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Oral presentations

EPISODIC NOCTURNAL HYPOXAEMIA IN PREGNANCY

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Introduction

Recent research measuring arterial oxygen saturation postoperatively has demonstrated that patients may experience profound hypoxaemic events on the second and third postoperative nights.1 During these desaturations significant myocardial ischaemia may occur and they may be associated with increased cardiovascular morbidity and mortality in the postoperative period.2 A reduction in FRC postoperatively combined with an increase in rapid eye movement (REM) sleep are the major factors producing these desaturations.

In late pregnancy FRC is significantly reduced and, combined with a higher metabolic rate, the parturient is susceptible to rapid arterial desaturations during periods of apnoea or airway obstruction. With local Ethics Committee approval we are conducting a study measuring overnight arterial oxygen saturation in pregnant women to determine if they experience hypoxaemic episodes during normal sleep.

Methods

An Edentec Model 3711 Digital Recorder is used to record overnight pulse oximetry and respiratory pattern in all patients recruited. This lightweight bedside recorder is attached to the patient using several non-invasive probes and measures the following variables: arterial oxygen saturation, heart rate, chest impedance and airflow at the lips and nose. Overnight recordings are downloaded onto a desktop computer and analysed using an ETS (Infiniti Medical) software programme.

Using this apparatus we have studied 21 women greater than 36 weeks’ gestation. Eight patients were ASA 1 and 13 were admitted with preeclampsia. A desaturation is defined as a drop in arterial saturation below 90% for more than 10 seconds. Differences between average overnight saturation and the frequency and severity of desaturations were compared using Student’s t-test.

Results

The mean length of each recording was 6 h 24 min (range 3 h 11 min to 8 h 50 min). There was no significant difference between the age and weights of the two groups. The mean overnight saturation in the normal group was 97 ± 1.9% and 95 ± 2.8% in the preeclamptic group. There was no significant difference between the two groups, however 4 of the preeclamptic patients had an average saturation of less than 94% (range 89–93%) over the study period. Eleven of the preeclamptic patients and 6 of the non preeclamptic patients experienced episodic desaturations below 90%. There was no difference in the frequency or severity of these episodes between the two groups.

Conclusions

We conclude that unrecognised hypoxaemia occurs in both normal pregnant women and those with preeclampsia during sleep. The mechanism and significance of this to the mother and fetus have yet to be elucidated.

References

DOES MIDWIFERY LED INTRAPARTUM CARE REQUIRE ANAESTHETIC SERVICES?

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Introduction

The Cumberlege report advocates a greater role for midwives in the care of the 'low risk' pregnant woman. In Leicester Royal Infirmary NHS Trust the 'Home from Home' unit provides midwifery led antenatal and intrapartum care of women with uncomplicated pregnancies. Epidural analgesia is not available. We performed a retrospective review of the requirements for anaesthetic services in this unit.

Subjects and methods

Women in labour who entered the 'Home from Home' unit over a 12-month period were reviewed retrospectively. Information about age, parity, reason for transfer, analgesia prior to transfer and anaesthetic intervention was extracted from case notes. Suitability for the offer of a 'Home from Home' confinement was also considered retrospectively from an anaesthetic viewpoint.

Results

During the review period 1610 women entered the 'Home from Home' unit in labour. 397 (25%) were subsequently transferred from the 'Home from Home' unit to the main delivery suite. Of these, 181 received anaesthetic intervention – 11% of the original population. The mean age of the women who remained in the 'Home from Home' unit was 25 years with 23% being primiparous and 77% multiparous. In those that were transferred and received anaesthetic intervention the mean age was 26 years. 67% were primiparous and 33% multiparous.

A request for epidural analgesia was the principal reason for transfer among those who required anaesthetic intervention. Also, 72% of those who required anaesthetic intervention had already received analgesia, mostly in the form of Entonox and/or pethidine. The commonest anaesthetic intervention provided was an epidural as shown in Figure 1. Further details of the reasons for epidural insertion are given in Figure 2.

Two patients were considered retrospectively to have been unsuitable for booking in the 'Home from Home' unit – one had severe rheumatoid arthritis and the other acute intermittent porphyria.

