



FEMORAL-POPLITEAL SURGICAL BLOCK IN A MORBIDLY OBESE PATIENT: A CASE REPORT

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Background

- 35.7% of adults in the United States suffer from obesity.
- Obesity is associated with several physiological changes that can complicate the anesthetic management for surgery :
 - Increases difficulty of intubation, decreases the functional residual capacity of the lungs, increases airway hyperresponsiveness, and makes the lungs more prone to atelectasis and collapse[1]
- Systemic opiate use for obese patients in the perioperative period significantly increases the risk of respiratory decline and failure.
- One study showed regional anesthesia can decrease the amount of systemic opioids required for adequate analgesia following total knee arthroplasties.[2]
- In certain cases, surgical or motor blockade of targeted nerves can eliminate the need for general anesthesia altogether
- We present the case of a morbidly obese patient presenting with a lower extremity fluid collection who was planned for I&D under a combined femoral-popliteal block and MAC

Materials/Methods

- This case report is devoid of patient identifiable information it is exempt from IRB review requirements as per West Haven VA Medical Center policy.

Case

- A 59-year-old, ASA IV, 182kg (53 BMI), male initially presented with a large subcutaneous right lower extremity collection of fluid following a fall from his wheelchair 10 days prior. Intrathecal baclofen pump initially placed at an outside facility 8 years prior and replaced one year ago.
- Past medical history was significant for HTN, hypothyroidism, spinal stenosis, severe polyneuropathy of the lower extremities, and possible chronic lymphedema.
- On airway exam, he was a Mallampati 4, had a full neck range of motion, and had a thyromental distance of 4 cm. No prior intubation history available.
- A contrast CT of the right lower extremity showed a 10 cm fluid subcutaneous fluid collection.
- Since the surgery was only planned for one hour and the fluid collection was subcutaneous, the surgery and anesthesia team decided to do the surgery under regional anesthesia alone.
- The patient was premedicated with 2mg of versed in split doses for comfort before the femoral nerve block.
- Patient was then placed in the supine position, his pannus was pulled out of the needle insertion site using tape, and the femoral nerve was identified using ultrasound. A 150mm, 22g, insulated needle was advanced in plane to the perineural space, and 30 cc of 0.5 % ropivacaine with 4 mg of dexamethasone was injected.
- For the popliteal nerve block, the patient remained in supine position and a leg rest was used to elevate the right lower extremity. The nerve was identified using ultrasound and an identical needle was advanced in plane into the perineural space. 20 cc of 0.5% ropivacaine with 4mg of dexamethasone was deposited around the nerve.
- An adequate block was achieved within 20 minutes following the injections and the surgery was carried out under moderate sedation using a dexmedetomidine drip. The block wore off within 12 hours following the surgery and the patient suffered no anesthetic related complications.

Discussion

- Prior studies have demonstrated that obesity is an independent risk factor for difficult intubation and ventilation.[1]
- A previous anesthesia team planned on doing the case under general with an awake fiberoptic intubation before our team decided on using regional anesthesia.
- Adequate analgesia was achieved without using narcotics and the patient had no pain intraoperatively or 12 hours postoperatively, ultimately mitigating the risk of apnea and hypoxia following the surgery
- One prospective study looked at the use of regional anesthesia in 9,342 patients in an outpatient center and showed that a BMI of 25 or greater was a risk factor for block failure. Keeping this in mind, we focused on optimizing the block for success.[3]
- Ultrasound use in regional anesthesia is currently the gold standard. Under ultrasound guidance, we carefully advanced the needle in plane visualizing the entire needle throughout its course. We then deposited the local anesthetic in a circumferential pattern around the nerve and visualized its spread on ultrasound which was reassuring and has shown to improve block success.[4]
- The results of this case demonstrate that a successful surgical block of the lower extremity is feasible and effective at preventing complications in the morbidly obese patient.

References

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