Double aortic arch (DAA) is a congenital anomaly, which can be detected by prenatal ultrasonography. We here present the use of in-utero magnetic resonance imaging (MRI) in two cases of suspected fetal DAA with potential airway obstruction.

Case 1: A 29 years old, G1P0 lady was referred for right-sided aortic arch with a narrow trachea by morphology scan. Repeated ultrasonography suggested DAA at 23 weeks of gestation. Amniocentesis was performed for karyotype and array comparative genomic hybridization, which were normal. At 32 weeks of gestation, fetal MRI was performed to assess potential airway obstruction, which suggested DAA with no tracheal compression. A female fetus of 3745grams was born at 40 gestational weeks with good Apgar score (9 at one minutes and 10 at 5 minutes). Postnatal echocardiography confirmed DAA.

Case 2: A 35 years old, G1P0 lady was referred for suspected DAA, persistent left superior vena cava (LSVC) and dilated coronary sinus at 25 weeks of gestation. Amniocentesis was done and normal result for karyotype and array comparative genomic hybridization. At 35 weeks of gestation, fetat MRI suggested DAA and trachea appeared normal without distortion. A male fetus was born of 3335grams was born at 41 week without breathing difficulty. Echocardiography after birth revealed right-sided aortic arch with bilateral SVC.

Discussion:
Routine prenatal screening ultrasonography can identify fetal aortic arch anomalies at standard three-vessels-trachea view. Possible tracheal compression was suspected in both cases and MRI was a promising tool for diagnosis (1) and predicting airway compromise at birth. The whole trachea was smooth in outline with normal caliber around 4mm in both cases, which gave a low risk of airway problem at birth. However, clinicians have to remain cautious in interpretation in the presence of other cardiac anomaly (1).

Reference: