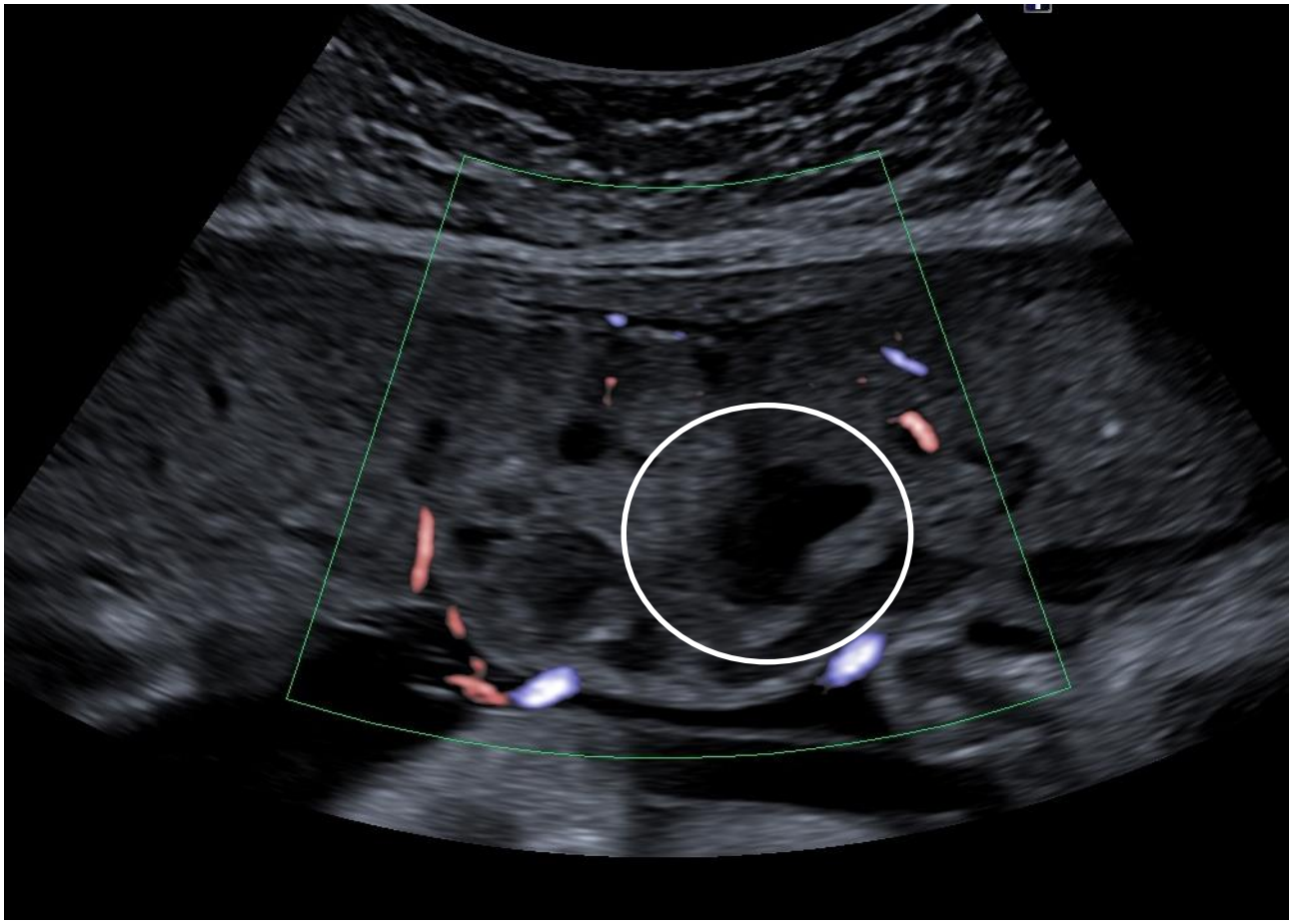
