Moving from intra-partum to prenatal diagnosis of placenta accreta: A quarter of a century in the making but still a long road to go.

In 1961, K Greig, MRCOG, then a senior registrar at the Royal Maternity reported a case of placenta accreta (PA) treated by post-partum hysterectomy (Figure). The patient was a grand multipara with prior history including a uterine curettage, manual delivery of the placenta and caesarean delivery (CD) (J Obstet Gynaecol Br Commonw. 1961;68:968-73). This was not the first case-report of accreta, but before imaging techniques i.e. ultrasound and magnetic resonance imaging (MRI) became available, PA was almost exclusively an intra-partum finding with often dramatic consequences.

Irving and Hertig in 1937 published the first detailed series of PA (Surg Gynec Obstet. 1937;64:178-200). Of their 20 cases, only one occurred after a previous CD. Similarly in their review of 86 cases reported literature up to 1935, only one was found after a CD. Predisposing factors at the time were a previous manual delivery and “vigorous” uterine curettage. Their cases were all described as PA vera or adherenta where the villi are attached to the myometrium without invading it. More invasive forms of PA, i.e. placenta increta where villi invade the myometrium and placenta percreta where villi invade through the entire uterine wall and sometime the surrounding pelvic organ where rarely reported until the 1970s.

The exponential increase in the numbers of PA in the last 30 years is directly linked to the rapid the increase in the numbers of CD during the same period and the majority of PAs are associated with prior CD (Jauniaux and Jurkovic. Placenta. 2012;33:244-51). Placenta increta and percreta are associated with considerable maternal morbidity and even mortality, especially when not diagnosed before delivery. The first antenatal ultrasound descriptions of PA were reported around 25 years ago, less than a decade after the description of major fetal anomalies such as spina bifida. Despite major improvements in ultrasound technology and routine screening sonograms in middle and high income countries, PA remains undiagnosed before delivery in between half (Fitzpatrick et al. BJOG.2014;121:62-71) and a third (Bowman et al.AJOG;212:177.e1-7) of the cases.

MRI is increasingly used for the diagnosis of PA and has been reported to be useful in assessing the depth of myometrial invasion, especially with posterior placentation. However, it is uncertain that MRI changes management or improves outcomes (). Millischer et al (BJOG. 2016) reviewed the accuracy of MRI with and without gadolinium contrast in a cohort of women with suspected PA on ultrasound and found that gadolinium improves the MRI-based diagnostic performance. Although there is concern about the risks of gadolinium during pregnancy, safety data are accumulating. However, cost and limited access to MRI makes it impractical as a screening tool for PA.

With the continuous increase in the number of CD worldwide, with the marked improvement in maternal outcome when PA is diagnosed antenatally there is an urgent need to improve the prenatal diagnosis of PA. Further studies

should assess the value and safety of gadolinium MRI as well as other modalities for the detection of PA from the second trimester of pregnancy.

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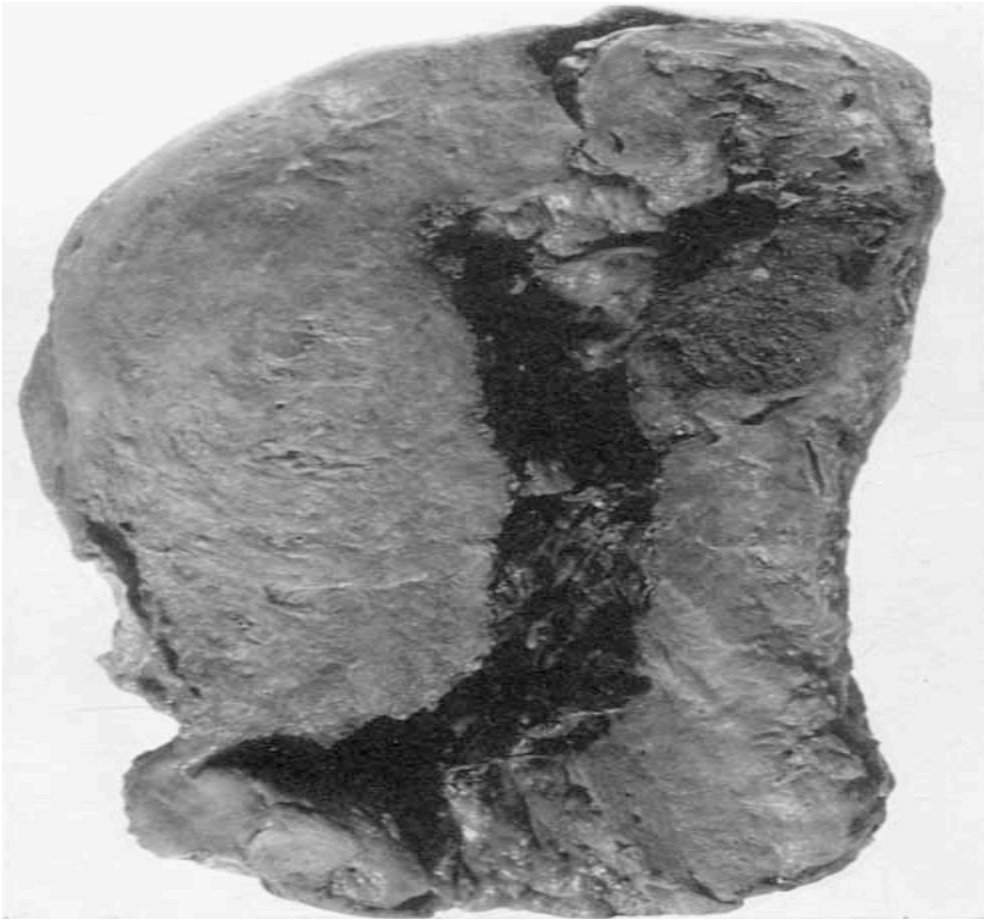
Figure from Greig K. J Obstet Gynaecol Br Commonw. 1961;68:968-73.
Hysterectomy specimen showing a placenta increta in the upper portion of the posterior wall and fundus.



Disclosure of interests

We declare no conflicts of interest.

E Jauniaux
Academic Department of Obstetrics and Gynaecology
Institute for Women's Health
University College London

London, UK.

Robert M Silver
Department of Obstetrics and Gynaecology
University of Utah School of Medicine
Salt Lake City, USA