STIC recorded hemodynamics in D transposition of the great arteries with VSD
Badr I, Kamel R, Abdel S, Abdel LS
Kasr Alainy faculty of medicine, Cairo, Egypt

Objective
In view of different surgical techniques for transposition of the great arteries (TGA) with ventricular septal defect (VSD), the assessment of the left ventricle outlet tract (LVOT) for possible associated stenosis is crucial for management. Various causes of LVOT obstruction related to mitral or tricuspid valve anomalies as well as the LVOT region itself could be present. The most frequent types of these obstructive lesions are the posterior deviation of the infundibular (outlet) septum and the cone shaped appearance (funnel like obstruction) of the LVOT. The absence of sub - pulmonary or pulmonary valve stenosis in case of TGA with VSD is an extremely important diagnosis, because it will determine the possibility of early neonatal intervention by arterial switch operation or a later repair by Rastelli operation. The objective of this report is to present a case of antenatal detection of TGA with VSD with the use of 4D color STIC volume.

Methods
This is a case report.

Results
A 23 - year old woman (G2P1), with unremarkable family history, was referred to our institution at 24 weeks of gestation for fetal cardiac assessment. Ultrasound examination revealed complete TGA with outlet sub - pulmonary VSD and mild posterior deviation of the infundibular septum without associated sub - pulmonary stenosis. No other associated anomalies were found. 4D STIC volumetric study was used to determine the flow direction and its timing across the VSD, where we found the continuous systemic to pulmonary ventricle shunting, during periods of systole and diastole, denoting still higher pressure in the systemic right ventricle than in the pulmonary left ventricle. Together, with the subtle encroachment of the posteriorly mal - aligned infundibular septum, not to the degree to cause obstruction, we confirmed our basic 2D and color Doppler assessment of the absence of sub - pulmonary obstruction or the valvular stenosis even in a mild from.

Conclusion
The prenatal diagnosis of complete TGA is based on the characteristic parallelism of both great arteries in the upper mediastinal views, with lack of visualization of normal 3 - vessel arrangement. Complete TGA may occur with intact ventricular septum or with VSD. We recommend, whenever technically possible, the use of 4D color STIC volume study on a wide scale to assess the VSD flow timing and the color mapping of the sub - pulmonary region for a possible obstruction, as it will be an important factor to determine the early neonatal surgical intervention.