

# Evaluating vascular flow in suspected placenta accreta

eL18-4 PureWave linear array transducer

### Category

Fetal assessment

### Author

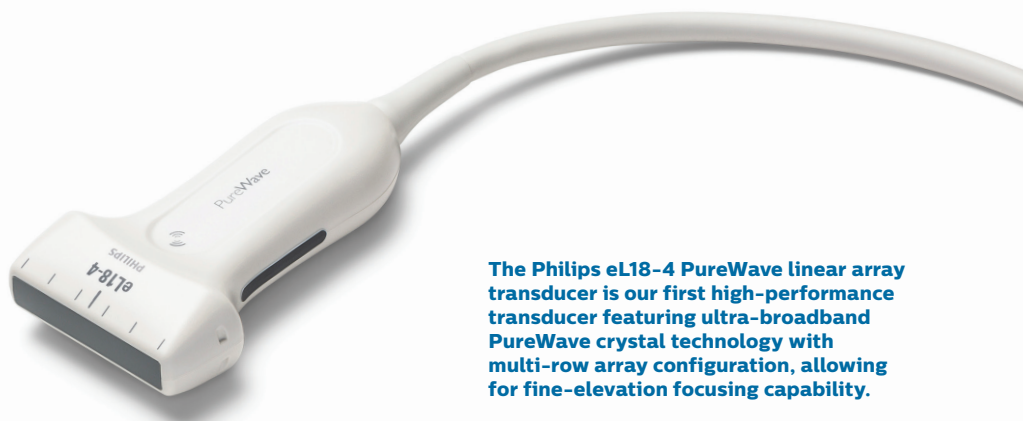
Luis F. Goncalves, MD  
Phoenix Children's Hospital  
Phoenix, AZ  
USA

### Overview

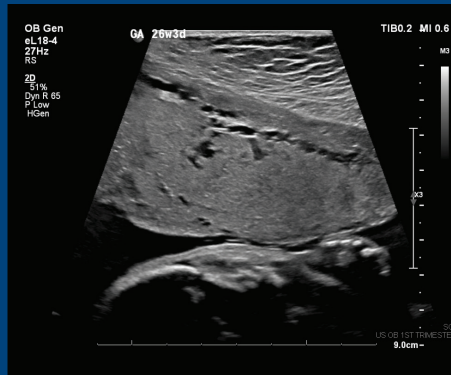
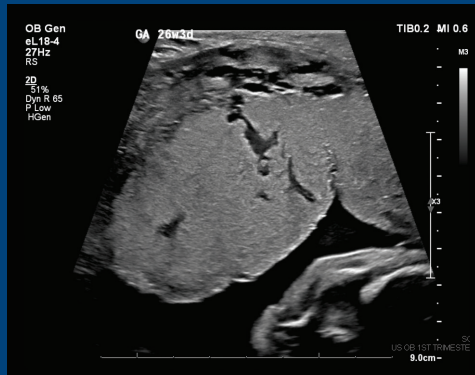
Accurate diagnosis of placenta accreta is important in determining timing of delivery as well as for surgical planning.<sup>1</sup> For example, if a placenta percreta is suspected prenatally, multiple specialists may need to be involved to secure a successful outcome. One of the clues for placenta accreta is abnormal placental vascularity seen as vascular lacunae, appearing as disorganized venous channels in the placental substance.

### Patient history

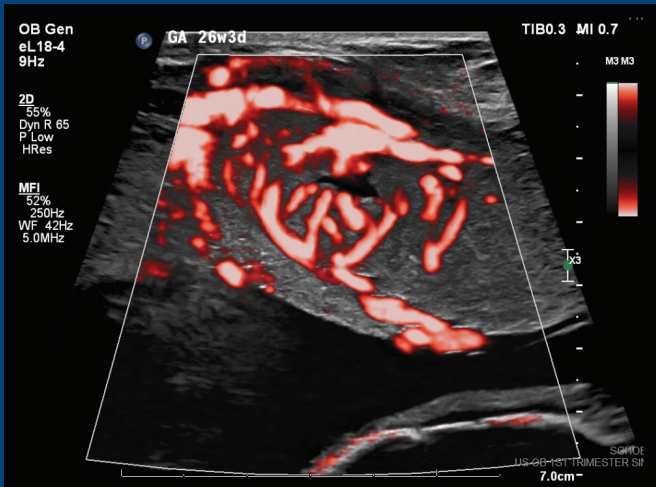
A 45-year-old female was referred for fetal MRI and ultrasound at 26 weeks and three days for suspected placenta accreta. Suspicious vascularity was noted on the prior ultrasound performed at an outside institution.