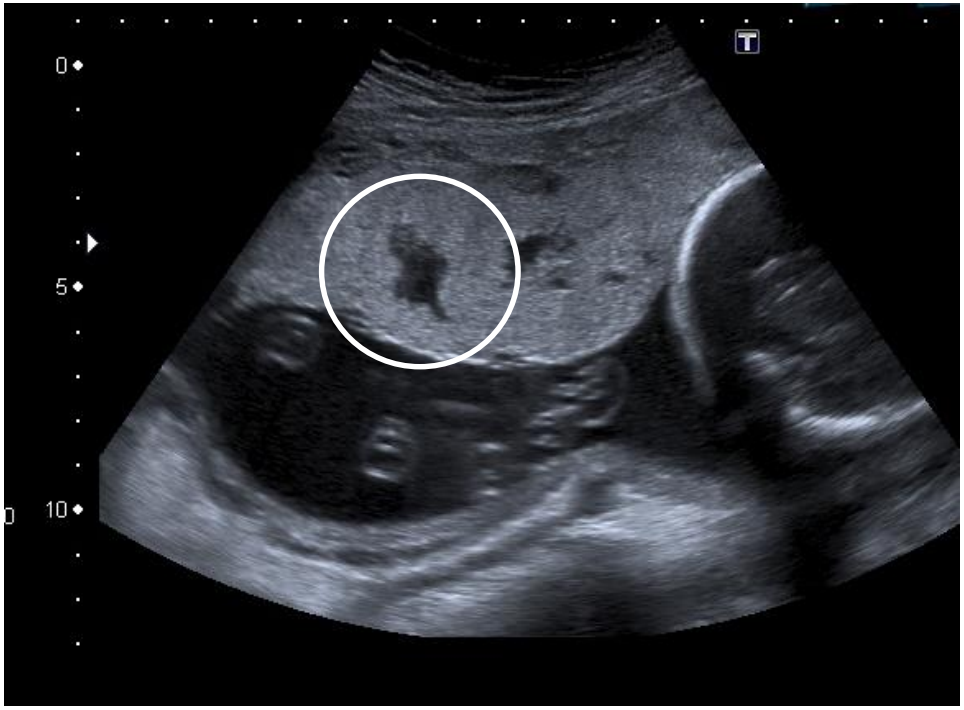
Placental Lakes definition



