CORRESPONDENCE

were delivered by Caesarean section (four under extradural anaesthesia alone). Blood loss at delivery was within normal limits in all cases.

From the results several points are worth noting. Of the nine patients, seven had extradural analgesia and two received pethidine 150 mg i.m. (patients No. 2 and 4; both 6 h after induction). It might have been expected that, following pethidine administration, absorption of ranitidine would have been slowed and the gastric volumes in these patients at delivery greater (McAuley et al., 1984). However, in both these patients gastric pH values after pethidine were acceptable (table I) and gastric volumes (45 and 20 ml) at delivery similar to those of the other patients.

Pharmacokinetic studies in man show that plasma ranitidine concentrations of greater than 100 ng ml\(^{-1}\) (Peden et al., 1979) are required to halve the secretion of gastric acid. Three of the patients had plasma concentrations below this at delivery, although in only one (patient No. 9) was this accompanied by a low gastric pH. These three patients all delivered 1 h before or after administration of ranitidine. It is probable that there is a delay before a decrease in plasma ranitidine concentration shows itself by a decrease in gastric pH.

The mean gastric volume at delivery of 30 ml confirms that antacid therapy with ranitidine does not decrease the volume of gastric contents to an insignificant level. However, the gastric volumes found in this study were considerably lower than most of those found in two other studies using ranitidine in labour (Gillett, Watson and Langford, 1984; McAuley et al., 1984). An explanation could be that the patients in this study received two doses of ranitidine before the induction of labour was carried out. All patients were fasted from 07.00 on the day of induction.

Of the five patients delivered by Caesarean section, four were judged by the obstetricians likely to require operative delivery before induction. The administration of ranitidine is unlikely to have been of significance.

In conclusion, we feel that the results obtained from studying nine patients made it unsafe to continue with this antacid regimen. As most of the unacceptably low pH values occurred 1 h before or 1 h after ranitidine administration, and as peak mean pH values always occurred 5 h after ranitidine administration, it is probable that more frequent administration of ranitidine would be successful in maintaining gastric pH at a satisfactory value. Two recently reported studies (Gillett, Watson and Langford, 1984; McAuley et al., 1984) have shown that ranitidine 6-hourly in labour gives more satisfactory results.

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REFERENCES


Shane, R. (1983). Which includes conscious sedation and local anaesthesia. Patients are premedicated with hydroxyzine 1.5 mg kg\(^{-1}\) i.m. 1 h before the procedure. A full explanation of all stages of the laparoscopy is given. When the patient is positioned in the lithotomy position on the operating table with 15–30° head-down tilt, fentanyl 1 \(\mu\)g kg\(^{-1}\) and fentanyl 0.01 mg kg\(^{-1}\) are given i.v., followed in 5 min by local anaesthesia of the skin. When the laparoscope reaches the peritoneal cavity, a bolus of 1% lignocaine 1.5 mg kg\(^{-1}\) is instilled. All patients received oxygen 4 litre min\(^{-1}\) via Venturi mask. In a controlled study (unpublished data) with 30 women we monitored ECG, arterial pressure (Dinamap 845), end-tidal carbon dioxide and arterial blood-gas tensions. The results showed slight but insignificant increase in end-tidal carbon dioxide which was confirmed with insignificant increase in

Fig. 1. Mean gastric pH values in relation to administration of ranitidine 150 mg (R). Bars represent SEM.
on 30 July 2018

Although patients are well motivated, carefully counselled and frequently emphasize on local anaesthesia, rather than sedation. The procedure is available at a few centres in the U.K. with the British literature. However, I understand that a similar Vatashsky, and am not aware that it has been described in the for gynaecological laparoscopy described by Drs Beilin and Vatashsky, halothane.

consequence, there was no contraindication to the use of publications quoted are always used when discussing this topic, but we believed that in our study the considerable reduction in Trendelenburg tilt, the decreased insufflation volumes, the advantages or disadvantages of individual anaesthetic agents. We believe that we were primarily concerned with the evaluation of the efficacy and the associated morbidity of allowing patients to breathe spontaneously against the more accepted technique of intubation and artificial ventilation. Concerning the use of halothane itself, as is evident from our study, we were not able to demonstrate a significant difference between carbon dioxide tensions between the two techniques or, indeed, an unacceptably high end-tidal Pco₂ concentration in the spontaneously breathing group. I appreciate that the publications quoted are always used when discussing this topic, but we believed that in our study the considerable reduction in Trendelenburg tilt, the decreased insufflation volumes, the shorter duration of the procedure and the increased familiarity of the surgeons with this procedure since those studies were performed, contribute to our different findings and, as a consequence, there was no contraindication to the use of halothane.

