Following a conversation with Professor Marples in 1961 it was realized that this fungus was the same as the one she had isolated from two patients and seven hedgehogs (*Erinaceus europaeus*) in New Zealand. It was then discovered that eight of our patients had had close contact with hedgehogs prior to the onset of their eruptions, and four had dogs which frequently caught hedgehogs; one patient could not be traced.

The fungus was isolated from one hedgehog with which two patients had been in contact, from another caught by a dog belonging to a patient who had been infected two years previously, and from a third found by a family which had also been infected two years before.

In four patients the eruption had a well-defined edge, typical of a ringworm infection, but in the other nine it was clinically indistinguishable from eczema. In four of the latter patients pustules were present. The finger-nails were infected in two patients.

It would seem likely that this dermatophyte is widespread in hedgehogs in this country and that hedgehogs introduced into New Zealand in 1885 were infected with it.

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ANALGESIA FOR FORCEPS DELIVERY

A TECHNIQUE FOR THE "SINGLE-HANDED" OBSTETRICIAN

BY

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The dangers associated with general anaesthesia for emergency obstetric procedures have attracted much attention in recent years. The maternal death-rate directly attributable to anaesthesia has been estimated at about 0.2 per 1,000 operative deliveries (Morris, 1959). In addition, there are many more "near misses" which are never recorded. The emptying-time of the stomach is delayed during labour, hence the danger of pulmonary aspiration. The characteristic syndromes have been clearly described by Mendelson (1946).

Other forms of anaesthesia that preserve the glottic reflex may be used. Spinal anaesthesia is now employed in only a few centres in Britain, but in these it has been used successfully for forceps and breech deliveries (Sears, 1959). Local analgesia may be used in 60% of all forceps deliveries (Parker, 1956). This percentage can be further increased by the intravenous administration of pethidine, a narcotic antagonist, and a phenothiazine derivative (Scott and Gadd, 1957). This state of partial anaesthesia has been called hypoaesthesia by Crawford (1958) and ataralgesia by Hayward-Butt (1957).

Many variations in the technique of internal pudendal block analgesia have been described (Gate and Dutton, 1955; Moir, 1956; Donald, 1959; Huntingford, 1959). The most highly recommended local analgesic agent is lignocaine, 0.5 or 1%. Adrenaline 1:1,000 or hyaluronidase may be added to increase its effectiveness.

I found that internal pudendal block was not an entirely satisfactory procedure because many patients complained of pain as the local analgesic was being injected, although the actual delivery itself was quite painless. Later promethazine and "pethilorfan" were given intravenously before beginning the injection (O'Sullivan, 1960). In a short time it was obvious that the block was no longer necessary—local analgesia at the site of the episiotomy was all that was required.

Technique

The procedure is explained to the patient in detail. A 2-ml. ampoule of pethilorfan, containing 100 mg. of pethidine hydrochloride and 1.25 mg. of levallorphan, is mixed in a syringe with 50 mg. of promethazine hydro-

chloride and injected slowly into a vein. At least two minutes are spent in giving this injection. The patient gradually falls into a light sleep as the injection is being completed but awakens during a pain. She is then placed in the lithotomy position. A leisurely "scrub-up" is performed, as it is essential not to hurry the delivery or restlessness results. The ideal interval is ten minutes, but five minutes is adequate in many cases.

Vulval toilet is performed and towels are applied to the legs and over the abdomen. The bladder is emptied by a catheter. An infiltration of 10 ml. of 1% lignocaine is given at the site of the proposed episiotomy. Another towel covering the anus is clipped to those covering the legs. Some operators may find it advisable to inject a further 5 ml. of the anaesthetic solution subcutaneously in the labium majus on each side. This is especially helpful if the presenting part has to be rotated.

After coating the gloved hand with a liberal supply of antiseptic cream a careful vaginal examination is carried out. If the patient is a primigravida the episiotomy is performed before the obstetric forceps is applied. If she is a multipara the forceps is applied first. Gentleness is essential. The forceps is applied in the usual manner between pains and the delivery completed. In this hospital the placenta is always delivered by the Brandt-Andrews method. Ergometrine 0.5 mg. is injected intramuscularly at the end of the third stage. The episiotomy is repaired with catgut and nylon.

When the presenting part is at the outlet in the persistent occipito-posterior position, the forceps is applied to the vertex in that position and the delivery completed. A large episiotomy is usually required. When the presenting part is in the deep transverse arrest or the persistent occipito-posterior position, rotation of the head can be accomplished during pains. The rotation may be completed in a series of steps, a little further advance being made each time the patient bears down. This is performed by two fingers pulling on the sagittal suture or by tangential pressure on the occiput with two fingers or the half hand. As the rotation is performed during pains the presenting part is forced down each time after the advancement, so that it does not slip back. Delivery is then carried out between pains as described above.

