# Severe postoperative nausea and vomiting in a Parkinsonian patient

*Brian O'Brien, Dominic Harmon*

A 74-year-old woman was reviewed 6 hours postoperatively following a mastectomy and axillary clearance as she was vomiting and feeling nauseous. She had experienced a severe episode of emesis after surgery more than 10 years previously, which, she recalled, had lasted several days.

In the interim she had developed Parkinson's disease and her tremor, rigidity and bradykinesia were obvious despite treatment with levodopa and a dopa-decarboxylase inhibitor. The house officer reviewing the patient feared a dyskinetic reaction to antiemetic drug treatment and so sought advice from the anaesthetic registrar on call.

The patient was found in a distressed state. Although she had been prescribed patient-controlled analgesia with morphine she was no longer using it because of her vomiting. The pain was unpleasant but her feelings of nausea were worse. She was receiving intravenous fluids, so dehydration had not developed. She was sweating, however, and unable to sleep because of her symptoms. The options considered by the anaesthetist were:

1. To use traditional antiemetic drugs and accept the possibility of dyskinetic effects as inevitable
2. To use newer antiemetic drugs which cause less interference with motor function
3. To give no treatment and allow the problem to resolve over time
4. To avoid pharmacological treatments and use alternative approaches.

**Dr Brian O'Brien** is Specialist Registrar and **Dr Dominic Harmon** is Specialist Registrar in the Department of Anaesthesia, University Hospital Galway, Ireland

*Correspondence to: Dr B O'Brien*

Use of butyrophenones (e.g. droperidol) and phenothiazines (e.g. prochlorperazine) can precipitate severe dystonic reaction, and they are contraindicated in Parkinsonian patients, so these drugs were avoided. The situation with other drugs was less clear cut: cyclizine, although not specifically contraindicated, has been inculpated in such reactions (Klawans and Moskovitz, 1977). Even the newer antiemetics (antiserotonergic drugs like ondansetron), while usually well tolerated, have been reported to cause similar reactions, albeit very rarely (Tolan et al, 1999), so these were avoided also unless more conservative options failed. However, a policy of non-intervention seemed unacceptable as the previous episode had lasted several days and in so frail a patient such an experience would be very arduous.

Among the other antiemetic therapies described are acupuncture, acupressure and use of ginger root (Arfeen et al, 1995; Mann, 1999). The evidence for the latter is weak. Acupuncture and acupressure have been quite well validated and adverse effects are rare. Therefore an injection of 2 ml of normal saline was given subcutaneously at the appropriate point: the 'p-6' point is two finger breadths proximal to the wrist crease between the tendons of palmaris longus and flexor carpi radialis. The dominant hand is usually used. An acupressure band was also applied (which compresses the same point). In the hours that followed the symptoms abated and the patient tolerated morphine again. Thereafter her recovery was uneventful.

## DISCUSSION

The pathophysiology of Parkinson's disease involves a degeneration of the nigrostriatal pathway within the basal ganglia. This leads to a reduction in the release of dopamine at these synapses. Other neurotransmitters are also involved (Lang and Lozano, 1998). Most established antiemetics block dopaminergic receptors to a greater or lesser extent, further reducing such transmission and thus exacerbating Parkinsonism. Apart from exacerbation of ongoing symptoms in the Parkinsonian patient, profound hypertonic reactions, oculogyric crises, tardive dyskinesia and neuroleptic malignant syndrome may arise. These effects range from being merely troublesome to occasionally lethal.

Parkinson's disease is a common condition and as the population ages it will become more so. Nausea and vomiting are also very commonly encountered problems in the hospital setting, be they postoperative or unrelated to surgery or anaesthesia. While prophylaxis is ideal, active treatment is often required. It seems likely therefore that this form of treatment, which has few side-effects apart from those of inserting a needle and mild sedation, may help in treating a common problem in a subgroup of patients in whom more established therapies might be better avoided. HM

Arfeen Z, Owen H, Plummer JL, Ilsley AH, Sorby-Adams RA, Doecke CJ (1995) A double-blind randomized controlled trial of ginger for the prevention of postoperative nausea and vomiting. *Anesth Intensive Care* **23(4):** 449–52

Klawans HL, Moskovitz C (1977) Cyclizine-induced chorea. Observations on the influence of cyclizine on dopamine-related movement disorders. *J Neurol Sci* **31(2):** 237–44

Lang AE, Lozano AM (1998) Parkinson's disease. First of two parts. *N Engl J Med* **339**: 1044–56

Mann E (1999) Using acupuncture and acupressure to treat postoperative emesis. *Prof Nurse* **14(10)**: 691–4

Tolan MM, Fuhrman TM, Tsueda K, Lippmann SB (1999) Perioperative extrapyramidal reactions associated with ondansetron. *Anesthesiology* **90(1)**: 340–1