

experience in less urgent situations has led us to suggest that the initial dose may be a 250 µg bolus repeated two or three times if necessary. The onset of uterine relaxation occurs approximately one minute after administration.^{4,5}

We would encourage further investigation to establish the effectiveness, optimal dosage and side-effects of bolus nitroglycerin administration for reduction of uterine tone and also to assess its effects on the newborn.

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Spinal anaesthesia for Caesarean section

To the Editor:

A regional technique is considered to be the anaesthetic of choice for Caesarean section, but in Canada this has become virtually synonymous with epidural blockade. In this country spinal anaesthesia is rarely performed for obstetrical procedures while in the United States it remains the most common form of regional anaesthesia in this setting.¹ The main reasons for the rejection of subarachnoid blockade include a higher incidence of profound hypotension and of post-dural puncture head-

ache. Factors favouring spinal anaesthesia are that it is faster, technically easier, and has a lower failure rate than epidural anaesthesia. Spinal anaesthesia also requires less drug, provides better sacral and motor blockade and is associated with a lower incidence of shivering.²

At St. Boniface General Hospital we have returned to spinal anaesthesia for elective and emergency Caesarean deliveries, mid-cavity and outlet forceps and occasionally for second-stage analgesia. At present 25 to 30% of all Caesarean sections are performed under subarachnoid blockade.

We use almost exclusively small gauge needles: 25 g, and more recently 27 g. For Caesarean delivery we usually use 0.75% hyperbaric Marcaine (Winthrop). The dosage is based on the following formula: 1 ml (7.5 mg) for patients 5 feet (152 cms) tall with the addition of 0.1 ml (0.75 mg) for each inch (2.5 cms) increase in height. When performing the spinal with the patient sitting we add an extra 0.1 to 0.2 ml of the bupivacaine. In addition fentanyl, 12.5 µg, is added to the local anaesthetic to improve the quality of block during the surgery and to provide early post-operative pain relief.³ Before anaesthesia, all patients are fitted with elastic anti-thromboembolic stockings and are given rapidly at least 1500 ml of crystalloid through a large-bore cannula.

We undertook a review of 100 consecutive Caesarean sections from January to July 1990 performed under spinal anaesthesia and compared the data with 100 consecutive Caesarean sections from the same period done under epidural anaesthesia which had been established solely for the purpose of the surgery.

There were no differences in the failure rate (eight epidural versus four spinal), requirement for intra-operative supplemental analgesics, incidence of headache (two epidural versus four spinal), requirement for epidural blood patch (0 epidural versus three spinal), or Apgar scores. In both groups, mean BP did decrease from the preoperative control, but between the two groups there were no differences in the amount of mean blood pressure decrease or in the use of vasopressors. The mean time from starting the anaesthetic to skin incision was shorter in the spinal group (22.1 ± 7.6 min vs 39.8 ± 11.8 min) ($P < 0.05$). For one patient requiring emergency Caesarean section for fetal distress this interval was seven minutes.

It is our opinion that spinal anaesthesia for obstetrical purposes has been prematurely abandoned in this country. Surgical conditions can be provided reliably and safely with a low incidence of side-effects. This is useful in situations where time is insufficient for establishing epidural anaesthesia, as an alternative when the epidural fails, and in the hands of anaesthetists who perform few epidurals and are more comfortable with subarachnoid

blockade. Spinal anaesthesia remains an excellent form of anaesthesia for non-urgent and elective Caesarean deliveries as well. Hopefully, it will regain its proper role as an important technique in the hands of the obstetrical anaesthetist.

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A practical, "hands-free" method for mask anaesthesia

To the Editor:

Mask anaesthesia with spontaneous ventilation is an enduring technique, although not without disadvantages. The necessity that one and sometimes both hands hold the mask has been addressed with bulky, tight-fitting straps and suspension systems.^{1,2} A second problem, that of pressure injury, may occur even when straps are not used.^{3–8} We have devised a technique which gives the anaesthetist two free hands and offers many other advantages.

Following induction of sufficiently deep general anaesthesia, a Williams Airway Intubator[™] is inserted into the patient's mouth. A 15 × 20 cm sheet of transparent adhesive dressing (TAD) (e.g., Opsite[™], Tegaderm[™]) is then applied to the face, covering both nostrils. Next, an endotracheal tube, which has been cut short (approx. 12 cm), so that the tip rests no more than a centimeter past the end of the Airway Intubator[™], is inserted. The breathing circuit is then attached to the 15 mm connector of the cut tube (Figure).

Using this method in more than 1200 patients over the past five years, few major problems have been encountered. Partial airway obstruction occurs in some patients,

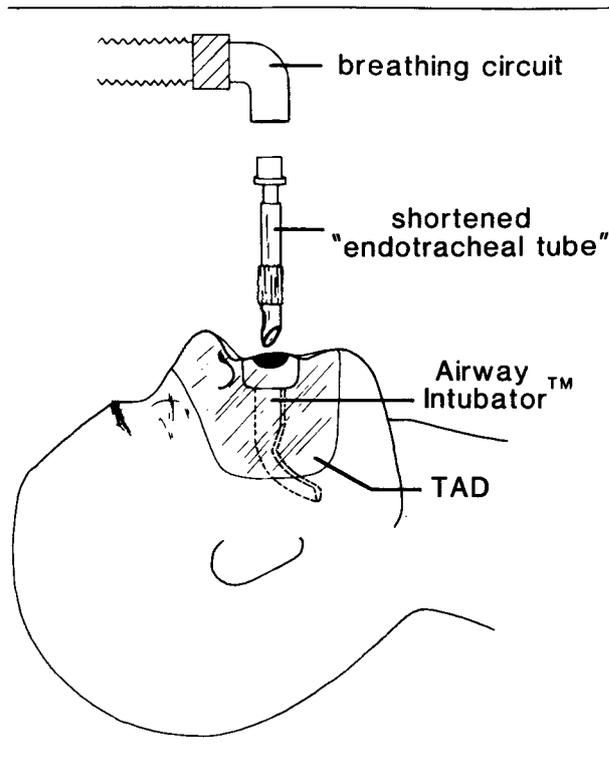


FIGURE Set-up.

particularly the edentulous. This can usually be overcome by manoeuvres aimed at improving the "sniffing position" and prognathic trust.¹¹ Regurgitation of gastric contents is no more likely than with conventional mask techniques. Should regurgitation occur, it is detected easily and possibly earlier than when an opaque mask is used. The TAD can be removed quickly to allow oropharyngeal suctioning. Prolonged controlled ventilation results in undermining of the TAD with gas, and loss of the seal, therefore this technique is best suited to the spontaneously breathing patient. Short periods of controlled or assisted ventilation may be used when necessary. The small leak which sometimes occurs at the circular junction of the tube and TAD is easily sealed with tape. Skin irritation has not occurred provided that care is taken when removing the TAD.

The equipment is suited to a wide variety of patients and procedures. It is simple, light-weight, and transparent. There is minimal leakage, a small deadspace, and no external pressure. An end-tidal CO₂ probe may be used with the system and will produce the typical waveform. Finally, a modification of this technique facilitates fiberoptic tracheal intubation of the anaesthetized patient.^{9–10}

Although the anaesthetist's hands are free to perform other tasks once the circuit is complete, vigilance remains essential. We do not recommend the abandonment of