Discussion

The final main recommendation of the Cumberlege Report is that the mother, 'needs to be fully informed of the options for care available, so that she can with confidence decide what best suits her, including the amount and type of interventions proposed'. Our review showed that in a carefully pre-selected group of 'low risk' maternity patients expected to have normal deliveries in the 'Home from Home' unit there was a considerable need for anaesthetic services to provide analgesia and anaesthesia. Expectant mothers, especially the primiparous, should be aware of this when choosing place of delivery.

Our review also showed that it would be prudent to provide anaesthetic guidelines on suitability for admission to midwifery led intrapartum care.

Reference

ADVANCE PREDICTION OF HYPOTENSION RISK AT CAESAREAN DELIVERY UNDER SPINAL ANAESTHESIA

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Introduction

Early recognition and treatment of spinal anaesthesia-induced hypotension may reduce maternal and neonatal morbidity. Baysinger et al suggested that a positive ‘sitting tilt test’ could predict women at high risk of hypotension.1 Inferior vena cava (IVC) compression might contribute to perioperative hypotension. Preoperative detection of the circulatory consequences of IVC compression might predict an increased risk of perioperative hypotension.

Methods

Healthy term pregnant women presenting for elective caesarean delivery gave oral consent to participate in this ethics committee-approved study. Preoperative blood pressure and heart rate (Dinamap) were measured 6 times at 1 minute intervals with the woman lying in the left lateral recumbent position and the BP cuff on the left arm to minimise hydrostatic effects.2 Then followed 6 readings with the woman supine and one further measurement back in the left lateral position. Lastly, a tilt test was done with the woman sitting with her legs hanging down freely at the side of the bed. While the woman was supine, we also noted the presence of symptoms or movements. We defined a positive ‘supine stress test’ (SST) as a >10 bpm increase in maternal heart rate or maternal leg flexion.

After rapid infusion of warmed Plasmalyte, we induced spinal anaesthesia in the sitting position with 2 ml hyperbaric 0.75% bupivacaine (15 mg) and 0.15 mg morphine and placed the woman supine with measured 15° left pelvic tilt. Blood pressure was measured every minute and any fall in systolic pressure below 100 mmHg or of more than 25% of sitting baseline was treated with 5–10 mg increments of ephedrine. Hypotension that persisted after 50 mg ephedrine was treated with phenylephrine in 50–100 μg increments.

Results

27 women were studied. All women tolerated the supine position for the full 5 minutes during the preoperative test. None had a positive tilt test (>10 bpm increase in HR or >10 mmHg decrease in SAP). There were no differences in demographic data, intravenous fluid volume or block height between 14 women with a positive and 13 with a negative SST. Women with a positive SST had a significantly lower systolic blood pressure nadir after induction of spinal anaesthesia than those with a negative SST (P = 0.0036, unpaired t-test), and mean ephedrine dose was 31.4 mg in the former and 15.8 mg in the latter group (P = 0.0038, unpaired t-test). A positive SST also predicted an increased risk of severe hypotension (SAP <70% of baseline) after induction of spinal anaesthesia (P = 0.0063, Fisher’s Exact test; sensitivity 75%; specificity 82%; PPV 86%; NPV 69%).

Discussion

An increase in maternal heart rate in the supine position during late pregnancy is a sign of reduced venous return from IVC compression. Supine movements may indicate an unconscious attempt to increase venous return.3 Simple preoperative testing based on these two features can identify women at high risk of developing severe hypotension after spinal anaesthesia. These patients may then benefit from closer monitoring and more aggressive treatment of blood pressure in the perioperative period. In this study, the sitting tilt test was of no value.

References

VOLUME PRELOADING IS NOT ESSENTIAL TO PREVENT SPINAL INDUCED HYPOTENSION AT CAESAREAN SECTION

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The aim of this study was to examine the protective effect against hypotension of 1000 ml preload in healthy women without fetal compromise scheduled for elective caesarean section under spinal anaesthesia.

Methods

Ethics committee approval and informed patient consent were obtained. Sixty mothers were allocated randomly to each study group. Baseline measurements of ECG, heart rate, blood pressure (BP) and oxygen saturation were obtained every minute in the left modified supine position. Fast running i.v. access was established with a 14 gauge cannula through which the preload group received 1000 ml of Ringer lactate solution during the 10 min preceding spinal injection. Women in the non-preload group received Ringer lactate slowly to maintain the patency of the cannula only. Unaware of the preload volumes, the anaesthetist performed the spinal injection of 2–2.5 ml of heavy bupivacaine 0.5% with 10 μg of fentanyl via a 27 or 25 gauge Whitacre needle at L2/3 or L3/4 in the sitting position. Both groups were then managed identically: all women were returned immediately to the left modified supine position and given a 500 ml infusion of Ringer lactate solution containing 60 mg of ephedrine which was controlled according to maternal BP. Boluses of ephedrine 6 mg were given if BP dropped below 30% of baseline values or to <90 mmHg (hypotension).

