EXTRADURAL ANALGESIA—THE PREFERRED METHOD OF ANALGESIA FOR VAGINAL BREECH DELIVERY

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SUMMARY

A prospective trial was designed to study the effect of extradural analgesia on the management of breech delivery. From a study of 51 patients, it was concluded that the duration of labour was not lengthened, the frequency of breech extraction was decreased and the condition of the infant was improved, as shown by foetal blood sampling and Apgar scores. Therefore we recommend strongly that extradural analgesia should be used in the management of all breech deliveries.

Many clinicians have reservations regarding the use of extradural analgesia in the management of vaginal breech delivery because of the theoretical risks of an increase in the frequency of breech extraction and, indeed, Donnai and Nicholas (1975) found extraction to be necessary in 10 of their patients (7.6%). However, several recent papers (Bowen-Simpkins and Fergusson, 1974; Crawford, 1974; Darby, Thornton and Hunter, 1976), which advocated extradural analgesia for breech delivery, suggested that the frequency of breech extraction was not increased, although Crawford found that the duration of the second stage was lengthened significantly. All three papers concluded that the outcome of breech delivery was not affected adversely by the use of extradural analgesia. These findings are interesting but inconclusive, since all three surveys were retrospective and only an unacceptably small proportion of all the breech deliveries received extradural analgesia. Therefore, we decided to conduct a prospective trial using extradural analgesia for all vaginal breech deliveries.

METHOD

The Obstetric Department at Pembury Hospital has been practising active management of breech delivery since 1972 (Eliot and Hill, 1972). The established policy in the unit consists of careful ante-natal screening, induction, infusion of oxytocin and cardiotocography during the first stage. Any cardiotocographic abnormality suggesting foetal distress is checked by foetal blood sampling where technically possible. Management during the second stage is centred upon the early detection of foetal hypoxia by frequent blood sampling. Foetal pH then determines the method and speed of delivery. If the pH value decreases to 7.24 units or less, delivery of the buttocks and legs is expedited by groin traction, thus prompt delivery is carried out at the earliest sign of foetal asphyxia. If the breech remains too high for delivery to be expedited in this way, Caesarean section is performed forthwith. Our results using this regimen have been reported previously (Hill et al, 1976), and will be summarized for comparison.

The prospective trial was instituted for a period of 12 months from June 1, 1976. During this time there were 79 singleton breech presentations. As in our previous study, congenital abnormalities incompatible with life (three foetuses) and premature deliveries less than 32 weeks' gestation (one foetus) were excluded from the trial. Sixteen elective Caesarean sections were performed and as these babies were delivered before the onset of labour, they were documented but not included in the trial. Eight other patients did not have an extradural block in labour. Six of the eight were admitted late in the first stage, or already in the second stage, thus it was impractical to arrange for extradural analgesia. One patient had a severe abruptio placenta and extradural analgesia was considered to be contraindicated. On one occasion an extradural block could not be given because no anaesthetist was available. This patient, a multigravida, started to bear down before full cervical dilatation, resulting in a traumatic delivery of the after-coming head through an incompletely dilated cervix. The baby subsequently died after 24 h and was found to have an intracranial haemorrhage as a result of bilateral tentorial tears.


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Thus 51 patients (28 primigravidae and 23 multigravidae) entered the trial and were given an elective lumbar extradural block early in the first stage of labour. As in our previous series, labour was induced between 38 and 39 weeks' gestation if all maternal and foetal factors were favourable. If there was any doubt about maturity, this was investigated by radiology and amniocentesis was used to assess the lecitthin-sphingomyelin ratio.

A paediatrician was present always at delivery and assessed the baby using the Apgar scoring system so that a direct comparison could be made with our previous series of babies delivered without an extradural block. A thorough examination was carried out at this time and a second paediatric assessment was made before the baby was discharged.

RESULTS

Of the 51 patients in the trial, 36 were delivered vaginally and 15 required Caesarean section during the course of labour. The indications for Caesarean section are given in table I.

<table>
<thead>
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<th>TABLE I. Indications for Caesarean section during labour</th>
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<td>Foetal distress during the first stage</td>
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<td>Prolonged first stage</td>
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<tr>
<td>Foetal distress during the second stage</td>
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<td>Prolonged second stage</td>
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There were no maternal complications attributable to delivery or associated with the extradural block. There were no perinatal deaths and no significant foetal morbidity requiring medical attention.

The Apgar score at 1 and 5 min is shown in table II. Foetal blood sampling was carried out in 31 of the 36 patients delivered vaginally. One foetus had a pH of less than 7.20 unit early in the second stage, and in four the values were between 7.20 and 7.25 unit. In accordance with our previous policy, delivery was expedited in these cases by groin traction. In only one other instance was groin traction employed because of delay in the second stage. On the remaining 26 occasions, the pH remained above 7.25 unit and assisted breech delivery was carried out in the usual way.

The average duration of labour for vaginal delivery was 7 h 42 min, and the average weight of the babies was 3085 g. The average weight of the babies delivered by Caesarean section during labour was 3424 g.

The results of our control group (Hill et al., 1976) are summarized in table III for comparison with the results of the present series.

