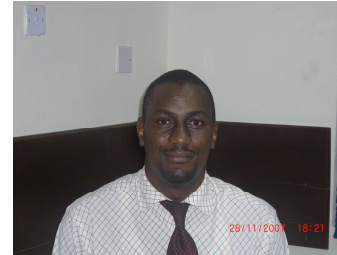


Anaesthesia for a Patient with Parkinson 's Disease: A Case Report

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SUMMARY

Managing a patient with Parkinson's disease presenting for anaesthesia is relatively rare and can be challenging, especially in the developing world. A patient with Parkinson's disease who had total abdominal hysterectomy and salpingoophorectomy is presented. The anaesthetic management options are discussed.

KEY WORDS: Anaesthesia, Parkinson's disease, levodopa.

CASE PRESENTATION:

Mrs O.O, a 55 year old lady, a retired nurse, was scheduled for total abdominal hysterectomy and bilateral salpingoophorectomy (TAH & BSO), on account of uterine fibroids and a high grade squamous intraepithelial lesion of the cervix. She was diagnosed with Parkinson's disease four years earlier, for which she had been taking sinemetTM (a combination of levodopa and carbidopa) tablets and artane (Trihexyphenidyl HCl).

On examination, she had 'pin-rolling' tremors at rest, no bradykinesia, no rigidity, and no other central nervous system abnormality. Her other systems were normal. Her past medical history was non-contributory and there was no family history of a similar illness. Her hematocrit was 39%, ECG showed an old anterior myocardial infarct, but echocardiography showed normal systolic and diastolic function. She was assessed as ASA II and was counselled for subarachnoid block. She was also instructed to take her drugs with a sip of water on the morning of surgery, which she did.

Regional anaesthesia by subarachnoid block was performed with 3mls of 0.5% heavy bupivacaine and 15µg of fentanyl, after fluid

preload with 1liter of Hartmann's solution. Block height was T8 dermatome with complete analgesia. Supplemental oxygen at 3L/min was given via nasal prongs. ECG, pulse oximetry, NIBP and temperature were monitored electronically throughout surgery. She had a short episode of tremors, which aborted on sedation with propofol infusion, titrated to effect. Surgery (TAH & BSO) lasted about 75 minutes, and was otherwise very uneventful, there were no episodes of hypotension or bradycardia. There was a short episode of shivering immediately after surgery, with the patient complaining of feeling cold (Intra-operative temperature ranged between 36.5 and 37⁰C). She was covered with warm drapes and transferred to the recovery room which was warmer. The shivering subsided without further treatment.

Postoperative period was uneventful; the subarachnoid block provided good postoperative analgesia for about 3 hours. She had no postoperative complications. Her next dose of oral sinemetTM was taken on schedule. By the second postoperative day, she was fully ambulant. She was discharged home 5 days later.

DISCUSSION:

Parkinson's disease occurs world wide, affecting all ethnic groups, with a very slight male preponderance.¹ Although the aetiology of Parkinson's disease is unknown, increasing age has been identified as the most consistent risk factor.² It affects approximately 3% of the population over 66 years of age, and the prevalence increases with age.³ Parkinson's disease is an increasingly common disease of elderly patients in the UK, but is much less common among African blacks.² This, and the much lower life expectancy of the population, may be possible reasons why the disease is not commonly seen in anaesthetic practice in Nigeria.

The mainstay of treatment is drug therapy using levodopa or dopamine receptor agonists². Our patient was being treated with sinemetTM (levodopa + carbidopa) and artane, with fair symptomatic control. The drug regimen should be administered as close to the beginning of anaesthesia as possible, since it has a short half-life (1-3 hours)². L-DOPA can only be administered enterally², so our patient took her medication about thirty minutes before anaesthesia with a small sip of water. Other drugs which have been used in the treatment of Parkinson's disease include Monoamine Oxidase Inhibitors; Amantadine, Anticholinergics, and Catechol O-Methyl Transferase Inhibitors.⁴ Recently, surgical procedures are being developed for the treatment of Parkinson's disease.²

Patients with Parkinson's disease most commonly present for urology, ophthalmologic, or orthopaedic procedures, but may also

present for surgical therapeutic procedures². Our patient presented for gynaecologic surgery. Anaesthetic considerations are mainly about the respiratory, cardiovascular, autonomic nervous and gastrointestinal systems. Respiratory complications, particularly aspiration pneumonia, are the most common causes of death in these patients⁵. Due to the involvement of the intrinsic laryngeal muscles, and other muscles surrounding the upper airway in extra-pyramidal disorders⁶, upper airway dysfunction may occur, causing retained secretions, atelectasis, and respiratory infection. Sialorrhoea, orthostatic hypotension, cardiac arrhythmias, and dependent oedema may also occur².

Regional anaesthesia has obvious advantages over general anaesthesia as it avoids the effects of general anaesthetics², and the airway complications mentioned earlier. It also provides very good postoperative analgesia. Postoperative nausea and vomiting, which may prevent resumption of oral intake, is also avoided, so that patients can resume oral drug intake². Our patient took her next oral dose of sinemetTM on schedule after surgery. Though diphenhydramine has been suggested for sedation⁷, we used propofol infusion for sedation with very good result. The patient was comfortable and tremors were abolished. Propofol has been reported to abolish the tremors of Parkinson's disease⁸.

For surgical procedures not amenable to regional anaesthesia, special precautions have to be taken. Drugs that precipitate or exacerbate Parkinson's disease should be avoided, including phenothiazines, butyrophenones (including droperidol), and metoclopramide. Thiopentone and propofol are probably safe, while ketamine, is theoretically contraindicated in Parkinson's disease because of an exaggerated sympathetic response, but has been used without harm^{2,9}. Inhalational agents such as halothane, which sensitizes the heart to the action of catecholamines, should be avoided in patients taking L-DOPA². Isoflurane and sevoflurane, are less arrhythmogenic, but hypotension is still a concern². Opioids especially fentanyl and morphine may be associated with increased muscle rigidity in these patients, therefore potent non steroidal analgesics should be used for postoperative analgesia². For patients taking L-DOPA, it is essential to ensure that patients do not miss medication doses postoperatively, it can be taken either with sips of water or by nasogastric tube.

In conclusion, patients with symptoms of Parkinson's disease can be safely anaesthetized, regional anaesthesia being the preferred technique where possible.

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