I am not familiar with the technique of “conscious sedation” for gynaecological laparoscopy described by Drs Beilin and Vatashsky, and am not aware that it has been described in the British literature. However, I understand that a similar procedure is available at a few centres in the U.K. with the emphasis on local anaesthesia, rather than sedation. The patients are well motivated, carefully counselled and frequently turned down if they are considered overweight, or have a previous history that might suggest the presence of intra-abdominal adhesions. No i.m. premedication is used, as is the usual practice for day-case procedures, and only tubal ligation laparoscopies are performed using this particular anaesthetic technique. It is encouraging that Drs Beilin and Vatashsky found 100% acceptance by the patients at interview 2-3 days following their procedure. Though the authors do not give values of end-tidal Pco₂ concentration, it would be interesting to know whether they are significantly less than the values we obtained in our study. Perhaps for day-case surgery this type of approach should be evaluated more closely, and less reliance placed on general anaesthetic techniques.

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REFERENCES

Sir,—Thank you for the opportunity to reply to the letter from Drs Beilin and Vatashsky in which they question the use of halothane in the spontaneously breathing group of patients described in our article. Our study was an evaluation of two techniques used for many years to the satisfaction of anesthetists and surgeons at the Royal Berkshire Hospital. We did not attempt to select or modify the anaesthetic techniques already in current use and we were not investigating the advantages or disadvantages of individual anaesthetic agents. We believe that we were primarily concerned with the evaluation of the efficacy and the associated morbidity of allowing patients to breathe spontaneously against the more accepted technique of intubation and artificial ventilation.

Concerning the use of halothane itself, as is evident from our study, we were not able to demonstrate a significant difference between carbon dioxide tensions between the two techniques or, indeed, an unacceptably high end-tidal Pco₂ concentration in the spontaneously breathing group. I appreciate that the publications quoted are always used when discussing this topic, but we believed that in our study the considerable reduction in Trendelenburg tilt, the decreased insufflation volumes, the shorter duration of the procedure and the increased familiarity of the surgeons with this procedure since those studies were performed, contribute to our different findings and, as a consequence, there was no contraindication to the use of halothane.

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EXCRETION OF LORAZEPAM INTO BREAST MILK

Sir,—The excretion of sedative drugs into breast milk is an important consideration should anaesthesia and surgery be necessary during the post-partum period in the mother who is breast feeding. It is known that some benzodiazepines and their metabolites are found in the milk of a nursing mother (Brandt, 1976) and that these may result in neonatal lethargy, weight loss and electroencephalographic changes characteristic of sedative medication (Patrick, Tilstone and Reavey, 1972). In addition, diazepam has been detected in the serum and urine of an infant being breast fed by a mother taking oral diazepam (Erkolla and Kanton, 1972).

Lorazepam, by mouth, is now established as an effective agent for premedication in many areas of anaesthesia. Its transfer across the placenta has been studied in women in labour (McBride et al., 1979). The ratio of neonatal to maternal plasma lorazepam concentrations at delivery in women undergoing routine surgical induction of labour ranged from 0.85 to 1.33. At doses of 2.5 mg i.v., the drug had no effect on the 1- and 5-min Apgar scores. Ancodatal data (Whitelaw, Cummings and Mcfadyen, 1981) would suggest minimal excretion of lorazepam into breast milk.

There is a need to define suitable anxiolytic and sedative drugs for administration to the breast feeding mother. The two cited studies (McBride et al., 1979; Whitelaw, Cummings and Mcfadyen, 1981) suggest lorazepam might fulfill these requirements. To confirm this, we studied the drug as premedication in four breast feeding mothers scheduled for post-partum sterilization.

All the women, each weighing more than 55 kg, were premedicated with lorazepam 3.5 mg orally 2 h before surgery. Anaesthesia was induced with thiopentone 4 mg kg⁻¹ and maintained with nitrous oxide, oxygen and fentanyl. Alcuronium was used to achieve neuromuscular blockade. Four hours after premedication, a 10-ml sample of breast milk was expressed by the mother and simultaneously a 10-ml sample of venous blood was taken. Analysis for free lorazepam concentrations was performed using electron capture gas chromatography following extraction of the samples into ethyl acetate. The results are shown in Table 1.

These results indicate the low passage of drug into breast milk. The free drug concentrations measured in the expressed milk (8 and 9 ng ml⁻¹) and, therefore, the amount available to the newborn are significantly lower than those reported in the newborn by McBride and his colleagues (23-82 ng ml⁻¹).