

Morbid adherence of the placenta: lack of specificity should remind us that ultrasound is a screening tool

Amar Bhide, Karin Leslie, Edwin Chandraharan, Kevin Hayes

¹Fetal Medicine Unit, St. George's Hospital, London, UK

Address for correspondence:

Dr. Amar Bhide

Fetal Medicine Unit

St. George's Hospital, London

Tel: +44 20 87250080

Fax: +44 20 87250079

e-mail: abhide@sgul.ac.uk

Excellent performance has been reported with prenatal diagnosis of abnormal placental invasion using ultrasound. We describe a case which illustrates the validity of ultrasound features of abnormally invasive placentation in women without previous caesarean delivery.

Case: Ms. CB, a 27 year-old G3 P1+1 was seen in her pregnancy at 36 weeks of gestation. Her first pregnancy was uncomplicated and she gave vaginal birth to a normally grown baby at term. Before the current pregnancy, she suffered a miscarriage in the first trimester, and underwent surgical evacuation. She suffered prolonged vaginal blood loss for which she was investigated, and a diagnosis of A-V malformation (AVM) was made on the basis of the ultrasound findings (Figure 1). She conceived spontaneously before intervention.

She was sent for ultrasound evaluation in the current pregnancy due to the possibility of the placenta being abnormally invasive, as it was situated over the AVM. The ultrasound features were suspicious of abnormally invasive placentation (Figures 2a and 2b). A personalised delivery plan was made in the anticipation of massive post-partum haemorrhage.

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1002/uog.17459

She was admitted in spontaneous labour at 40+3 weeks. Labour progressed normally. Placenta was delivered spontaneously after the baby. The estimated blood loss was 500 mls. The mother was discharged home after 48 hours' observation.

Comment: The case demonstrates that the ultrasound features of abnormally invasive placenta¹⁻³ are not unique to the condition. The combination of history of a Caesarean delivery, location of the placenta over the presumed scar and typical ultrasound features is necessary for antenatal diagnosis. Ultrasound features of abnormally invasive placentation are described in the setting of a previous caesarean section and low anterior placenta/placenta previa⁴. Abnormal invasion of placenta can also occur without a previous uterine scar due to decidual secondary to previous curettage, manual removal and uterine sepsis. Characteristics of an AVM are well defined in the non-pregnant uterus, but they are also not defined in the pregnant uterus due to the huge normal physiological vascular changes seen.

However, diagnostic performance of ultrasound for abnormally invasive placentation should not be extrapolated to women without previous caesarean delivery. For this population, the validity of ultrasound features remains undefined. Intervention based solely on ultrasound appearance of the placenta suggestive of abnormal invasion is not justified.

References:

1. Collins SL, Ashcroft A, Braun T, Calda P, Langhoff-Roos J, Morel O, Stefanovic V, Tutschek B, Chantraine F; European Working Group on Abnormally Invasive Placenta (EW-AIP). Proposal for standardized ultrasound descriptors of abnormally invasive placenta (AIP). *Ultrasound Obstet Gynecol.* 2016;47(3):271-5.
2. Alfirevic Z, Tang AW, Collins SL, Robson SC, Palacios-Jaraquemada J. Ad-hoc International AIPEG. Pro forma for ultrasound reporting in suspected abnormally invasive placenta (AIP): an international consensus. *Ultrasound Obstet Gynecol.* 2016;47(3):276-8.
3. D'Antonio F, Iacovella C, Bhide A. Prenatal identification of invasive placentation using ultrasound: systematic review and meta-analysis. *Ultrasound Obstet Gynecol.* 2013;42(5):509-17.
4. Bhide A, Sebire N, Abuhamad A, Acharya G, Silver R. Morbidly adherent placenta: The need for standardization. *Ultrasound Obstet Gynecol.* 2017 (In press).

Figure 1. Transvaginal scan with colour flow mapping consistent with an A-V malformation



Figure 2. Grey-scale (a) and bi-directional power Doppler (b) findings of the placenta showing multiple lacunae, vascularity and turbulent flow

