OBSTETRICS IN GENERAL PRACTICE

Normal Labour

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Labour, especially in the primigravida, is a process usually attended by some degree of anxiety, pain, injury, and blood loss. If successfully managed, all of these hazards will be reduced to the minimum, the highest standard of asepsis will be maintained, and such emergencies as may arise will be quickly recognized and promptly dealt with.

Onset of Labour

The primigravida is often afraid that she will miss the onset of labour and consequently will be too late in sending for assistance. It should be carefully explained that she will be able to recognize a rhythmic, regular tightening or discomfort in the lower abdomen and that she will soon feel the uterus hardening to the touch. She will also usually produce a "show" of blood-stained mucus from the vagina due to dilatation of the cervix and stretching of the lower uterine segment. The contractions of false labour on the other hand tend to be irregular and erratic; they last longer and are usually unaccompanied by show or by backache. She should also be warned about the "waters breaking". Early and unexpected rupture of the membranes may provoke much alarm and distress in the unprepared primigravida.

The First Stage

The room in which delivery will take place, be it in a private house or in a maternity home or in a hospital G.P. unit, should be stripped of all non-essential furnishings but should contain a suitable low chair and table at which the patient can sit and sew or take her meals. It may also contain such diversionary adjuncts as books, television, radio, or record player, and during the early part of labour she should be encouraged to walk about or continue with her normal household duties.

The vulva should be shaved as soon as labour is established and should thereafter be swabbed with a suitable bland antiseptic. Swabbing should also be carried out immediately before vaginal examinations, catheterization, and the delivery. A sanitary towel should not be worn by the patient either before or after rupture of the membranes. It is more likely to promote infection by contamination than to prevent it.

Bowel

An enema should be given early in labour with the double purpose of stimulating contractions and of emptying the bowel so as to prevent contamination of the perineum by faeces expelled from the anus by the descending head. Enemata are to be avoided when delivery is imminent as this will not only increase the risk of infection but may cause unpleasant spluttering at the anus with each contraction in the second stage.

Bladder

The bladder should be emptied every 3 to 4 hours during labour and if necessary catheterization should be undertaken, but a self-retaining catheter should never be left in the bladder as the risk of infection is great. A full bladder will interfere with descent of the presenting part and is often associated with ineffective uterine action. Urine passed should be kept and tested for specific gravity, albumin, and acetone. Modern methods of urine testing are now so simple and so cheap that there is no excuse for neglecting this routine. Ketonuria requires treatment and occurs more frequently than is often suspected.

Sedation

This will be dealt with in detail in a subsequent article, but it should be remembered that a sleepless night is demoralizing both for the patient and the nurse; sedation should, if possible, be timed with this in mind. Simple measures conducive to sleep, such as a comfortable bed, darkened room, quietness, and a warm drink should not be forgotten.

Diet

There is always the possibility that a general anaesthetic may be necessary and the dangers of aspiration pneumonitis are now well recognized. Consequently women in labour should eat and drink sparingly. Food should be in small helpings and easily digestible. In the primigravida, after three-fingers dilatation of the cervix has been reached, food intake should be limited to glucose sweets and fluids, and, in the event of ketonuria, an intravenous drip should be set up of 500 to 1,000 ml. of 5% glucose in water.

Examination

The foetal heart should be listened to every hour during the first stage; auscultation should be avoided just after a contraction.

Uterine contractions should be observed. Attention should be paid to the length, frequency, and character, with careful watch for change to second-stage type of contraction.

Progress in labour should be assessed by abdominal examination and by rectal or vaginal examination. Abdominal examination will enable one to observe the descent of the head and anterior shoulder. Rectal examination is of value in many cases as it has the advantages of reducing the risk of sepsis and avoiding preliminary scrubbing up. With experience it can be as informative as vaginal examination, and there is no doubt that practice greatly improves the performance so that in most cases the state of the cervix and the level of the head can be ascertained accurately. Often, too, the bag of membranes can be felt and the position confirmed by palpating fontanelles and sutures.

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Vaginal examination is not necessary in early labour but should be carried out later if the information obtained by other methods is incomplete. Many obstetricians recommend vaginal examination when the membranes have ruptured in order to exclude cord prolapse as well as to assess progress. In describing the position of the presenting part there is much to be said for the method now adopted widely in the U.S.A. of defining the level of the ischial spines as zero station and measuring in centimetres the distance of the presenting part above or below this level—for example, zero minus 4 or zero plus 2. This obviates the use of vague, loose terms, such as "mid-cavity," which may have a different connotation in the minds of different examiners.

As the first stage progresses, preliminary preparations should be made for delivery. Lotions should be prepared and swabs laid out, as well as mucus extractor, scissors, and ligatures. Ergometrine for injection and a hypodermic syringe should also be made ready.

