

feel that continuous peripheral nerve blocks in compressible locations (e.g. axillary, femoral and distal sciatic blocks) can be considered for the treatment of ischaemic limb pain if other treatment options are limited, and a careful risk benefit assessment has been made taking the potential risks of anticoagulation into account.

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Anaesthesia for Caesarean section and acid aspiration prophylaxis: a survey of Slovak obstetric departments

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EDITOR:

In the US, regional anaesthesia is used in 93% of Caesarean sections [1]. A German survey from the year 2002 indicated that 73.4% of scheduled Caesarean sections and 48.2% of urgent Caesarean sections were performed using regional anaesthesia [2]. General anaesthesia carries a risk of regurgitation and aspiration of stomach contents into the lungs. In Germany, pharmacological prophylaxis of acid aspiration before elective Caesarean section was routinely used in 69% of obstetric departments in 1997 [3]. In the UK, the rate of pharmacological prophylaxis was more than 90% for scheduled Caesarean sections [4]. In Slovakia, the rate of Caesarean delivery increased from 13% in 1997 to

16.8% in 2001 [5]. In view of the increasing frequency of Caesarean sections in Slovakia, we conducted a retrospective survey to study anaesthetic techniques and aspiration prophylaxis practices in parturients undergoing Caesarean section during a 1-yr period (January to December 2005).

We surveyed all 66 obstetric departments in Slovakia using a mailed questionnaire with a cover letter inviting comments on the protocols of the respective unit. Departments that did not respond within 8 weeks were sent a reminder. Obstetric records, and information about the anaesthetic technique, acid aspiration prophylaxis and the drugs used, including dose and route of administration, were solicited. Sixty-one (92%) departments responded. Of the 52 233 deliveries in Slovakia in 2005, information from 48 744 (93.3%) was included in the survey; among those were 9383 Caesarean sections. The obstetric departments performed an average of 799 deliveries yr⁻¹ (Table 1). The overall Caesarean section rate was 20.2%. Sixty

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Table 1. Anaesthesia technique and aspiration prophylaxis.

	All departments	<500 deliveries yr ⁻¹	500–1000 deliveries yr ⁻¹	1000–1500 deliveries yr ⁻¹	>1500 deliveries yr ⁻¹
Rate of Caesarean section (%)	20.2	19.5	17.8	20.8	23.3
General anaesthesia (%)	59.7	84.7	39.8	62.1	52.2
Regional anaesthesia (%)	40.3	15.3	60.2	37.9	47.8
Pharmacological prophylaxis of aspiration (%)	72.1*	71.5	76	67.9	75

*40/61 (65.5%) departments using prophylaxis routinely, 4/61 (6.5%) occasionally.

percent of all Caesarean sections were performed with general anaesthesia (Table 1). Among the techniques of regional anaesthesia, spinal anaesthesia predominated, whereas epidural or combined spinal/epidural anaesthesia or continuous intrathecal anaesthesia were only used occasionally.

Forty departments (66%) replied that acid aspiration prophylaxis was administered routinely before Caesarean sections, whereas 6.5% used prophylaxis occasionally and 17 (28%) did not. Pharmacological prophylaxis was performed in 61% of Caesarean sections that were performed under general anaesthesia. Thirty-six of the 40 departments administered more than one drug for acid aspiration prophylaxis; 30 used ranitidine and metoclopramide and six additionally used famotidine. The most common route was intravenously (i.v.) 1 h before surgery. Six departments used sodium citrate as a single drug for routine acid aspiration protocol. Occasional preoperative mechanical gastric emptying was reported in 12 of 61 departments.

Discussion

The Caesarean section rate rose from 16.8% in 2001 to 20.2% in 2005 in Slovakia. Preserved consciousness of the parturient, a reduced risk of aspiration, avoidance of difficult airway management and lower costs are arguments in favour of regional anaesthesia for Caesarean section. The international trend towards regional anaesthesia is obvious. Spinal anaesthesia has become the preferred technique as it is easy to perform, inexpensive and safe [6]. The rate of regional anaesthesia in Slovak obstetric departments varies from 15.3 to 60.2%. US data of 1400 hospitals revealed a rate of regional anaesthesia of 78% in obstetric departments with <500 deliveries yr⁻¹, 85% in departments with 500–1500 deliveries yr⁻¹ and 89% in departments with >1500 deliveries yr⁻¹ [1].