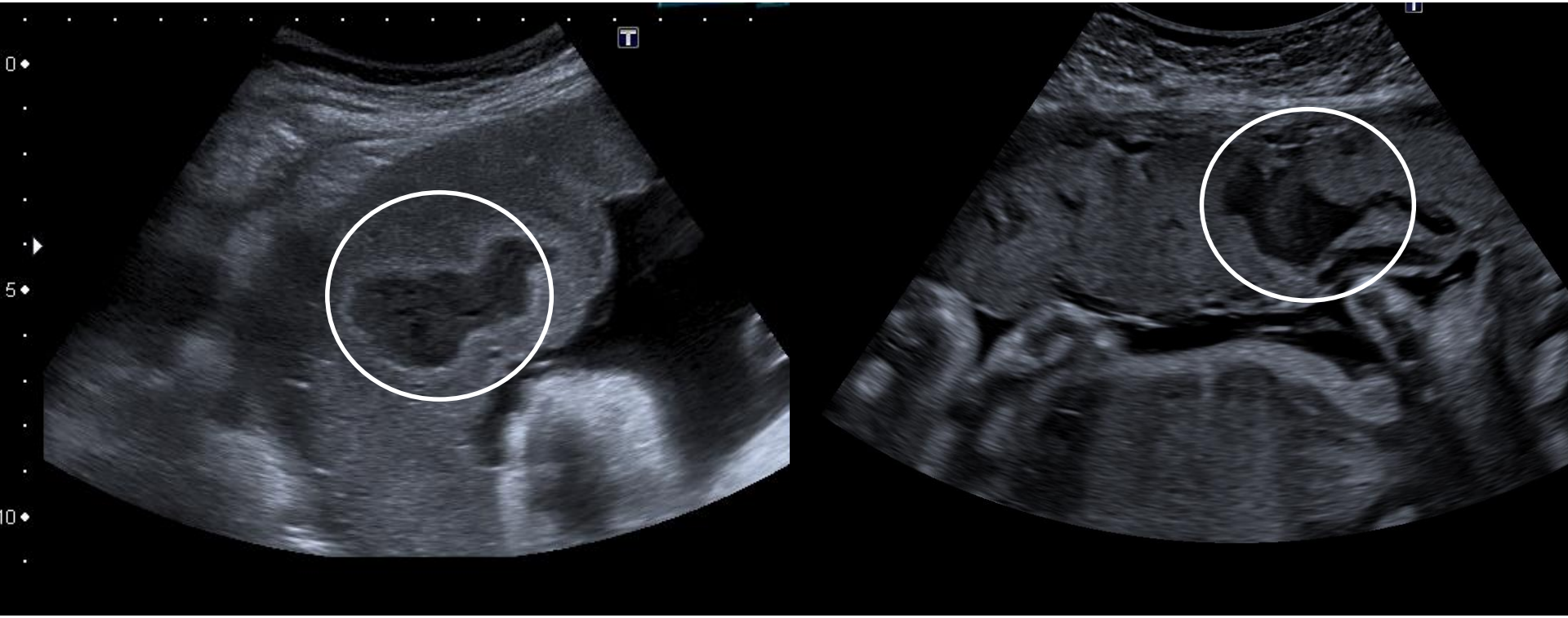
Placental lakes are well demarcated, mainly homogenous, hypoechoic to anechoic, sonolucent intervillous or avillous vascular spaces surrounded by normal-appearing echogenic placental tissue or with subchorionic location.

