

VOMITING AFTER ANAESTHESIA FOR TERMINATION OF PREGNANCY IN CHINESE

S C Chan
J R Lo
K C Wong

SYNOPSIS

The incidence of vomiting after anaesthesia for termination of pregnancy was found to be much higher than that after Caesarean section although both groups of patients had the same anaesthetic sequence.

The anti-emetic effect of metoclopramide (10 mg) and prochlorperazine (at two dosage levels of 6.25 mg and 12.5 mg) was evaluated in Chinese patients undergoing suction evacuation for termination of intrauterine pregnancy of six to twelve weeks gestation. It was found that both failed to reduce the occurrence of postanaesthetic vomiting. Omission of ergometrine also failed to reduce the vomiting significantly. Important factors contributing to the high incidence of vomiting in these patients include: early pregnancy, dilatation of the cervix uteri and the psychological stress of their pregnancy being terminated.

INTRODUCTION

Termination of intrauterine pregnancy was carried out in many patients in recent years. It was noted that a large percentage of these patients had nausea and vomiting immediately after operation. A number of factors may be responsible: female sex (1), early pregnancy, pethidine premedication (2), dilatation of cervix (3), and ergometrine as oxytocic.

Metoclopramide (Primperan, Maxolon) has been used successfully in the prevention of nausea and vomiting postoperatively (4, 5). It inhibits both the vomiting centre and the chemoreceptor trigger zone, and also prevents gastric stasis.

Prochlorperazine maleate (Stemetil) is a commonly prescribed anti-emetic. It has less potentiating effect on hypnotics than chlorpromazine and does not produce hypotension (6).

Department of Anaesthetics
Queen Mary Hospital
Pokfulam Road
Hong Kong

C S Chan, FFARCS (Eng)
J R Lo, FFARCS
K C Wong, FFARCS

The purpose of the present investigation is to document the high incidence of post-anaesthetic vomiting in patients undergoing suction evacuation for termination of intrauterine pregnancy of six to twelve weeks gestation and to assess the anti-emetic effects of metoclopramide and prochlorperazine in these patients.

MATERIALS AND METHODS

The incidence of postoperative vomiting was noted in 42 Chinese patients undergoing elective or emergency lower segment Caesarean section. Premedication consisted of atropine 0.6 mg intramuscularly one hour before operation. General anaesthesia was induced with thiopentone, followed by suxamethonium and endotracheal intubation. Maintenance of anaesthesia was with nitrous oxide and oxygen. Intermittent positive pressure ventilation was facilitated by the use of intermittent suxamethonium or alcuronium. Ergometrine and pethidine were given intravenously at delivery of the baby. Average duration of anaesthesia was 50 minutes.

Postoperative vomiting was studied in 431 Chinese women undergoing suction evacuation for termination of pregnancy (TOP). The gestational period ranged from six to twelve weeks. Premedication consisted of atropine 0.6 mg and pethidine 50 mg given intramuscularly one hour before operation. Anaesthesia was induced with thiopentone, followed by suxamethonium and endotracheal intubation. Maintenance of anaesthesia was with nitrous oxide and oxygen. Intermittent positive pressure

ventilation was facilitated by the use of intermittent suxamethonium. Average duration of anaesthesia was 20 minutes. Patients were divided into five groups, the allocation being random. Group I (143 patients) received ergometrine 0.5 mg intravenously at the time of the suction. Group II (77 patients) received, in addition to ergometrine, metoclopramide 10 mg intravenously. Group III (50 patients) had, in addition to ergometrine, prochlorperazine 6.25 mg intramuscularly with premedication. Group IV (117 patients) had instead prochlorperazine 12.5 mg intramuscularly with premedication. Group V (44 patients) received neither ergometrine nor any anti-emetic.

Hypotension was not observed in any of the patients. All patients regained consciousness within three minutes of the end of the operation. They were observed closely in the recovery room for the occurrence of vomiting. Some, but not all, patients were questioned the next day in the ward to confirm the observations in the recovery room: there was no discrepancy in the findings.

RESULTS

Results were analysed by the chi-squared (χ^2) test, with the application of Yates' correction.

The incidence of vomiting were compared between the Caesarean section group and the TOP group I (Table 1), the anaesthetic technique employed being essentially similar. The difference was statistically significant.

Table 1
Vomiting after termination of pregnancy and Caesarean section

	Incidence of vomiting
TOP Group I	51/143 (35.7%)
Caesarean section	3/42 (7.1%)
Statistical significance	$\chi^2 = 11.435$ $p < 0.01$

TOP Group I = termination of pregnancy cases given ergometrine 0.5 mg.

The incidences of vomiting were compared between TOP group I and the other TOP groups. The results were shown in Table 2. There was no significant reduc-

tion in vomiting irrespective of the administration of metoclopramide and prochlorperazine or the omission of ergometrine during the suction evacuation.

