

**CONGENITAL CONSTRICTION OF THE VARIOUS FOETAL PARTS
CAUSED BY UMBILICAL CORD ALONGWITH ANOMALIES OF
CORD A STUDY OF 17,725 DELIVERIES**

by

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Introduction

The usual length of the umbilical cord is about the same as that of the foetus i.e. about 50 cm. but considerable variations in its length have been observed. Undue length of the cord naturally predisposes to prolapse of cord, looping of cord around neck or trunk or any part of the fetal limbs and to the formation of knots. Occasionally the cord has constricted the part around which it has been wound so tightly as to lead to death of the baby or if it is around the limbs leading to interference with the development of the particular part. Sometimes it may result into either partial or complete amputation of the fetal limb. There are few cases on record where the trunk has been deeply indented leading to severe foetal anoxia.

In routine obstetric practice, we come across many cases where coiling of umbilical cord around the fetal neck is observed. Recently Sinha and Mukherjee (1969) reported cases of Intrauterine death due to tight coils of cord around the neck and

the limbs. Javert (1957) has discussed the risks of coil around fetal body leading to intrauterine death. Sinha and Eastman (1957) and Dippel (1964) have published their series of 1000 cases. They do not support the view that cord round the neck or body (unless very tight) can cause fetal asphyxia and death because blood flow is maintained through the umbilical blood vessels in uterus. The incidence of nuchal cord is high i.e. about 80%. The incidence of cord around body is reported as 0.5% by Kasturi Lal (1971). But Spellacy *et al* (1969) reported the incidence of this complication to be about 2% in their 17,190 cases. Kasturi Lal has also reported a case with 22" long cord coiled around trunk and right ankle twice. But it was not so tight as to produce any constriction or asphyxia of baby. The incidence of cord around foetal body in our hospital study was 7% out of 17,725 deliveries during a period of January, 1971 to June 1977.

CASE REPORT

Patient A., aged 35 years was admitted in the obstetric Ward of Maternity Hospital attached to G.S.V.M. Medical College, Kanpur on 22nd August, 1977. She presented with labour pains following an amenorrhoea of 40 weeks. She was 4th gravida with all previous full term

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normal deliveries conducted at home. Her last delivery was 2 years back. At the time of admission she gave history of prolonged labour (Duration of labour pains being about 26 hours).

Her general condition was fair, although the pulse rate was 108/mt. and B.P. 124/80 mm of Hg. She was slightly dehydrated. Her systemic and abdominal examinations revealed nothing significant. Vaginal examination showed caput succedaneum ++, full dilatation of the cervix and adequate pelvis. The vertex being below the level of ischial spines, outlet forceps were applied and moderate traction had to be given to effect the delivery of a full term male baby weighing 3.2 Kg. Apgar score of the baby was 9 but the cord was seen constricting various parts of the foetal body. There was one tight loop of the cord around the foetal trunk at the level of xiphisternum causing an indentation about 1 cm. deep. There were 2 coils of cord around the right thigh of the baby about 3.75 cm. above the knee and 2 tight loops around the right leg, 2.5 cms. above the medical malleolus. On the left limb a tight loop of cord was seen in the groin and another on the ankle constricting the respective parts. Talepes was present in both the feet as is obvious in Fig. 1. The parts of the limbs between the various constrictions were swollen up. An X-ray of the whole body of the baby was taken and no bony abnormality was detected. An orthopaedic surgeon was consulted and after having seen the X-ray plate he only advised an oil massage for the baby specially on the affected parts. There was no other congenital anomaly in the baby. His feeding pattern was absolutely normal.

The total length of the cord was 80 cm. its diameter being 1-2 cm. There were two false knots in the cord. The weight of placenta was 420 gm. On gross appearance and histopathological examination it revealed nothing abnormal.

Observations

The total number of deliveries in U.I.S.E. Maternity Hospital during the period of January 1974 to June 1977 were 17,725. Out of these 1256 babies (7.00%) had loops of umbilical cord around various parts of their baby. Table I shows the

TABLE I
Showing Incidence of Loops of Cord Around Various Foetal Parts

S. No.	Type of loops of cord	No. of babies	Percentage
1.	One loop of cord around the neck	908	5.12
2.	Two loops of cord around the neck	230	1.14
3.	Three loops of cord around neck	64	0.36
4.	More than 3 loops of cord around the neck	43	0.24
5.	Cord around foetal limbs	8	0.04
6.	Cord around trunk	3	0.01

incidence of loops of cord around the various foetal parts. In majority of the cases i.e. 908 (5.12%), there was only one loop of cord around neck. Cord around the foetal limb was present in only 8 (0.04%) cases. Whereas cord around trunk was quite rare (0.01%) of the cases.

Table II shows the foetal outcome in cases of loops of cord around the foetal neck. The maximum incidence of intrauterine death was seen in babies with 3 or more loops of cord around foetal neck i.e. 14.0 and 20.0% respectively. Similarly the incidence of still birth was also highest in cases of 3 or more loops of cord around the neck 9.3 and 27.0% respectively. The first week deaths of babies were also maximum when loops of cord were more than 3 (9.30%).

Table III shows the mode of delivery in present study. In 926 out of 1256 cases (73.72%) normal spontaneous delivery

TABLE II
Shows the foetal outcome in the cases of loops of cord around foetal neck

S. No.	Number of loops of Mode of delivery	I.U.D.	Still Births	Death within 7 days	Alive and healthy
1.	One loop of cord (908)	9 (0.99%)	24 (2.6%)	14 (1.5%)	861 (94.8%)
2.	Two loops of cord (230)	16 (6.9%)	9 (3.9%)	4 (1.7%)	201 (87.39%)
3.	Three loops of cord (64)	9 (14.0%)	6 (9.3%)	2 (3.12%)	47 (73.43%)
4.	More than three loops of cord (43)	9 (20.0%)	12 (27.0%)	4 (9.30%)	18 (41.86%)

TABLE III
Showing mode of delivery in cases of loop of cord around foetal parts

S. No.	Mode of delivery	No.	Percentage
1.	Normal spontaneous delivery	926	73.72
2.	Forceps delivery	126	10.03
3.	Caesarean section (foetal distress or non-engagement of head)	204	16.24

took place. But in 204 cases (16.24%) a caesarean section had to be done mainly either for foetal distress or for non-engagement of head in spite of pelvis being adequate. However, in some of the cases various other indications of caesarean section were seen viz. either placenta previa or contracted pelvis. The rate of forceps delivery in these cases were rather low (10.0%) cases.

Table IV shows that in 3 cases (0.01%) talipes of feet was seen.

TABLE IV
Showing incidence of congenital anomalies formed by tight cord around foetal body

S. No.	Type of Congenital Malformations	No.	Percentage
1.	Talipes of feet	3	0.016
2.	Indentation of trunk	2	0.011

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See Fig. on Art Paper VI