

The Vacuum Extractor or Ventouse

by

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THE principle of ventouse is to pull on the scalp of the baby with the help of a metal cup to complete the delivery of the foetus. A vacuum is created in the cup by means of a pump. An artificial caput is produced on the scalp as a result of vacuum within the cup. Thus a firm grip is obtained on the scalp and traction is applied through the rubber tubing and traction bar.

The idea of this type of delivery goes back to 1706 when Younge described delivery by pulling on the scalp through a "cupping glass" fixed to the scalp with air pump. Today's instrument owes its origin to Malmstrom who revived this mode of delivery first in 1954 and later in 1957, with modification of his previous apparatus.

The Instrument

The instrument consists of three metal cups with diameters of 40, 50 and 60 mm. respectively, each with a depth of 20 mm. Each cup can be attached to the traction bar by the rubber tubing and the metal plate with attached chain. The traction bar is hollowed for the passage of the pin which by passing through the chain, attaches the cup to the traction bar more securely

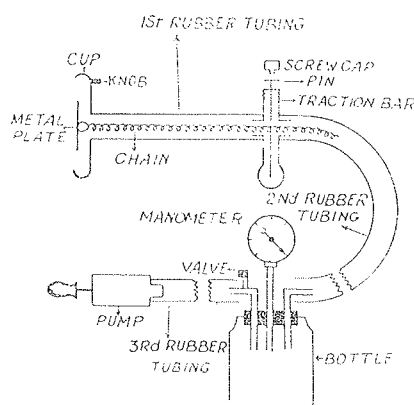


Fig. 2

so that there is no chance of slackening of the rubber tubing while traction is being made on the bar. The open end of the traction bar is fitted with a screw cap arrangement to ensure that the apparatus is leak proof while vacuum is being produced. A long rubber tubing is fitted at the other side nozzle of the traction bar with its other end connected with one nozzle of the vacuum bottle. The vacuum bottle is again fitted with a manometric arrangement graduated to 1 kgm. per sq. cm. and another nozzle with a release valve for the attachment of the vacuum pump. Thus vacuum can be produced by the use of the pump from the cup end to the pump end.

Use of the Instrument

Sterilization: All parts from the second rubber tubing up to the cup, both inclusive, are boiled for 30 minutes or autoclaved. When the apparatus is not in use the chains are to be dried thoroughly and lubricated to avoid rust.

Indication:

- I. (1) In first stage of labour to speed up cervical dilatation.
- (2) To stimulate an increase in the uterine contractions.

- (3) To expedite delivery in such conditions as prolonged labour with maternal distress or mild foetal distress.

II. In delayed second stage when the head is in cavity perhaps with occiput in lateral or posterior position.

III. In certain cases of uterine inertia with incomplete dilatation of cervix.

IV. In prolapse of cord to maintain the reposed cord in position and preventing re-prolapse by gently pulling the head on to the cervix. This is a doubtful indication as prolapse of cord is a grave emergency demanding such a speedy delivery that it cannot be achieved by Ventouse.

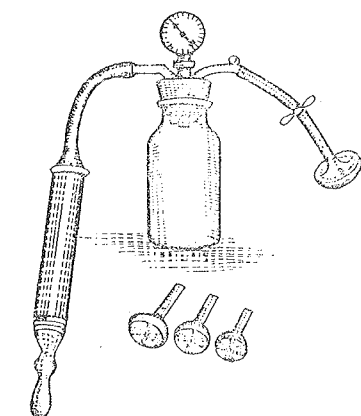
Ventouse is quite valueless in cases of acute foetal distress. It is unsuitable for cephalo-pelvic disproportion which only strong traction could overcome. In mechanical difficulties of lesser degree the fact that no part of the instrument takes up valuable pelvic space must count as a strong point in its favour.

Application

Although Ventouse may be applied through 2-3 fingers dilated cervix, and 3/4 cervical dilatation is preferable especially in cases of developing foetal distress.

In the technique of application the basic principle is to insert the largest possible cup and to attach it as near as possible to the occipital end of the foetal head so as to increase the flexion when traction is applied.

Perineal infiltration or pudendal block usually gives sufficient anaesthesia for the procedure. In exceptionally non-co-operative patients, Trilene inhalation is all that is



THE VACUUM EXTRACTOR 1956

Fig. 1

NEWS from the STATES

ORISSA

The members of the Branch have formed a full-fledged State Branch in Orissa with the election of the following Executive Committee :

President : Miss B.P. Mahanty.

