

Lateral Positioning techniques to reduce diagnostic pitfalls and improve accuracy of MRI Imaging for Placenta accreta spectrum

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Objective

The purpose of this case series is to emphasize the importance of different positional techniques during MRI imaging for suspected Placenta Accreta Spectrum and their effect on diagnosing abnormal findings and decreasing the diagnostic pitfalls.

Methods

This Case series involves two different cases of abnormally invasive placentation in which there were few diagnostic uncertainties on initial standard MRI imaging and positioning techniques. Both of these cases underwent repeat MRI imaging using different positioning techniques, thus overcoming the diagnostic pitfalls and improving the overall accuracy.

Results

Case 1-24 year old P1001 with no prior history and a previous uncomplicated vaginal delivery progressed without event into the second trimester before having an episode of antepartum bleed. Ultrasound evaluation revealed the presence of placenta previa prompting further imaging studies. On MRI, there was concern for a right posterior placenta increta, possible percreta anterior to the common iliac vessels and distal right ureter with moderate right sided hydronephrosis. She was scheduled for a cesarean hysterectomy between 35-36 weeks. After multidisciplinary evaluation of patient a second MRI was suggested to complete a focused evaluation of the area of suspected percreta. Patient subsequently had a repeat MRI study done with a left lateral decubitus positioning which revealed no evidence of placenta percreta and instead showed the presence of an intact but thinned out myometrial interface separating the placenta from the iliac vessels and ureter. At 37 weeks she was admitted for a cesarean section which was completed with an estimated blood loss of 1200cc. Placenta separation was uneventful intraoperatively and patient had an uncomplicated course in the immediate post op period CASE 2-34 year old P5005 with past medical history of hypothyroidism and a past obstetric history of postpartum hemorrhage and. Patient also had an previous operative hysteroscopy for an intrauterine pathology. In the index pregnancy, she was evaluated at 32 weeks due to concern for anterior placenta accreta. She had an MRI evaluation that showed a large region of full thickness of myometrial fibrosis in the right lower uterine segment extending to the anterior abdominal wall and possibly involved the right external iliac artery. There was evidence of abnormal placental attachment to the region of fibrosis. Patient had a repeat targeted MRI with positioning in the supine and left lateral positioning which revealed a C shaped placenta with no evidence of invasion or encroachment on the right external iliac artery. Patient was subsequently lost to follow up.

Conclusion

Proper MRI imaging and lateral positioning techniques increases the accuracy of the workup in high-risk patients with Placenta accreta Spectrum along with decreasing the diagnostic pitfalls. This aids in multidisciplinary delivery planning to improve maternal and neonatal outcome. Diagnostic accuracy and confidence require adherence to strict examination protocol, repeat imaging with different positioning when required and awareness of common pitfalls.