

GW28-e0164**Surgery or Thrombolytic Therapy for Mechanical Heart Valve Thrombosis in Pregnancy: a Systematic Review**Zhe Xu,¹ Fan Jin,² Jing Song Ou¹¹the First Affiliated Hospital of Sun-Yat-sen University; ²the First Affiliated Hospital of Jinan University; ³Guangzhou Women and Children's Medical Center

OBJECTIVES Managing mechanical heart valve thrombosis (MHVT) in pregnant women remains challenging. We aim to evaluate the effectiveness and safety of surgery or thrombolysis for MHVT mothers and their fetuses.

METHODS Relevant studies published before March 2017 were collected in several databases and analyzed with SPSS 22.0. We searched studies with at least two patients treated with surgery or thrombolysis.

RESULTS Seventy four studies comprising 224 pregnancies (153 adopting surgery, 71 receiving thrombolysis) were included. Duration of cardiopulmonary bypass (CPB) time ≥ 120 min is significantly related to the poor fetal outcome of surgery. For patients at gestational age ranging from 26w to 36w, the fetal wastage rate in the subgroup of caesarean delivery before cardiac surgery was significantly lower than the patients whose delivery was carried out after the surgery. Compared with streptokinase subgroup, the mortality rate in the tissue-type plasminogen activator (tPA) subgroup was significantly lower while the success rate was significantly higher. The fetal and maternal outcomes of thrombolysis were comparable to the subgroup of surgery whose NYHA grades were III/IV.

CONCLUSIONS For MHVT pregnant patients with NYHA III-IV, the therapeutic effect of thrombolysis may be comparable to the surgery. The protocol of low-dose, slow infusion of tPA with repeated doses as needed may be the optimal regimen for these patients. If surgery was adopted, CPB management of pregnant women should be addressed to improve maternal and fetal outcomes. For MHVT patients at gestational age ranging from 26w to 36w, caesarean section before surgery may be advisable.

GW28-e0262**Assessment of left ventricular performance in heart transplant recipients by three-dimensional speckle tracking imaging**Dan Wang,¹ Mingxing Xie¹¹Department of Ultrasound, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology

OBJECTIVES To calculate left ventricular (LV) global performance values in heart transplant (HT) recipients by three-dimensional speckle tracking imaging(3D-STI) and to observe the changes in LV global performance over time after HT and investigate the correlated factors.

METHODS The 30 HT patients were divided into two groups according to postoperative time:1 month postoperatively(HT-1) group and 6 months postoperatively (HT-2) group. Thirty healthy subjects were enrolled as control group. 3D-STI was performed to assess LV torsion, LV systolic dyssynchrony index (SDI), and LV global strain(GS). Global performance index(GPI) was calculated, and correlations factors with GPI were studied.

RESULTS Heart rate(HR), left atrium(LA), interventricular septum thickness(IVST), left ventricular posterior wall thickness(LVPWT), and left ventricular mass (LVM) in both HT groups were higher than those in the control group. Compared with the control group, SDI was significantly higher in both HT groups, and SDI of the HT-1 group was much higher than that of HT-2 group. Compared with the control group, apical rotation (RoA), twist and torsion in the both HT groups decreased significantly. There were no significant differences in these values between the two HT groups; Basal rotation (RoB) showed no significant difference among the three groups. GPI of the both HT groups was significantly lower than that of the control group; however, GPI of HT-2 group was higher than that of HT-1 group. Multivariate stepwise regression analysis identified global left ventricular longitudinal peak systolic strain(GLS), the time length since surgery, left ventricular mass (LVM), and RoA as predictors of LV GPI. GLS was the most influential to GPI.

CONCLUSIONS The values of LV rotation, twist and SDI can be used to assess the LV systolic function and dyssynchrony. The GPI value based on 3D-STI may accurately reflect LV performance

changes over time after HT. The GPI value has potential applications in clinical practice. GLS, the time length since surgery, LVM and RoA values can be the predictors of LV global performance, and as long as the left ventricular ejection fraction(LVEF) is preserved, the left ventricular global performance of HT recipients remains stable and tends to improve over time after HT.

GW28-e0414**Prenatal Diagnosis of a Congenital Lung Deformity: Horseshoe Lung**Hong Liu,¹ Cao Haiyan,¹ Xie Mingxing,¹ Song Xiaoyan¹¹Union Hospital, Huazhong University of Science and Technology, Wuhan, China

OBJECTIVES Horseshoe lung (HL) is a rare congenital pulmonary deformity in which the caudal and basal segments of the left and right lungs are joined together behind the pericardium at the height of cardiac apex. The feature of horseshoe lung was first described by Spencer in 1962. Horseshoe lung is often associated with other malformations such as scimitar syndrome, unilateral lung hypoplasia, congenital cystic adenomatoid malformation (CCAM) and esophago-bronchial fistula.

METHODS We report a case of a fetus with HL without other intracardiac and extracardiac malformation, suspected prenatally on ultrasound image and confirmed with fetal MRI.

RESULTS A 32-year-old woman, with no family history of congenital defects, were recommended to our department at 24 weeks and 5 days gestation, because of an abnormal aortic morphology. A fetal echocardiographic evaluation in our department showed the aortic arch and thoracic aortic enlarged with abnormal direction. There was no evidence of intracardiac and great vessel anatomic abnormalities, bone dysplasia, or other extracardiac deformities.

Fetal MRI was therefore performed to assess the cause of aortic translocation, and showed the basement of the lungs fused in front of the spine and thoracic aorta. The fused lungs across the mediastinum confirmed the diagnosis of fetal horseshoe lung. Meanwhile the fetal MRI also demonstrated that without pulmonary hypoplasia, esophageal atresia or great vessel deformities.

CONCLUSIONS The definite diagnosis of horseshoe lung rely on imaging technology. CT is the best postnatal imaging modality for assessment of HL anatomy, evaluation of the lung anomalies development. The pulmonary artery and vein can be clearly identified by contrast-enhanced CT. Prenatal MRI and sonography can confirm the diagnosis of HL, clearly demonstrate the communication between the lungs. When the fetal echocardiology demonstrate the displacement of the heart and the abnormal position of the great vessels, we should take further fetal MRI to confirm the presence of horseshoe lung. The prenatal diagnosis should make definite diagnosis about HL, also should make sure whether there is intracardiac deformities.

GW28-e0655**Modified Nikaidoh procedure with double-root translocation: case report**Zili Meng,¹ Meng Jiatian¹¹Hebei Chest Hospital

OBJECTIVES To report a case of modified Nikaidoh procedure with double-root translocation in a 2-Year-Old girl.

METHODS A 2-year-old girl weighing 11.2 kg underwent successful biventricular repair for transposition of the great arteries, a ventricular septal defect, and a left ventricular outflow tract (LVOT) obstruction with moderate pulmonary stenosis of the bicuspid pulmonary valve (z score of -4.9 for the pulmonary valve) by means of a modified Nikaidoh procedure with double root translocation by use of a valve-spared pulmonary root.

RESULTS The postoperative echocardiogram showed no LVOT obstruction, no aortic valve regurgitation, and mild pulmonary stenosis and pulmonary valve regurgitation. No reintervention has been required during the 5-year follow-up, with annular growth of the pulmonary valve.

CONCLUSIONS Modified Nikaidoh procedure is an effective method for transposition of the great arteries, a ventricular septal defect, and a left ventricular outflow tract (LVOT) obstruction with moderate pulmonary stenosis of the bicuspid pulmonary valve.