

Antenatal diagnosis of persistent right umbilical Vein: Incidence and frequency of associated congenital malformations

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Objective

To investigate the incidence of prenatally diagnosed persistent right umbilical vein (PRUV) in a referral population and to estimate the associated malformations' rate of fetuses with PRUV.

Methods

This was a retrospective and prospective analysis of all the cases with PRUV diagnosed in our center between 2012 and 2018. During the study, 22 458 consecutive women with low-and high-risk singleton pregnancies presenting for targeted organ scanning in the second and third trimesters were examined. Fetuses with situs inversus, situs ambiguous and heterotaxy were excluded. Detailed fetal US and echocardiography were the performed to detect any other anomalies. In all cases of detected anomalies, a fetal karyotyping was offered. After birth, the infants were evaluated by paediatricians for any additional abnormalities.

Results

The average gestational age at diagnosis was 25 (range, 17 to 37) weeks. During the study period, 22 458 consecutive high- and low-risk pregnancies were examined, of which 44 fetuses with PRUV were identified, corresponding to an incidence of 0.19%. Forteen cases (31.81%) proved to have additional anomalies. Five fetuses of these non-isolated cases had chromosomal abnormalities (trisomy 13 and 18). Two fetuses had renal anomalies (unilateral and bilateral multicystic kidney). In three cases, a tetralogy of Fallot were diagnosed. Two fetuses had a congenital diaphragmatic hernia together with cleft lip and hydrocephalus. In 5/14 cases a single umbilical artery was documented. In two fetuses with normal karyotype, PRUV was accompanied by omphalocele.

Conclusion

In conclusion, PRUV is an uncommon prenatal finding but its incidence may be higher than traditionally thought. It has shown a significant increase in the rate of associated malformations. So, a diagnosis of PRUV should be followed by a thorough fetal morphology scan in order to exclude any other malformations, especially those of the cardiovascular system.

