CORD TRACTION IN THE MANAGEMENT OF THE THIRD STAGE OF LABOUR

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The 3rd stage of labour can still be a great source of anxiety to the obstetrician and discomfort to the patient. The shorter the 3rd stage, the less the anxiety and, with the abolition of fundal pressure, the less the discomfort. These results are achieved, together with a reduction in manual removals of placentae and no increase in the incidence of postpartum haemorrhage, by the use of traction on the cord. Delivery of the placenta by cord traction was introduced in the Lambeth Hospital, London, in 1960, as a routine for all deliveries; and it is on the results over a 12-month period from August 1962 that this paper is based.

Method of Delivery of Placenta

In all normal deliveries, an oxytocic is given immediately at the crowning of the head. Depending upon the consultant under whom the patient is admitted, either ergometrine 0·5 mg. with 'hyalase' 1,500 units, or 'syntometrine', a combination of 'syntocinon' 5 units and ergometrine 0·5 mg., is given by intramuscular injection. The latter combination has been found to be more satisfactory, but the results will be considered *in toto*. After delivery of the baby in the dorsal position, the cord is cut, the air passages cleared, and the baby handed to an assistant. The fundus is then palpated with the left hand. When the obstetrician feels the uterus to be contracted, he holds the cord in his right hand and exerts firm traction; at the same time he pushes the body of the uterus towards the umbilicus by placing his abdominal hand, palm towards the fundus, over the lower segment of the uterus immediately above the symphysis pubis. By this method, the uterus is not allowed to descend into the pelvis and little discomfort is felt by the mother. None of the classical signs of separation or, more correctly, descent, are awaited. The one essential is that the uterus should be contracted, and in order that it shall remain so an oxytocic should be given. If the placenta is not delivered, the whole procedure is repeated every 2 or 3 minutes.

Material

The number of patients in this series is 1,506. The majority were delivered by pupil midwives or medical students. Only normal cases are considered in the series — grand multiparae, multiple births, operative deliveries, and patients with breech presentation or a previous history of trauma in the 3rd stage, being thus excluded. The only normal cases not included are 24 mothers whose babies were born before arrival in hospital.

Results

1. *Length of 3rd stage.* Table I shows the number and percentages of placentae delivered at varying intervals after delivery of the baby. This shows that only 236 cases — or 15·7% — had the placenta *in situ* for more than 5 minutes.

TABLE I. LENGTH OF 3RD STAGE

Time interval	*Number*	*Percentage*
0– 5 minutes	1,270	84·3
6–10 minutes	192	12·8
11–20 minutes	28	1·86
Over 20 minutes	16	1·06
	1,506	100

2. *Loss of blood.* Table II shows the number and percentages of cases considered in relation to blood loss.

TABLE II. LOSS OF BLOOD

Blood loss	*Number*	*Percentage*
0– 5 oz.	939	62·4
6–10 oz.	395	26·2
11–19 oz.	119	7·90
20 oz. and over	53	3·50
	1,506	100

3. *Manual removal.* As a general rule, if the placenta is not delivered within 30 minutes it is removed manually. Credé's expression is never used. Cord traction was always tried under anaesthesia before manual removal was performed. It failed in each case in this series. The number of cases of manual removal was 12, or 0·80%.

4. *Avulsion of the cord.* The cord was avulsed from the placenta in 3·85% of cases. This presented no great problem. Two courses may be taken should it happen, viz: (1) Await descent of the placenta, as is standard teaching, and deliver by maternal effort or fundal pressure. This was the method normally used by the midwives. (2) Make a gentle vaginal examination. In some cases the placenta is felt either wholly in the vagina or poking through the cervix. In either case the lower edge may be grasped and the placenta delivered, the uterus again being pushed up with the abdominal hand. This we call a 'lift out'. Table III shows the number of cases in which the cord was avulsed, and the methods of delivery of the placenta. On many occasions the cord has a high breaking strain; hence the manual removal was not always preceded by avulsion of the cord.

TABLE III. DELIVERY OF PLACENTA AFTER AVULSION OF CORD

Maternal effort	7
Fundal pressure	38
Lift out	9
Manual removal	4
	58 (3·85%)

5. *Inversion of the uterus.* There was no case of inversion of the uterus.

DISCUSSION

Smellie (1956)[1] recommended traction on the cord for delivery of the placenta; so did Denman (1805),[2] who wrote, 'If the placenta should descend very slowly the

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practitioner may take hold of the funis and by gentle pulling in time of a pain favour its separation and descent'. In a footnote, Denman goes on to say, 'When the young has been a short time expelled carnivorous animals apparently feeling pain lay hold of the navel string with their teeth in order to extract the placenta'. The presence of a pain stresses the importance of a contracted uterus. Smellie[1] suggests lifting the placenta from the vagina in cases of failed cord traction: 'Introduce your hand slowly into the vagina and feel for the edge of the cake'.

