POSTPARTUM COMPLICATIONS OF FORCEPS DELIVERY PERFORMED UNDER EPIDURAL AND PUDENDAL NERVE BLOCK

D. D. Moir and Sheila Davidson

SUMMARY

In a prospective study of 100 primigravidae, 50 women had a forceps delivery under epidural block and 50 women had a forceps delivery under pudendal nerve block with perineal infiltration. There was no significant difference in the incidence of postpartum headache, upsets of micturition and backache between the two groups.

A survey was made of so-called minor complications amongst women who had recently been delivered under epidural analgesia, in an attempt to assess the influence of this technique on the incidence of headache, backache, and disturbances of micturition in the early puerperium. A second group of patients was also studied. These women had pudendal nerve blocks in the second stage of labour, and systemic analgesics (usually pethidine) in the first stage. Some also received nitrous oxide and oxygen (Entonox) analgesia.

METHOD

One hundred primigravid patients had a mid-cavity or low forceps delivery and a mediolateral episiotomy. By studying only nulliparous women, the possible effect of past experiences of childbirth was eliminated.

Lumbar epidural analgesia was given to 50 patients. A continuous technique was used in 44 of these women. In every case, the local anaesthetic drug was 0.5% bupivacaine, without adrenaline. A 16 s.w.g. Tuohy needle was used, and a midline puncture was performed at the L3-4 or L2-3 interspace.

Bilateral pudendal nerve blocks were performed by the transvaginal route in the other 50 patients. A 1% solution of prilocaine without adrenaline was used and the perineum was also infiltrated with this solution.

Epidural analgesia is not used routinely in the Queen Mother's Hospital, but is reserved mainly for the more prolonged and painful labours, and for patients with hypertension (Moir, 1971). Consequently, there is a tendency for the more difficult forceps deliveries to be carried out under epidural block, and this is confirmed by the figures in table I, in which the types of forceps delivery are listed.

The average duration of the first and second stages of labour was 14.7 hours in the patients who had epidural analgesia, and 9.2 hours in those who had pudendal nerve block. The longer labours and high incidence of posterior positions of the foetal occiput are evidence of the greater number of obstetric abnormalities among the patients who received epidural analgesia for labour and delivery.

Each patient was interviewed at some length by one of us (S.D.) between 24 and 48 hours after delivery, and a standard questionnaire was completed by the interviewer. A complication was recorded under the appropriate heading if the following criteria were satisfied:

**Headache.** If the patient requested an analgesic for the relief of headache, or if headache first occurred, or became substantially worse, after delivery. There were no dural punctures in this series.

**Backache.** If lumbar or sacral ache first occurred after delivery, or was more severe than backache experienced during pregnancy.

**Upset of micturition.** Retention of urine, dysuria, loss of bladder sensation or difficulty in initiating the flow of urine. Known urinary infections were excluded.

**Perineal pain.** If an analgesic had been requested for perineal pain, or if the patient admitted to this pain on questioning. Pain was graded as “mild”, “moderate” or “severe”, on the patient's assessment. The perineum was inspected and the extent of bruising and wound healing was recorded.

<table>
<thead>
<tr>
<th>Types of forceps delivery under epidural and pudendal block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidural block (50)</td>
</tr>
<tr>
<td>Kielland's forceps with rotation of occiput</td>
</tr>
<tr>
<td>Midcavity forceps with manual rotation of occiput</td>
</tr>
<tr>
<td>Low and midcavity forceps with occiput anterior</td>
</tr>
</tbody>
</table>

Donald D. Moir, M.D., F.F.A.R.C.S., D.O.B.S.T.C.O.G.; Sheila Davidson, R.G.N., S.C.M.; The Queen Mother's Hospital, Glasgow G3 8SH.
Neurological sequelae.

A neurological examination was not performed, but no patient complained of numbness, paraesthesia, muscular weakness, or difficulty in walking.

RESULTS

The incidence of the complications under review is shown in table II. The \( \chi^2 \) test was used to assess the significance of these results. Using a P value of 0.05 or less as the level of statistical significance, none of the complications was significantly more common in either group of patients. Some patients had two or more complaints, so that, in the epidural series, 27 patients had no complaints and 23 of the women delivered under pudendal block made no complaint.