Table 2
Vomiting after anaesthesia for termination of pregnancy

	Incidence of vomiting	Statistical significance (compared with TOP Group I)
TOP Group I	51/143 (35.7%)	
TOP Group II	22/ 77 (28.6%)	n.s. (0.5 > p > 0.3)
TOP Group III	14/ 50 (28.0%)	n.s. (0.5 > p > 0.3)
TOP Group IV	31/117 (26.5%)	n.s. (0.3 > p > 0.1)
TOP Group V	13/ 44 (29.5%)	n.s. (0.7 > p > 0.5)

n.s. = not statistically significant

TOP Group I, termination of pregnancy cases given ergometrine 0.5 mg.
 TOP Group II, ergometrine 0.5 mg + metoclopramide 10 mg.
 TOP Group III, ergometrine 0.5 mg + prochlorperazine 6.25 mg.
 TOP Group IV, ergometrine 0.5 mg + prochlorperazine 12.5 mg.
 TOP Group V, no ergometrine or anti-emetic.

DISCUSSION

Many women suffer nausea and vomiting early in their pregnancy. The fact that their pregnancy is being terminated may aggravate the situation. The high incidence of post-anaesthetic vomiting was brought out by the present survey which showed an incidence of 35.7% in the TOP cases, compared with 7.1% in Caesarean cases, the anaesthetic sequence employed being similar.

The incidence of post-anaesthetic nausea and vomiting being so high after suction evacuation for termination of pregnancy, it was considered worthwhile to find a suitable anti-emetic.

Metoclopramide has been found to be an effective anti-emetic in abortion cases (7). On the other hand, Dobkins, Evers and Israel found metoclopramide to be no more effective than a placebo as a post-anaesthetic anti-emetic following methoxyflurane anaesthesia (8). The present study showed that metoclopramide was of no value in reducing post-anaesthetic vomiting in patients undergoing suction evacuation for termination of pregnancy when the gestational period was of six to twelve weeks duration.

Prochlorperazine was known to be an effective anti-emetic (9, 10). However, it was found to be ineffective at two dosage levels when given to patients presenting for termination of pregnancy.

Ergometrine might be blamed for contributing to the high incidence of nausea and vomiting (11). Its omission in one group of patients in the present study did not seem to improve the situation.

The conclusions to be drawn are that vomiting is common in patients undergoing suction evacuation for termination of intrauterine pregnancy of six to twelve weeks duration.

Prochlorperazine was known to be an effective anti-emetic (9, 10). However, it was found to be ineffective at two dosage levels when given to patients presenting for termination of pregnancy.

Ergometrine might be blamed for contributing to the high incidence of nausea and vomiting (11). Its omission in one group of patients in the present study did not seem to improve the situation.

The conclusions to be drawn are that vomiting is

common in patients undergoing suction evacuation for termination of intrauterine pregnancy of six to twelve weeks gestation, and that metoclopramide and prochlorperazine in the doses and manner employed fail to reduce the occurrence of vomiting in such patients. Three factors must have contributed: (a) early pregnancy; (b) dilatation of the cervix uteri; and (c) the psychological stress of their pregnancy being terminated.

ACKNOWLEDGEMENT

The authors like to thank all their anaesthetic colleagues at the Queen Mary Hospital and the Recovery Room nursing staff for their cooperation during the present study.

REFERENCES

1. Burtles R, Peckett BW: Postoperative vomiting: some factors affecting its incidence. *Brit J Anaesth* 1957; 29:114-23.
2. Riding JE: Postoperative vomiting. *Proc Roy Soc Med* 1960; 53:671-5.
3. Bellville JW: Post-anesthetic nausea and vomiting. *Anesthesiology* 1961; 22:773-80.
4. Handley AJ: Metoclopramide in the prevention of postoperative nausea and vomiting. *Brit J Clin Pract* 1967; 21:460-2.
5. Lind B, Breivik H: Metoclopramide and perphenazine in the prevention of postoperative nausea and vomiting: a double-blind comparison. *Brit J Anaesth* 1970; 42:614-7.
6. Vickers MD, Wood-smith FG, Stewart HC: *Drugs in Anaesthetic Practice* 5th ed. London: Butterworth, 1978; p. 78.
7. Clark MM, Storrs JA: The prevention of postoperative vomiting after abortion: metoclopramide. *Brit J Anaesth* 1969; 41:890-392.
8. Dobkin AB, Evers W, Israel JS: Double-blind evaluation of metoclopramide, trimethobenzamide, and a placebo as postanaesthetic anti-emetics following methoxyflurane anaesthesia. *Canad Anaesth Soc J* 1968; 15:80-91.
9. Howat DDC: Antiemetic drugs in anaesthesia. *Anaesthesiology* 1960; 15:289-97.
10. Robbie DS: Post-anaesthetic vomiting and anti-emetic drugs. *Anaesthesia* 1959; 14:349-354.
11. Moodie JE, Moir DD: Ergometrine, oxytocin and extradural analgesia. *Brit J Anaesth* 1976; 48:571-4.