Objective
Early prenatal diagnosis of double aortic arch and follow-up details.

Methods
According to hypothetical double aortic arch theory, two aortic arches and two ductal aches present in human embryological life. After the regression of right aortic arch, the left aortic arch retains as a major channel for left ventricular outflow. If the regression process fails both right and left aortic arches persist and form a complete vascular ring around the trachea and esophagus. Complete Vascular ring can cause varying degrees of airway compression. A double aortic arch is associated with three main subgroups of arch anomalies; right aortic arch with a right ductus, right aortic arch with left ductus and double aortic arch. Although the incidence of double aortic arch is unknown, as 1.5% was reported in a case report based on a tertiary center experience. A case with prenatal diagnose of double aortic arch and postnatal short term follow–up being presented in this report.

Results
A 28-year-old woman, gravida 1, para 0, underwent routine first trimester screening. Nuchal translucency was measured 1.2 mm and the nasal bone was present. The normal position of the heart on the left side of the chest and four symmetrical chambers were determined. Fetal heart rate was calculated as 156/min. Flow patterns were normal in the tricuspid valve and ductus venosus upon pulsed Doppler interrogations. In three vessels and trachea view (3VT) at first trimester screening, the placement of transverse aorta (A) was far away from pulmonary artery (P) (Figure 1b). This finding rise the suspicion of aortic arch anomaly. The same finding was also determined in advancing gestational ages. Follow-up examinations revealed that, the visceral and cardiac situs, ventricular morphology, atroventricular valves, atrial septum primum, left and right ventricular outlets, pulmonary veins and systemic veins were normal. In the 3VT view, right superior vena cava and left ductus arteriosus were normal in appearance but aortic arch was demonstrated double with right dominance. Complete vascular ring due to double aortic arch was shown in figure 2-a and b both with color Doppler and gray scale imaging. In addition, the double aortic arch in 3VT view was shown in Figure 3 by 3D Power Doppler imaging. Amniocentesis was offered to rule out possible associated karyotype abnormality and 22q11 microdeletion. Afterwards karyotype and microdeletion results were determined normal. Mild polyhydramnios developed in early third trimester of pregnancy probably due to vascular compression effect of double aortic arch. At 38 weeks of gestation, a neonate weighing 3, 210 g was delivered with cesarean section due to maternal desire, with Apgar scores of 8 and 9 at one minute and five minutes respectively. Neonatal echocardiography and Computerized Tomography results confirmed the prenatal diagnosis of double aortic arch. There was no significant vascular compression of trachea during the first four months period. After four months the neonate showed feeding difficulties and vomiting. Barium esophagography revealed that, a compression effect is present at the level of mid-esophageal segment possibly due to vascular ring effect, but it does not block the passage (Figure 4). During the preparation of this report, the neonate with mild symptoms was followed without surgery.

Conclusion
Double aortic arch is the most frequently diagnosed vascular ring cause. Vascular ring may compress the trachea and esophagus and some symptoms, such as respiratory obstruction, vomiting and pneumonia due to aspiration, may develop in neonatal period. An accurate diagnosis of aortic arch anomalies can be done using fetal echocardiography. 3VT view is the most important interrogation for detection of aortic arch anomalies. It is possible to diagnose or doubt of aortic arch anomalies with obtaining 3VT view in first trimester screening.