Abnormally Adherent and Invasive Placenta: A Spectrum Disorder in Need of a Name

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There is little doubt that the worldwide caesarean delivery epidemic has led to an increased incidence of abnormally adherent and invasive placentation (AAIP). The significant impact that this disorder has on maternal morbidity and mortality has led to a flurry of publications in the world literature concerning all aspects of this condition. These papers have arisen from many sources notably pathologists, epidemiologists, obstetricians, and radiologists. Subsequently, the disjointed terminology used to describe this complex disorder is becoming increasingly confusing and perhaps misleading. In their review, Bhide et al. call for standardisation of the diagnostic terminology[1]. We agree this is necessary if we are to better understand, diagnose and manage this complex condition.

There are too many terms used to describe this spectrum disorder. For example, a recent systematic review found that out of 58 studies related to

ultrasound-based prenatal diagnosis, seven used the term “morbidly adherent placenta (MAP)”, two used “placental adhesive disorders”, two used “abnormally invasive placentation”, two used “abnormally adherent placenta” or “abnormal placental adherence”, one used “advanced invasive placentation” and one used the term “abnormal myometrial invasion”[2]. We believe the time has come for experts across disciplines to incorporate patient history, clinical presentation, imaging studies, and the underlying pathology, and agree upon more precise and useful terminology. This will help us all to better understand the disease process and make more accurate prenatal diagnoses allowing appropriate management.

When considering an appropriate terminology, the pathological diagnosis of abnormal placental adherence and invasion must be taken into account. Pathologists use ‘placenta accreta(or creta)’ when the villi adhere to the myometrium, ‘placenta increta’ when the villi invade the myometrium, and ‘placenta percreta’ when the villi invade through the uterine serosa. Lumping the three different pathological diagnoses into ‘placenta accreta’ to define the over-arching clinical condition has led to considerable confusion, particularly among clinicians. An attempt to clarify the over-arching terminology may be morbidly adherent placenta (MAP) or abnormally invasive placenta (AIP), but, neither term accurately describes what is a spectrum disorder. We think the term MAP is perhaps the least appropriate, because it implies abnormal adhesion (perhaps related to disrupted decidua) and does not precisely include abnormal invasion (increta and percreta), which tends to cause the greatest maternal morbidity and mortality.

The term “Morbidly Adherent Placenta” was first reported in in 1885 by Macdonald to describe a case of “partial placenta adhesion” which was complicated by retention of cotyledons, which he successfully treated with “opiate, ergot and brandy” [3]. This terminology then disappeared from the medical literature for 100

years. It was briefly reintroduced in 1985 to describe cases requiring post-partum hysterectomy in the management of secondary postpartum haemorrhage after caesarean section [4, 5]. With no rational explanation, it started to be used again to describe the ultrasound and magnetic resonance imaging (MRI) signs of placenta accreta [6] and has been used increasingly since and appears to be gaining ground as the 'fashionable' term. The term MAP completely fails to address abnormal invasion.

Irving and Hertig (1937) were the first to define the condition known clinically as "the abnormal adherence of the afterbirth in whole or in parts to the underlying uterine wall" and histologically as "the complete or partial absence of the decidua basalis" [7]. They also reviewed 86 cases reported in the literature up to 1935, including a few cases of "deeper placentation" producing placenta "increta" or "percreta," which they all included under the umbrella term "placenta accreta". In 1966, Lukes et al criticized the over-arching definition of "placenta accreta" to refer to both abnormal adherence and abnormal penetration of placental villi into the myometrium [8]. They suggested that it would be much simpler to provide a clinical diagnosis of "adherent or invasive placenta". Human placentation is physiogically invasive and therefore, the term was corrected to "*abnormally* adherent or invasive placenta". Follow-up histopathology would then subdivide the final diagnosis into accreta, increta, or percreta as appropriate.

Including the pathologist's classification of accreta, increta, percreta is important to better understand the underlying pathophysiology of the disease process and the predictive value of prenatal imaging studies. Following his review of the world literature between 1945-1969, the pionneering placentologist, H. Fox[9] noted that "the difficulties encountered in attempting to determine the true incidence of placenta accreta reflect, to a considerable extent, problems in the definition of this

condition". His review also highlighted that in many cases the diagnosis of placenta accreta "rested entirely upon clinical grounds" with no attempt at obtaining the pathological examination of hysterectomy specimens. A recent systematic review detailed correlations between ultrasound findings and pathologic diagnosis and found that only 72/1078 cases had tissue-based pathologic descriptions [2]. The lack of detailed histopathologic information in the other cases may explain why no ultrasound sign, or a combination of ultrasound signs, are specific for the depth of abnormal placentation. This deduction has an impact not only on diagnostic accuracy but also on epidemiological data and management options. In fact, many clinicians consider the required manual removal of the placenta as a surrogate for at least a partial placenta accreta [8]. This assumption is likely to be incorrect. Not surprisingly then, the reported prevalence of abnormally adherent and invasive placentation varies widely between studies and the frequency may reflect differences in terminology rather than variance in pathophysiology.

The European Working Group on Abnormally Invasive Placenta (EW-AIP) have recommended the use of AIP to cover the entire spectrum[10]. This can then be subdivided into accreta, increta, and percreta following histological analysis. To truly avoid dispute and confusion, however, perhaps it may be best to consider combining MAP and AIP, and revert to the definition of Lukes et al [8] referring to the clinical spectrum as 'abnormally adherent and invasive placenta' (AAIP). If we are to improve our understanding of the abnormally adherent and invasive placenta, facilitate prenatal imaging research, and ultimately enhance patient care, we must have a clear and precise terminology to better define it.

References

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