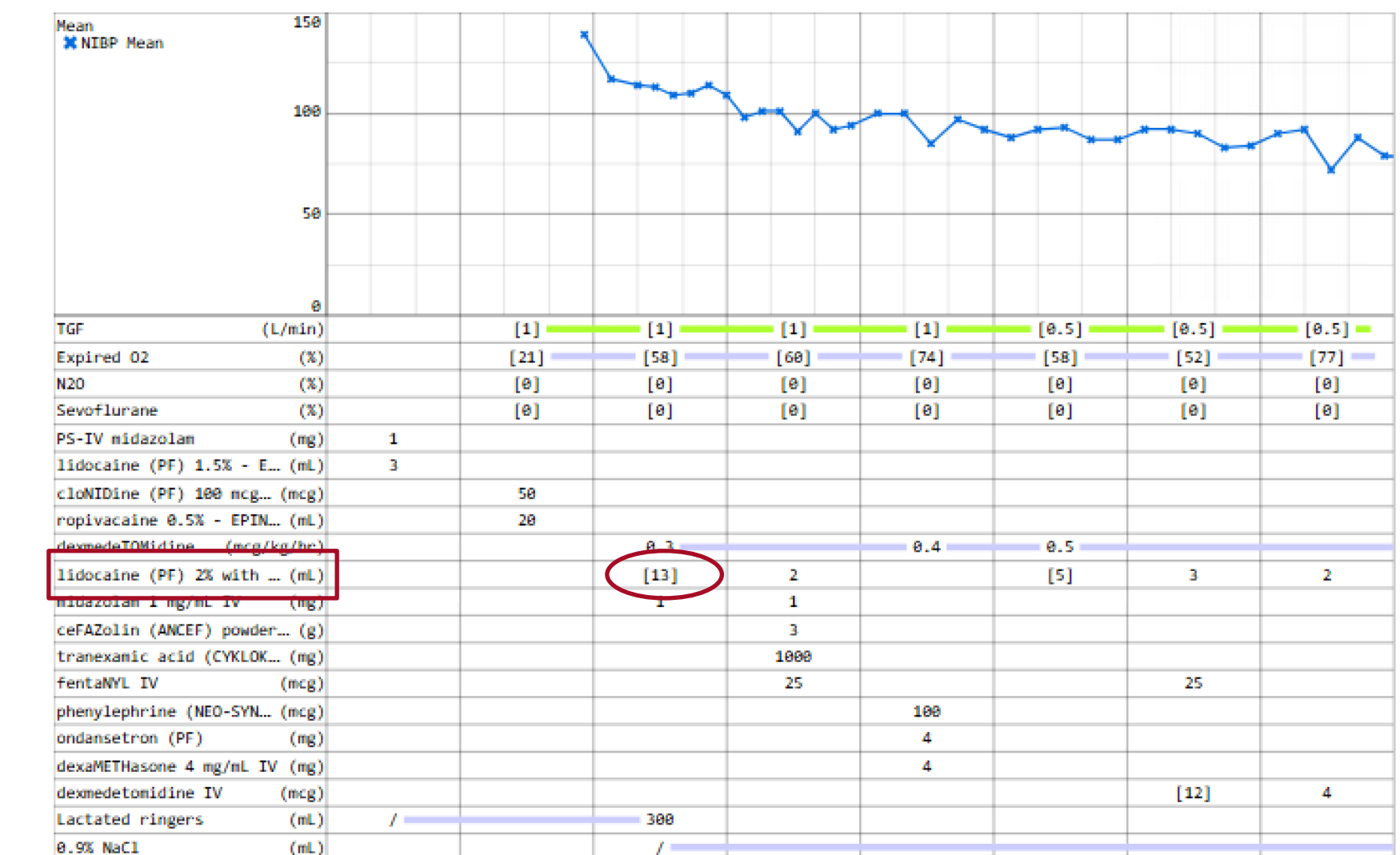


Figure 2. Intraoperative anesthesia record highlighting that after lidocaine was given through the epidural, **MAP remained between 75-100 mmHg** for the duration of the case with minimal vasoactive medications needed

Discussion

- Neuraxial anesthesia can be superior to general anesthesia when hemodynamic stability is imperative
- Choosing an epidural over a spinal allows for slow titration to effect, thus reducing the potential for unpredictable hemodynamic swings
- This is beneficial in patients with apical HCM, because it is essential to **maintain preload, maintain afterload, and avoid tachycardia**