Caesarean section under local anaesthesia

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IN SPITE OF ancillary advances in modern-day surgery, I think few practising obstetricians will disagree with me (and for that matter even our anaesthetic colleagues) that the hazards associated with anaesthesia are still the "Achilles heel" in obstetrical surgery because the majority of cases in this field are emergency cases. This is especially true in so-called "developing countries" where the "F.F.As." are a precious and rare commodity. Added to this, the mothers here are usually overworked and undernourished. And a great number comes into labour unbooked. This was the situation I found myself in when I became the second M.R.C.O.G. to be in private practice in Kuala Lumpur in 1964.

Method

I shall now describe a typical case I have recently done at the Chinese Maternity Hospital, Kuala Lumpur.

Lean Shin Thye, aged 32, para 0 gravida 2. L.M.P. 16.6.70 was admitted at 2 am. on 31.3.71 unbooked, complaining of having labour pain with show since one hour earlier. She was then in her 41-week pregnancy. She was admitted by a midwife into the "free ward". When I was called at 8.45 am. on 1.4.71, she was 31¾ hours in labour; M.R. 13¼ hours ago and two hours in the second stage with no progress. A vaginal examination revealed Vertex presentation LOA position Caput ++; moulds ++; station 2 +. She had an outlet contracture: the AP diameter of the outlet was barely 3¼" and the subpubic arch was narrow. In my opinion, an accouchement force with forceps was unjustified. And so an emergency L.S.C.S. was decided upon.

For premedication narcosis, I prescribed i.m. Pethilorfan 100 mgm, Sparine 50 mgm and Atropine 1/100 grain. The actual operation began ¾ hour later. 35 ml. of 1% Xylocaine with adrenaline (1 : 160,000) were used to infiltrate the incisional site down to the anterior rectus sheath, i.e. 6" midline subumbilical down to the pubis just short of the hair line. This took exactly two minutes. I waited two minutes before incision. Ignoring minor bleeders and merely clamping major bleeders with artery forceps, it took me six minutes from skin incision to delivery of the head. At this juncture, i/v syntometrine 1 cc. was given. While waiting for the drug to take effect, the infant's mouth and nostrils were cleared of mucus using an electric sucker. The infant was delivered during the next uterine contraction, thus simulating the beneficial effect of squeezing the infant through the natural birth canal.

I left instructions with the staff nurse, who was at the head of the operation table attending to the periodic of BP and pulse, to give a previously diluted Pethidine (50 mgm in 5 ml. water) intravenously through the pre-set i/v drip, if the patient should

groan or show grimaces of discomfort after the baby had been extracted. It was required in this case.

During the operation, aside from the Doyan's retractor to expose the lower uterine segment, no abdominal packing was done.

The rest of the operation, viz. delivery of the placenta and the stitching up, were uneventful. The operation took exactly 46 minutes, skin to skin. Apgar rating of the infant at one minute was 9 and the blood loss was estimated as 15 oz. The puerperium was uneventful. Michels clips were removed on the 5th and 7th day and the patient discharged on the 8th post-operative day.

Indications

Of the 22 cases where case notes are available for review, the indications for Caesarian Section are as follows:—

Foetal distress	—	2 cases
Cord presentation	—	1 case
Maternal factors	—	4 cases
Placenta Praevia	—	6 cases
Cephalo-pelvic disproportion	—	7 cases
Failed trial forceps	—	2 cases

Results

There were no maternal or foetal mortality in these 22 cases.

Discussion

Local and regional anaesthesia is being more widely employed in the last decade even in the United Kingdom, the stronghold of conservatism. I remember, when I was doing my post-graduate work in the United Kingdom in the late 50s, general anaesthesia was required for many obstetric and gynaecological manoevres, eg. forceps delivery, breech delivery, M.R.P., A.R.M., and hystero-salpingogram. Now we see more and more articles from the United Kingdom exhorting the virtues of paracervical block, pudendal block and intravenous basal narcosis.

Basal Narcosis

With the advent of the tranquillizers or ataractics, this trend towards local and regional analgesia and anaethesia has been accelerated. It is indeed surprising to see that in the brief span of about ten years, this group of drugs,the tranquillizers has now occupied second place as the most commonly used agents in medicine (Modell, 1967). In addition to potentiation and prolongation of narcotic drugs, these tranquillizers have profound effects on emotional behaviour creating a "couldn't-care-less" attitude which, in some situations, results in a considerable degree of amnesia. The other valuable effect of these drugs is the anti-emetic effect. These drugs act mainly via the hypothalamic centres which in turn influence, to a great degree, the autonomic activity.

Toxicity of Lignocaine

Although lignocaine has a toxicity twice that of procaine (Hunter, 1951) it has many valuable advantages, such as greater potency and diffusability (Dutton, 1955) so that its use is becoming more widespread.

The maximum safe dose for lignocaine is put at 1 gram. It must be borne in mind that the potency of lignocaine increases in geometrical ratio to concentration (Gordh 1949, Carnegie 1950). Concentrations from 0.5% to 4% with, or without, added vasoconstrictor are the usual concentration employed, the choice depends on the site and quantity required.

In man 10 ml. of 1% procaine can be given intravenously with safety. So presumably ½ of this dose of lignocaine can be tolerated intravenously in man.

It is said that *conduction anaesthesia* is safer for the mother and infant than general anaesthesia (Apgar, 1957). But few can quote results as good as the experts.

Spinal anaesthesia is associated with a high maternal mortality, neurological complications and sequelae (Widdicombe, 1954). It is the "most dangerous type of anaesthesia for pregnant women" (Greenhill, 1952).

Moreover, both the above two methods of anaesthesia are regarded as unsuitable for emergencies and haemorrhagic conditions (Moya, 1960). Apart from the time taken to prepare and to perform the anaesthesia, there is the discomfort and inconvenience necessitated by positioning and shifting about of the patient. For example, in epidural anaesthesia, 15 minutes must elapse between the first injection and the start of the operation.

"*General Anaesthesia* administered by a properly trained anaesthetist to a properly prepared patient is an ideal less commonly attained in obstetric emergencies" (Hodges and Tunstall, 1961).

Unfortunately, the traditional general anaesthesia is also associated with maternal dangers due to vomiting and regurgitation, and the respiratory depression of the foetus from drugs and maternal hypotension and hypoxia (Phillips, 1959).

It is now recognised that a maternal systolic BP of less than 100 m.m Hg. may lead to foetal bradycardia of a definite pathological significance (Hon, 1960). Foetal hypoxia under spinal anaesthesia can be further aggravated by adoption of the supine position (Kennedy, 1950).

In general anaesthesia, all infants delivered with an induction delivery interval in excess of seven minutes may have respiratory depression (Hodges and Tunstall, 1961).

Intrapartum asphyxia is responsible for the majority of preventable perinatal deaths. Many anaesthetic techniques currently used for Caesarean Section do little to alleviate the effects of foetal hypoxia. Indeed, many may even aggravate it (Bonham, 1961).

Emanuel (1965) in his series attributed 15% of maternal mortality to anaesthetic accidents.

Although this series of 22 cases is too small for the purpose of comparison, nevertheless, in our time in Malaysia, it is useful to be able to perform Caesarean Section without too much dependence on the availability of a qualified anaesthetist quite apart from the question of safety to our patients.

Summary

The reasons for local anaesthesia in Caesarean Section are the present lack of qualified anaesthetists and apparently relative safety of the procedure to both mother and child. A detailed description of the technique used is given. A short list of indications and result is appended.

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