EP15.26 - Time-of-flight: what a non-contact vascular MRI sequence can demonstrate in cases of placenta accrete spectrum

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Objective:

To evaluate the images generated by the non-contrast MRI sequence Time-of-flight (TOF) in cases of placenta accreta spectrum (PAS), with special attention in the vascular tridimensional architecture of maternal pelvic arteries.

Methods:

Patients were referred for MRI due suspected PAS were submitted to TOF sequence. TOF is an non-invasive and contrast-free vascular sequence for MRI.

Results:

Four patients reffered with suspected PAS were evaluated using the TOF sequence. The MRI parameters used for TOF sequence are included in Table 1. The TOF sequence can acquire bidimensional images of the maternal pelvic arteries in three different planes. The images can be fused, forming a 3D image. The tridimensional image can demonstrate clearly in all cases the aorta, with its bifurcation, the internal iliac arteries and their branches: the uterine arteries, cervical arteries and superior vaginal arteries, with their topographic relation with the maternal uterus and bladder. The collateral arteries cannot be visualized in those images due restricted field-of-view.

TOF MRI parameters

Voxel Size	Echo time (ms)	Repetition time (ms)	Field of View (mm)	Time (m)
0.9mm	7.1	23.6	240	8

Conclusion:

The TOF sequence can reconstruct the maternal pelvic arteries related to the uterus, placenta and bladder in 3D images.



Figure 1: 3D reconstruction of the maternal pelvic arteries provided by TOF MRI sequence. The iliac arteries can be visualized and their main branches, as uterine arteries, cervical arteries and superior vesical arteries. The image can be observed in any plane, improving the spatial perception of the maternal arterial anatomy.vesical arteries. The image can be observed in any plane, improving the spatial perception of the