THE
Journal of Obstetrics & Gynaecology of India

VOL. I. NO. 2. DECEMBER 1950.

DECAPITATION BY THREAD SAW

BY

K. N. MITRA, B.Sc., M.D., M.R.C.O.G., F.R.C.S. (Ed.),
Honorary Senior Visiting Surgeon, Eden Hospital, Medical College Hospitals, Calcutta;

and

MARY P. JOHN, M.B.B.S., M.R.C.S., M.R.C.O.G.,
Professor of Clinical Obstetrics & Gynaecology, Medical College Hospital for Women, Patna.

The mention of neglected shoulder presentation at once suggests a badly managed labour. Due to lack of organised maternal care, a number of patients with this type of dystocia are admitted to our hospitals every year. The consideration, therefore, of the choice and methods of treatment in these cases is of practical importance.

In the majority of instances, the case is seen late in labour. The patient is usually a multigravida and the foetus is dead or dying. The shoulder is impacted in the thinned out lower uterine segment and practically all the liquor amnii has drained away. The mother is dehydrated and exhausted from prolonged exertions; and, not infrequently, the excessive uterine contractions raise the apprehension of imminent rupture.

The alternative methods of delivering the child are: Decapitation, evisceration, internal version or lower segment caesarean section. We should, however, keep in view that this grave complication can only develop when labour is badly managed. In our experience these patients are brought to the hospital in a low condition, after repeated and unsuccesssful attempts at vaginal delivery by untrained midwives. In such grossly infected cases and with the baby dead or dying, abdominal section has no appeal. Internal ver-

sion if attempted (vide infra) is fraught with grave risk to the mother, and the chance of delivering a live baby at this stage of labour is very remote. The treatment of choice in these cases is decapitation or evisceration and extraction of the foetus. In practice, however, we have noted that the resident staff in hospitals, if left to themselves, invariably attempt internal version (mostly with success) in these cases. What is the reason of this diffidence to employ decapitation even by residents who possess considerable obstetrical dexterity? We believe that this is due to the fact that with the instruments hitherto in use (various patterns of blunt or sharp hooks) the operation is difficult and, at times, dangerous. A similar impression is conveyed by the following remarks of Munro Kerr [2]: "The operation has always been looked upon as one of great difficulty. I cannot say that it is easily carried out, but in most cases it can be performed without much difficulty". We are of the opinion that the diffidence and reluctance to perform decapitation, even when indicated, can be overcome only if the technique of the operation could be made simple, safe and easy.

Stoekel ([4, 5]) (1930, 1938) describes the several advantages of performing decapitation by the Blond-Heidler technique. The original instrument (and the modification) is expensive, not easily available and brittle. The instrument devised by one of us (K.N.M.) invokes the principle of Blond-Heidler's technique. It can be easily assembled and has the additional advantages of low cost, durability and much improved efficiency. The steps of the operation are simple, can be easily mastered and performed safely both in domiciliary and hospital practice. To date ten operations have been performed by the authors and a few others by their assistants without any maternal death or trauma. The first three cases of the series are described here illustrating the technique and the variations that may be employed in performing this operation to suit different types of cases. (Plate i).

1. A 50 cm. Thread Saw. The loop is cut off from one end. Two equal lengths of closely fitting hollow plastic tubes are threaded and fixed on opposite sides leaving a gap of 15 cm. in the middle of the thread saw. A loop is reformed on the cut end by a set of pliers.
2. Four ordinary sewing thimbles of assorted sizes. A slot is made on one side of the thimble.
   A piece of copper wire is bent into a circular loop (diameter 2 cm.) with a free projecting end (4 cm.). The loop is welded and the free end soldered to the side opposite to the slot in the thimble.
3. Two thread saw handles.

Case Records. After eliciting the history and establishing the diagnosis, the following pre- and post-operative treatments were carried out in these cases with minor variations. Cleansing of the patient and change of clothes, infusion of 5% glucose saline by continuous intra-

venous drip (about 800 ml. to 1500 ml.), intramuscular injection of soluble sulphonamide one gram, and injection of Penicillin 50,000 units. Pre-medication was done by injection of Atropine gr. 1/150 and morphine gr. 1/4. Morphine was used to allay the uterine contractions and was not contra-indicated as the foetus was dead. During the lying-in-period the following drugs were exhibited. One dram of alkali every 4 hours, a total of 18-22 grams of sulphadiazine, a total of 10-12 lakh units of Penicillin in five days. In addition 9 mgm. of dioenoesterol was given for four days to suppress lactation.

