more time must elapse before I feel justified in publishing them. Now I find there are very few cases in which it proves impossible to attempt some useful form of functional reconstruction.

Summary

The advances in the surgical treatment of conduction deafness in the past 25 years are reviewed. The main factors which have influenced progress are an improved instrumental technique under magnification by spectacles or microscope and the control of infection by antibiotics.

The success of fenestration for otosclerosis depends upon technical competence and choice of patient. In my experience the 30 decibel level, or better, was achieved at one year after operation in 51% of my first hundred cases, but in 85% of my second hundred cases. Mobilization of the stapes is reported to give good results in about 35%. If it fails I consider it unwise to risk labyrinth trauma from further dissection to free the stapes footplate and favour a subsequent fenestration operation.

I consider tympanoplasty is a development in functional otology of major importance. It presents a creative approach to the double problem of controlling disease and conserving or improving hearing in chronic otitis media. In order to clarify what it means and tries to achieve I have defined and discussed five fundamental principles as follows: (1) Precision microsurgical technique is essential. (2) Pathological changes in the tympanum can be assessed as irreversible or reversible under the operating microscope. (3) Antibiotic therapy helps considerably to control chronic infection provided irreversible pathology has been eliminated. (4) Full-thickness skin grafts provide a satisfactory medium for the plastic reconstruction of a new tympanic cavity. (5) Tympanoplasty attempts to apply the basic audiological principles of leverage and phase differential to achieve the optimum transmission of sound waves to the labyrinth.

Hearing results are encouraging, but more time must elapse before I feel justified in publishing them.

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According to the Ministry of Health the monograph on phenoxymethylpenicillin (penicillin V) tablets in the *British Pharmacopoeia 1958*, which becomes official on September 1, will quote a dosage of 125 to 250 mg., and will require tablets containing, in each, 125 mg. of phenoxymethylpenicillin to be dispensed or supplied where the prescriber has not specified a strength. This will differ from the requirement of the *British National Formulary*, which is that tablets containing 120 mg. of phenoxymethylpenicillin, or the equivalent amount of one of its salts, shall be dispensed or supplied in the absence of specific directions by the physician. Moreover, there is a tendency for manufacturers to change from strengths of 120 and 240 mg. to those of 125 and 250 mg., and for the same product to be available in both types of strength during the period of the change. Since the tablets are likely to be available in both types of strength for some time, and the difference between these is so slight, the Ministry is advising pharmacists that from February 1 until further notice prescriptions on Form E.C.10 for these tablets may be dispensed from either type of strength.

BRANDT-ANDREWS TECHNIQUE OF DELIVERY OF THE PLACENTA

BY

NORMAN KIMBELL, F.R.C.O.G.

Consultant Obstetrician and Gynaecologist, Peterborough Group of Hospitals

Many authorities (Brews, 1948; Gibberd, 1955; *Queen Charlotte's Textbook of Obstetrics*, 1955; Browne and O'Sullivan, 1955) allow fundal pressure on the uterus as a method of assisting the delivery of the separated placenta. Browne and McClure Browne (1955), in discussing guidance of the third stage of labour, permit, when the placenta is known to be separated, gentle pressure on the uterus downwards in the axis of the inlet, or pulling on the cord.

When the placenta is retained various procedures are advocated for its expression. The Credé method is known to every doctor, but, as Browne and McClure Browne point out, it tends to cause shock. It should be gentle and not used often—probably not more than twice. Greenhill (1953-4), in commenting on Hammond's (1952) article, states: "Hammond is one of a small minority, who still believes in Credé's manual expression of the placenta." Greenhill considers this procedure should be forgotten. I am of the same opinion.

Modified Technique

The Brandt-Andrews technique is described by De Lee and Greenhill (1947) and advocated because the Credé manoeuvre has potential and actual dangers. I have modified the technique as described by these authors. Instead of using a hand to grasp the umbilical cord, I use forceps. The modified technique is as follows. A pair of forceps is placed on the umbilical cord as close to the vulva as possible. One hand grasps the forceps and the other hand is placed on the abdomen so that the palmar surface of the fingers is over the anterior surface of the uterus approximately at the junction of the corpus uteri with the lower segment. The uterus is now gently pressed backwards and upwards towards the patient's umbilicus, and at the same time steady but not too strong traction is made on the umbilical cord. If too great traction is made the cord may break. This technique will usually bring forth the placenta and membranes. If it does not succeed, one capsule of amyl nitrite is broken and inhaled by the patient, and the Brandt-Andrews technique is then repeated, usually with success. A second capsule of amyl nitrite has occasionally been used, and this sometimes made the difference between success and failure. Amyl nitrite is used to relax a possible hour-glass contraction ring, which can be diagnosed only by intra-uterine palpation (Browne, 1950). Amyl nitrite is rarely necessary. If the placenta is still retained the patient is anaesthetized and the Brandt-Andrews technique repeated. Should this fail, then manual removal is at once carried out.

Picton (1951) appealed for more widespread adoption of the Brandt-Andrews technique for conducting the normal third stage. He stressed the need for the bladder to be empty. He considered that this was the only method of placental expulsion in which the admittedly rare risk of acute inversion of the puerperal uterus was entirely absent. Furthermore, he pointed out that before inversion of the uterus could be initiated the uterus and cervix should be relaxed. He therefore advised intravenous ergometrine with the birth of the anterior shoulder.

