

## PW3-7

### **Femoral vein occlusion in infants undergoing cardiac catheterisation pre-cavopulmonary shunt procedure**

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Introduction: Femoral venous thrombosis and femoral vein access issues after catheterisation is a well recognised complication. There are no studies describing the extent of the problem, predisposing factors and possible preventive strategies in infants with univentricular heart physiology. We set out to look at this high risk group of infants, undergoing routine cardiac catheterisation prior to their cavopulmonary shunt procedure.

Material and Methods: Retrospective analysis over 2 year period from 2007 till 2009, conducted on 101 children undergoing cardiac catheterisation pre-cavopulmonary shunt procedure. We analysed procedure records and angiograms of each patient. Five were excluded for lack of data and 96 included.

Results: Routine cardiac catheterisation performed on 96 children prior to cavopulmonary shunt procedure at median age of 4.2 months (2.3 -17 months) and median weight 5.9kg (4-11kg). The commonest underlying diagnosis was hypoplastic left heart syndrome in 83(86%) with the remainder comprising of other univentricular physiologies. All patients underwent a surgical procedure; either Norwood or PA banding initially followed by stay in intensive care. In addition to this, 15 infants also had cardiac catheterization. Right femoral vein (RFV) access was obtained in 42(45%) and failed in 53(55%). Elective right femoral artery (RFA) access was used in one unstable infant. In those with failed RFV access; access was achieved using left femoral vein (LFV) in 18(34%), internal jugular vein in 4 (7%) and either right or left femoral artery was used when both femoral veins were not accessible in 31(58%).

Angiographic evidence of occluded veins was seen in 34(35%), occluded RFV in 11(11%), occluded bilateral femoral veins in 19(20%) and occluded inferior vena cava in 4(4%). One patient had ultrasound evidence of blocked right femoral vein.

Conclusions: Venous access during cardiac catheterization of infants with univentricular heart with prior surgery can be challenging. One third of these patients have angiographic evidence of one or more femoral vein occlusion. Routine ultrasound evaluation prior to procedure may help reduce procedure time by identifying vessel patency. Other options such as heparin coated central lines need to be considered to minimize extent of this problem.