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Is transhepatic vascular access a feasible and safe alternative for cardiac catheterization in children with congenital heart disease?

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Introduction:

Diagnostic and therapeutic cardiac catheterization is performed in children with congenital heart disease using femoral vascular access. In some cases, this access may be unavailable due to thrombosis from previous catheterization, indwelling central lines or patient's small size. In the last few years the transhepatic approach has been described as "viable" and safe alternative to the femoral access.

Methods:

We analyzed safety and complications of transhepatic access in children performed in our center from 2005 to 2016

Results:

During this 11 year period, we performed 8 catheters in 6 children via transhepatic access. Median age was 18.5 months (range 2-174 months), median weight 10kg (range 4.6-18 kg). Sheath size ranged from 4-11Fr. Transhepatic puncture was always ultrasound guided. 7 catheters were interventional and 1 only diagnostic. Interventions included stenting of main pulmonary artery, pulmonary side branches and superior caval vein, balloon dilatation of pulmonary vein, closure of pulmonary artery, pulmonary side branches, veno-venous collaterals and atrial septal defect. After catheter in 3 patients we closed the punctured hepatic vein using coils or amplatzer devices. The day after, all patients had abdominal ultrasound, echocardiography and ECG. There were no complications in all the patients.

Conclusion:

Data on transhepatic catheterization in children is limited. Our data show that a broad spectrum of different cardiac interventions can be performed via transhepatic vascular access. It seems a feasible and safe alternative for cardiac catheterization if routine femoral access is not possible.