<table>
<thead>
<tr>
<th>Complication</th>
<th>Epidural block (50)</th>
<th>Pudendal block (50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Backache</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Upset of micturition</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>Neurological sequelae</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Perineal pain</td>
<td>50 (24 severe)</td>
<td>50 (18 severe)</td>
</tr>
</tbody>
</table>

DISCUSSION

Statistical analysis has shown that, in this series of 100 primigravid patients who had forceps deliveries under epidural or pudendal nerve block, the method of analgesia did not significantly influence the incidence of headache, backache and urinary complications after delivery.

Headache, as defined, occurred in 10% of the patients who had pudendal nerve blocks and in 18% of those who had epidural analgesia. Headache was rarely severe and there is, of course, no reason why an uncomplicated epidural or pudendal block should cause headache. Other workers have recorded a 10% incidence of headache after delivery under general anaesthesia and pudendal nerve block (White et al., 1962; Winkler, Sherk and Hale, 1963).

Backache was recorded in 22% of patients delivered under epidural block, and in 32% of those who received a pudendal nerve block. There was thus no substantiation for the belief that epidural puncture causes backache, even when performed in the midline with a 16 s.w.g. needle. Crawford (1972) found that 45% of his patients delivered under epidural block complained of backache after delivery, but he did not think that the backache was related to the method of analgesia. Bonica (1967) stated that the incidence of backache was the same after general and conduction anaesthesia, and that postpartum backache is usually caused by a faulty lithotomy position and the lordosis of pregnancy.

Upsets of micturition occurred in 20% of patients delivered under pudendal nerve block, and in 34% of those who were given an epidural block. This difference is not significant (P<0.1).

It is generally believed that prolonged labour and difficult forceps delivery may cause trauma to the bladder or urethra, with resulting upsets of micturition. Painless retention of urine was common, and this apparent transient loss of bladder sensation was also frequently noted by Crawford (1972), who recorded a 14.5% incidence of urinary upsets in over 900 epidural blocks. Crawford considered that these upsets were due to trauma in labour or at delivery, and not to the use of epidural block. Crawford employs epidural analgesia extensively in normal labours, whereas in the writers' hospital the method is usually reserved for labours which are unusually painful or prolonged. The higher incidence (34%) in the present series is probably due to the use of epidural analgesia for patients in more or less abnormal labour and perhaps also to more detailed questioning by an experienced midwife.

By far the commonest complaint was perineal pain. No patient was free of pain on the second day after forceps delivery, and 42% of all patients regarded the pain as severe. Extensive local bruising was common, but the appearance of the perineum was not always well related to the severity of the pain. Probably the use of a mediolateral episiotomy before stretching of the perineum caused more trauma and bleeding than might have been anticipated after a midline episiotomy.

REFERENCES


POSTPARTUM COMPLICATIONS OF FORCEPS DELIVERY

LES COMPLICATIONS POSTPARTUM DE L’ACCOUCHEMENT FORCIPITAL SOUS NEUROBLOQUAGE EPIDURAL ET PUDENDAL

SAMMAIRE

Dans une étude prospective de 100 femmes primigravides, 50 ont eu un accouchement forcé par voie suprapubienne et 50 sous neuroblocage pudendal avec infiltation perinéale. Il n’y eut pas de différence significative dans la fréquence des céphalées après accouchement, des troubles de la miction et des douleurs du dos entre les deux groupes.

POSTPARTUM-KOMPLIKATIONEN NACH ZANGENEBURT UNTER EPIDURAL-NARKOSE UND PUDENDES-NERV-BLOCKADE

ZUSAMMENFASSUNG

In einer prospektiven Untersuchung von 100 Primigraviden wurden 50 Frauen durch Zange entbunden mit Epidural-
narkose. Fünfzig andere hatten ebenfalls eine Zangenbe-
burt unter Pudendus-Nerv-Blockade mit perinealer In-
filtation. Zwischen den beiden Gruppen bestand kein
signifikantener Unterschied in Bezug auf postpartale auft-
tretende Kopfschmerzen, Miktionsstörungen und Rücken-
schmerzen.