Results

All Apgar scores were ≥8 and there was no statistically significant difference in the cord blood gases between the two groups. The results are shown in the Table.

Conclusion

This study has demonstrated that a preload of one litre of Ringer lactate in the 10 min preceding spinal anaesthesia did not lessen the incidence, severity or duration of hypotension when used in combination with prophylactic ephedrine. In addition, it offered no benefit to the neonate. We have now abandoned routine preloading before regional anaesthesia.

Table. I.v. fluids, ephedrine and hypotension. Mean (SD)

<table>
<thead>
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<th>Preload ml</th>
<th>1000 n=30</th>
<th>200 n=30</th>
<th>P value</th>
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<td>Total i.v. fluids (ml)</td>
<td>1827 (395)</td>
<td>928 (405)</td>
<td>NS</td>
</tr>
<tr>
<td>Ephedrine (mg)</td>
<td>47.4 (16.6)</td>
<td>48.3 (15.4)</td>
<td>NS</td>
</tr>
<tr>
<td>Hypotension</td>
<td>10 women</td>
<td>9 women</td>
<td>NS</td>
</tr>
<tr>
<td>≥3 min</td>
<td>5 episodes</td>
<td>4 episodes</td>
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CRITERION BASED AUDIT OF GASTRIC PREPARATION IN OBSTETRIC PATIENTS HAVING GENERAL ANAESTHESIA, IN A UNIT WITH A SELECTIVE FEEDING POLICY

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Introduction

There is wide variation in policies for oral intake during labour in maternity units in England and Wales. In York a selective regime is used according to risk category. A high risk group has been identified comprising 25% of patients of whom 35% require surgical intervention. These women are starved and have regular ranitidine administration. The remaining 75% of patients form a low risk group with only 3.5% requiring surgical intervention. Mothers in the low risk group are offered drinks and light snacks and have no prophylactic antacid therapy. This audit was designed to determine whether patients requiring general anaesthesia in our unit have satisfactory gastric preparation. The criteria chosen for satisfaction were a pH ≥3 and volume ≤25 ml.

Methods

On admission to the obstetric unit, women were divided into low or high risk groups for operative intervention. Parturients with diabetes mellitus, pre-eclampsia, breech presentation, multiple pregnancy, placental insufficiency, antepartum haemorrhage, pre-
vious retained placenta or caesarean section were designated high risk. Once in established labour these patients received 6 hourly oral ranitidine 150 mg, intravenous fluids and only sips of water by mouth. The low risk group received no antacid prophylaxis and were allowed drinks and light snacks unless they were cross-matched or labour was prolonged, in which case they were started on the high risk regime. All patients received 30 ml of 0.3 molar sodium citrate prior to surgery. For a 12-month period all patients requiring general anaesthesia had a 32 gauge orogastric tube passed after induction. The gastric contents were aspirated and the volume and pH (Duotest pH paper) were measured and recorded.

Results
There were 99 general anaesthetics carried out during the period of the audit. Sixty-six patients had been starved and given oral ranitidine. The remaining 33 patients had been offered light snacks and drinks and had not received ranitidine. The pH was significantly higher in the ranitidine group with a median of 7 and an interquartile range of 6–8 compared to a median of 6 and an interquartile range of 4–7 in the fed group, \( P < 0.003 \) (Wilcoxon rank sum). There was no difference in the volumes of gastric contents in the two groups. The ranitidine group had a median volume of 30 ml and an interquartile range of 20–45 while the other group had a median of 25 ml and an interquartile range of 15–75. Only one patient failed to meet the criteria of satisfactory pH. She had a pH of 2 and a volume of 80 ml. This was a designated high risk patient who had received 150 mg of oral ranitidine 3 hours prior to emergency caesarean section. All other patients who had received oral ranitidine had gastric pH values of 5 or more. Many patients in both groups failed to meet the criteria for gastric volume, 60% in the ranitidine group and 45% in the fed group.