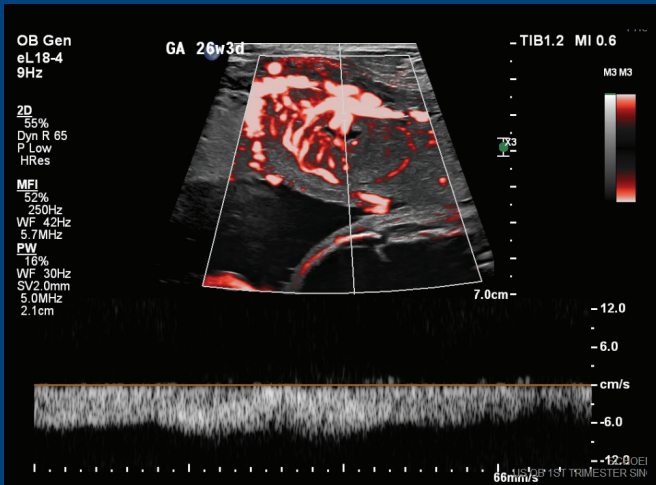
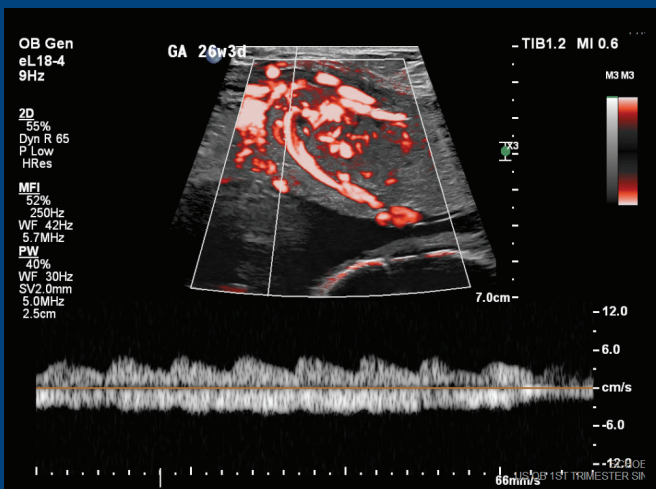
The Philips eL18-4 PureWave linear array transducer is our first high-performance transducer featuring ultra-broadband PureWave crystal technology with multi-row array configuration, allowing for fine-elevation focusing capability.



Figures 1, 2 and 3 2D images of placental anatomy.



**Figure 4** MicroFlow Imaging of placental vasculature



**Figures 5 and 6** MicroFlow Imaging and pulsed Doppler of placental vasculature.

## Protocol

Images of the placenta were obtained with the eL18-4 PureWave linear array transducer with and without MicroFlow Imaging (MFI) on the EPIQ ultrasound system (Figures 1 – 4).

## Findings

The images show a normal myometrium and a clear interface with the placenta. With MFI, the maternal arcuate arteries, spiral arteries as well as branching villous arteries are well-depicted, confirming a normal vascular architecture (Figures 5 and 6).

## Conclusion

High-resolution images obtained with the Philips PureWave eL18-4 transducer were used to determine that normal vascular architecture of the placenta in a case of suspected placenta accreta were present. This technology has the potential to change the way clinicians interpret normal versus abnormal vascular flow in the placenta.

## Reference

- 1 Warshak CR, Eskander R, Hull AD, et al. Accuracy of ultrasonography and magnetic resonance imaging in the diagnosis of placenta accreta. *Obstet Gynecol.* 2006 Sep;108(3 Pt 1):573–81. PMID: 16946217. DOI: 10.1097/01.AOG.0000233155.62906.6d Accessed May 18, 2018.

Results from case studies are not predictive of results in other cases. Results in other cases may vary.