

Open Cystolithotomy under Tap Block with Pre-emptive Analgesia as an Alternative Mode of Anaesthesia, in a Case of Parkinson's Disease

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ABSTRACT

Introduction: Parkinson's disease is a progressive neurodegenerative disorder with mainly neuromuscular involvement. Many anaesthetic problems are associated with it, including pharmacokinetic interactions with antiparkinsonian medications.

Case report: An 80 years old male patient was presented with haematuria and was taken in emergency operation room for open cystolithotomy under transverse abdominis plane block with pre-emptive analgesia technique. Neuraxial anaesthesia could not be used, as he was on dual antiplatelet medications and any airway manipulation, intraoperative hemodynamic instability was avoided by using transverse abdominis plane block.

Conclusion: We had managed this case of open cystolithotomy successfully by alternate mode of anaesthesia, leading to less complications and rapid emergence.

Keywords: Transverse Abdominis Plane Block, Pre-Emptive Analgesia, Parkinson's Disease, Difficult Airway

INTRODUCTION

Parkinson's disease (PD) is a chronic, progressive neurodegenerative disease characterized by both autonomic and motor features like classical triad of resting tremor, bradykinesia and muscular rigidity. Loss of striatal dopaminergic neurons responsible for motor symptoms and loss in non – dopaminergic neuron results in autonomic symptoms.

PD occurs worldwide affecting all ethnic age groups. The prevalence of PD in industrialised countries is generally estimated at 0-3% of the entire population and about 1% in people over 60 years of age.¹ Males are more often affected than females at a ratio of around 3:2. The anti-parkinsonian medications which interact or substitute dopamine or dopamine like substances used, are the challenge in anaesthetic management.

We report a successfully managed case of elderly patient of PD with multiple comorbidities like old cerebrovascular accident and hypertension, diagnosed as urinary bladder calculus and hematuria undergoing open cystolithotomy and clot evacuation, under transversus abdominis plane (TAP) block as primary mode of anaesthesia with pre-emptive analgesia and sedation.

CASE REPORT

An 80 years old male, hypertensive patient, known case of parkinson's disease with old cerebrovascular accident (CVA), was undergoing emergency open cystolithotomy

for urinary bladder calculus and clot evacuation under ASA grade IVE, due to continuous haematuria despite of full medical management. He had a history of gross painless haematuria for two days. He was diagnosed as a case of Parkinson's disease 3 years ago and was well controlled with regular medications like tablet Levodopa (100mg) plus Carbidopa (10mg) (Brand name: tablet Syndopa 110) three times daily. He was on tablet Amlodine (5mg) once daily and tablet Clopidogrel (75mg) plus Aspirin (75mg) once daily for hypertension and past history of CVA respectively.

On examination, his GCS was 15/15, pallor was noticed, baseline SpO₂ was 100% on room air, pulse rate 88 bpm, blood pressure 112/72 mmHg. Cardiovascular and respiratory system examination was fine. On central nervous system (CNS) examination, we noticed right sided focal neurological deficits with power of grade 3/5 in the right upper and lower limbs, mask like facies and neck rigidity. Airway examination revealed, mouth opening of 5cm, complete edentulous, Modified Mallampati score- 3, loss of buccal pad of fat with restricted neck movement (fixed flexion deformity).

Laboratory investigations were within normal limits except a low haemoglobin level (8.5g/dl).

After obtaining proper consent and confirming adequate NPO status, the patient was premeditated with injection Ranitidine (50mg), injection Ondansetron (4mg) IV, after putting a 20G IV cannula and tablet Levodopa (100 mg) plus Carbidopa (10 mg) was given orally with sips of water at the pre-operative area. The patient was shifted to operating room, standard ASA monitors like pulse oximetry, electrocardiography, non-invasive blood pressure cuff were attached, and baseline parameters were noted. As a part of pre-emptive analgesia protocol, injection Paracetamol (1000 mg), injection Dexamethasone (8mg) were given and infusion Dexmedetomidine (loading dose 1mcg/kg over 15minutes), and intravenous fluid with ringer lactate solution have been started. Under strict aseptic precautions, bilateral TAP block

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was performed with total 30ml of 0.5% bupivacaine and 2% lignocaine mixture, 15ml on each side using anatomical landmark method. The whole process took 10 minutes and was not associated with any complications. Following the TAP block, he was sedated with injection Propofol (50mg), injection Fentanyl (30mcg) and dexmedetomidine infusion was adjusted to 0.4mcg/kg/minute dose.

The surgery went on smoothly for 1 hour without any further need of other analgesia and with absolute hemodynamic stability. After the surgery, he emerged from anaesthesia smoothly without any adverse CNS symptoms within 15 minutes of stopping Dexmedetomidine infusion. His postoperative course was uneventful and without any deterioration of neurodeficiency or muscle rigidity.

DISCUSSION

Parkinson's disease is an increasingly common disease of elderly patient. They present with geriatric problems, such as surgery for prostate, incidental general surgical procedures, cataract, gynaecological surgeries, and so on. The patients of Parkinson disease are on variety long term medication which interact with aesthetic drugs and potentially affect the outcome. Hence care should be taken and dose should be titrated while patient of Parkinson undergoes any surgical intervention under general anaesthesia.²

In patient of PD, due to autonomic dysregulations, sympathomimetics (like ketamine) should be used with caution as these can cause an acute rise in blood pressure and directly acting drugs (like phenylephrine) is preferred in hypotension. Although newer inhalational agents like isoflurane and sevoflurane, are less arrhythmogenic, but hypotension is still a concern due to hypovolaemia, norepinephrine depletion, autonomic dysfunction and the co-administration of other medication. Morphine cause increases dyskinesia in high dose and decrease with low dose.³ MAO inhibitor also inhibits the metabolism of narcotics, so dose of narcotic should be reduced to 20- 25% of usual dose and with concomitant use of pethidine (meperidine) might precipitate serotonin syndrome. Drugs like metoclopramide, phenothiazine should be avoided as these drugs known to precipitate symptoms of Parkinson disease.

In the present case, patient underwent open cystolithotomy and clot evacuation under bilateral TAP block with sedation and pre-emptive analgesia. It reduces the need of inhalational anaesthetic, decreases the dose of opioids which cause muscle rigidity and most common cause of post-operative complication. With TAP block technique, we avoided airway manipulation (which was difficult as well due to fixed flexion deformity), which is one of the most common cause of post-operative morbidity. Regional anaesthesia has been reported to have obvious advantages, like it allows better communication of subjective feelings, avoids intraoperative hemodynamic instability, residual effect of general anaesthesia or neuroblocking agents and opioids related rigidity were eliminated.⁴ In this case, neuraxial anaesthesia technique could not be used because the patient was on dual antiplatelet medications (clopidogrel and

aspirin). Though TAP block is quite safe and easy to perform, but there are some known complications associated with it, like intraperitoneal injection, bowel hematoma, visceral organ injury and local anaesthetics systemic toxicity as well. Precautions should be taken to avoid those complications like using short gauge bevelled blunted needle and using real time ultrasound guided block etc.

CONCLUSION

An alternative mode of anaesthesia, in the form of TAP block with pre-emptive analgesia was successfully implemented and executed, in a case of PD with multiple comorbidity and difficult airway.

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