Two-third of obstetric departments in Slovakia routinely use acid aspiration prophylaxis. In the UK, more than 90% of women who are scheduled for elective Caesarean section received pharmacological aspiration prophylaxis [4], whereas in Germany

there were 69% [3] and in France, 51% [6]. Before emergency Caesarean section, the corresponding numbers were 100% for the UK, 88% for France and 68% for Germany [3,4,6]. The most commonly used drug for prophylaxis in Slovakia is ranitidine; this is similar to the UK and to Germany [3,4]. The most common route of administration is i.v., and most often the drug is administered 1 h before Caesarean section. Metoclopramide is the most frequently used second-line drug. Sodium citrate, as a routine acid aspiration prophylaxis, was used in only six departments, and mechanical gastric emptying was used very occasionally.

During the last 2 decades, the number of general anaesthetics for Caesarean section has decreased; in some centres, it is used only occasionally, for instance, for severe fetal distress. Anaesthetic protocols and guidelines should exist in each centre, and obstetricians should be clearly informed about relevant features. A multi-disciplinary team approach is in the patient's best interest, and adequate communication between obstetric and anaesthesia teams is one of the most important factors in obtaining safe anaesthesia for the mother and rapid delivery of the fetus.

We conclude that anaesthetists in Slovak obstetric departments are aware of a trend towards regional anaesthesia and of the risk of aspiration in patients undergoing Caesarean section. Pharmacological prophylaxis of aspiration does not seem to be a standard; however, non-pharmacological measures for the prevention of regurgitation are common. This survey demonstrates the need for consensus discussions on the use of regional techniques and acid aspiration prophylaxis in parturients undergoing Caesarean section. In the light of the increasing rate of Caesarean deliveries, acid aspiration prophylaxis deserves more widespread use in obstetric anaesthesia in Slovakia.

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Transient hypothalamic dysfunction causing episodic cardiac dysrhythmias

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EDITOR:

The hypothalamus plays an important role in regulation of the autonomic nervous system and includes an anterior group of parasympathetic nuclei and posterior group of sympathetic nuclei. Normally, both sympathetic and parasympathetic nuclei are continually active resulting in an optimal basal tone. Manipulation of either group of nuclei could lead to alteration of the basal tone leading to autonomic dysfunction. There are few cases of autonomic dysfunction as a result of intraoperative hypothalamic injury [1,2]. We report an unusual case of postoperative heart rate (HR) variations probably due to intraoperative hypothalamic insult.

Case report

A 4-yr-old male child, weighing 15 kg, presenting with complaints of headache and diminution of vision for 1 yr, was admitted to our neurosurgical ward. His systemic examination and routine investigations were normal. Magnetic resonance imaging of head revealed a suprasellar lesion of 2.87 × 3.37 × 4.5 cm size associated with mild hydrocephalus suggestive of hypothalamic glioma. For an elective pterional craniotomy and tumour resection, general anaesthesia was induced with

fentanyl 30 µg and thiopentone 150 mg. Rocuronium 15 mg was given to facilitate tracheal intubation. Anaesthesia was maintained with isoflurane in a mixture of nitrous oxide and oxygen and intermittent boluses of fentanyl and rocuronium. A subtotal excision of tumour was performed. The child had an uneventful intraoperative course. Intraoperative arterial blood gas analysis was normal. The surgery lasted for about 5 h. At the end of surgery, anaesthesia was discontinued and neuromuscular block reversed with neostigmine and glycopyrrolate. The child became fully awake and responded to verbal commands. However, it was noted on the monitor that the patient had alternate episodes of bradycardia and tachycardia, each episode lasting for about 30 s. It was also noticed that there was dilatation of both pupils. The trachea was not extubated and the child was transferred to the neurosurgical ICU for ventilatory support. Six hours later, the cardiac dysrhythmias subsided and the pupils had returned to normal size. Mechanical ventilation was discontinued and the trachea extubated 12 h after surgery. A cardiac evaluation 12 h postoperatively was normal. The child was discharged 5 days later with a normal neurological function.

Discussion

Many reports have discussed hypothalamic syndromes related to disruption of the hypothalamic pituitary axis, and various authors have also studied

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