

Vascular abnormalities of the umbilical cord

Patient Information Series – What you should know. what you should ask.

Single umbilical artery

What is a single umbilical artery?

The umbilical cord usually consists of two umbilical arteries and one umbilical vein. Some umbilical cords carry only one umbilical artery and one umbilical vein.

How does SUA happen?

Three theories are described to explain SUA occurrence. The first theory is the failure of development of one of the umbilical arteries. The second one is the development of a clot in one artery at an early stage. The last theory is the persistence of the original artery.

How are chromosomes relevant to an SUA?

In most cases, SUA has isolated findings. Only 10 % were reported to be associated with chromosomal abnormalities.

Should I have more tests done?

After the diagnosis of SUA, detailed ultrasound is advised to look for possible structural differences in the heart or kidneys of the baby.

Further investigations depend on the findings of the detailed ultrasound.

What are the things to watch for during pregnancy?

In isolated SUA cases, follow-up for the baby's growth is advised.

What does it mean for my baby after it is born?

There are no concerns after birth in isolated cases with well- grown babies.

The prognosis in babies with SUA and other findings in the ultrasound will depend on the final diagnosis after the diagnostic investigations.

Will it happen again?

When associated with the presence of other malformations, the risk of recurrence can be increased fourfold. In isolated cases, the recurrence risk is estimated to double.

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Umbilical vein varix

What is an umbilical vein varix?

Umbilical vein varix (UVV) is a dilation of the umbilical vein (the part inside the fetus's abdomen before it enters the liver.)

How does UVV happen?

The umbilical vein's weakest part is inside the abdomen after insertion and before it enters the liver. It lacks the support of the umbilical cord. Under any increase in venous pressure, it will dilate and forms UVV.

How are chromosomes relevant to a UVV?

Only 5-10 % are associated with aneuploidy. The associated significant fetal abnormalities in approximately 5–10%. 70%–80% of cases of umbilical vein varix isolated.

Should I have more tests done?

Detailed ultrasound and diagnostic tests to rule out associated chromosomal abnormalities are advised.

What are the things to watch for during pregnancy?

Follow-up in the centre where there is a high-risk team is needed. Follow-up ultrasounds are advised to detect any signs of fetal distress or complications in the UVV.

What does it mean for my baby after it is born?

In isolated cases prognosis is good. With the presence of other abnormalities, the prognosis will depend on the underlying cause and type of abnormalities present.

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Persistent Right Umbilical Vein

What is persistent right umbilical vein PRUV?

It is an embryological condition in which the right umbilical vein remains open. When both veins remain open, it is called supernumerary vessels.

How does it happen?

The cause of PRUV remains unknown. There have been unproven theories described.

Two types of PRUV;

Type 1 – PRUV; Reported in 95% of cases. This type has a good prognosis. The DV (the connecting vessel to the heart) is usually present, and there is little interference in hemodynamics.

Type 2 PRUV connects to the heart direct, causing high volume on the heart. This type is associated with the absence of DV and a poorer prognosis.

How are chromosomes relevant to a PRUV?

Trisomy 18 and Noonan syndrome have been reported in many cases. There have been associated cardiac abnormalities, which can present with or without chromosomal abnormalities.

Should I have more tests done?

Detailed ultrasound and fetal echocardiogram are advised.

What are the things to watch for during pregnancy?

Any signs of fetal anemia need to be monitored with serial ultrasounds.

What does it mean for my baby after it is born?

In isolated cases, the prognosis is good. Other predictors for the prognosis will be underlying associated anomalies.

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