

HYPOVOLEMIA RESULTING FROM A TIGHT NUCHAL CORD AT BIRTH  
William J. Cashore and Robert H. Usher, Neonatal Unit, Royal  
Victoria Hospital, and Dept. of Pediatrics, McGill University,  
Montreal.

Infants with tight umbilical cord loops around the neck may shift blood into the placenta as pressure on the cord obstructs the umbilical vein earlier than the umbilical artery. If these infants require cord ligation and transection to deliver the body, significant blood loss may result.

Blood volume determinations (I<sup>125</sup> Albumin) have been performed after birth in 11 such infants, with the following results: Blood Volume  $75.3 \pm 6.4$  ml/kg, Red Cell Volume  $25.8 \pm 4.1$  ml/kg, Plasma Volume  $49.5 \pm 5.1$  ml/kg, and Venous Hematocrit  $39.0 \pm 4.6\%$ . The value for Red Cell Volume is significantly lower ( $p < 0.005$ ) than that found previously in this Unit by Saigal for infants with immediate cord clamping ( $32.4 \pm 2.6$  ml/kg). This difference represents a blood loss at birth of 20% (or about 50 ml in a full-term infant), with a resulting decrease in body iron content.

Tight nuchal cord accounts for a large proportion of otherwise unexplained cases of neonatal anemia occurring in this hospital. Affected infants are pale and somewhat hypotensive after birth, sometimes with a systolic heart murmur, but otherwise appear to be unaffected by the blood loss.