

CONTINUOUS CAUDAL ANALGESIA IN LABOUR

(An Obstetricians Experience)

by

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SUMMARY

Continuous Caudal analgesia in labour is a very valuable tool in the hands of an obstetrician.

This study consists of a comparison of 337 cases of Caudal analgesia with 350 cases of lumbar epidural analgesia given during labour.

Today continuous Caudal analgesia has been superseded by lumbar epidural analgesia solely because of the belief that very high dose of anaesthetic agent is required for Caudal analgesia in labour. Only 10cc. of 0.5% Bupivacaine with adrenalin was found to be totally effective in this series for Caudal analgesia.

The success rate in both the groups was found to be comparable and the incidence of forceps rate slightly lower in the Caudal analgesia group. This can be still lowered by not interfering in the second stage of labour provided the foetal heart is satisfactory. Prolonged second stage of labour should be accepted as a sequelae of epidural analgesia in labour.

Introduction

Many parturient women throughout the world receive regional analgesia for their labour and this form of Pain relief has become accepted practice in many units. The most obvious maternal benefit of well-conducted regional analgesia is complete alleviation of Pain in the conscious co-operative patient with definite advantage of reducing maternal metabolic acidosis and hyperventilation. This study consists of the use of continuous caudal analgesia in women during labour. Most obstetricians who have

seen it being used will agree that it is a welcome addition to their armamentarium. Rippman of Zurich (1958) in his review of the world medical literature on this subject, listed no fewer than 1,029 published papers, all of which confirmed the efficacy of this technique in obstetrics.

Today this technique of regional analgesia which was practised by obstetricians has been superseded by lumbar epidural analgesia given by the anaesthetist. The main reason being higher dose of anaesthetic agent required in the past for Caudal Analgesia.

Material and Method

Continuous caudal analgesia was given to 337 labouring women in a period of 3 years

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(1980-82) by the author in the Regional Hospital Galway, Republic of Ireland. The figures are compared with 350 lumbar epidural analgesia given in the same period in the unit.

Technique :

Oxford technique of continuous caudal analgesia in women was used. Patient was kept in the left lateral position and prepared for the procedure. In a single swift jab the Caudal needle was introduced through the sacral hiatus into the Caudal space and a 18 gauge polythene canula was passed after ascertaining the position of the needle. A 2 c.c. test dose of 0.5% Bupivacaine with adrenaline was given followed by only 10 c. c. of 5% Bupivacaine with adrenaline. The author after extensive use found that, effective analgesia can be obtained with only 10 c.c. of 0.5% Bupivacaine with adrenaline instead of the customary 20 to 25 c.c. used by all other authors. Top up dose of 10 c.c. 0.5% Bupivacaine with Adrenaline was used whenever required. The effectiveness of analgesia was grouped into successful, partially successful where one or two segments were not anaesthetised and total failure where the patient continued to experience pain all over.

Results

Total 337 cases of caudal analgesia were performed from 1980 to 1982 in a period of 3 years. The results are compared with the 350 lumbar epidurals given in the same period by the anaesthetic consultant staff. Table I and II show, the success rate in the caudal group in 1980 was 92.47% with figures of 96.77% including the partially successful caudals. The lumbar epidural successful figures were 94.84% without partial successes.

In 1981 the percentage in the caudal group were 93.90% as against 96.25% and 98.75% in the lumbar epidural group 1. 1982 showed the figures 95.06% successful caudals as against 94.73% epidurals. When partially successful cases were included, the rate was 96.29% in caudal and 94.73% in lumbar epidural group.

On comparing the method of deliveries in the 3 years cases, the forceps rate was 36.20% in the caudal series, as against 37.71% in the lumbar epidural series. The incidence of Kiellands forceps delivery was nearly same with 12 cases in Caudal series and 11 in Lumbar epidural.

