



PURE REGIONAL NERVE BLOCK IN BELOW KNEE AMPUTATION, COMPLICATED BY VENTRICULAR ARRHYTHMIA – SUCCESSFUL MANAGEMENT OF A HIGH-RISK PATIENT WITH REGIONAL NERVE BLOCK.

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KEYWORDS :**INTRODUCTION:**

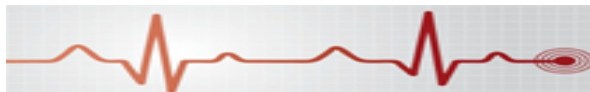
We often encounter patients, who are at high risk for general anesthesia or neuraxial blockade. The appropriate application of regional anesthesia in such patients, can lead to safe and successful outcomes. Ultrasound guided peripheral nerve blocks (PNB) may offer safer alternatives in patients at high risk for complications; with good analgesia and cardiovascular stability. We present one such high-risk patient, whom we managed with pure nerve block, for below-knee amputation surgery.

CASE DETAILS:

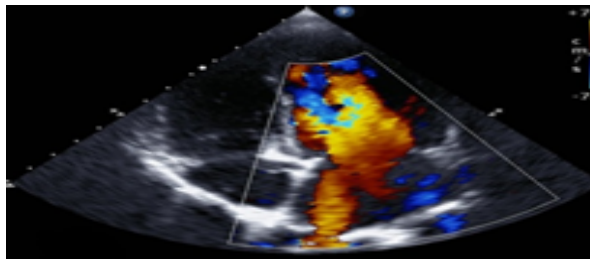
62 yr old gentleman. Diabetes Mellitus for 15yrs, on irregular medication with poor glycemic control (HbA1c - 9.1%). Presented to the ED with ulcer over the left foot for 2 weeks; Swelling and pain over the left leg for 5 days associated with fever. Was assessed by Surgical unit and diagnosed to have **Diabetic foot ulcer with vascular compromise, Necrotising Fasciitis of Left leg, Diabetic ketoacidosis, Sepsis with septic shock, Anemia ; Dys-electrolytemia.** Treated with IV antibiotics, IV fluids, IV KCL, blood transfusion and Inotropic Support. Planned for **Emergency Left below-knee amputation.**

PRE-OP INVESTIGATIONS:

Hb (g/dl)	6.1 8.5
Platelet (cell/cumm)	85,000
RBS	463
Urine acetone	+++
Urea/creat	21/ 0.6
Na / K / Cl	124/2.6/90
pH/ Hco3-	7.3 / 14
BT / CT	2 / 4 min
PT - INR	1.59
CXR	Normal

ECG

Q waves in leads V1-V4.

Suggestive of **old anterior wall infarction****ECHO:**

EF- 54%

No RWMA

Grade II Diastolic Dysfunction

PRE ANESTHETIC ASSESSMENT:

- Pt was conscious, oriented, febrile.
- Pallor+
- PR: 100/m RR – 24/min Spo2 -99% with O₂ 4 L/min
- BP:100/60 mm hg on Noradrenaline 0.15 mics/kg/min
- CVS: S1 S2+
- RS: B/L air entry +, no added sounds.
- Mallampatti Score III; Mouth opening –adequate,
- Neck movements – normal; No loose teeth or dentures; Spine-normal
- He was taken up for surgery under ASA category III_e

ANAESTHESIA – CHOICE IN THIS PATIENT**GENERAL ANESTHESIA**

- Hemodynamic instability
- Cardiac Stress
- Delayed recovery



- Neuraxial**
- Coagulopathy
- Hemodynamic Instability



- Nerve Block**
- Hemodynamic Stability
- Stable cardiac perfusion

INTRA-OP MANAGEMENT:

Inotrope (Noradrenaline **0.15 mics/kg/min**); O₂ 4 L/min. Sedation : Inj Midazolam 0.5 ml IV stat. USG guided Femoral + Popliteal Nerve Block was done. (5ml 0.5% Bupivacaine + 5ml 2% Lignocaine). Immediately after completion of surgery, patient developed **Ventricular Tachycardia with hypotension.** Cardioversion done, Managed as per ACLS protocol and intubated. Extubated on POD #1.

NERVE BLOCK - TECHNIQUE :

Femoral nerve block -Patient was placed in supine position. USG done at inguinal region to locate the nerve, artery, and vein. After aseptic measures, femoral nerve was approached through 22-gauge, 100-mm needle, guided by hydro-dissection with linear ultrasound probe and 5ml 0.5% Bupivacaine + 5ml 2% Lignocaine + 5ml distilled water given around the nerve. Popliteal nerve block Patient was placed in lateral decubitus position with operative side upward and exposed.

With USG, sciatic-popliteal nerve was blocked by similar needle at popliteal fossa with linear probe.

DISCUSSION:

Patients requiring emergency or urgent lower limb amputation due to poor circulation usually present with cellulitis, sepsis, multi-organ dysfunction, and comorbid conditions. GA can be catastrophic due to profound hypotension & myocardial depression at induction⁽¹⁾. Neuraxial blocks are precluded because of coagulopathy/hypotension⁽²⁾. Use of PNB for BKA is not very common and has advantage of cardiovascular stability and pain relief intra & postoperatively, especially, in very sick patients. USG guided PNB may facilitate more rapid block onset & prolong block duration, with the added advantages of a decrease in drug dosage and a reduction in the incidence of local anesthetic toxicity. In our case, the procedure was successfully completed under PNB. He developed VT immediately after completion of surgery, probably due to underlying ischemia, hypokalemia, acidosis and was successfully managed thereafter.

CONCLUSION :

Pure nerve blocks may thus be a safe alternative to GA/neuraxial blockade in patients at high risk, especially in those with cardiac risk factors and hypotension. Despite cardiovascular stability offered by PNB, acute emergencies can still occur, and early and effective therapy can result in good outcomes.

REFERENCES :

1. Shamim F, Hameed M, Siddiqui N, Abbasi S. Ultrasound-guided peripheral nerve blocks in high-risk patients, requiring lower limb (Above and below knee) amputation. *Int J Crit Illn Inj Sci*. 2018
2. Chandran R, Beh ZY, Tsai FC, Kuruppu SD, Lim JY. Peripheral nerve blocks for above knee amputation in high-risk patients. *J Anaesthesiol Clin Pharmacol*. 2018 Oct