Experience has shown that traction on the cord, accompanied by counter-traction with the body of the uterus towards the umbilicus, is a safe, speedy and comfortable method for conducting the 3rd stage. This series, like others — Kimbell (1958),[3] Spencer (1962)[4] — has shown that the routine use of cord traction has no practical disadvantages. Indeed, a postpartum haemorrhage rate of 3·5% (using syntometrine, 2·4%) and a manual-removal rate of 0·8% compare favourably with any published figures; so does the completion of the 3rd stage in 5 minutes, or less, in 84·3% of cases. A positive approach which shows no increase in the incidence of postpartum haemorrhage and a decrease in manual removals is far better than inactivity plus impatient 'fundal fiddling'.

Few still believe that the classical 'signs of separation' of the placenta occur when the placenta actually separates. The lengthening of the cord, mobility and change in shape of the uterus, and 'show', are the signs of descent. Leff (1929)[5] found by vaginal examination that the placenta separated promptly after the baby left the uterus. This was confirmed by the X-ray studies of Brandt (1933),[6] which showed that, in each of 30 cases, the placenta had separated within 3 minutes. Burton-Brown (1949)[7] also using an X-ray technique, injecting radio-opaque material into the cord, showed the placenta to be separated within 4½ minutes. In view of the finding of Leff, Brandt and Burton-Brown, there can be no reason not to accelerate descent of the placenta by cord traction.

Combined fundal pressure and cord traction cannot be recommended, even when the placenta is 'separated' and the uterus contracted. By this means, the uterine supports are stretched to the limit, considerable pain evoked in the mother, and the chance of acute inversion introduced. For this reason, the teaching of Munro-Kerr (1937,[8] Browne and Browne (1955)[9] and Brews (1953)[10] should be condemned.

Inversion of the uterus is often quoted as the main danger of cord traction. This may be so with the flabby uterus and firmly attached fundal placenta, but it is hard to conceive inversion of a firmly contracted uterus. Dimpling of the fundus by fundal pressure is a much more likely aetiological factor. In Kimbell's series,[3] quoting 11,475 deliveries in which either cord traction or fundal pressure was used, there were 2 cases of inversion, each associated with fundal pressure. Spencer[4] had no case of acute inversion in 1,000 cases. Picton (1951),[11] discussing the mechanics of cord traction, explains that, if the uterus remains high because the fundus is pushed towards the umbilicus, inversion is less likely owing to tension of the round ligaments. He states that his is the only method where the rare risk of inversion is absent.

The most recent paper on cord traction — Spencer (1962)[4]—discusses 'controlled cord traction' following the intravenous administration of ergometrine with the birth of the anterior shoulder. This technique suffers from the grave disadvantage that it can only be used where a doctor or medical student is in attendance. Even under these conditions, in 1,244 patients it was necessary to give the ergometrine to 244 of them by the intramuscular route because of failure in venipuncture. The failure rate was 19·6%.

Finally, Table IV shows the comparative results of the cases in the present series using *intramuscular* syntometrine (ergometrine + syntocinon) and those of Spencer's series

TABLE IV. COMPARATIVE RESULTS OF I.V. ERGOMETRINE AND I.M. SYNTOMETRINE

	i.v. Ergometrine	*i.m. Syntometrine*
No. of cases	1,000	828
Duration of 3rd stage:		
0–5 min.	81·7%	86·4%
Over 10 min.	6·3%	2·26%
Blood loss:		
0–10 oz.	94·9%	92·3%
11–19 oz.	3·9%	5·3%
20 oz. or more ...	1·2%	2·4%
Manual removal	2·1%	·72%

(1962) using *intravenous* ergometrine. Cord traction following intravenous ergometrine is a satisfactory technique. As compared with intramuscular syntometrine, the smaller incidence of postpartum haemorrhage does not, in my opinion, balance the greater rate of manual removal of the placenta. With syntometrine there was no postpartum haemorrhage greater than 30 oz.

Conclusion

1. Active management of the 3rd stage by cord traction, following either intramuscular ergometrine with hyalase or, preferably, intramuscular syntometrine, is a safe, kind and rapid technique.

2. The inactive, time-consuming wait for signs of separation, frequently accompanied by inept fiddling with the fundus, should be discontinued.

3. Fundal pressure is painful, damages the uterine supports and should be abandoned. As a routine procedure, it belongs with Credé in the past.

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