



Peripheral Nerve Block as the Main Anesthetic Management for a COVID Positive Patient with Severe Aortic Stenosis and Hip Fracture

Vikram Bhasin MD, Daniel Camras MD, Dominique Chang MD, Raymon Dhall MD

INTRODUCTION

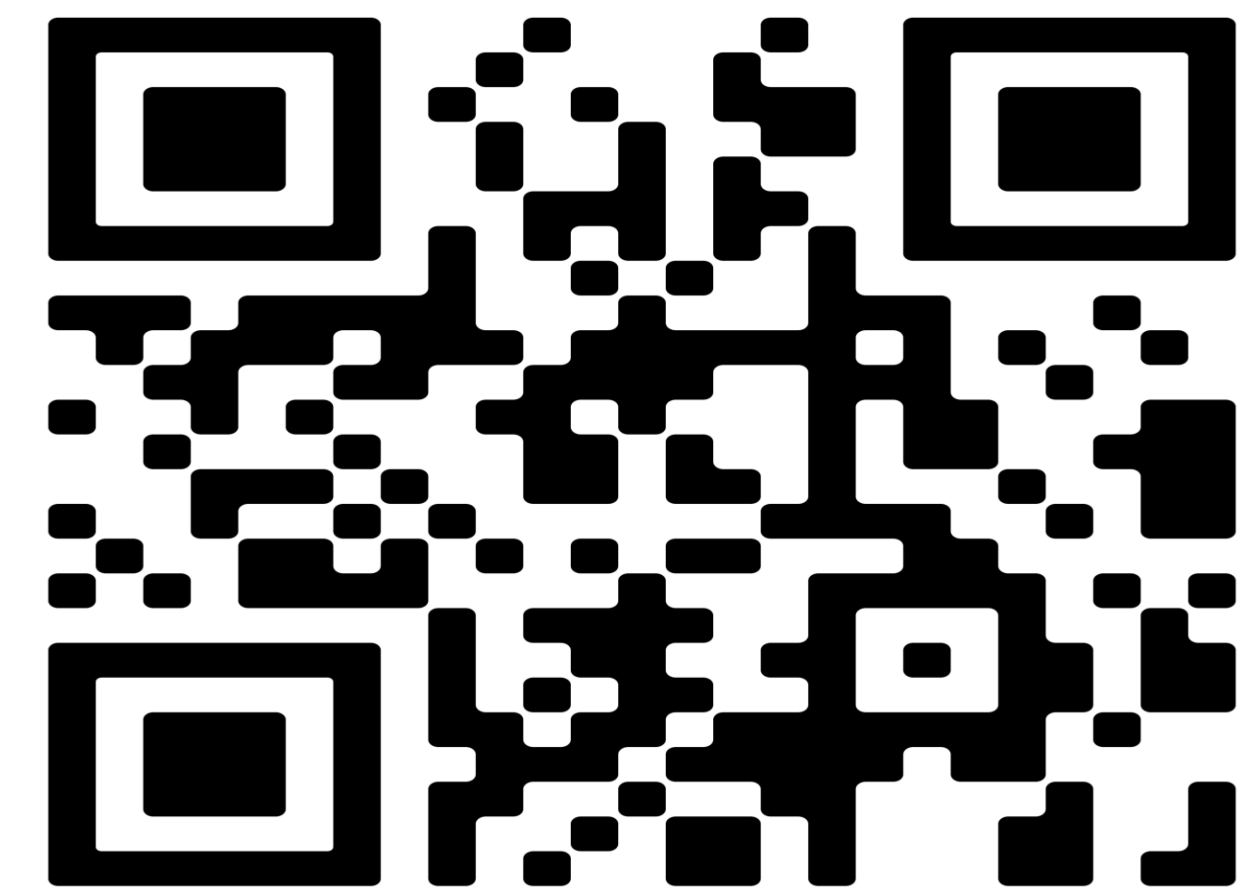
Severe aortic stenosis (AS) can present significant hemodynamic challenges for patients undergoing general or neuraxial anesthesia. With an increasingly aging population, there are a significant number of patients with acute hip fractures, often presenting with severe cardiac problems, such as AS. Given that these surgeries must often be performed in a timely manner, it is imperative to create an anesthetic plan that minimizes complications. Depending on the surgery, properly placed peripheral nerve blocks (PNB) can provide surgical anesthesia while minimizing complications related to general or neuraxial anesthesia.

CASE REPORT

We present a 96 F with a history of HTN, dementia, and aortic stenosis who initially presented to an outside hospital with confusion, elevated BP, and concern for new seizures, as well as a positive COVID test. Five days into admission, she sustained a fall getting out of bed, suffered an intertrochanteric fracture, and was transferred to Montefiore for subsequent management.

Transthoracic echocardiogram from six months earlier was notable for an EF of 65%, AVA 0.9cm², MG 29mm Hg. The patient had dementia but endorsed no symptoms of AS.

After preoperative evaluation, the decision was made to proceed with surgery under block and sedation. In the OR, initial vital signs were blood pressure 163/65, Pulse 62, and SpO₂ 100%. The patient's weight was 45kg. A preinduction radial arterial line was placed.



SCAN ME



Fig 1. Right Intertrochanteric Fracture. Credit: Orthobullets

CASE REPORT continued

She received ultrasound-guided femoral nerve (FN) and lateral femoral cutaneous nerve (LFCN) blocks using 16ml and 4ml of 0.375% ropivacaine, respectively. The patient tolerated the block well and underwent cephalomedullary nail placement. Additionally, 200 mcg of Fentanyl was incrementally administered for supplemental analgesia, and sedation was achieved with a propofol infusion at 25 mcg/kg/min. The patient tolerated the procedure well with only mild changes in blood pressure.

DISCUSSION

Hip fractures are a major cause of morbidity and mortality for the elderly population, and can occur after minor trauma, often requiring surgical intervention. Several studies have evaluated varying anesthetic techniques for patients undergoing hip fracture repair surgery including combined general and regional anesthesia, however significant data evaluating the efficacy of peripheral nerve blockade as a primary anesthetic is lacking.

For this patient with severe AS, there were several concerns with pursuing both general or neuraxial anesthesia. In addition to the hemodynamic instability associated with induction of general anesthesia, the patient's recent COVID test raised respiratory concerns with endotracheal intubation. Regarding neuraxial anesthesia, the potential sympathectomy and reduction of afterload is poorly tolerated with severe AS. The use of regional anesthesia enabled minimal doses of intravenous anesthetic agents, helping to avoid these potential pitfalls.

The use of FN and LFCN blocks provide coverage for both the skin incision and nail placement. Fentanyl was used incrementally for sedation and supplemental analgesia, and low dose propofol was used for sedation. Perioperatively the patient reported good pain control and had no significant hemodynamic changes, with no significant perioperative complications.