Prenatal Imaging of Situs Anomalies: Utility of Fetal MRI
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Introduction
Ultrasound of the fetus through the abdomen. The stomach is small. The gallbladder is seen.

Discussion:

Case 1
Gestational age: 35 weeks. Ultrasound findings: liver is midline. The stomach is in the left side of the abdomen. The liver is in the right side of the abdomen. The gallbladder is on the right side (arrow). The spleen is not seen.

Case 2
Gestational age 28 weeks, referred to prenatal MRI because situs inversus was suspected from an outside ultrasound. Fetal MRI demonstrated left-sided cardiac apex, liver is midline, right-sided stomach. Coronal T1 demonstrated colon in the left side of the abdomen. The liver is in the right side of the abdomen. The gallbladder is on the right side (arrow). The spleen is not seen.

Case 3
Gestational age 36 weeks, fetus diagnosed by prenatal ultrasound with situs inversus. Fetal echocardiogram suggested hypoplastic transverse arch at our institution. Plain radiograph of the chest and abdomen demonstrated right-sided cardiac apex, right-sided stomach, presence of the gallbladder, left-sided aorta, left-sided IVC, small bowel on the right and colon on the left, suggesting malrotation. Postnatal imaging showed midline liver. Small bowel was obstructed, terminal ileum at the site of the stricture.

Case 4
Gestational age 35 weeks with megacystic, multicystic dysplastic left kidney (LK) and hydronephrosis. Both kidneys were abnormal with multicystic dysplastic left kidney and moderate right hydronephrosis as seen on prenatal MR. Plain radiograph demonstrated right-sided cardiac apex, right-sided stomach, presence of the gallbladder, left-sided aorta, left-sided IVC, small bowel on the right and colon on the left, suggesting malrotation. Postnatal imaging showed midline liver. Small bowel was obstructed, terminal ileum at the site of the stricture.

Case 5
Gestational age 35 weeks, referred to prenatal MRI because situs inversus was suspected from an outside ultrasound. Fetal MRI demonstrated left-sided cardiac apex, liver is midline, right-sided stomach. Coronal T1 demonstrated colon in the left side of the abdomen. The liver is in the right side of the abdomen. The gallbladder is on the right side (arrow). The spleen is not seen.

Conclusion
MRI, used in conjunction with ultrasound, is a valuable tool in the evaluation of the fetus with a suspected heterotaxy syndrome. With this information, appropriate patient management and counseling can be performed.

References