Discussion
Only one patient failed to meet the criteria for both satisfactory volume and pH. She had been correctly designated high risk and had been starved and given prophylactic antacids. We feel that these results support the continuation of feeding in labour for low risk patients. The emphasis should be on accurate categorisation with starvation and early administration of antacids in high risk patients.

References

DOES THE PRIMIPAROUS WOMAN HAVE A REALISTIC EXPECTATION OF CHILDBIRTH?

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Aims
To determine primiparous women’s expectations of labour during the course of the pregnancy, and to assess whether these expectations are realistic.

Method
Primiparous women who attended the antenatal booking clinic at the Princess Anne Hospital were invited to complete a questionnaire. A similar questionnaire was completed by women attending the antenatal clinic during the third trimester of pregnancy. Primiparous women who delivered at the Princess Anne Hospital were asked to complete a questionnaire within 48 hours of delivery, and an identical postal questionnaire was completed at 6–8 weeks post delivery.

Results
Data were obtained from 250 primiparous women. A high proportion of women attending antenatal booking clinic (12–14 weeks’ gestation), had no idea
of the likelihood of needing various types of analgesia or interventions during labour. By the third trimester of pregnancy, the proportion of women who had no idea about analgesia requirements had decreased markedly, but the proportion with no idea about possible obstetric interventions remained the same. Of those women who had some idea, their expectations were realistic for TENS, pethidine and Entonox, underestimated for epidural and forceps, and overestimated for caesarean sections. These findings did not change significantly between antenatal booking and third trimester, despite 82% antenatal class attendance. 90% of women did not want any more information regarding labour.

Conclusions
Results suggest that current antenatal education provides information about obstetric analgesia, but fails to inform women effectively about possible obstetric interventions.

GUILT BY ASSOCIATION?

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Introduction
The use of on-demand epidural analgesia for maternal pain relief in labour has been linked with reduced maternal satisfaction. This is usually explained by less maternal involvement due to impaired sensation and lack of control during the labour. We believe that excellent analgesia from epidural use should be beneficial to mothers and therefore have re-examined the association between epidural use and maternal satisfaction. A randomised trial would be unethical; we have stratified for parity and maternal expectation to avoid confounding bias.

Methods
All mothers who delivered at Princess Anne Hospital during January and February 1994 were interviewed by the same investigator (GKB) during the first day after delivery. Epidural analgesia had been available on request. Exclusions were maternal ASA grade III or greater, weight > 100 kg, elective caesarean section, any antenatal complication (preeclampsia, eclampsia, antepartum haemorrhage, delivery before 37 weeks’ gestation, intrauterine growth retardation or death, ruptured membranes > 24 h), fetal presentation other than cephalic, multiple pregnancy or neonatal death. The mothers were divided into 2 groups based on their thoughts concerning epidural use before delivery (maternal expectation). Group A were happy to use epidural analgesia electively for maternal pain relief; group B were unhappy to use epidural analgesia unless absolutely necessary. Each group was subdivided depending on the use of epidural analgesia and parity. The distribution of maternal satisfaction scores was negatively skewed; this was normalised by square transformation prior to analysis using one way ANOVA with P<0.05 considered significant.

Results
Data from 538 mothers were analysed. 153 mothers (28%) were happy to use epidural analgesia electively for maternal pain relief, group A. 385 mothers (72%) were unhappy to use epidurals, group B. This distribution was not affected by parity. Results are expressed as mean satisfaction score (MSS) (95% confidence limits). Overall, mothers who received epidurals (n=167, MSS=7.5 [7.2–7.8]) were less satisfied than those who did not (n=371, MSS=8.3 [8.1–8.5], one way ANOVA, P<0.001). Primiparous (n=231, MSS=7.8 [7.6–8.0]) were less satisfied than multiparous (n=307, MSS=8.3 [8.1–8.5], one way ANOVA, P=0.0015). We have allowed for maternal expectation by comparing only groups who received what they expected.

