centration of morphine following intrathecal morphine were 6 ng/ml or less, a range which does not cause neonatal respiratory depression.

Majority of babies had good or fair neonatal reflexes inspite of administration of morphine intrathecally.

The neurobehavioral assessment of these babies revealed that the infants had a good capacity to shut down disturbing stimuli, had good orientation responses to environmental stimuli and were generally alert. Similar studies of neonatal neurobehavior following maternal intrathecal morphine administration were unavailable to us.

It is concluded that maternal intrathecal morphine administration has no significant behavioral or neurological effect on the babies and it may be considered to be safe in labor medication.

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Congenital Short Small Bowel Presenting as Neonatal Intestinal Obstruction

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Problems arising from congenitally short length of small intestine have been occasionally reported and its association with hypoperistalsis has also been documented, mostly associated with hypertrophic pyloric stenosis. But short length of

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stenosis. With silver staining techniques of the intestinal wall, they observed: (*a*) Too many neurones in the ganglia due to failure of normal fall out of cells at the time of birth, (*b*) Many neuronal nucleii had neuroblastoma like clumped chromatin, and (*c*) Intrinsic argyrophil ganglion cells with reduced processes.

More recently, Shawis *et al.*(5) reported similar cases in two siblings with malrotation. They also found a deficiency of argyrophil neurones in myentric plexus of small intestine. They postulated an autosomal recessive mode of inheritence of this anomaly. No associated pyloric stenosis was found. None of them survived.

Rege and Deshmukh(6) have reported two cases of megacystic microcolon with intestinal hypoperistalis from India, one of which had an associated short small gut. Huysman *et al.*(7) recently reported one baby with short bowel and congenital malrotation of small gut who has survived following a prolonged period of total parenteral nutrition and with gradual introduction of lactose saccharose-poor low osmolar feeding.

The normal length of neonatal small intestine has not been extensively assessed. Coran(8) and Bryant(9) reported the normal length of small gut of a full term newborn to be around 200 to 300 cm. In absence of any vascular anomaly and atresia, the short length of small intestine can be explained as arrest in the normal lengthening of gut during third trimester but the precipitating factor is still a matter of speculation.

The unique feature of this case was the short length of the small gut with malrotation and persistent obstruction in presence of normal length of colon. Similar obstruction was noted in the other sibling also. This obstruction could be due to intestinal hypoperistalsis since the ganglion cell content of the intestines were normal on HE stain. This syndrome of short small gut with malrotation and intestinal hypoperistalsis may or may not be associated with hypertrophic pyloric stenosis as in our case and others(2,5,7).

This condition of short small bowel should be suspected in a baby who presents with hypertrophic pyloric stenosis and malrotation of midgut.

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Jugular Vein Cannulation

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Establishment of venous access and the maintenance of an intravenous line is often difficult in extremely small and sick children. Occasionally peripheral percutaneous venous catheterisation is not successful because of previously punctured or thrombosed veins. In these cases it is necessary to attempt venous cannulation by venesection of basilic, median, cephalic, saphenous or jugular veins. We report our experience with cannulation of the jugular vein in extremely sick children.

Material and Methods

One hundred children needing jugular vein cut down were studied and results noted. Jugular vein cannulation was attempted in patients with: (*i*) no suitable peripheral veins for intravenous therapy; (*ii*) major surgical procedures where transfusions of large quantity of blood was expected; (*iii*) neonates requiring exchange transfusion where umbilical catheterisation was not possible.

Procedure: The patient was placed supine with the neck hyper extended and the head turned to the opposite side. After aseptic skin preparation local anesthetic with 1% xylocaine was administered. A transverse incision was made over the sternocleidomastoid at the junction of the middle and lower third. The external jugular vein was then identified. If the calibre was adequate it was cannulated. However, if the calibre was inadequate, the internal jugular vein was exposed by separating the sternal and clavicular heads of the sternocleidomastoid muscle with the help of right angle retractors. The vein was carefully hooked. To avoid skin contamination, a subcutaneous tunnel was made, and the catheter (No. 6 gauge feeding tube) tunneled into the main wound. The jugular vein was ligated distally with 3/0 catgut and a phlebotomy made and adequate length of catheter introduced so that its tip was in the mid superior vena cava. The catheter was secured with a ligature previously placed around the proximal portion of the vein. The skin incision was closed.

Results

One hundred patients underwent jugular vein cannulation. Their age ranged between 18 hours to 2.5 years. Eighty one per cent patients were less than 2 weeks old. The weight ranged between 1.3-12 kg.

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