The Second Stage

The onset of this stage is generally recognized by a change in the character of the contractions. These become stronger and more frequent, while the patient tends to bear down with each pain and there is often a typical involuntary grunt with each expiratory effort. Frequently the membranes rupture spontaneously with the onset of the second stage.

The patient should now be put to bed. Opinion in this country is divided whether she is better delivered in the left lateral position or in the dorsal. It depends to a large extent on the personal preference and training of the attendant. Most have agreed that the patient should be turned on to her back for the third stage, and for this reason we prefer the dorsal position throughout labour as it avoids the moment of loss of control when the patient is being turned from left lateral on to her back. In the dorsal position the foetal heart can also be heard more easily and with less disturbance to the patient.

Bearing Down

It is usually taught that the patient should be encouraged to push down with each contraction during the second stage. This bearing-down action is almost entirely involuntary and it is a needless waste of effort and strength to have her bear down throughout this stage. We feel that exhortations to "push" should be reserved till the presenting part becomes visible or at least until the perineum is bulging. From then onwards, however, she should be encouraged to take a most active part in the proceedings. She should grasp her thighs behind flexed and widely separated knees. Her breath should be held and the effort made as though to expel a constipated bowel motion. Her feet may be placed on the bed during this bearing down effort or she may adopt the exaggerated lithotomy position with flexed legs drawn up until her thighs meet the abdomen. The patient can then grasp her legs behind or in front of the knees. Others prefer to grip the top rail of the bed and it matters little which position is adopted so long as suitable purchase is obtained. If the membranes are still intact during the second stage the bulging bag should be ruptured with an artery forceps. This is often followed by an increase in the intensity and frequency of the contractions.

Preparation for Delivery

Estimation of the exact time of delivery will vary with each case depending on the parity of the patient and on the rate at which labour is progressing, but when it is considered that delivery is imminent the appropriate preparations should be made. The patient's bladder is emptied (by catheter if neces-

sary), the attendant scrubs up, and then the patient's buttocks, thighs, and perineum and vulva are swabbed with a suitable antiseptic. (Chlorhexidine is not only effective but is non-irritant and also reasonably cheap.) Thereafter sterile drapes are applied. A mask should be worn throughout the second stage, and once it has been donned it should remain in position and should not be pulled down over the nose. This only contaminates the mask and renders it worse than useless. Disposable paper masks are now easily available and have much to commend them. Sterile rubber gloves and gown should always be worn; bare hands, no matter how well scrubbed and how well smeared with antiseptic, are inadequate. It is not necessary for the patient to be masked unless she has a cold or infected throat.

Delivery

When the head begins to appear, a sterile pad should be taken in the right hand and placed gently over the anus. The doctor stands on the right of the patient; his left arm passes over her right leg and the hand forms a cup to receive the emerging occiput and to press it gently backwards towards the perineum and thus promote flexion. When the head is crowning the patient is instructed to pant; then the head is eased gently out of the vulva and gradually extended by the left hand while the right hand draws the perineum over the baby's face. Sometimes it may be necessary to free the chin by slipping a finger down the side of the jaw and below the chin. Mucus should be swabbed from the nose and mouth to prevent aspiration by the baby. A loop of cord should now be felt for. If it is around the baby's neck it should be slipped over the head, or, if this is not possible, divided between clamps.

No attempt should be made to hurry the delivery of the shoulders and the next contraction should be waited for. The patient should then gently bear down, and at the same time the attendant should gently grasp the head with one hand on either side and press it towards the anus to bring the anterior shoulder under the pubis. The head is then pulled up towards the mother's abdomen to allow the posterior shoulder to be born and the rest of the body follows without difficulty. If assistance is required at this stage it may be provided by fundal pressure or by gentle traction with a finger in the anterior axilla. It must be emphasized that just as much care is required for delivery of the shoulders as for the head; all too often one sees a gentle and skilful delivery of the head followed by a hasty, careless delivery of the shoulders resulting in perineal damage or even injury to brachial or cervical plexus of the infant.

Ligation of Cord

The cord is now divided between ligatures about 4 inches from the umbilicus and the foetal end tied for a second or, preferably, a third time. The placental end of the cord should be pulled gently taut and a clamp or ligature applied at the vulval margin. In this way the lengthening of the cord which takes place with the separation of the placenta will become easily evident. It is advisable to wait until the cord has stopped pulsating before ligation is carried out and then it should be "milked" towards the baby. This increases materially the infant's haemoglobin and erythrocyte count and is to be recommended except in premature infants or in those who may develop haemolytic disease; in these cases the additional erythrocyte breakdown may increase the bilirubin content of the blood.

The vulva, vagina, and perineum are inspected for laceration and haematoma.

The management of the third stage of labour will be dealt with in a future article.

