RESPIRATORY PROBLEMS WITH MECONIUM STAINED AMNIOTIC FLUID

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SUMMARY

This study describes respiratory problems in 80 babies with meconium stained amniotic fluid. Trachea was visualised in all cases for meconium, which was present in 51 cases. Incidence of respiratory distress was three times higher when meconium was present in trachea than when it was absent. Combined Obstetric—pediatric approach can reduce respiratory morbidity in these babies.

Introduction

Meconium staining of amniotic fluid (MSAF) has been regarded as a sign of fetal distress and alerts the obstetrician and neonatologists alike (Abramovic *et al* 1974, Meis *et al* 1978). MSAF has been shown to be associated with low apgar scores, low fetal pH and respiratory problems due to meconium aspiration during or before delivery (Starks 1980, Mitchell *et al* 1985). Suction of upper airway at delivery has been observed to reduce the respiratory morbidity in these infants (Gage *et al* 1981). The present study concerns term babies who had thickly MSAF at birth and followed up for respiratory morbidity.

Material and Methods

80 term infants with thickly MSAF at birth delivered at Smt. Sucheta Kriplani Hospital, New Delhi comprised the study group. 67 of these were born by caesarean section and transferred to special care nursery. In 10 cases it was a normal vaginal delivery and babies were transferred to Neonatal Nursery for respiratory problem in low apgar score at birth. Only term infants with birth weight $>$ 2 kg and who survived at least 2 days were included and observed for respiratory morbidity.

In all infants, upper airway was visualised and laryngeal/tracheal suction were done when meconium was visualised. The babies was closely observed in the nursery for morbidity and all had X-ray chest done within 3 days of birth. Other investigations were done as indicated (blood sugar, serum bilirubin etc) and patients were managed symptomatically.

Results

80 neonates who were delivered with MSAF and had laryngeal suction soon after delivery comprised the study

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Accepted for publication on 27-2-87.

group. Maternal factors have been shown in Table I. Fetal distress was noted in majority of cases (82.5%). Mean birth weight and gestation were 2.8 ± 0.514 and 38.3 ± 1.28 weeks respectively. Mean ± 1 SD of apgar score at 1, 5 and 10 minutes has been depicted in Table II. In 50% of babies 1 min apgar score was > 7.

TABLE I
Factor in Cases of MSAF (Total 80)

	No.	%
Fetal distress	66	82.5
Non progress of labour	5	6.25
Toxemia	15	18.75
Antepartum haemorrhage	4	5
Previous caesarean	6	7.5
Cephalopelvic disproportion	4	5
Abnormal presentation	4	5
Post datism (>40 weeks)	9	11.25

TABLE II
Shows Mean ± 1 SD of Apgar Score

Age in minutes	Mean	± 1 SD
1	6	2.6
5	7.7	1.8
10	8.9	1.7

40 infants had 1 min apgar score <6.

Distribution of babies according to presence or absence of meconium in larynx and respiratory distress revealed that incidence of respiratory distress in neonates was more than three times higher when meconium was present in trachea than when it was absent (Table III). 3 babies died, one with intracranial haemorrhage and two due to massive aspiration. Pulmonary air leaks were noted in 3 cases only. The duration of respiratory distress was < 2 days in 43, 2 to 7 days in 30 and > 7 days in 7 babies.

The incidence of MSAF varies from 8 to 18% of all deliveries. In majority of cases, meconium is passed during labour and aspirated into tracheobronchial tree with first breaths at birth. Thickly MSAF noted before onset of labour is associated with a high incidence of perinatal deaths (Ramchandra *et al* 1984). Respiratory problems can be prevented in most of these cases by deep oropharyngeal suction and laryngeal/tracheal suction of meconium. Gregory *et al* studied 1000 consecutive deliveries and 88 had MSAF. 56% of these 88 infants had MSAF in trachea with half of these having abnormal X-ray findings. Although they noted abnormal X-rays in 30 cases with MSAF only 16 of 88 who had meconium in trachea were sick.

In the present study respiratory problem were encountered in 45.1% of babies when meconium was present in trachea and only 13.1% when it was absent. All infants whose respiratory distress lasted for more than 48 hours belonged to cases with meconium in trachea.

Mitchell *et al* estimated pH of cord blood at birth and noted frequent association of pH < 7.25, fetal acidosis and higher fetal risks. Also these authors noted that by 55 minutes of first noting

TABLE III
Respiratory Morbidity in Babies According to Presence of Meconium in Larynx

	No.	No. with Resp. Dist.	%
Meconium present in Larynx	51	23	45.1
No meconium present in Larynx	29	4	13.8

of meconium, 50% of all infants had pH < 7.25 indicating that presence of thick meconium should alert obstetrician for quick delivery.

Our findings indicate that in all babies born with MSAF, trachea should be visualised for presence of meconium and pediatricians can anticipate respiratory problems and plan proper management.

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