Case 1. M, aged 20 years, para 0+0, housewife, admitted on 3-3-47 at 8-30 a.m. According to history she was at term; labour had commenced in the early morning of 2-3-47. Membranes had ruptured spontaneously at mid-day and a hand was noticed protruding out of the vulva soon after. Foetal movements ceased at night. Repeated unsuccessful attempts had been made by two "dais" to deliver the child vaginally before her admission into the hospital.

On examination the patient appeared ill and dehydrated. The tongue was dry and coated. Pulse 134 per minute, respirations 22 per minute, temperature 100°F, blood pressure 119/70. Urine analysis revealed a trace of albumin and acetone bodies. The uterus was contracting strongly at intervals of 2 minutes lasting for 40-50 seconds. The foetus was lying transversely with the back posterior, and the head was felt high up in the left iliac fossa. There was very little liquor amnii left and foetal heart sounds were not heard. The left hand upto the wrist was prolapsed at the introitus, the colour was dusky red and was without any circulatory response. A diagnosis of shoulder presentation with dead foetus was made.

The patient was prepared for operation and examined under light ether anaesthesia. The cervix was fully dilated. The uterus was firmly contracted over the impacted left shoulder. There was apparently no pelvic contraction. The head was lying high up in the left iliac fossa and the neck could be reached with difficulty and was approximately about 10 ins. from the introitus. It was decided to perform decapitation. The anaesthesia was deepened.

One loop of the thread saw was passed through the slot in the thimble and the latter put on the right index finger. The whole of the right hand was gradually introduced into the uterine cavity behind the back of the foetus and the metal loop was negotiated round the neck of the baby. The thumb was hooked into the loop from the opposite side and by gradual pull the thimble was disengaged from the forefinger and brought round the neck of the baby. The thumb and the hand were slowly withdrawn drawing in its wake the sheathed saw round the neck of the foetus. The thread saw handles were applied and keeping them closely together the neck was severed with a few see-saw movements with an ease that was surprising. The trunk was delivered by traction on the prolapsed arm and the head delivered afterwards by

hooking a finger in the mouth. The placenta was expelled spontaneously after 15 minutes. There was no post-partum haemorrhage. The patient made an uneventful recovery (except fever for the first three days — max. 101°F.) and was discharged on 10th day. (Plate ii).

Case II P, aged 25 years, para 5+1, housewife, admitted on 20-3-47 at 11-30 a.m. According to dates she was at term. Labour had commenced two days earlier. The patient was apathetic and the relatives too excited to give a clear history. A hand had prolapsed in the morning of 19-3-47 and she was treated by several "dais" throughout the whole day by various manipulations without any obvious success.

On examination the patient appeared very ill, dehydrated and exhausted. The tongue was dry and thickly coated; there were sordes at the angles of the mouth. Pulse 160 per minute, respirations 28 per minute, temperature 97.8°F, blood pressure 96/56 mm. Urine analysis revealed no abnormality. The prolapsed left hand was blue with no circulatory response and the skin was slightly peeling off.

The uterus was contracting feebly at intervals of 3-4 minutes with slight relaxation in between. The lower uterine segment appeared thin and dangerously distended; the liquor had drained away. The foetus was lying obliquely with the back posterior and the head high up in the left iliac fossa. No foetal heart sounds could be heard. A diagnosis of impacted shoulder presentation with dead foetus was made.

After due preparation the patient was examined under light ether anaesthesia The cervix was half dilated, but fully dilatable. The uterine wall was very irritable and closely applied over the presenting part. No attempt was made to feel the neck at this stage. The anaesthesia was deepened and the operation proceeded on forthwith. The thimble with the loop of the saw in position was put on the right thumb, the right hand was gradually inserted into the uterine cavity. The metal loop was passed from the front over the neck and withdrawn up the fore-finger round the opposite axilla. In this case again, the handles of the saw were kept together and the neck along with the impacted shoulder and arm severed from the trunk with great ease. The head was delivered by pulling on the prolapsed arm and the trunk was delivered after. The third stage was uneventful.

