Paracervical Block with Bupivacaine 0.25%.

D. H. GUDGEON,* F.R.C.S.ED., M.R.C.O.G.

Brit. med. J., 1968, 2, 403

The technique of paracervical block and its use in labour have been described and discussed by several authors (Kobak, and Sadove, 1961; Cooper and Chassar Moir, 1963; Pitkin and Goddard, 1963). The anaesthetic agent employed has usually been 1% lignocaine with 1:200,000 adrenaline, and the results obtained by Cooper and Chassar Moir (1963)—complete pain relief in 71% of cases, and partial in 25%—are representative.

The great disadvantage of the technique has been the short duration of anaesthesia. Cooper and Chassar Moir (1963) claim one to two hours, Nyirjesy *et al.* (1963) state less than one hour, and personal experience has confirmed the latter. It has thus been necessary to carry out repeated injections, with the attendant disadvantage of multiple vaginal examinations. Baggish (1964) has attempted to overcome this by using a technique designed to give a "continuous block." Teflon tubes are inserted through the perineum into the vagina and then into the parametrium. The tubes are secured in place and repeated injections can be made. Experience has shown this method to be clumsy; sterility is difficult to maintain, and successive injections give shorter periods of relief from pain.

Bupivacaine (1-*n*-butyl-DL-piperidine-2-carboxylic acid 2,6-dimethylanilide hydrochloride) is a long-acting local anaesthetic synthesized in Sweden. Its properties have been described fully elsewhere (Widman, 1964; Albért and Löfström, 1965). This article records its use in a strength of 0.25%, with adrenaline 1:400,000, for paracervical block in 40 patients in labour: 20 ml. of solution was used, 10 ml. to each side of the cervix. The technique has been that of Cooper and Chassar Moir (1963), using the needle and guard described by them. The patients were unselected and include primigravidae and multigravidae. In all cases the cervical dilatation was 4 cm. or more at the time of the first block.

Results

Complete pain relief was obtained in 35 cases (87%), and partial relief in the remaining 5 (13%). The duration of pain relief varied between 4 hours 5 minutes and 2 hours 15 minutes, with a mean average of 3 hours, a significant improvement over 1% lignocaine.

Repeat blocks were carried out in 13 cases. These subsequent injections gave diminished pain relief, with an average duration of 2 hours 20 minutes. No block was attempted more than twice, as the policy in this department is to use continuous epidural anaesthesia in prolonged or abnormal labours.

Side-effects

Foetal bradycardia has been reported after paracervical block, 1% lignocaine with 1:200,000 adrenaline being used (Freeman *et al.*, 1956; Kobak and Sadove, 1961; Page *et al.*, 1961;

Nyirjesy *et al.*, 1963). Bupivacaine 0.5% with 1:200,000 adrenaline was used in two cases before the 40 reported, and in one there was foetal bradycardia with the heart rate falling to 90 per minute. The foetal pH was 7.29, and after 45 minutes the foetal heart rate was steady at 130 per minute. Crawford (1963) has suggested that the adrenaline is the cause of the bradycardia. With the weaker solution now used there have been no cases of foetal bradycardia.

In this small series there has been no morbidity attributable to the blocks. In particular, there was no evidence of haematoma formation in the parametrium and base of the broad ligament. This may possibly be due to the injection sites always being at 4 and 8 o'clock, rather than 3 and 9.

Bupivacaine represents a marked advance over lignocaine and extends considerably the use of the simple technique of paracervical block in obstetric analgesia. Paracervical block has its greatest value in normal labour, and it is now possible to provide virtually complete pain relief in the average labour with only two injections.

When full dilatation is reached before the block has worn off the patient can still be encouraged to push with contractions, and no discomfort is experienced until the presenting part is on the perineum. Supplementary anaesthesia is necessary for instrumental delivery.

Paracervical block is of considerable value in preventing a patient pushing on an undilated cervix. I would hesitate to claim that it increases the speed of cervical dilatation, but it certainly does not prolong normal labour.

In conclusion, I would emphasize the simplicity of the technique and the rapidity and duration of pain relief.

Summary

Paracervical block in labour, using bupivacaine 0.25%, with adrenaline 1:400,000, has been found to give effective pain-relief in 87% of cases. The mean average duration of anaesthesia after the first injection was three hours. No foetal bradycardia was noted, and there was no maternal morbidity.

I wish to thank Sir Arthur Bell, Mr. A. Briant Evans, and Mr. R. D. de Vere for their help and encouragement.

REFERENCES

- Albért, J. and Löfström, B. (1965). *Acta anaesth. scand.*, 9, 1.
- Baggish, M. S. (1964). *Amer. J. Obstet. Gynec.*, 88, 968.
- Cooper, K., and Moir, J. C. (1963). *Brit. med. J.*, 1, 1372.
- Crawford, J. S. (1963). *Brit. med. J.*, 2, 119.
- Freeman, D. W., Bellville, T. P., and Barno, A. (1956). *Obstet. and Gynec.*, 8, 270.
- Kobak, A. J., and Sadove, M. S. (1961). *Amer. J. Obstet. Gynec.*, 81, 72.
- Nyirjesy, I., Hawks, B. L., Hebert, J. E., Hopwood, H. G., and Falls, H. C. (1963). *Amer. J. Obstet. Gynec.*, 87, 231.
- Page, E. P., Kamm, M. L., and Chappell, C. C. (1961). *Amer. J. Obstet. Gynec.*, 81, 1094.
- Pitkin, R. M., and Goddard, W. B. (1963). *Obstet. and Gynec.*, 21, 737.
- Widman, B. (1964). *Acta anaesth. scand.*, 8, 219.

* Registrar in Obstetrics and Gynaecology, Westminster Hospital, London S.W.1.