



Bubbles and Lines: visual mnemonics to aid in the diagnosis of vasa previa

Ranzini AC

MetroHealth Medical Center/Case Western Reserve University-School of Medicine, Cleveland, Ohio, United States

Objective

Vasa Previa (VP) is a common ultrasound finding that continues to be overlooked during the midtrimester anatomic survey. The incidence of the finding is 1/2500 overall, but among the in vitro fertilization (IVF) population, the incidence may be as high as 1/250. Recognizing VP is important as neonatal mortality is reduced by 50% when the condition is diagnosed prior to labor. Since most pregnancies are screened with gray scale imaging in early pregnancy, it is important to recognize the gray scale clues for VP.

Methods

The most important risk factors for VP are the ultrasound-identified risk factors: velamentous or marginal cord insertions into the placenta, marginal previa, placenta previa and succenturiate lobes, all of which are much easier to identify during the midtrimester scan or possibly earlier in pregnancy. Since most pregnancies are screened primarily with gray scale imaging, it is important to recognize the direct signs of VP visible on transabdominal or transvaginal scanning, especially when these ultrasound risk factors are seen. We review the “bubble” and “line” signs, which are gray scale findings and clues to the diagnosis of VP. These findings are able to be identified on either transabdominal or transvaginal scanning. Once identified, the “bubble” can be elongated by turning on it to form a “line”, or the “line” can be made into a “bubble” by turning on it. If the initial diagnosis is suspected transabdominally, transvaginal scanning can guide further management of the pregnancy by confirming the number and location of the vessels and their distance and relationship to the internal os.

Results

Several examples of the “bubble-sign” and the “line-sign” will be presented with transabdominal and transvaginal images in gray scale and confirmed with color and pulsed-wave Doppler.

Conclusion

Vasa previa can be suspected with transabdominal gray scale imaging by finding either the “bubble-sign” or the “line-sign” in the lower uterine segment in the midtrimester, and then confirming this with transvaginal scanning with color and pulsed-wave Doppler. The “bubble-sign” and the “line-sign” can also be seen vaginally. Recognizing these gray scale signs will aid in the identification of VP for all of us who screen pregnancies with gray-scale imaging.



