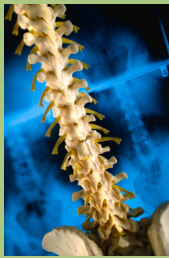


# AnesthesiaDotCalm Newsletter



News You Can Use

April 10, 2007

## The Two Vessel Umbilical Cord



I've often been asked, "What the heck is a two vessel cord?" Actually, I've never been asked this question but I should have because my response would probably be. "Beats me!" So inspired by my own ineptness I decided to look into the myriad of information on this subject. I began with comprehensive web search (lasting all of 5 minutes) and what follows is what I think presents the most concise answer.

As you may( or may not) know, the normal umbilical cord contains 2 arteries and 1 vein. The umbilical vein carries oxygenated blood from the placenta to the left portal vein in the fetal liver. The 2 umbilical arteries are continuous with the internal iliac arteries and carry deoxygenated blood from the fetus to the placenta. The most common abnormality of the umbilical cord is a single umbilical artery (SUA), which occurs in 0.5% to 2.5% of pregnancies. This finding is sometimes referred to as a 2-vessel cord. The loss of 1 umbilical artery usually occurs secondary to thrombotic atrophy of a previously normal artery. Less likely, the loss may result from primary agenesis(i.e. any imperfect development)of the artery. It is the left umbilical artery that is more commonly absent.

The clinical significance of an SUA is not completely understood, and there are many different reports regarding outcomes of fetuses with this finding. SUAs have been reported to increase incidence of fetal anomalies by 30% to 60% in all major organ systems (eg, the cardiovascular, gastrointestinal, and central nervous systems). The most common congenital abnormality usually involves the kidneys (e.g. hydronephrosis, dysplastic kidneys )although half of these have minor clinical significance. Other associated anomalies include cleft lip, esophageal atresia, spina bifida, diaphragmatic hernia, cystic hygroma, , polydactyly, syndactyly, and marginal and velamentous insertion of the cord. In addition, SUA is associated with an increased risk of such chromosome abnormalities as trisomy 13, trisomy 18, and triploidy. Data also suggest that the finding of SUA is associated with an increased incidence of intrauterine growth retardation(IUGR);and there are also some reports indicating a higher incidence of preterm delivery and stillbirth. There seems to be a 20% perinatal mortality rate with two thirds of deaths occurring before birth. Of the one third of neonates who die postnatally, most have associated congenital abnormalities. This finding may be related to the association of SUA with chromosomal abnormalities and anomalies of the major organ systems.