

## CLINICAL SIGNIFICANCE OF A SINGLE UMBILICAL ARTERY

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### ABSTRACT

Single Umbilical Artery (SUA) was found in 9 of 965 (1.2%) babies at birth. It was associated with fetal genito-urinary malformations in 3 cases, neural tube defect in 1, intra-uterine growth retardation in 2, prematurity in 1, and maternal diabetes in 3 cases.

The umbilical cord should be routinely examined for the number of vessels after delivery and on routine ultrasound screening for congenital malformations. The diagnosis of SUA needs further fetal evaluation.

### INTRODUCTION

Aplasia or atrophy of one umbilical vessel is thought to cause S.U.A. The umbilical cord normally has 2 arteries and one larger vein. Benirschke and Brown (1955) first drew attention to the association of single umbilical artery with fetal malformation. About 30% of all infants with SUA had associated congenital abnormalities, (Benirschke, 1967).

### MATERIAL AND METHODS

In 765 term births the umbilical cord was routinely examined at birth for the number of umbilical vessels. The presence of single umbilical artery was then co-related with the maternal and neonatal findings.

### RESULTS AND OBSERVATIONS

SUA was found in 9 cases at birth

### DISCUSSION

SUA has been found in 1.2% of births, with a high incidence in women with diabetes (33%) and previous bad obstetric history (44%). SUA was found in 1% of all singleton births, 5% in twins and 2.5% abortuses (Benirschke, 1967). An increased incidence of SUA has also been found in intrauterine death (Helfetz, 1984) abortuses, trisomies (Byrne, 1985) and diabetic mothers (Peckham, 1965) with a 4 times increased perinatal mortality. No serious complications were seen in those babies with SUA with no other malformation (Frolich, 1966) while of 98 normal infants with SUA, unrecognised malformations became apparent in 10 cases later on (Byran 1975). Ultrasound diagnosis of SUA can be done by noting the number of umbilical vessels on

Table : I

## SUA &amp; Associated Fetal Anomaly

Abnormality		No. of cases
Genito-urinary abnormality	Renal agenesis	1
	Hydronephrosis	2
CNS abnormality	Anencephaly, spina bifida & meningo-myelocoele	1
I.U.G.R.		2
No significant finding		3

Table : II

## Obstetric Factors Associated with SUA

Factor	No. of cases
1. Insulin Dependent Diabetes Mellitus	2
2. G. D. M. with hypertension	1
3. Poly hydramnios	1
4. Previous IUD	1
5. Prev. baby with multiple cong. abn.	1
6. Prev. Consecutive 2 spontaneous abortions	2

longitudinal section (Jassani, 1980). A high incidence of congenital malformations and chromosomal anomalies are associated with SUA (Hata, 1986). SUA has been found to be associated with congenital abnormality in 18%, fetal growth retardation in 34% and prematurity in 17% (Byran, 1975).

Finding of missing umbilical artery at delivery, and prenatal diagnosis of SUA by ultrasound in a significant factor indicating the necessity of detailed fetal examination to rule out fetal congenital and chromosomal abnormality, especially in patients with diabetes, and bad-obstetric history.

## REFERENCES

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