



## REGIONAL NERVE BLOCK FOR LOWER LIMB DEBRIDEMENT IN A PATIENT WITH CKD GRADE 4: A CASE REPORT

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### ABSTRACT

Lower limb surgeries are usually performed under central neuraxial blockade. But patients with comorbidities are not able to tolerate the consequences and hemodynamic instability, and are at increased risk of morbidity and mortality. We report successful perioperative management of a 72 year elderly female patient with right lower limb swelling posted for emergency debridement with compromised renal function under combined femoral and sciatic nerve block.

**KEYWORDS :** peripheral neuraxial block, chronic kidney disease, thrombocytopenia, lower limb debridement.

### Introduction:

Chronic kidney disease is defined as either kidney damage or glomerular filtration rate  $<60\text{ml/min/1.73m}^2$  for more than 3 months. There is progressive loss in kidney function over a period of months or years. Most common causes of chronic kidney disease are diabetic mellitus, hypertension, glomerulonephritis and polycystic kidney disease.<sup>1</sup> It presents as unique challenge to anaesthetist as it comes with sequelae like electrolyte imbalance, anemia, uremia, cardiac arrhythmias, renal osteodystrophy.<sup>2</sup> Drugs and metabolites are normally excreted by kidney can accumulate to toxic levels due to impaired glomerular filtration rate and renal tubular function.<sup>3</sup> We report successful perioperative management of a 72 year elderly female patient with right lower limb swelling posted for emergency debridement with compromised renal function under combined femoral and sciatic nerve block.

### Case Report:

A 72 year elderly female weighing 45kg, presented to hospital with swelling over Right leg posted for emergency debridement. She was Hypertensive since 2 years on Tab.Stamlo-dipine 5mg od. She was recently diagnosed diabetic mellitus on insulin. On examination she was conscious and oriented. On systemic examination bilateral crepts were present over lung fields, rest other systemic examination was normal. Pre-operative blood investigations revealed hemogram (HB9.1mg/dl, TLC10,300cells/mm<sup>3</sup>, **platelet count 58,000cells/mm<sup>3</sup>**) RBS 179.7, blood urea 180mg/dl, **serum creatinine 2.3mg/dl**. ECG and Chest Xray were unremarkable. Coagulation profile and serum electrolytes were within normal limits..She was in Stage 4 CKD with GFR of 22ml/min/1.73m<sup>2</sup>.

In view of above condition, general and central neuraxial anaesthesia were not opted due to its adverse effects, hence anaesthesia in the form of lower limb peripheral nerve block was planned.

### Combined femoral and sciatic nerve block was planned.

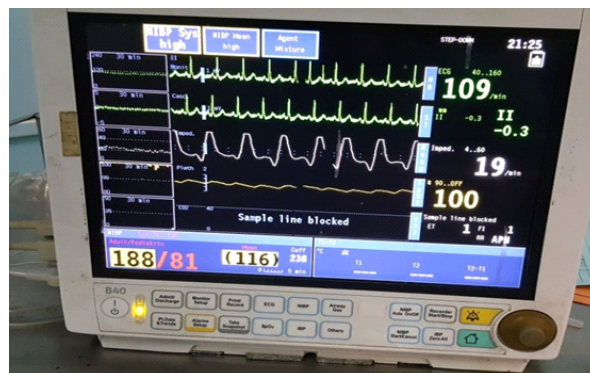
After arrival to the operation theatre an IV line was started with 20G cannula and Ringer lactate drip was started. All anaesthetic equipment were checked, Multipara monitors were connected and baseline readings recorded.

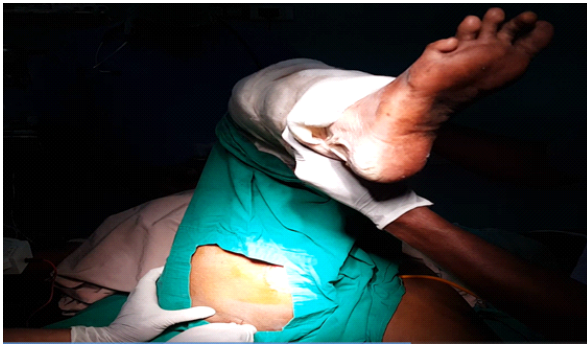
Oxygen was supplied through oxygen face mask @ 4 lit/min. According to institution protocol patient was premedicated with Inj.Ranitidine 50mg, Inj.Ondansetron 4mg, Inj.Metoclopramide

10mg, Inj.Glycopyrrolate 0.2mg IV were given. INJ. Midazolam 1MG IV and INJ. Pentazocin 15MG IV was given as sedation.

### SCIATIC NERVE BLOCK:

Under all aseptic precautions, sciatic nerve block was given through posterior approach with Raj method, with help of 10cm stimuplex needle and nerve locator. Adequate response was achieved. Drugs, INJ. Lignocaine 2% (15cc) and INJ. BUPIVACAINE 0.5% (15cc) was given.





#### **FEMORAL NERVE BLOCK:**

Under all aseptic precaution, femoral nerve block was given with winnies method, with help of 5cm stimplex needle and nerve locator. Adequate response (over the patella) achieved. Drugs, INJ. BUPIVACAINE 0.5% (10cc) was given. After adequate analgesia was achieved, operation was started. Intra operatively patient was hemodynamically stable. Patient was shifted to ICU postoperatively. Post operative analgesia persisted for 4 hours after the surgery. Post-operative care was uneventful.



#### **DISCUSSION:**

As she is case of chronic kidney disease, with diabetic mellitus general anaesthesia is not opted due to the adverse effects of muscle relaxants, narcotics, and potential volatile agents. As drugs and metabolites are normally excreted by the kidney can accumulate to toxic levels due to impaired glomerular filtration and renal tubular function leading to delayed recovery, post operative ventilatory support and prolonged hospital stay. Regional anaesthesia has its place in patients with chronic kidney disease. Its administered whenever there is indication because its logical choice as it avoids the effects of muscle relaxants, narcotics and potential volatile anaesthetics. Sympathetic blockade is an important consideration when utilizing epidural or spinal anaesthesia. A high level blockade can result in a significant drop in blood pressure and glomerular filtration rate. Carefull preoperative fluid loading will offset the degree of hypotension. In our case use of spinal anaesthesia was not opted as she has thrombocytopenia. Hence peripheral lower limb block with combined sciatic and femoral nerve block was planned for this patient. As it avoids the dreadful complications of both general and spinal anaesthesia.

#### **CONCLUSION:**

Regional nerve blocks provide excellent anaesthesia and hemodynamic stability for patients with chronic kidney disease. It avoids the use of multiple drugs as in general anaesthesia and

prevents the hemodynamic instability seen in central neuraxial blocks.

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