Vice President : Miss R.R. Ray.

Secretary : Miss S. Patnaik.

Treasurer : Miss R. Rout.

Programme Chairman : Miss Pankaj-bala Singh.

Membership Chairman : Miss Labanya Mohapatra.

SNA Adviser : Miss Santa Ray.

The first executive committee meeting was held on August 12, 1964. The inauguration of the State Branch was postponed to October 2, 1964 due to unavoidable circumstances.

UTTAR PRADESH

The Branch office has received magazine 'John F. Kennedy Speaks', and back issues of the American Journal of Nursing, 1959, 1961 and 1962 from the U.S.I.S., Lucknow. Members desiring loan of these may apply to the Branch Secretary.

The Chairman of the Nursing

Education Section of the State Branch strongly recommends "Prasav Karm Sambandhi Gyan" written by Dr. Roberts Martin, which contains Midwifery notes in Hindi to Midwives and Auxiliary Nurse Midwives, which is available from Mrs. S.R. Solomon, N.I.S. Literature Department, Barhpur, Fatehgarh. Price Rs. 4/-.

The Lucknow district branch celebrated the Independence Day at the Nurses Home of the Gandhi Memorial and Associated Hospitals. The Programme included business and concert of patriotic songs and poems by the students of Lady Kinnaird Hospital, Lucknow.

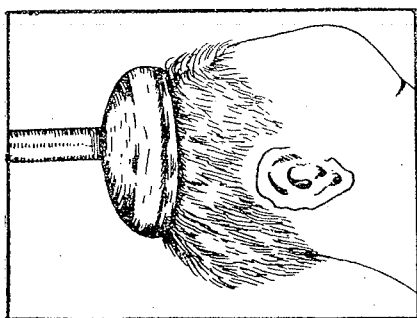


Fig. 3.
Ventouse Metal cap in position

necessary in addition to perineal block. A prior episiotomy may be necessary in cases of primigravida with rigid perineum and small introitus. In other cases, pressing back the perineum with the cup or fingers may be sufficient. In placing the cup on the foetal head the knob should point to the occiput and

no cervical or vaginal tissue is caught under the cup. When accurate apposition has been secured, an artificial caput is produced by gradual increase of the vacuum in the cup. It is best to start with 0.2 kgm/cm² and during a period of ten minutes to increase the negative pressure to 0.8 kgm/cm² slowly. In this way good adhesion between cup and scalp is secured, by the caput formed within the cup. Traction by means of the bar is applied in the axis of the pelvis. It is usual to employ one hand for traction and to use the fingers of the other hand to assist flexion and in some cases rotation and cervical dilatation. Observation is also thus kept on adhesion of the cup to the scalp. Traction is usually made during contractions, and rotation can be achieved by pressing on the knob in proper direction. When the head is delivered, the vacuum is immediately released by opening valve.

The whole operation from the starting of the traction up to the delivery of the head should be completed between 45 minutes to one hour. The procedure must be a slow one.

Advantages

1. So far as the mother is concerned, the procedure is a safe one for the mother.

2. Foetal mortality is low particularly in high or mid-extractions as compared with forceps. But an artificial caput is formed which usually disappears within a few hours to a few days. Small ulcers or bruises may occur on the foetal head where the rim was attached. But injuries generally do not occur unless the limit of one hour for delivery is exceeded.

3. It can be applied through the undilated cervix and high and mid-contractions can be achieved without much harm either to the mother or to the child. Thus it can reduce the incidence of caesarian section.

Of course there is a possibility of maternal genital prolapse developing late when extraction is achieved through undilated cervix.

4. In relatively inexperienced hands a vacuum extractor entails less risk than forceps.

5. The head can be brought down by Ventouse to a relatively low position in the pelvis for safe delivery with low forceps. The final word about the Ventouse could not be given until extensive trial is given by comparison with other methods of delivery.

REFERENCE: Recent Advances in Obstetrics and Gynaecology by A. Bourne and L. Williams.

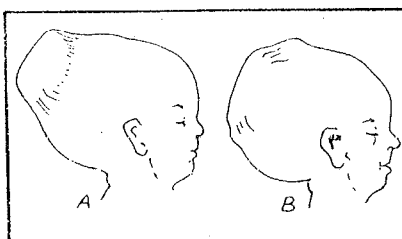


Fig. 4.
Head of the child (A) Immediately after delivery showing "chignon" and (B) 10 minutes later when appearance is similar to normal caput succedaneum.

care must be taken to ensure that