Placental pathology and risk of recurrent preterm birth

TO THE EDITORS: Preterm birth (PTB) is the leading cause of perinatal mortality and morbidity. Although our understanding of the etiology behind this pregnancy complication is poor, it has a tendency to recur.\(^1,2\) Patients who have had a previous PTB are usually very anxious during the second pregnancy, which itself can lead to spontaneous PTB. Therefore, risk predictors individual to a patient’s pregnancy or delivery are needed to aid counseling for these patients. Recently, Suresh et al.\(^3\) determined the independent contributions of the major placental pathology histologic types toward recurrent PTBs in a total of 924 pregnancy pairs. The authors reported that only high-grade chronic inflammation was independently associated with an increased risk of recurrent PTB. They concluded that placental pathology can be utilized to change risk assessment. However, the study raises some important issues that should be addressed.

The placenta was submitted for pathologic review in 947 (57.2%) index PTBs and not submitted in 708 (42.8%). Subsequent pregnancy outcome (gestational age) was available in 924 (97.6%) out of 947 cases with placental pathology, including 376 early PTBs (<34 weeks) and 548 late PTBs (34–36 weeks). The authors mentioned that standardized institutional indications for the examination of placentas by pathology included the following: intrauterine fetal demise, fetal growth restriction, PTB at <34 weeks’ gestation, severe preeclampsia, etc. This indicated that most of the 548 cases of late PTB had other adverse conditions. In other words, obstetricians would not apply for a pathologic examination in the case of late PTB without a coexisting undesirable condition. Therefore, it would be interesting to know the recurrent rate in the 708 patients with index PTBs but no placental histology. The risk of recurrent PTB was 27% in the study sample. Were there any differences between patients with early PTB and those with late PTB? Was the pathologic type of placenta correlated with a maternal medical condition?

Indeed, one finding of this study confirmed the results of a previous study that recurrent PTB was more likely to occur among women with inflammatory lesions observed on placental pathology from a previous PTB.\(^4\) Chronic inflammation has been implicated, particularly in late PTB. Another finding was that low-grade maternal vascular malperfusion was associated with recurrent PTB only among those with early PTB (<34 weeks). The authors did not discuss the implications of this finding. We speculate that the risk factors of early PTBs are different from those causing late PTBs. Therefore, they could not be evidenced by placental pathology.

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