TABLE I
Caudal Epidural

Year	Total	Success	%	Partial	% Including partial
1980	93	86	92.47	4	96.77
1981	82	77	93.90	0	93.90
1982	162	154	95.06	2	96.29

TABLE II
Lumbar Epidural

Year	Total	Success	%	Partial	% Including partial
1980	99	94	94.94	0	94.94
1981	80	77	96.25	2	98.75
1982	171	162	94.73	0	94.73

TABLE III

Method of Delivery	Caudal Series Number with %	Lumber Epidural Series Number with %
S.V.D.	161 (47.77%)	157 (44.85%)
Forceps	122 (36.20%)	132 (37.72%)
Twins	88 (2.67%)	6 (1.71%)
Ls. Cs.	23 (6.82%)	38 (10.85%)
Breech	14 (4.15%)	13 (3.71%)
Vacuum	8 (2.37%)	4 (1.14%)
Total Procedures	337	350
Kiellands Forceps out of Forceps Deliveries	12	11

In caudal series 47.77% patients had a spontaneous vertex delivery with 44.85% in the lumbar epidural series. LSCS was required in 6.82% and 10.85% cases in the two respective groups. All the other forceps deliveries were low or midcavity easy forceps deliveries, for reasons like prolonged second stage, foetal distress etc.

Discussion

Essentially there is very little difference functionally between caudal epidural and lumbar epidural analgesia apart from the different site of introduction of the continuous epidural canula. In order to achieve total pain relief in labour one has to obtain an analgesia level upto, and including thoracic 11 segment. It was believed that since caudal epidural analgesia was given through the sacral hiatus there was need for higher doses of at least 20 to 22 c.c. of anaesthetic agent, in order to reach T 11 level of analgesia. Moore D. C. (1971) used 15 to 21 c.c. while Meehan (1972) used 16 to 20 c.c. of 0.5% Bupivacaine + Adrenaline.

Bupivacaine crosses to the maternal cir-

ulation fairly quickly, and higher doses of anaesthetic agent given to the mother certainly means higher blood levels in the baby. The evidence of placental transfer of local anaesthetic was described by Bromage B.R. (1961). The once popular caudal epidural approach had been discarded for many reasons, E.g. higher anaesthetic doses, higher failure rate — 10% to 20% patchy pain relief, high expertise to counter anatomical variation of sacrum, and obesity in pregnancy. High failure rates reported thus view mainly due to lack of experience in the technique.

In the Regional Hospital Galway more than 4500 caudal analgesias were undertaken for labour and there was no case of meningism or injection of anaesthetic agent directly into the rectum or the foetal head. Table I shows the gradual increase in the success rate from 1980 to 1982. This clearly shows that proficiency and success rate are dependent on developing expertise and continuous application of the technique by the person.

The success rates are seen to be compar-

able with Lumber Epidural figures as shown in Table II.

Meehan (1971) reported 97.7% success rate in his series of caudal epidurals from Oxford. The forceps rate in this study was 36.20% in caudal series and 37.71% in the lumbar epidural series. This can be lowered further if the patients are not asked to push until the cervix is fully dilated but was till the presenting part descends wall. Foetal heart remaining normal there is no need to cut short the second stage of labour, which is usually prolonged. This policy has shown that the forceps rate is much less than various other authors such as Crawford (1972) — 42.9%, Nash (1973) — 56%.

The other figures in Table III show that the analgesia was used for twins and breach deliveries regularly allowing easy manoeuvring at the time of delivery.

The caesarean section rate was seen to be 6.82% in caudal series and 10.85% in lumbar epidural series. The normal section rate of the hospital being around 10% per year.

Conclusion

Continuous caudal analgesia in labour is a very valuable tool in the hands of an obstetrician. As shown in this study, it is as effective as lumbar epidural analgesia. A dose of 10 c.c. and 0.5% Bupivacaine with

adrenaline was found to be totally effective. This shows that large doses of anaesthetic agents are not required for caudal analgesia.

Caudal Analgesia does not result in higher forceps rate (including rotational) compared to Lumbar epidural analgesia as suggested in the past. Forceps rate is seen to fall if the second stage of labour is allowed to prolong even upto two hours provided the foetal heart remains normal.

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