

## Anaesthetic Management of a High Cardiac Risk Patient Posted for Intertrochanteric Femur Fracture Fixation

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### ABSTRACT

High risk patients presenting for hip fracture surgeries can be successfully managed with peripheral nerve blocks. The anti-tachycardia mechanism of AICD was suspended after he was taken into the operating room and a defibrillator was kept standby. Vascular access was obtained through a 18 Gauge catheter placed on the right upper limb and one in right external jugular vein.

**Keywords:** Geriatric; Perioperative management; Psoas compartment block

### INTRODUCTION

Perioperative management of geriatric patients with multiple comorbidities for hip fracture surgeries continue to be very challenging as general and neuraxial anaesthesia interfere with the hemodynamic parameters. Early fixation is the current norm in the management of these fractures to improve the patient outcome [1]. Here we describe our management of an American Society of Anaesthesiologists grade IV, patient posted for distraction hip screw placement.

### CASE STUDY

Sixty six year old male, approximately 70 Kg and 180 cm tall, with a long standing history of coronary artery disease presented to our hospital with an intertrochanteric fracture of right femur. He had history of anterior wall as well as inferior wall ischemia which had been thrombolysed several years back, followed by angioplasty. He has had several episodes of left ventricular failure. One year back an Automatic Implantable Cardioverter Defibrillator (AICD) was placed to prevent sudden cardiac death as he had non - sustained ventricular tachycardia on Holter monitoring.

He also had other comorbidities like diabetes mellitus, chronic kidney disease and hypertension. On admission he was in acute heart failure which required intensive care management and after being stabilised he was posted for distraction hip screw fixation of his fracture on the fifth day of stopping Clopidigrel. Interrogation of his AICD revealed that he had not used the defibrillator in the year post its implantation and that he was not

pacemaker dependent. His echocardiogram showed that he had an ejection fraction of 20%, severe left ventricular dysfunction, severe mitral regurgitation and severe pulmonary artery hypertension. His laboratory parameters were normal except for elevated serum creatinine. Though severely morbid, he was able to perform his activities of daily living on his own and ambulating him was our primary aim. So after explaining the risk of developing perioperative major adverse cardiac events he was taken up for surgery.

The anaesthetic plan was a combined psoas compartment block and sciatic nerve block with a backup plan of converting to general anaesthesia in the event of a block failure. The emergency drug cart and airway rescue equipment were kept ready. The anti-tachycardia mechanism of AICD was suspended after he was taken into the operating room and a defibrillator was kept standby. Vascular access was obtained through a 18 Gauge catheter placed on the right upper limb and one in right external jugular vein. Central line was not inserted since there was a concern of the guide wire triggering an arrhythmia or disturbing the AICD device. An arterial line was placed for monitoring. After explaining the procedure, he was positioned in lateral decubitus, with the operative side nondependent.

Under aseptic precautions, nerve blocks were done by the landmark technique under the guidance of peripheral nerve stimulator. Psoas compartment block was performed by the Capdevilla's approach and sciatic block by Labat's approach. A 22 gauge 100 mm Stimuplex® (B Braun) needle and Stimuplex® HNS 12 (B Braun) peripheral nerve stimulator was used. At

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both sites 20 mL of 0.5% Ropivacaine and 5 mL 2% plain Lignocaine were given. After ensuring adequate sensory and motor blockade he was positioned in traction table and surgery was performed. Sedation was given in titrated boluses of Inj. Fentanyl to a total dose of 60 µg. Hemodynamic parameters remained stable throughout the surgery and patient was shifted to coronary intensive care unit postoperatively, where the patient made an uneventful recovery and was discharged on third postoperative day.

## DISCUSSION

Hip fractures continue to be one of the most common surgeries performed in the geriatric population. Though peripheral nerve blocks are popular for upper limb surgeries, lower limb anaesthesia requires blockade of more than one plexus, which are deep seated and require a large volume of local anaesthetic, which makes them less favoured. General anaesthesia or neuraxial blockade are the routine choices for anaesthetic management of lower limb surgeries. Both are associated with significant physiologic changes leading to hemodynamic instability especially in high risk patients with multiple comorbidities. But the knowledge of anatomy and innervation of the hip joint helps us to understand that a psoas compartment block combined with a sciatic nerve block provides adequate anaesthesia for hip surgeries [2]. Case reports and studies are coming up demonstrating the success of these nerve blocks in providing adequate anaesthesia for hip surgeries [3,4]. Petchara et al., demonstrate the success of a combined lumbar and sacral plexus block in high risk geriatric patients

undergoing hip fracture fixation [5]. Some limitations of these nerve blocks are that the discomfort caused by positioning of the contralateral unanesthetised limb requires administration of good sedation. Sometimes there is sparing at the proximal portion of skin incision which can be managed by local infiltration of some local anaesthetic.

## CONCLUSION

Combined psoas compartment and sciatic nerve block can be used for the anaesthetic management of hip surgeries. More research and publications are needed in this area to help establish the safety and efficacy of these blocks in hip surgeries.

## REFERENCES

1. Shelton C, White S. Anaesthesia for hip fracture repair. *BJA Educ.* 2020;20(5):142-149.
2. Enneking FK, Chan V, Greger J, Hadzic A, Lang SA, Horlocker TT. Lower-Extremity Peripheral Nerve Blockade: Essentials of Our Current Understanding. *Reg Anesth Pain Med.* 2005;30(1):4-35.
3. Ahamed ZA, Sreejit MS. Lumbar plexus block as an effective alternative to subarachnoid block for intertrochanteric hip fracture surgeries in the elderly. *Anesth Essays Res.* 2019;13(2):264-268.
4. Taha AM, Ghoneim MA. Hip hemiarthroplasty using major lower limb nerve blocks: A preliminary report of a case series. *Saudi J Anaesth.* 2014;8(3):355-358.
5. Petchara S, Paphon S, Vanlapa A, Boontikar P, Disya K. Combined lumbar-sacral plexus block in high surgical risk geriatric patients undergoing early hip fracture surgery. *Malays Orthop J.* 2015;9(1): 28-34.