Care of the Child

It is the urgent duty of the attendant to ensure that the air passages are clear, as inhaled mucus or liquor may result in pneumonia or atelectasis or both. If at all possible this clearance of mucus should be done before the first gasp is attempted. In a maternity unit mechanical suction, either electrically or by an oxygen cylinder or by a water tap, should be available, but in domiciliary practice there is no alternative to some variety of the old-fashioned mucus extractor. It is often inefficient and potentially septic. Frequently, when most wanted, the tubing is found to be kinked or perished so that it collapses when suction is required. The attendant should take the utmost care to ensure that this instrument is kept in good condition. Recently mucus extractors with disposable parts have become available; we have been impressed by the Warne-Macrae mucus extractor.

While the mucus is being extracted, the baby should be held flat or slightly head down so that fluid in the trachea will tend to drain out. However, once this has been achieved the baby should be propped up to relieve its diaphragm of the weight of the viscera. The ceremonial and time-honoured method of dangling the child by its ankles and slapping its backside or pinching it is to be deprecated since the risks of cerebral venous engorgement and the weight of abdominal contents on the diaphragm far outweigh any potential advantages. Gentleness in handling is imperative and it is a tribute to the inherent toughness of many newborn babies that they survive the succession of insults applied to them in the form of "afferent stimuli" by over-enthusiastic and under-informed accoucheurs.

Once respiration has been established, the child should be left in peace to recover from the turmoil of labour and only when it is pink, warm, and active should the first bath be given. This should be combined with a careful and systematic inspection of the infant for developmental abnormalities. Each system should be examined in turn.

It should be remembered that the baby is highly susceptible to "cold injury." During a recent severe winter we have seen several instances of severe damage or death caused by leaving the child in a room in which the temperature was well below zero.

Role of Doctor and Midwife

When working together on a case the doctor and midwife should form a team, and when conditions permit they should make a joint antenatal examination towards the end of the pregnancy. Each should be familiar with the routine of management for the labour. The midwife should be responsible for the immediate care of the patient in labour and for the delivery of the baby. Generally speaking, she has much wider experience of normal delivery and is the acknowledged expert in this field. Also, she is committed only to her current case, whereas the doctor's loyalties may be divided by a host of other pressing tasks and responsibilities. However, she is responsible to the doctor for her patient's condition and should keep him informed. For his part, the doctor should make it clear at which point he wishes to be summoned, and should always insist on being notified when labour has commenced.

Many family doctors are keen, interested, and efficient obstetricians who prefer to conduct their own confinements and do so with skill. Others prefer to leave the delivery to the midwife and to appear only if something goes amiss. In every case the doctor should visit the patient during labour in order to ensure that mother and foetus are satisfactory, to provide reassurance, and to assess progress. He should be called at once in the following circumstances.

- (a) When foetal or maternal distress is suspected.
- (b) When sedation is required.
- (c) When there is delay in the first, second, or third stage.
- (d) When there is haemorrhage above normal loss.
- (e) If there is suspected birth injury to mother or child.
- (f) If, for any reason, it is considered that the patient requires hospital admission, the doctor should invariably carry out an examination and should provide the hospital with the necessary information.

Labour which is prolonged presents certain special problems which will be considered in an article next week.

In the preparation of this article I have been greatly helped by Dr. J. Pearson, general practitioner, Paisley, whose many suggestions have been incorporated.

TO-DAY'S DRUGS**Carisoprodol**

This drug is marketed by Wallace Laboratories as "carisoma."

Chemistry

Carisoprodol is chemically N-isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate. It is chemically related to both mephenesin and meprobamate and is produced by replacing a hydrogen atom on one of the carbamyl nitrogens of meprobamate.

Pharmacology

This drug is not only a muscle relaxant but also an analgesic; the two effects are produced independently. It has a marked depressant action on the reticular formation of the brain-stem, but this action does not lead to drowsiness, nor does it produce behavioural changes, in contrast to the effects of barbiturates and other hypnotics. Its action on muscle spasm seems in part to be due to a selective effect upon reticulospinal facilitation.¹⁻³

The muscle relaxant action has been evaluated according to four criteria—(1) the paralysing effect of the drug on intact animals, (2) the effect on spinal reflexes, (3) the antagonistic action of strychnine, and (4) the releasing action on decerebrate rigidity. It is about eight times as potent as mephenesin in relaxing induced spasticity in animals.

The analgesic action of this drug seems not to be due to any effect on peripheral pain receptors or on sensory pain pathways and their synapses, but rather to an effect on the centres concerned with pain perception. Evidence in support of this view comes from experiments on dogs; in these animals, after administration of the drug, there is no longer any pupillary dilatation on painful stimulation, but natural reflex responses to nociceptive stimuli are retained. The drug increases the threshold to experimental dental pain more effectively than certain other common analgesics.⁴

Toxicity

The toxicity of carisoprodol is low. In man no adverse effects have been reported on respiration, blood counts, or blood chemistry, nor on renal, hepatic, or endocrine function.