



E-learning

'Doppler measurement of the uterine artery'

Measurement of the **UTERINE ARTERY**: supplemental information of the e-learning 'CPR Doppler Ultrasound' based on the ISUOG Practice Guidelines: 'use of Doppler ultrasonography in obstetrics'.¹

UTERINE ARTERY

What is the appropriate technique for obtaining uterine artery Doppler waveforms?

Using Doppler ultrasound, the main branch of the uterine artery is easily located at the cervicocorporeal junction, with the help of real-time color imaging. Doppler velocimetry measurements are usually performed near to this location. To measure the uterine artery during the third trimester of pregnancy the transabdominal technique should be applied. Measurements should be reported independently for the right and left uterine arteries, and the presence of notching should be noted.

Transabdominal technique

- The probe is placed longitudinally (vertically) in the lower lateral quadrant of the abdomen.
- Whilst angling the probe from lateral to medial, color flow mapping is useful to identify the uterine artery as it is seen crossing the external iliac artery.
- The sample volume is placed 1 cm downstream from this crossover point (as illustrated in Figure 1).
- In a small proportion of cases if the uterine artery branches before the intersection of the external iliac artery, the sample volume should be placed on the artery just before the uterine artery bifurcation.

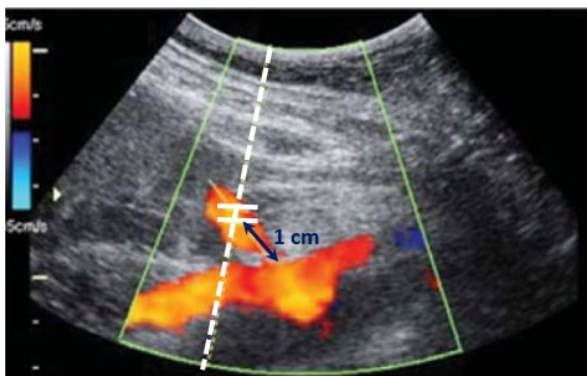


Figure 1 The sample volume is placed 1 cm downstream from the crossing external iliac artery.

- The same process is repeated for the contralateral uterine artery.
- With advancing gestational age, the uterus usually undergoes dextrorotation. Thus, the left uterine artery may not run as lateral as does the right.

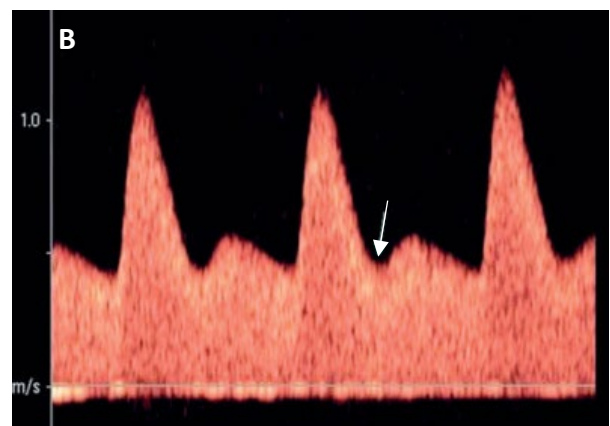
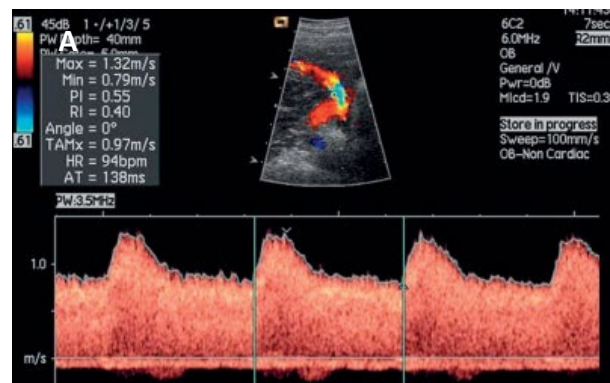


Figure 2 Waveforms from uterine artery obtained transabdominally in second trimester. Normal (a) and abnormal (b) waveforms; note notch (arrow) in Doppler signal in (b).

REFERENCES

1. Bhide A, Acharya G, Bilardo C, et al. ISUOG practice guidelines: use of Doppler ultrasonography in obstetrics. *Ultrasound in obstetrics & gynecology: the official journal of the International Society of Ultrasound in Obstetrics and Gynecology.* 2013;41(2):233.