

The “midline shift of the aorta” sign: a screening tool for prenatal diagnosis of congenital diaphragmatic hernia

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Introduction: The overall prenatal detection rate for congenital diaphragmatic hernia (CDH) is only about 60% and still a subset of fetuses with CDH are either diagnosed in the late third trimester or postnatally. The stomach down left sided CDHs are the ones most often missed in prenatal ultrasound likely due to lack of identification of mediastinal shift in the routine midtrimester scan. The objective of the study is to propose a simple sign in three-vessel view (3VV) which serves as a screening tool to identify the mediastinal shift in CDH.

Methods: The 3VV was retrospectively evaluated in 54 cases of CDH and 13 cases of eventration diagnosed in midtrimester. In 7 cases referred with diagnosis of CDH in third trimester, we retrieved the midtrimester anomaly scan 3VV from those centres. In normal cases, the position of the aorta (Ao) in the 3VV is always in midline in alignment with the spine [a]. The shift of aorta away from the midline was evaluated in all the abnormal cases.

Results: The main pulmonary artery and ductus arteriosus were seen in the midline and the aorta was shifted to right side in 44/47 (94%) cases of left sided CDH [b]. The superior vena cava (SVC) was seen in the midline and the aorta was shifted to left side in 6/7 (86%) cases of right sided CDH [c]. The midline shift of aorta was noted in all the cases of eventration. Of the retrieved 7 cases, all had a midline shift of aorta.

Conclusion: The “midline shift of aorta” sign is a very simple and easily recognizable sign which identifies the mediastinal shift in CDH cases. Routine evaluation of the midline position of aorta in 3VV would help to suspect subtle mediastinal shift which eventually would increase the detection rate of CDH.

