

Title: The Peculiar Placenta: A Case of Placental Mesenchymal Dysplasia

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Purpose: To report a rare case of placental mesenchymal dysplasia

Methods: Case report

Background: Placental mesenchymal dysplasia (PMD) is a benign placental anomaly that is characterized by placentomegaly and cystic lesions grossly, and mesenchymal dysplasia histologically. PMD is a rare finding, with an estimated incidence of 0.02%. Yet this condition is likely underdiagnosed due to a lack of awareness. Differential diagnosis includes partial or complete molar pregnancy, chorioangioma, and subchorionic hematoma. It is essential to recognize PMD to prevent unnecessary termination of pregnancy. PMD is associated with multiple complications, such as fetal growth restriction, preterm delivery, Beckwith-Wiedemann Syndrome (BWS), and stillbirth.

Results: A 25-year-old G2P1001 at 30+3 weeks dated by 11-week ultrasound presented for preterm labor. The initial ultrasound also noted a minimal subchorionic hematoma at the uterine fundus. A cervical exam showed that the cervix was 4 cm dilated, 50% effaced, and at -2 station. Prenatal labs were unremarkable, and ultrasound showed fetal growth restriction, with the estimated fetal weight measuring 9% (EFW 1364g), and resolution of the subchorionic hematoma. Pertinent obstetric history included one previous full-term spontaneous vaginal delivery complicated by postpartum preeclampsia. Significant past medical history included gastroschisis and short bowel syndrome status post-surgical repair and cholecystectomy. She was started on magnesium for fetal neuroprotection, ampicillin for unknown group B streptococcus status, and had already received steroids for fetal lung maturity. The patient had spontaneous rupture of membranes just prior to fetal head delivery, with clear fluid noted. Normal spontaneous vaginal delivery of a 1220g male infant occurred with APGARs of 1, 6, and 8 at one, five, and ten minutes. The umbilical cord was clamped after a 10-second delay due to fetal distress and the placenta was delivered seconds after the infant with an intact three-vessel cord. The infant received surfactant and positive pressure ventilation without improvement and was subsequently intubated and transferred to the NICU. The placenta was sent for evaluation due to low APGARs, and the pathology report returned with a diagnosis of mesenchymal dysplasia. This diagnosis was evident upon staining sections of placental parenchyma with p57 immunochemical stain, which showed positive staining of villous trophoblasts and absence of staining of villous stromal cells in the fibrous nodules.

Conclusions: Placental mesenchymal dysplasia is a rare anomaly with a varied clinical presentation. For this patient, her pregnancy was uncomplicated until she went into preterm labor at 30+3 weeks with noted fetal growth restriction, and fetal respiratory distress after birth. There was no concern for PMD until a postnatal placental pathological workup was done, which showed positive p57 staining of the placental parenchyma, confirming PMD. While it is traditionally considered a benign anomaly, PMD can be associated with multiple complications. A systematic review of 64 cases of PMD found that intrauterine growth restriction was the most common complication, affecting 33% of pregnancies, and 52% of pregnancies resulted in preterm delivery. Interestingly, both findings are consistent with this patient's case, suggesting a classic presentation of PMD despite the lack of prenatal findings. Management of PMD depends greatly on the clinical presentation of the patient and the infant. Close prenatal and postpartum monitoring is indicated in the case of maternal complications. The patient should also be counseled on the nature of PMD and the possibility of recurrence with subsequent pregnancies. Neonatal care includes managing any presenting complications, as well as undergoing a thorough assessment to rule out possible associations with PMD.