Aristotle remarks that "until the after-burden is brought away, which is sometimes more difficult to do than the child, it is altogether as dangerous if it be not speedily done: therefore as soon as the child is born, lest the womb should close,

the midwife having taken the string (cord) should wind it once or twice about one or two of the fingers of the left hand joined together, the better to hold it, drawing the string (cord) and stretching it near the privities towards the entrance of the vagina." Aristotle adds that extraordinary care must be taken that "it be not drawn forth with too much violence lest the string (cord) breaks."

In July, 1954, the Brandt-Andrews technique of delivery of the placenta was introduced, and has for some time been the routine used in the great majority of cases by midwives, house-surgeons, registrar, and myself, in the Gables Maternity Hospital, Peterborough, and the obstetric unit in the Stamford and Rutland Hospital.

If the patient has been delivered by a midwife, the standard practice of injecting intramuscularly 0.5 mg. of ergometrine mixed with the contents of one ampoule of "hyalase" at the moment of crowning or delivery of the head of the baby is performed. This technique (Kimbell, 1954) has now been in continuous use since the end of December, 1950. Although hyaluronidase, in the preparation hyalase, has been given in many thousands of patients, there has not been one allergic reaction observed. If the patient has been delivered by a house-surgeon, registrar, or myself, the intramuscular technique as used by midwives is generally followed, except in those cases where there has been a history of post-partum haemorrhage, or when labour has been prolonged and the possibility of this complication is present; then intravenous ergometrine, 0.5 mg., is given at the moment of crowning of the foetal head. This routine use of ergometrine has not been followed by inversion of the uterus, and indeed the firm tone present has, I am sure, helped to prevent this serious complication.

Manual removal of the placenta has decreased since the adoption of the Brandt-Andrews technique. The incidence of post-partum haemorrhage has also decreased, as the following figures show.

	No. of Booked Cases	Manual Removal Rate per 1,000	Post-partum Haemorrhage Rate per 1,000	Acute Inversion of Uterus, Cases
Before Brandt-Andrews ..	4,075	12	20	2
After Brandt-Andrews ..	4,651	10	19	0
Total ..	8,726			

Retained Placenta

Two cases of retained placenta in domiciliary practice which occurred recently have prompted me to write this paper. The cases caused much concern to the general practitioners confining the patients, and both were dealt with by the Brandt-Andrews technique.

Case 1.—This patient, aged 39, gravida-4, para-2, all domiciliary confinements, was delivered of a healthy daughter, weight 7 lb. 4 oz. (3.3 kg.), at home, five miles from hospital, at 8.35 a.m. on April 20, 1957, by her midwife. As the placenta did not separate, the doctor was called, and after failing to express it he arranged for her admission to hospital, where she arrived at 1 p.m. Blood pressure on admission was 150/80; pulse rate 80; condition excellent. Her admission was reported to me by the sister on duty, and at 1.40 p.m., after one attempt at the Brandt-Andrews technique had failed, the patient inhaled one capsule of amyl nitrite, and the technique was repeated, with immediate success.

Case 2.—A gravida-1 aged 32. Normal delivery at home on March 26, 1957, twenty miles from Gables Maternity Hospital, Peterborough. Five minutes after delivery a post-partum haemorrhage of approximately 2 pints (1,140 ml.) occurred. Intravenous ergometrine, 0.5 mg., was given by the doctor attending the confinement. A gentle Credé expression failed to deliver the placenta. One hour after delivery the doctor telephoned me for advice. He was instructed in the Brandt-Andrews technique, with which he was not familiar, and was able to deliver the placenta with-

out difficulty, and with considerable relief to all those involved (Aitken, personal communication, 1957).

Discussion

I believe there will be fewer retained placentae if the Brandt-Andrews technique is used, aided, if necessary, by the inhalation of amyl nitrite. Cord traction is used routinely in delivering the placenta during lower-segment caesarean section operations. The technique has been in use for the past three years in the Gables Maternity Hospital, Peterborough, and in the obstetric unit of the Stamford and Rutland Hospital. The Credé technique is not now used, and the series reviewed has shown that there is no need for it.

From January 1, 1949, to May 31, 1957, there were 11,475 deliveries in these maternity units. During this time two cases of acute inversion of the uterus occurred. On each occasion the method adopted for expression of the placenta was fundal pressure on the uterus.

The Brandt-Andrews technique should help to prevent inversion because the uterus is pushed backwards and upwards and the fundus is not handled. Routine use of ergometrine as described should be more generally practised.

Summary

The Brandt-Andrews technique for delivering the placenta is described.

Two cases are reported to demonstrate its potential usefulness to obstetricians and general practitioners.

Acute inversion of the uterus has not occurred in my units following the use of the technique.

Credé expression should, in my view, be abandoned.

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The population in London continued to diminish in 1956, ending up about 22,000 lower than in 1955. It was about three-quarters of a million less than in 1938, and over a million less than in 1901. The live birth rate at 15.9 per thousand population was higher than in any year since 1949, and the illegitimate birth rate, 8.4% of the total, was the highest since 1946. The infant mortality rate decreased to 21.3 per thousand live births from 23.2 in 1955. The death rate was 11.7 per thousand population, which was higher than any year since 1952. The increase in mortality was mainly among old people. The report of the County Medical Officer of Health (Dr. J. A. Scott) for 1956, from which these figures were taken, includes a special section on accidents in the home. The commonest fatal home accidents are falls by old people, while the second most frequent cause is coal-gas poisoning. The general pattern of home accidents is summarized in the words: "Inexperience of the young; inattention of the adult; infirmity of the aged." By the end of the year an estimated 68% of the children 1-4 had been immunized at some time against diphtheria, and this was the highest figure in recent years. The one child (aged 4) who died of diphtheria during the year had not been immunized against it.