

P-273

Percutaneous dilation of inferior caval vein and closure of left superior caval vein in the patient after Fontan operation

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Introduction: The purpose of this abstract is presentation of percutaneous treatment of patient after Fontan operation with sudden development of cyanosis.

Material: The 3-year-old girl was born with double inlet right ventricle. The banding of pulmonary artery was performed at 3 month of life, and later a hemi-Fontan operation was performed at 8 month of life. A Fontan completion was done at 10 month of life. She had a catheterization study prior to the Fontan operation which revealed good haemodynamic and morphology. The left superior caval vein was not present. She was doing well with saturation = 90 %. When she was 2,5 year-old the saturation decreased to 72-74 %. The angiographies revealed stenosis of inferior caval vein and the main flow from lower parts of body was through the hemiazygos and hemiazygos accesoria veins to patent left superior caval vein and to pulmonary veins atrium. The left superior caval vein was connected to right superior caval vein.

Results: After balloon occlusion test of left superior caval vein the increase of arterial saturation from 75 to 94 %, without negative consequences, was observed. In these circumstances the successful balloon angioplasty of inferior caval vein was performed. A 8/6 Amplatzer Duct Occluder was deployed in left superior caval vein below the entrance of hemiazygos accessory vein. Control angiographies revealed right flow from lower parts of body with total occlusion of left superior caval vein without restriction of flow. There was no increase of pulmonary artery pressure.

On FU the girl is doing well. The saturation is about 94- 95 %.

Conclusion: The active investigation of causes of desaturation in the Fontan patients is necessary in all cases. The best method is diagnostic catheterization with angiographies. The most complications can be treated during the same procedures.