Placental Lakes
ultrasound appearance



placental lakes (hematomas, intraplacental haemorrhage, placental lacunae with flow and feeder vessels): clinical relevance when > 2 lesions with a diameter > 2cm are visualised

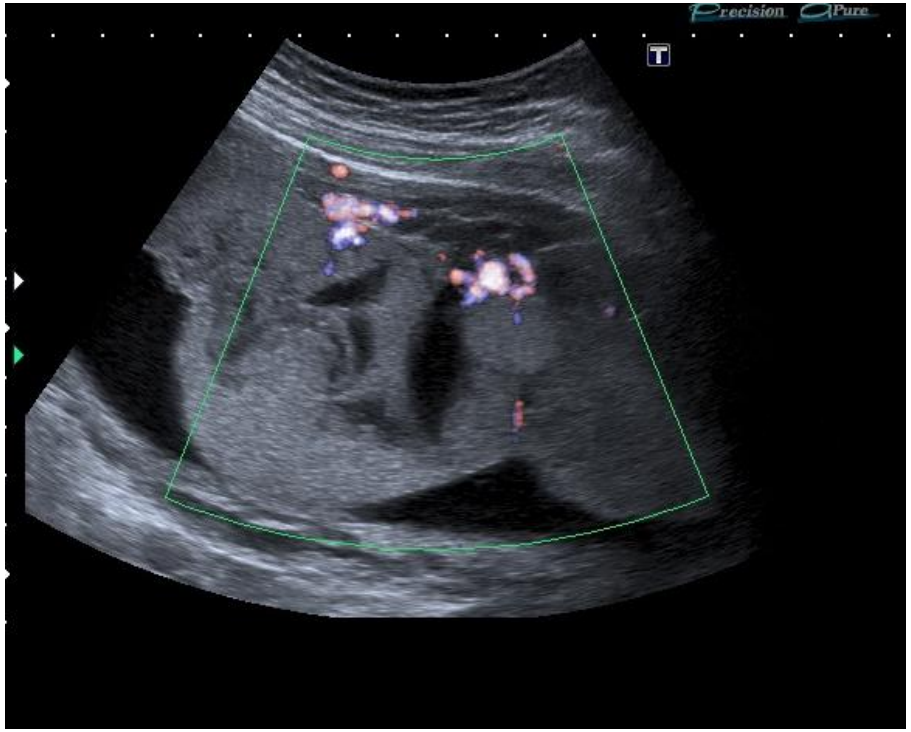
Placental Lakes ultrasound findings

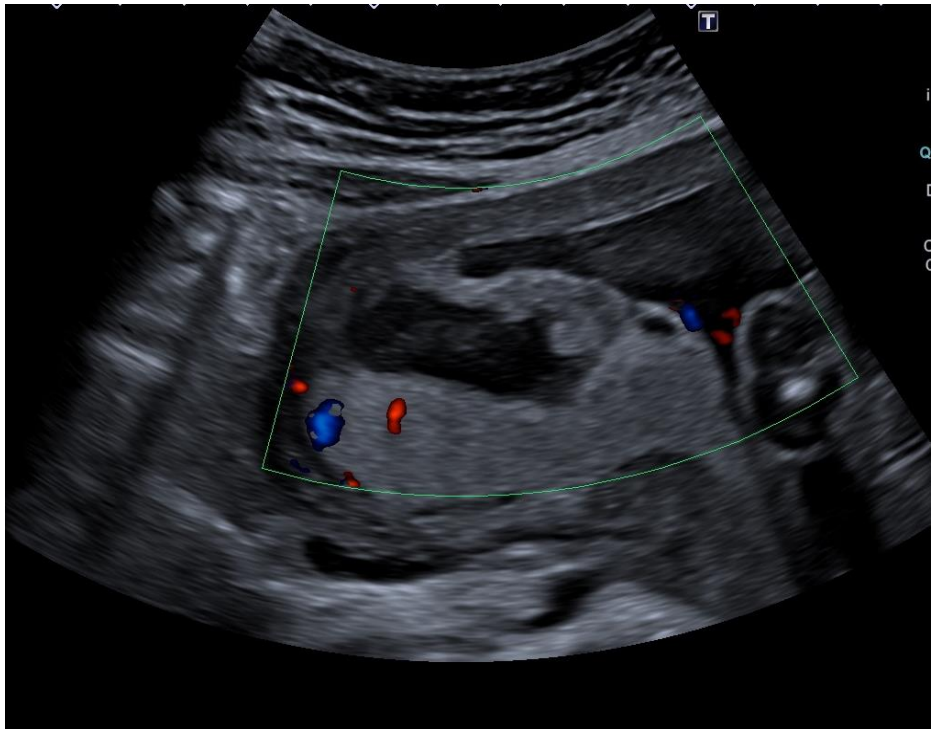


swirling, non-pulsatile low velocity flow on 2D gray- scale within the lesion
over time the lesions change to be more inhomogeneous structure with organization of hematoma

Inhomogeneous:
hyper- and hypoechoic with change over the time of aggregated blood