In this case an injection of 20 cc. polyvalent antigasgangrene serum and 3,000 units of antitetanus serum were given in addition to routine therapy.

She made an afebrile and uneventful recovery and was discharged on 10th day. (Plate iii).

Case III. R, aged 30 years, para 6+0, housewife, admitted on 29-5-47 at 10 a.m. Term pregnancy. Patient in labour since 4 p.m. of 28-5-47. The membranes ruptured at 10 p.m. with prolapse of a hand soon after. Foetal movements ceased to be felt about midnight. Not interfered outside.

On examination the patient appeared to be a thin emaciated woman in a state of extreme exhaustion. Pulse 164 per minute, imper-

ceptible, respirations 24 per minute, temperature 97.2°F, blood pressure 90/54 mm.

The uterus was contracting strongly with hardly any relaxation. The abdomen was tense making it impossible to define the foetal parts. No foetal heart sounds were heard. The right hand was prolapsed upto the elbow and had no circulatory response.

After usual resuscitation and preparation, the patient was examined under ether anaesthesia. The right arm was prolapsed, the foetus was doubled up and impacted low down in the pelvis. The posterior lip of the cervix could neither be felt nor could the fingers reach the neck. The uterus appeared tonically contracted and the lower uterine segment seemed very thin. It was decided to perform an embryotomy and the operation proceeded on after deepening the anaesthesia.

The thimble with the thread saw was put on the left fore finger and passed round the trunk just below the scapulae and the metal loop withdrawn by the middle finger of the right hand round the trunk of the foetus. The trunk was divided easily by the thread saw.

She made an uneventful recovery and was discharged in an excellent condition on 11th day. (Plate iv).

Discussion.

The usual duration of the operation is about 3 minutes. In cases I and II, the head was high up and the neck could be reached by the fingers with difficulty. Amputation of the neck in such cases by a decapitation hook would have been a formidable and long operation necessitating deeper anaesthesia and risk of rupture of the uterus. Indeed, we may recall in this connection the treatment of a similar case some years back. After several unsuccessful attempts to negotiate a Ramsbotham's hook round the neck of the foetus, decapitation had to be finally performed in the following way: The skin and subcutaneous tissue of the baby from the tip of the shoulder to the root of the neck was opened by a long pair of Mayo's curved scissors, then the neck was divided subcutaneously by embryotomy scissors and the operation concluded after many anxious moments. In the third case, embryotomy could have been performed with scissors. This method, however, proved easier, quicker and neater. The great advantage of cutting with the sharp thread saw is a clean incised wound without any protruding spicules of bones. The operator has the option to cut the baby in any plane to make the subsequent extraction easier. We have also tried the original Blond-Heidler instrument which appears to suffer from the following disadvantages: The plain bronze alloy wire has a blunt edge and the traction necessary to amputate the neck frequently snaps the wire; further, the original thimble which can only be applied to the thumb sticks to it by a strong suction force and can be disengaged with difficulty. The modified thimble (Stoeckel, 1938) unfortunately could not be procured. The instrument described here appears to have the following advantages: It is cheap and can be improvised easily; it is dur-

able and more efficient as a cutting instrument; and the thimble can be put on any finger to suit the convenience of the obstetrician.

From our own experience of the operation of decapitation on a large number of cases by the various methods, we are in entire agreement with Marshall[3] (1937) and Stoeckel that decapitation by the technique originally suggested by Blond-Heidler is safe and easy. We commend that the method described here is immensely superior and safer than the operations described in standard text books.

Summary.

Decapitation or evisceration is recommended as the treatment of choice in dealing with cases of neglected shoulder presentation when the foetus is dead or dying.

A sheathed Gigli saw and a thimble introducer is described for performing the operation.

The operation and the variations of technique are illustrated by description of three cases of impacted shoulder presentation.

References:

1. Blond-Heidler: Zentralb. f. Gynakal; 47; 1097, 1815; 1923. Quoted by Stoeckel.
2. Kerr, J. M. Munro: Operative Obstetrics. London; 1935.
3. Marshall, C. Mc Intosh: Jour. Gyn. Brit. Emp; 44; 735; 1937.
4. Stoeckel, W. Lehrb. der Geburtsh; 1930 (G. Fischer, Jena).
5. Idem: Ibid; 1938.