| Table. Satisfaction scores |
|---------------------------|-----------------|-----------------|
| Group        | Primiparous     | Multiparous     |
| Group A      |                 |                 |
| + epidural (1) | 8.0 (7.6–8.4), n=50 | 8.2 (7.6–8.5), n=30 |
| - epidural (2) | 8.5 (7.8–9.2), n=16 | 8.5 (8.1–8.9), n=57 |
| Group B      |                 |                 |
| + epidural (1) | 7.0 (6.6–7.4), n=73* | 6.4 (5.1–7.7), n=14* |
| - epidural (2) | 8.2 (7.9–8.5), n=92 | 8.4 (8.2–8.6), n=206 |
i.e. group A(1) as the epidural group and group B(2) as the non-epidural group. Group A(1) vs group B(2) comparison shows that maternal satisfaction was not affected by the use of epidural analgesia or parity. Group B(1) mothers who received epidural analgesia were less satisfied compared to all other groups (*=one way ANOVA, *P*<0.001). 14% (44/307) of multiparous received an epidural, 5% (14/231) of them in group B(1). However, 53% (123/231) of primiparous received epidural analgesia, 32% (73/231) of them in group B(1).

**Conclusion**

Maternal satisfaction was not affected by the use of on-demand epidural analgesia for mothers in labour.

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**THE EFFECT OF PRETREATMENT WITH GLYCOPRROLATE ON EMETIC AND HYPOTENSIVE PROBLEMS DURING CAESAREAN SECTION CONDUCTED UNDER SPINAL ANAESTHESIA**

N. F. Quiney, P. G. Murphy

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**Introduction**

Nausea and vomiting during caesarean section carried out under regional anaesthesia may be a result of the effect of maternal hypotension and hypoxaemia on the vomiting centre, or a relative overactivity of the parasympathetic nervous system due extensive sympathetic blockade. In this study the effect of pretreatment with glycopyrrolate on emetic symptoms during caesarean section has been examined.

**Methods**

40 patients undergoing elective caesarean section were randomised to receive 4 μg kg⁻¹ glycopyrrolate or saline during preloading with 1000 ml Hartmann’s solution. Spinal anaesthesia was induced with 2.5 ml hyperbaric bupivacaine using a 24 gauge Sprotte needle at L3/4 in the left lateral position. 60 mg ephedrine was added to 1000 ml Hartmann’s solution and infused at a variable rate in order to maintain systemic blood pressure at within 20% of the preoperative value. The quantity of ephedrine used was assessed by weighing the bag of Hartmann’s at the end of the procedure. Patients were asked to report any feelings of nausea, dry mouth and palpitations every 3 minutes. Episodes of vomiting or retching were also noted. For further analysis the procedure was divided into 3 epochs: (1) spinal anaesthesia to uterine incision; (2) uterine incision to clamping of umbilical vessels; (3) clamping of vessels to completion of surgery. Differences in ephedrine requirements were analysed with a two-tailed unpaired t-test and confidence interval analysis. Differences in the incidence of hypotensive and emetic complications between the 2 groups were investigated using \( \chi^2 \).

**Results**

The incidence of hypotension, emetic symptoms and pain requiring supplemental analgesia during the 3

### Table

<table>
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<tr>
<th>Epoch 1</th>
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<tbody>
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<td>Glyco</td>
<td>Control</td>
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<tr>
<td>pain</td>
<td>0/20</td>
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* *P* 0.05, glyco vs control; other comparisons *P>*0.05.
i.e. group A(1) as the epidural group and group B(2) as the non-epidural group. Group A(1) vs group B(2) comparison shows that maternal satisfaction was not affected by the use of epidural analgesia or parity. Group B(1) mothers who received epidural analgesia were less satisfied compared to all other groups (*=one way ANOVA, P < 0.001). 14% (44/307) of multiparous received an epidural, 5% (14/307) of them in group B(1). However, 53% (123/231) of primiparous received epidural analgesia, 32% (73/231) of them in group B(1).

Conclusion

Maternal satisfaction was not affected by the use of on-demand epidural analgesia for mothers in labour.

52% of primiparous women received epidural analgesia. 28% of primiparous women were happy with this; the remainder received analgesia that they had hoped to avoid. This frustrated expectation caused dissatisfaction. We recommend that primiparous women should be targeted, educated and reassured about epidural use. This may reduce their dissatisfaction.

References


THE EFFECT OF PRETREATMENT WITH GLYCOPHRROLATE ON EMETIC AND HYPOTENSIVE PROBLEMS DURING CAESAREAN SECTION CONDUCTED UNDER SPINAL ANAESTHESIA

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Department of Anaesthesia, Southmead Hospital, Bristol, UK

Introduction

Nausea and vomiting during caesarean section carried out under regional anaesthesia may be a result of the effect of maternal hypotension and hypoxaemia on the vomiting centre, or a relative overactivity of the parasympathetic nervous system due extensive sympathetic blockade. In this study the effect of pretreatment with glycopyrrolate on emetic symptoms during caesarean section has been examined.

