

# Anaesthetic Considerations in a Parkinson's Disease Patient undergoing Thiersch Procedure

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Dear Editor,

A 76-year-old woman weighing 43 kg, with an 18-year history of Parkinson's Disease (PD), who was scheduled for rectal prolapse surgery (Thiersch procedure). Authors highlight the anaesthetic approach and perioperative concerns that shaped our management.

The patient had a history of hypertension for 15 years and was on levodopa 100 mg and carbidopa 25 mg (QID), as well as rasagiline 1 mg (OD) for PD. Additionally, she was on a combination of antihypertensives: benidipine 8 mg, carvedilol 3.125 mg, and torsemide 10 mg. Clinical examination revealed resting tremors, cogwheel rigidity, difficulty initiating gait, constipation, normal deep tendon reflexes, no signs of cerebellar dysfunction and no sensory deficits. Notable orthostatic hypotension was observed, with blood pressure rising from 148/90 mmHg (sitting) to 180/110 mmHg (supine). The pulse rate was 82 beats/min, and oxygen saturation was 98%. Chest X-ray, Electrocardiogram (ECG), 2D ECHO and all laboratory investigations were normal. Cognitive function was intact. Features such as facial muscle wasting and restricted neck mobility raised potential airway management issues. The patient was classified as American Society of Anaesthesiologists (ASA) III for fitness. Informed consent was obtained from both the patient and her relatives.

Preoperatively, a 20 G intravenous cannula was secured. Fasting status was confirmed, and the time of levodopa and carbidopa intake was noted two hours prior to transferring the patient to the preoperative room. All three antihypertensive medications were also administered at the same time. The operating theatre was prepared for both spinal and general anaesthesia. Emergency medications, including atropine 0.6 mg, glycopyrrolate 0.2 mg, mephentermine 30 mg, phenylephrine 500 mcg, and labetalol 10 mg, were kept ready. After preloading with 500 ml of Ringer's lactate, spinal anaesthesia was administered using 2.5 ml of 0.5% bupivacaine at the L3–L4 level. Tremors in her lower limbs significantly diminished within minutes, and the patient remained stable. Initial hypotension post-block (BP 98/66 mmHg) was expected and treated with supportive measures. Blood pressure was monitored at three-minute intervals, fluctuating from a systolic pressure of 140 to 98 mmHg and diastolic pressure from 90 to 60 mmHg. Heart rate varied between 110 and 76 beats/min. Intraoperative monitoring faced challenges due to tremor-induced artefacts on pulse oximetry on her hand. To overcome these erroneous readings, an additional pulse oximetry monitor was attached to her toe. No adverse events occurred throughout the procedure, which concluded smoothly within 45 minutes.

Postoperatively, the patient was able to move her legs after 45 minutes, and tremors in the lower limb began after 120 minutes. She resumed levodopa-carbidopa four hours after surgery and was also started on intravenous paracetamol 1 gm for analgesia TID. The patient was discharged after three days of observation in the ward.

The Thiersch procedure (anal encirclement) is performed in elderly patients who cannot tolerate major perineal or abdominal surgeries due to a high-risk of rectal prolapse. This procedure narrows the anus using simple sutures or prosthesis [1]. Patients with PD commonly present with autonomic instability, complicating haemodynamic management during anaesthesia [2]. In present case, blood pressure fluctuations were prominent despite medication adherence. Respiratory vulnerability due to rigidity, decreased cough reflex and pharyngeal muscle involvement increases the potential for aspiration [2]. For this patient, the short duration of surgery, the nature of rectal surgery allowing for low-dose spinal anaesthesia, and the absence of cognitive impairment supported the decision for regional anaesthesia.

Authors remained cautious of drug interactions. Levodopa, with its central mechanism, can cause a hypotensive effect. Rasagiline, a monoamine oxidase-B inhibitor, is contraindicated with agents like meperidine or Selective Serotonin Reuptake Inhibitors (SSRIs), which can trigger serotonin syndrome—a potentially life-threatening complication marked by autonomic dysregulation and neuromuscular abnormalities [2]. Moreover, abrupt withdrawal of antiparkinsonian drugs can precipitate neuroleptic malignant syndrome, highlighting the importance of continuing these agents perioperatively [2,3].

While delivering spinal anaesthesia, challenges due to ongoing tremors was encountered, which worsened due to anxiety experienced by the patient. Although general anaesthesia can be considered for patients with PD, it is associated with risks such as masking of myopotentials, which is usually the first sign of intraoperative exacerbation and increased susceptibility to delirium [4]. Peripheral nerve blocks or saddle anaesthesia are ineffective in attenuating lower limb tremors. For this patient, spinal anaesthesia allowed for tremor suppression, avoided airway manipulation and provided satisfactory pain control.

Gautam B and Baral B, reported a case of spinal anaesthesia for laparoscopic cholecystectomy in a Parkinson's patient, witnessing an uneventful and smooth surgery after achieving a sensory blockade of T3. Despite facing challenges due to undiagnosed autonomic dysfunction, as in index case, they concluded that spinal anaesthesia is a better option than general anaesthesia in their study [3]. Bani Hani DA et al., compared spinal and general anaesthesia in 10 Parkinson's patients undergoing hip fracture surgery. Three of four patients receiving general anaesthesia developed complications such as atelectasis, urinary tract infection and aspiration pneumonia, with one resulting in mortality. In contrast, the spinal group had fewer complications and a shorter hospital stay (5.8 vs. 9 days), suggesting that spinal anaesthesia may be a safer option for PD patients [4].

There are numerous anaesthetic considerations for PD that should be taken into account before deciding on the anaesthetic plan, along with factors such as the type of surgery (site, elective/emergency),

duration of anaesthesia, duration and severity of PD, any systemic manifestations and interactions between antiparkinsonian drugs and anaesthetic agents [2]. The choice should be individualised based on a risk-benefit analysis of both general anaesthesia and regional anaesthesia, including peripheral nerve blocks. This experience supports the use of regional anaesthesia in similar surgical contexts, provided there is adequate preoperative evaluation and perioperative vigilance.

Thanks

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AUTHOR DECLARATION:

• Financial or Other Competing Interests: None

• Was informed consent obtained from the subjects involved in the study? NA

• For any images presented appropriate consent has been obtained from the subjects. NA

PLAGIARISM CHECKING METHODS: [\[Jain H et al.\]](#)

• Plagiarism X-checker: Jul 04, 2025

• Manual Googling: Jul 05, 2025

• iThenticate Software: Jul 07, 2025 (3%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

Date of Submission: **May 28, 2025**

Date of Peer Review: **Jun 24, 2025**

Date of Acceptance: **Jul 09, 2025**

Date of Publishing: **Aug 01, 2025**

Journal of Clinical and Diagnostic Research. 2025 Aug, Vol-19(8): UL02-UL03

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