DISCUSSION

Three recent studies on the effect of extradural analgesia on breech labour (Bowen-Simpkins and Fergusson, 1974; Crawford, 1974; Darby, Thornton and Hunter, 1976) were all retrospective with only 35%, 56% and 54% of their respective patients receiving extradural analgesia. In Crawford's series, an extradural block was given only to selected patients, and when the obstetrician had no objection, with the remainder acting as controls. Bowen-Simpkins and Fergusson left the choice of analgesia to the patient and their assessment of foetal condition at delivery was based on Apgar scoring alone, and they suggested
that a prospective trial with acid-base studies would be of value. Therefore we designed a prospective trial in which our aim was to give extradural analgesia to all patients having a breech delivery and this was accomplished in 86% of our patients.

Opposition to the use of extradural analgesia in labour has been usually on the grounds that it will prolong labour and increase the incidence of breech extraction during the second stage. We have shown conclusively that this is not so. The duration of labour in the control group was 7 h 52 min as compared with 7 h 42 min in those patients who had an extradural block. Surprisingly, it was necessary to expedite delivery in only 16.6% of the trial group, as compared with 29.9% of the control group.

We believe firmly that the acid-base status is the best index of foetal condition. Donnai and Nicholas (1975) question the validity of foetal blood sampling because of increased stasis in the breech, but Eliot and Hill (1972) confirmed that there was a close correlation between the foetal pH in the breech and the 1-min Apgar score, and so even if there is stasis, a decrease in pH can only indicate increasing acidosis. The pH values in our extradural analgesia group were compared with those in our control group, the two series having been managed identically in every respect with the exception of the extradural block. The foetal condition in the extradural analgesia series was excellent with only five infants out of 31 (16.1%) having a pH of less than 7.25 unit. In the control group, there were 23 out of 67 infants (34.3%) with a pH of less than 7.25 unit. The improved foetal condition in the second stage was further reflected by the difference in the Apgar scores. The pH values in our extradural analgesia group were significantly better than in the control group, as judged by the measurement of the pH during the second stage and the Apgar scores. We assume that this improvement results from the abolition of the bearing down reflex by the extradural block, which causes a reduction in the maternal expulsive efforts and a consequent improvement in the utero-placental blood flow.

The advantages of extradural analgesia in labour, giving maximal pain relief without foetal respiratory depression, are well recognized. Extradural analgesia is particularly useful for breech delivery, resulting in a comfortable, co-operative patient sufficiently relaxed to allow a controlled delivery and effectively preventing premature expulsive efforts. As we have shown that there is no basis to the criticism that extradural analgesia increases the frequency of breech extraction, or prolongs labour, and as we have shown it to improve neo-natal condition, we feel that the ideal management of breech delivery should incorporate foetal blood sampling and extradural analgesia.

ACKNOWLEDGEMENTS

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REFERENCES


ANALGESIE EXTRADURALE—METHODE D’ANALGESIE PREFEREE POUR LES ACCOUCHEMENTS VAGINAUX AVEC PRESENTATION PAR LE SIEGE

RESUME

On a conçu un essai à effectuer ultérieurement pour étudier l’effet de l’analgésie extradurale sur la conduite de l’accouchement avec présentation par le siège. A partir d’une étude effectuée sur 51 patientes, on a conclu que la durée du travail ne s’en trouvait pas prolongée, que la fréquence de l’extraction par le siège était diminuée et que l’état de l’enfant s’en trouvait amélioré, comme on a pu le voir par l’échantillonnage du sang foetal et les indices d’Apgar. Nous recommandons donc fortement d’utiliser l’analgésie extradurale pour la conduite des accouchements avec présentation par le siège.

EXTRADURALE ANALGESIE—DIE BEVORZUGTE METHODE DER ANALGESIE FUR VAGINALE STEISSGEBURTSHILFE

ZUSAMMENFASSUNG

Entworfen wurde eine vorausschauende Untersuchung, um die Wirkung von extraduraler Analgesie und die Handhabung der Steissgeburtshilfe zu studieren. Aus einer Untersuchung von 51 Patienten wurde geschlossen, dass die
Dauer der Wehen nicht verlängert, die Häufigkeit der Steissextraktion verringert, und das Befinden des Säuglings verbessert worden war, wie durch fetales Blutprobe und Apgar-Index gezeigt wurde. Deshalb empfehlen wir stärksten, dass die extradurale Analgesie in der Handhabung aller Steissgebürten angewendet werden sollte.

ANALGESIA EXTRADURAL—EL METODO DE ANALGESIA PREFERIDO PARA EL PARTO VAGINAL DE NALGAS

SUMARIO

Se diseñó una posible prueba para estudiar los efectos que la analgesia extradural ejerce sobre el tratamiento del parto de nalgas. A base del estudio de 51 pacientes se concluyó que no se prolongaba la duración del parto, que disminuyó la frecuencia de la extracción de nalgas y mejoró la condición del infante, según quedó demostrado por el muestreo de sangre fetal y el contaje de unidades Apgar. Por tanto recomendamos encarecidamente el empleo de analgesia extradural en el tratamiento de todos los partos de nalgas.