A STUDY OF CORD ENCIRCLEMENT

by

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The condition of nuchal position of the cord in which the cord encircles the neck of the foetus is believed by many of the authors as a cause of foetal distress and even death. Nuchal position of the cord in most of the instances is incidental, Sinnathuray (1966). Varying reports have been made regarding its causes and management. Greenhill (1965) stated that "It is possible that in its active movements the foetus throws the cord around its body and down to the neck, and that the condition exists for weeks before delivery." The present study was under taken to study the effect of cord encirclement on foetal morbidity and mortality.

Observations

A total of 2083 deliveries were conducted at Zanana Hospital attached to R.N.T. Medical College Udaipur from Dec. 1977 to July 1978. Out of which 180 neonates had cord encirclement (8.641%). The incidence of cord looping is as shown in Table I.

In 98.33% of the cases it was purely cord encirclement round the neck with number of loops varying form 1 to 4.

TABLE I
Incidence of Cord Looping

Cord loops	No. of cases	%
Cord once round neck	132	73.33
Cord twice round neck	38	21.11
Cord thrice round neck	6	3.33
Cord four times round neck	1	0.55
Cord round other of the body	3	1.66

The average cord length in this study was 66 cm, while maximum was 158 cm, and minimum was 33cm.

Vertex presentation was there in 177 cases (97.77%), breech in 3 (1.66%) and transverse in 1 (0.55%) case.

The mode of delivery in this series of 180 cases is as shown in Table II.

TABLE II
Mode of Delivery

Mode of delivery	No. of cases	%
Spontaneous Vaginal	145	80.55
Forceps	26	14.44
L.S.C.S.	8	4.44
Internal Padalic Version	1	0.55

Of the 8 cases in which L.S.C.S. was done, the indication for C.S. was foetal

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distress in 5 cases, placenta praevia 1 case, contracted pelvic 1 case and cervical dystocia 1 case. Foetal distress was the indication for forceps in 24 out of 26 cases.

Foetal out Come

Active resuscitative measures were required in 30% case with cord coiling and in only 10.44% cases without cord coiling Table III shows foetal out come.

TABLE III
Foetal Outcome

Type of Case	No. of cases	Still births	%	N.N. Deaths	%	Over all
With cord encirclement	180	10	5.55	6	3.33	8.88
Without cord encirclement	1903	78	4.098	32	1.681	5.779

The overall foetal loss of 8.88% was much higher with cord encirclement when compared to 5.779% of non coiling.

Discussion

There are varying reports regarding incidence of cord encirclement by various authors.

According to Sinnathuray (1966) it can be expected in 1 out of every 3 deliveries and according to Greenhill (1965) in 1 out of every 5 deliveries. The incidence of cord encirclement in the present series was 8.64%, while that reported by Pippel (1964) was 32.5%, Shui and Eastman (1957) 23.3%, Horwitz (1966) 27.670, and Upreti (1979) 7%.

The maximum No. of Loops found in the present series were four only. While Greenhill (1965) has reported as much No. of loops as 7. But in most of the cases it is only one loop of cord around the neck as evident from Table IV.

Shui and Eastman (1957) stated that there is certain correlation between the average cord length and number of coils round the neck. Excessive length is an importance predisposing cause of coiling. The average cord length reported by Upreti (1979) was 96 cm, while it was 66 cm in the present series.

Mode of Delivery

Keeping in mind the need for patient individualization and the management of concurrent problem, successful vaginal delivery may be anticipated in most patients with this problem (Horwitz, 1964). He reported that there is twice as much need for use of forceps in coiled cases as

TABLE IV

Series	One loop	Two loops	Three loops	More than 3
Shui & Eastman	20.6	2.5	0.2	—
(1957)	22.1	3.2	1.4	0.1
Dipple (1964)	5.12	1.14	0.36	0.24
Upreti (1979) Present series	6.33	1.82	0.28	0.048

compared to non coiled cases. Upreti (1979) reported 10.3% need for forceps as compared to 14.44% in the present series. The common indication in both the series was foetal distress.

Foetal Outcome

Kasturi Lal (1971) concluded that there are four factors responsible for foetal distress such as spasm of vessels. compression of cord. strangulation of foetus or the premature separation of part of the placenta owing to relatively short cord pulling on it during descent of the foetus. Shui and Eastman (1957) expressed that foetal loss was no higher in coiled cases. Rather he reported more loss in noncoiled 2.6% as compared to coiled one 1%. Horwitz (1964) reported 1.8% loss in noncoiled and 4.1% in coiled cases. Dipped (1964) stated that umbilical cord anomalies are not frequently the cause of foetal and neonatal death. This is particularly true of loops of cord round foetal neck. He reported foetal loss as 11.770. Upreti (1979) reported 43 cases of intra uterine death with cord coiling, but there was no such case of intra uterine death with cord looping in this series.

Conclusion

The increased need for resuscitation of the new born and the high incidence of foetal loss with cord encirclement indicates that the condition can not be overlooked. A timely intervention during labour and skilful handling of the new born in cases of cord encirclement can reduce the incidence of foetal loss to a minimum.

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