

**Supplemental Table 1: Placental lesions across gestational age ranges, identified by Pinar et al. (2014) [5]**

	<b>Developmental</b>	<b>Inflammatory</b>	<b>Circulatory</b>
<b>&lt;24 week stillbirth</b>	Velamentous umbilical cord insertion	Acute chorioamnionitis, funisitis, umbilical cord phlebitis, chorionic plate vasculitis	Diffuse avascular villi
<b>24 – 31<sup>6/7</sup> week stillbirth</b>	Single umbilical artery	Acute chorioamnionitis (chorionic plate), funisitis, umbilical cord arteritis, umbilical cord phlebitis, chorionic plate vasculitis, vascular degenerative changes	Retroplacental hematoma, diffuse infarction, avascular villi (focal/diffuse)
<b>32 – 36<sup>6/7</sup> week stillbirth</b>	Single umbilical artery	Chorionic plate vascular degenerative changes	Retroplacental hematoma, focal/diffuse infarction, perivillous fibrin deposition, chorionic fetal vascular thrombi
<b>≥37 week stillbirth</b>	Single umbilical artery, diffuse terminal villous immaturity	Acute chorioamnionitis, chorionic plate vascular degenerative changes	Intraparenchymal thrombus, chorionic fetal vascular thrombi, avascular villi, edema (placental hydrops)

**Supplemental Table 2: Lesions included in Kernel Principal Covariates Regression, with definitions according to Pinar et al. (2011) [12]**

<b>Category</b>	<b>Lesion</b>	<b>Definition</b>
<b>Developmental</b>	Abnormal cord insertion	Velamentous (within placental membranes) or furcate (without Wharton's substance)
	Single umbilical artery	Absence of one umbilical artery
	Terminal villous immaturity	Increased terminal villous diameter, increased stromal fibroblasts and macrophages, centralized capillaries, lack of vasculosyncytial membranes
	Terminal villous hypoplasia	Decrease in the number and modal diameter of distal villi at the center of the lobule after adjustment for plane of section and gestational age
	Abnormal membrane insertion	Circummarginate (parenchyma continues beyond insertion of the membranes leaving uncovered placental tissue) or circumvallate (membranes are folded over at the margin, decreasing the surface area of the placenta)
<b>Inflammatory</b>	Acute chorioamnionitis	Presence of inflammatory cells in placental membranes or chorionic plate
	Acute funisitis	Presence of inflammatory cells in Wharton's substance
	Acute umbilical cord phlebitis or arteritis	Presence of inflammatory cells in umbilical vein or artery walls
	Chorionic vasculitis	Presence of inflammatory cells in chorionic vessels
	Chorionic vascular degeneration	Homogenization of the muscular wall of chorionic vessels
	Intervillitis	Presence of inflammatory cells in intervillous space
	Acute/chronic villitis	Presence of macrophages or other inflammatory cells within villous stroma
	Deciduitis	Presence of inflammatory cells within the decidua of basal plate or free membranes
<b>Circulatory</b>	Avascular villi	Loss of villous capillaries and bland hyalinization of villous stroma
	Retroplacental hematoma	Clots present behind the placenta, with or without strong adherence to basal plate (gross)
	Hemorrhage of placental disc	Gross or microscopic presence of hemorrhage within villous parenchyma or basal plate
	Parenchymal infarct	Fresh (reddish or rusty-brown appearance, firmer in consistency) or older (yellow, firmer, fibrous), with or without involvement of the entire thickness of the placenta (gross)
	Intravillous thrombus	Clotted blood within chorionic villi (microscopic or gross)

	Villous fibrin deposition	Evolved infarcts with fibrin deposition	
	Fetal vascular thrombi	Thrombi present within fetal vessels on placental disc	
	Fetal vascular disruption	Occlusion or obstruction of fetal vessels on placental disc (gross)	
	Nucleated fetal red blood cells	The presence of three fields containing at least two unequivocal normoblasts (Nucleated red blood cells – NRBC) in a single terminal villus (capillaries) in one microscopic section examined at 40x magnification	
	Decidual vasculopathy	Changes that occur in the decidual arterioles in preeclampsia or other hypertensive disorders: (1) thick-walled decidual arterioles (hypertrophic); (2) decidual vessels with acute atherosclerosis and/or fibrinoid necrosis and/or foamy macrophages	
	Abundant blood clots	Presence of excessive amount of blood clots attached to the specimen or loose in the container	
<b>Placental Disc (other)</b>	Syncytial knots	Aggregates of syncytiotrophoblast nuclei along proximal stem villi or at one or more poles of distal villi. A severe increase was defined as excessive knots for gestational age at the periphery of lobule in > 30% of parenchyma. The extent of syncytial knotting was estimated as the percentage of villous parenchyma with more knots than expected for gestational age in the bottom 75% of a full-thickness section.	
	Trophoblast proliferation	Foamy trophoblasts, trophoblastic giant cells, or immature extravillous trophoblast of basal plate	
	Chorangioma	Benign neoplastic proliferation of capillaries and stroma within a villus forming an expansile nodular lesion	
	Chorangiomatosis	Multifocal lesion characterized by an increase in villous capillaries that tends to permeate the normal villous structures	
	Chorangiosis	Diffuse increase in the number of villous capillaries	
	Villous karyorrhexis	Karyorrhexis of fetal blood cells, endothelium, and/or stromal cells with preservation of surrounding trophoblast	
	Irregular lobulations	Irregular pattern of basal plate	
	Inclusion bodies	Viral or other inclusions within the villous parenchyma	
	<b>Umbilical cord (other)</b>	True knot	Defined as “tight” if they can not be easily reduced
		Vascular lesion	Lesions within the artery or vein of umbilical cord
Punctate/gross hemorrhages		Presence of hemorrhage within Wharton’s substance	
Degeneration		Homogenization of the muscular wall of umbilical vessels	

<b>Multifocal findings (chorion, membranes, disc, umbilical cord)</b>	Reactive amniocytes	Amniocytes with vacuolization of cytoplasm, heaping up of cells, dissociation, loss of cells, and necrosis
	Calcifications	Nodules or plaques of calcium
	Meconium	Brown, green, or yellow discoloration
	Amniotic bands	Amniotic bands creating any degree of disruption in fetus or placenta
	Edema	Changes suggestive of acute increase in extracellular fluid, tissue bubbles separated by reticulin fibers
	Hemosiderin	Crystalline yellowish pigment, often larger in size than meconium
	Amnion nodosum	Nodular structures on the amnion
	Necrosis	Necrotic cells/structures present

*Note: some lesions are included as either “focal” or “diffuse”*

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