Amniotic Band Sequence (ABS) is a collection of fetal malformations associated with fibrous bands that entangle or entrap various fetal parts in utero. The severity of imaging diagnosis has been presented in utero and around (33). However, with the advent of fetal MRI and with the advances in fetal radiology and surgery, fetal MRI has been increasingly used to better characterize fetal abnormalities. In this paper, we illustrate the MRI findings of ABS and compare its accuracy to US.

**Methods**

Using the institution’s electronic medical records database, we retrospectively identified and reviewed 14 confirmed cases of ABS from the years 2008–2018 in which patients had a total MRI and a level II Ultrasound performed on the same day. The final diagnosis of ABS was confirmed by either operative report (in 11 cases where prenatal intervention was undertaken) or by assessment of postnatal clinical records (3 cases). All fetal MRI exams were acquired with a 3-Tesla scanner using a new phased-array coil. Sequences performed included single-shot fast spin echo (FSE) and fast imaging employing steady state acquisition (FIESTA) sequences with various magnetization and/or gradient echo parameters. Technical details are available on request. Images were reviewed and interpreted by the PAI author and one other member of the radiology department who were blinded with respect to the etiology. Material / fetal sedation was not used.

**Background**

ABS has been related to cases of fetal death due to cord constriction. Cord involvement appears as cord entanglement or an unusual fixed course, suggesting in an additional 3 cases (21%). US detected bands in 13/14 patients (92.8%).

**Results**

**Limb Involvement**

Limb involvement in ABS is seen as focal constriction of the soft tissues with or without edema of the distal portion of the affected extremity. In our series, cord involvement was present in 7 fetuses (table 2). Cord findings for all affected fetuses were similar using both modalities with the exception of one case in which only MRI suggested involvement due to unusual fixed course, this was confirmed at surgery. Abnormal Doppler waveforms of the umbilical artery or vein were present in 4 fetuses.

**Truncal Involvement**

ABS has been related to cases of fetal death due to cord constriction. Cord involvement appears as cord entanglement or an unusual fixed course, suggestive in 3 cases (21%). Cord involvement was present in 7 fetuses (table 2). Cord findings for all affected fetuses were similar using both modalities with the exception of one case in which only MRI suggested involvement due to unusual fixed course, this was confirmed at surgery. Abnormal Doppler waveforms of the umbilical artery or vein were present in 4 fetuses.

**Discussion**

Amniotic bands appear as linear to T2-signal irregularities, usually this and reproduce on several sequences and planes to differentiate from motion artifact in the amniotic fluid. The bands can be seen, often not always, in close association with the affected body part or umbilical cord. MRI also provided excellent assessment of the entire pregnancy allowing identification of limb and cord involvement. US retains the advantage of Doppler capabilities allowing for assessment of fetal demise in cases of cord involvement and preservation flow distal to the constriction in limb involvement.

**Conclusions**

Fetal MRI is valuable in assessing amniotic bands and its secondary manifestations and could be a complementary technique to prenatal US in cases where fetal surgery is contemplated.

**References**