Methods

40 patients undergoing elective caesarean section were randomised to receive 4 μg kg⁻¹ glycopyrrolate or saline during preloading with 1000 ml Hartmann’s solution. Spinal anaesthesia was induced with 2.5 ml hyperbaric bupivacaine using a 24 gauge Sprotte needle at L3/4 in the left lateral position. 60 mg ephedrine was added to 1000 ml Hartmann’s solution and infused at a variable rate in order to maintain systemic blood pressure at within 20% of the preoperative value. The quantity of ephedrine used was assessed by weighing the bag of Hartmann’s at the end of the procedure. Patients were asked to report any feelings of nausea, dry mouth and palpitations every 3 minutes. Episodes of vomiting or retching were also noted. For further analysis the procedure was divided into 3 epochs: (1) spinal anaesthesia to uterine incision; (2) uterine incision to clamping of umbilical vessels; (3) clamping of vessels to completion of surgery. Differences in ephedrine requirements were analysed with a two-tailed unpaired t-test and confidence interval analysis. Differences in the incidence of hypotensive and emetic complications between the 2 groups were investigated using χ².

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<td>4/20*</td>
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* P, 0.05, glyco vs control; other comparisons P > 0.05.
epochs of the procedure are shown in the Table. There was a higher incidence of (transient) hypotensive episodes soon after insertion of the spinal anaesthetic in the treatment group (see Table). These were associated with nausea and vomiting. Nevertheless, pretreatment with glycopyrrolate led to a significant reduction in the mean dose of ephedrine overall (39.7 mg ± 15.0 [SD] compared to 61.5 ± 23.3 in the control group, 95% confidence interval of the difference between the means 9.3–34.3, P=0.001). In the final epoch, there was a significant reduction in the incidence of nausea and abdominal discomfort in the glycopyrrolate group.

Conclusions
Two distinct forms of nausea and vomiting appear to complicate caesarean section under spinal anaesthesia. That developing soon after establishing spinal blockade is associated with hypotension and is worsened by glycopyrrolate. This may be a result of glycopyrrolate-induced tachycardia further reducing already restricted venous return and therefore cardiac output. In contrast the nausea and vomiting which occurs during uterine/peritoneal closure is not associated with haemodynamic instability and is reduced by pretreatment with glycopyrrolate, as is the need for supplemental analgesia. Parasympathetic efferents may therefore be involved in the abdominal discomfort experienced at this stage of the procedure.

References

THE EFFECT OF POSTURE ON GASTRIC EMPTYING
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Mushambai, J. Allott, H. Hampton,
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Introduction
Inhalation of gastric contents is an important cause of anaesthetic morbidity and mortality associated with obstetrics, and delayed gastric emptying may increase its likelihood. Limited studies have evaluated the influence of body position on gastric emptying of radiographically marked food and contrast media. However, these studies using repeated X-ray and scintigraphic investigations are now seen as unethical. We have investigated the effect of three body positions (semi-supine at 45°, right lateral and left lateral) on gastric emptying using applied potential tomography (APT). APT is a safe, reliable and reproducible method of measuring gastric emptying. It measures gastric emptying by computing changes in resistivity of gastric contents as the stomach empties. When measuring gastric emptying using APT, it is necessary to inhibit gastric acid secretion which interferes with resistivity measurements.

Method
We studied 9 healthy, non-smoking volunteers on 3 occasions at least 1 week apart in a randomised fashion, each acting as his own control. After an overnight fast, cimetidine 800 mg was administered orally with some water. Two hours later, with the subject in one of the positions (semi-supine at 45°, right lateral or left lateral), a liquid meal of beef consommé soup (Campbell’s) 500 ml was given. The change in resistivity with time within the stomach was recorded for 60 min and the time to 50% emptying (T50) was calculated.

Results
Gastric emptying was significantly delayed in the left lateral position (Median T50 = 49 min) compared with right lateral (T50 = 26 min) and semi-supine position (T50 = 22 min).

Conclusion
These data suggest that posture has a significant influence on gastric emptying and patients should be placed in the right lateral or semi-supine position in order to maximise gastric emptying.

References