COMPLICACIONES POSTPARTALES DE LA EXTRACCION CON FORCEPS EFECTUADA BAJO BLOQUEO NERVIOSO EPIDURAL Y PUDENDO

RESUMEN

En un estudio prospectivo de 100 primigrávidas, 50 mujeres tuvieron un parto con forcéps bajo bloqueo epidural y 50 mujeres tuvieron un parto con forcéps bajo bloqueo del nervio pudendo con infiltación perinéal. No hubo diferencia significativa en la frecuencia de cefalea postparto trastornos de la micturición y dolor de espalda entre ambos grupos.

BOOK REVIEW


This book contains the proceedings of a research symposium held in Seattle in May 1970, and is keenly-awaited sequel to a previous book of similar title which reported a symposium held in 1967. Both volumes reflect the remarkable achievement of Dr. Fink in terms of initiative, enthusiasm and organization. There are 32 contributions, grouped in three sections; the first and second deal respectively with excitable and non-excitatory membranes, and the third with "cell systems". The word "anesthetics" in the title takes in muscle relaxants and tranquilizers, although the majority of papers concern inhalational or intravenous agents.

The first short section on excitable membranes there is reference to the effects of anesthetics on brain metabolism, in vitro and in man. In view of the present patchy knowledge of neurotransmitters in the central nervous system, it is inevitable that studies of the synaptic effects of anesthetics leave many questions unanswered. In the section on non-excitatory membranes there is some reference to the membrane-expanding effect of volatile anaesthetics, and postulation of the mechanisms by which this may lead to other effects. There follow papers on the effect of anesthetics on energy functions and the oxygen consumption of mitochondria. Also included in this section are miscellaneous contributions on the actions of anesthetics on microtubular systems, on luminous bacteria, and on "model systems" (myoglobin and Escherichia coli). It is not clear why these were included under the heading of "non-excitatory membranes" rather than in the subsequent section. There, under the heading "cell systems", there are many data on the metabolism of volatile anesthetics, mainly halothane. One paper, which reviews and studies the increased metabolism of halothane in practising anaesthetists, relates this to the possible long-term occupational toxicity of halothane. Sometimes there is speculation on the relationship between halothane metabolites and halothane-induced hepatic necrosis, without giving adequate attention to the possibility that the latter condition is itself an unproven entity. Two communications refer to the effect of anaesthetics on mitosis, studied in the chick embryo, and by the response of the bone marrow to toxic drugs. Interesting contributions are given on the effects of halothane and oxygen on antibody production, and on the actions of preservatives of volatile anaesthetics in enhancing enzyme induction. Other papers in this section include the effects of anesthetics on sodium transport, the influence of adrenergic blockade on the metabolic response to ether anaesthesia, and the toxicity of subanaesthetic concentrations.

Much of the interest from this book (and the earlier volume) derives from the ever-present, mind-occupying problems as to how anaesthetics act. A stringent question might be whether the anaesthetic concentrations used in vivo bear a valid relationship to those present in the aqueous media used for isolated preparations, where there is no blood-brain barrier. If, as Seem will suggest, local and general anaesthetics are similar in action, and the different kinds of effects observed in the central nervous system (excitatory or inhibitory) are related to the properties of the blood-brain barrier (and its relative regional penetration by an individual agent?), where stand all the isolated organ studies? Also, is it facile, or a serious challenge, to suggest that the tenfold difference between the local and general anaesthetic actions of, say, xenon is due to the greater susceptibility of the much smaller diameter fibres in the brain?

The book is well presented, bound and edited, and has many illustrations; few printing errors were noted. It should be a best-seller for all research workers, for whom this volume must be a great stimulus. Although most of the contributions have been published elsewhere, in separate but similar form, their collection in this book requires no justification.

Perhaps, in these days of cost-effectiveness and consumer-orientated research (hopefully, a passing political aberration), some may be less impressed by the lead set by this and the previous volume of 1967; however, even in the present economic climate, they should probably be dismayed that this type of research publication has its origins almost exclusively in the United States.

G. D. Parbrook
R. A. Millar