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Placenta accreta spectrum grading: The devil is in the histopathology details

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The authors have no conflict of interest to declare.

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We thank Palacios-Jaraquemada and D'Antonio for their interest in our work in general and our contribution to the Federation International of Gynecology and Obstetrics (FIGO) classification on placenta accreta spectrum (PAS) in particular. The FIGO classification development is a dynamic process which evolves with time. It is based on a consensus resulting from the review of evidence-based data modulated by the results of extensive literature reviews by a group of international experts under the umbrella of the committee. As past member of FIGO Working Group on Labor and Delivery, Prof Palacios-Jaraquemada should be aware of this process which is used for all other FIGO classifications and which the FIGO revised regularly.

Palacios-Jaraquemada and D'Antonio describe cases that combined both PAS grade 1 and 3. The fact that different grades of PAS can co-exist in the same specimen is well-known and was first described by Luke et al in 1966¹. In those cases, the deepest level of invasion should be used to classify them. Another long-established fact is that placentation into uterine scars can be associated with extravillous trophoblastic cells invading abnormally deeply inside the uterine wall with secondary transformation of the radial and/or arcuate arteries leading to massive obstetric hemorrhage during delivery, if the operator is unaware of the situation. This is without any doubt, the main concern in the management of invasive PAS and will almost always be associated with high maternal morbidity and some mortality independently of the location and extension of the invasive area.

Overall, the main issue in evaluating data from cohort studies on prenatal diagnosis and management of PAS, is the lack of detailed pathologic confirmation and differential diagnosis between adherent and invasive grades. In a recent systematic review and meta-analysis², we found large amounts of heterogeneity

between population studies for prevalence, incidence of peripartum hysterectomy and distribution of the different grades of PAS due to inconsistency with regards to the criteria used to diagnose and confirm the condition at birth. Our study on the clinic-pathologic correlations in invasive PAS, is the first to have prospectively correlated prenatal ultrasound signs, with intra-operative findings, immediate post-operative gross features and detailed histopathologic findings³. This approach can be used in case of conservative management. An expert panel has recently proposed a classification and reporting guidelines for the pathology diagnosis of PAS, which should provide authors of future publication with a standardised approach across the spectrum of PAS specimens⁴.

References

1. Luke RK, Sharpe JW, Greene RR. Placenta accreta: The adherent or invasive placenta. *Am J Obstet Gynecol* 1966;95:660–8.
2. Jauniaux E, Bunce C, Grønbeck L, Langhoff-Roos J. Prevalence and main outcomes of placenta accreta spectrum: a systematic review and metaanalysis. *Am J Obstet Gynecol*. 2019;9:e031193.
3. Jauniaux E, Hussein AM, Zosmer N, Elbarmelgy RM, Elbarmelgy RA, Shaikh H, Burton GJ. A new methodologic approach for clinico-pathologic correlations in invasive placenta previa accreta. *Am J Obstet Gynecol*. 2020; 222:379.e1-379.e11369.
4. Hecht JL, Baergen R, Ernst LM, Katzman PJ, Jacques SM, Jauniaux E et al. Classification and reporting guidelines for the pathology diagnosis of placenta accreta spectrum (PAS) disorders: recommendation from an expert panel. *Modern Pathol* 2020; May 15. doi: 10.1038/s41379-020-0569-1.