



Three-dimensional reconstruction of the cervical segment of the uterine artery at 11 – 14 weeks' gestation

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Objective

Preeclampsia screening at the end of the first trimester requires the measurement of uterine blood flow. Studies reported that transabdominal measurement of the uterine artery pulsatility index has a relatively low inter-observer reproducibility, mainly because the uterine artery is not being sampled in the same place.

Methods

Using three-dimensional power Doppler, we reconstructed the uterine artery pathway at the cervical level.

Results

We found that the artery always forms a loop, with an anterior descending and posterior ascending segment. Loop spatial position and the appearance of its segments vary according to parity. The loop is most of the times regular in nullipara, with variations in its orientation. Usually It has an antero-posterior position above or at the level of internal os and it represents the most inferior point of uterine artery at this level. The loop is almost always rotated in multipara; its segments are tortuous and more elongated. The loop is often not the most inferior point of the uterine artery, and its anterior afferent segment sometimes descends below to the level of the loop.

Conclusion

Using three-dimensional reconstruction, we demonstrated the appearance of the uterine artery at the level of the cervix. Understanding the spatial arrangement of uterine artery could enhance the performance of pulsatility index measurement.