Rotation and delivery may also be achieved by the use of Kielland's forceps. There have been no third-stage abnormalities.

Discussion

This technique is presented as the ideal method of forceps delivery by the "single-handed" obstetrician. It is recommended for its ease and safety. Many colleagues now use it for all forceps deliveries. I have used it successfully on 50 patients, of whom 14 had deep transverse arrest and nine had persistent occipito-posterior position of the occiput. In four cases of malposition the baby was delivered in the face-to-pubis position, while the other 19 were rotated manually and then delivered. In two further cases the method failed. In one case the analgesia was adequate but delivery was so difficult that it became necessary to transfer the patient to the theatre for a trial forceps under general anaesthesia. It had been hoped to use this technique on the second patient, but she refused and delivery was undertaken using general anaesthesia.

McLaren (1960), speaking on the Maternity Hospital Reports of 1959 at the Royal Academy of Medicine in Ireland, stated that forceps deliveries on the district were performed with nineteenth-century anaesthesia. There were 31 anaesthetic deaths investigated in the latest "Confidential Maternal Mortality Report" covering the years 1955 to 1957 (Ministry of Health, 1960). Six of these deaths occurred with the "single-handed" obstetrician. At present many practitioners, owing to the problem of the anaesthetic, send patients requiring forceps delivery to hospital, where better facilities are available. It is hoped that more general-practitioner maternity beds will be made available in the near future. It is expected that practitioners may then perform more forceps deliveries than at present.

It is advisable that only "lift-out" or low mid-cavity forceps delivery be undertaken in the patient's home. However, some practitioners may perform rotation and delivery if they feel confident, especially if in a maternity nursing-home or practitioner hospital unit. If the delivery is being carried out in the patient's home an "obstetric helper" or a portable lithotomy frame, such as described by Handfield-Jones (1957), is desirable. The Labat type of syringe with its special needles (10 cm. long) are recommended for injection of the local analgesic solution.

It has been noted that the intravenous injection should be given slowly. The rapid injection of pethidine can cause nausea, vomiting, giddiness, and hypotension. Since the inexperienced operator may give the mixture too rapidly, it is suggested that he should dilute the injection with 5 ml. of sterile water. The larger injection cannot be given rapidly.

No reference could be found in the literature about the use of promethazine for forceps deliveries except in the writings of Crawford (1958, 1959). There are many American references to its value in labour. Chlorpromazine, another phenothiazine, has been used quite widely since the publication of Scott and Gadd's (1957) work. I have never used chlorpromazine because of the risk of hypotension following its intravenous or even intramuscular injection and the added danger of toxic action on the liver.

Crawford (1959) stated that promethazine did not cross the placental barrier, whereas chlorpromazine did. Since that time he (personal communication, 1960) has proved that it does cross the barrier and advises caution in its

use if foetal distress is present. I have continued to use the drug in these cases without any ill effects.

Moore and Dundee (1961) claimed that promethazine is anti-analgesic. They state that the drug in the dosage recommended possesses less analgesic properties than pethilorfan 2 ml. alone. I cannot agree with their conclusions, but in labour many factors other than pure somatic pain are involved.

The dosage originally suggested (O'Sullivan, 1960) was 50 mg. of promethazine and 1 ml. of pethilorfan. It has been increased to 50 mg. of promethazine and 2 ml. of pethilorfan. It may not be necessary to give the total amount. This depends on the response of the patient during the injection.

Summary and Conclusions

The types of anaesthesia for operative obstetric procedures are discussed.

A technique using intravenous promethazine and pethilorfan together with infiltration of a local analgesic agent at the site of the episiotomy is described. This is adequate for most forceps deliveries, and for rotation and delivery in cases of malposition of the vertex.

It is suggested that this is the ideal method for the "single-handed" obstetrician, whether he is working in hospital or in domiciliary practice. However, cases suitable for delivery by forceps on the district must be selected.

The technique is safe and practicable for forceps deliveries provided: (a) the injection is given slowly, (b) sufficient time is allowed for the injection to take effect, (c) delivery is performed between pains, and (d) rotation is accomplished during a pain.

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"Comparing 25 consecutive death certificates registered at Bury in 1847 with a similar number [in 1960], the median age at death has risen from 42 to 75. Of the 25 certificates in 1847, 4 deaths occurred under the age of six months, 5 deaths were due to phthisis, 4 to decay of nature, 1 typhus, 1 cancer, and 1 woman was executed for poisoning her husband, while 40% of the informants were only able to sign the register by a cross." (B.M.A., West Suffolk Division.)