Placental lakes
colour Doppler

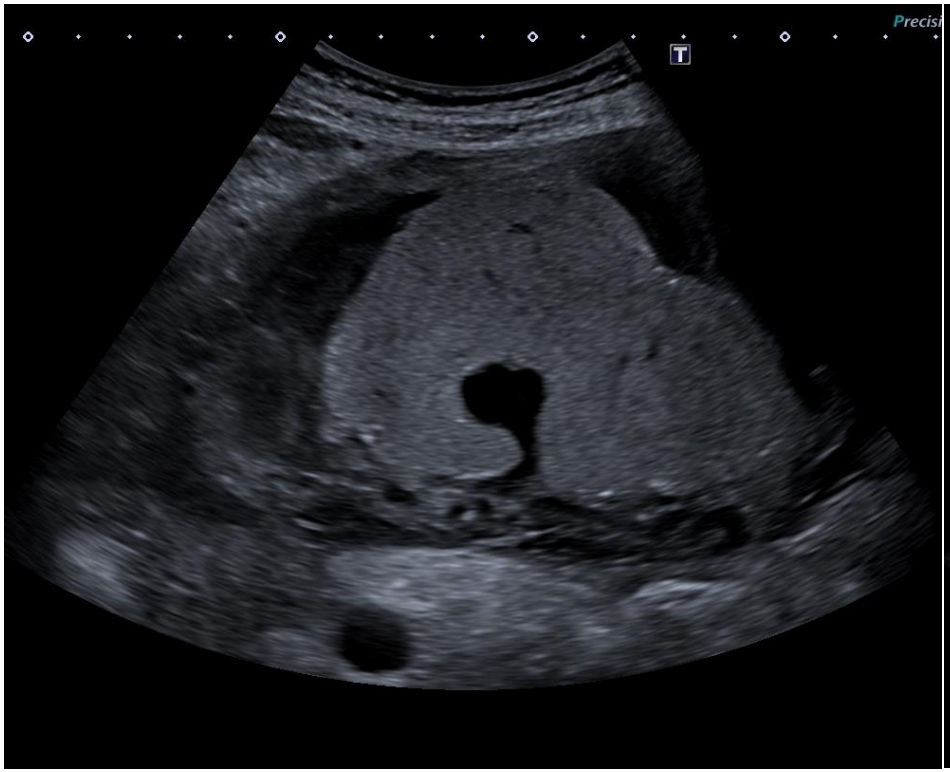


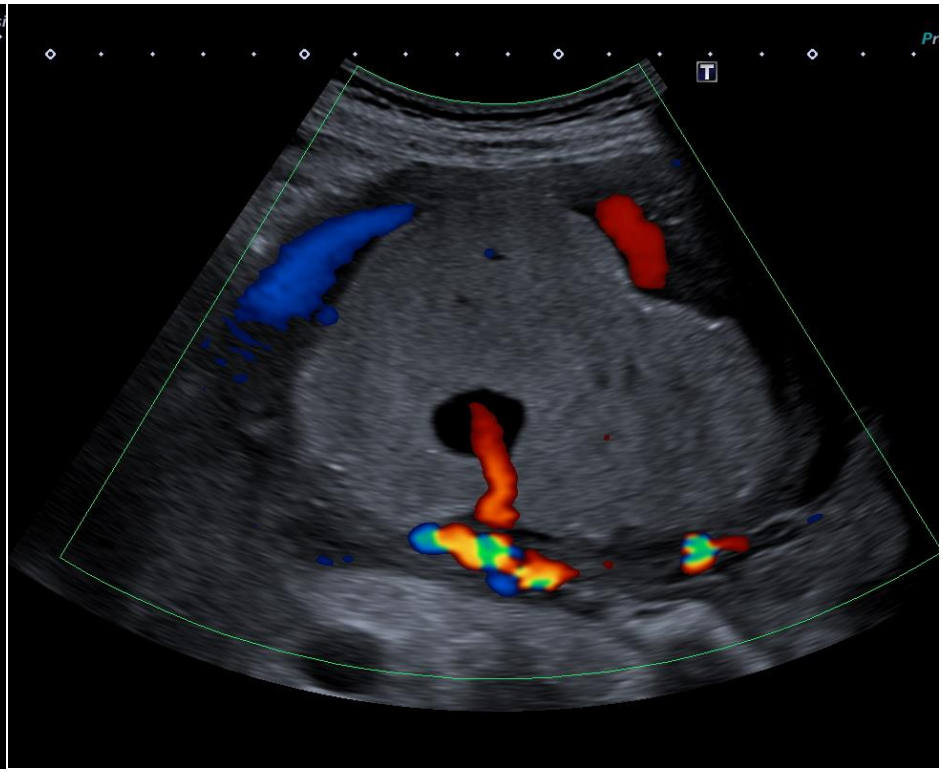


Colour Doppler imaging is used to visualise any vascular flow surrounding the lesion, typically only sparse vascularization is detected with low flow velocity.

Placental Lake

some lakes present with feeder vessels with vascular flow

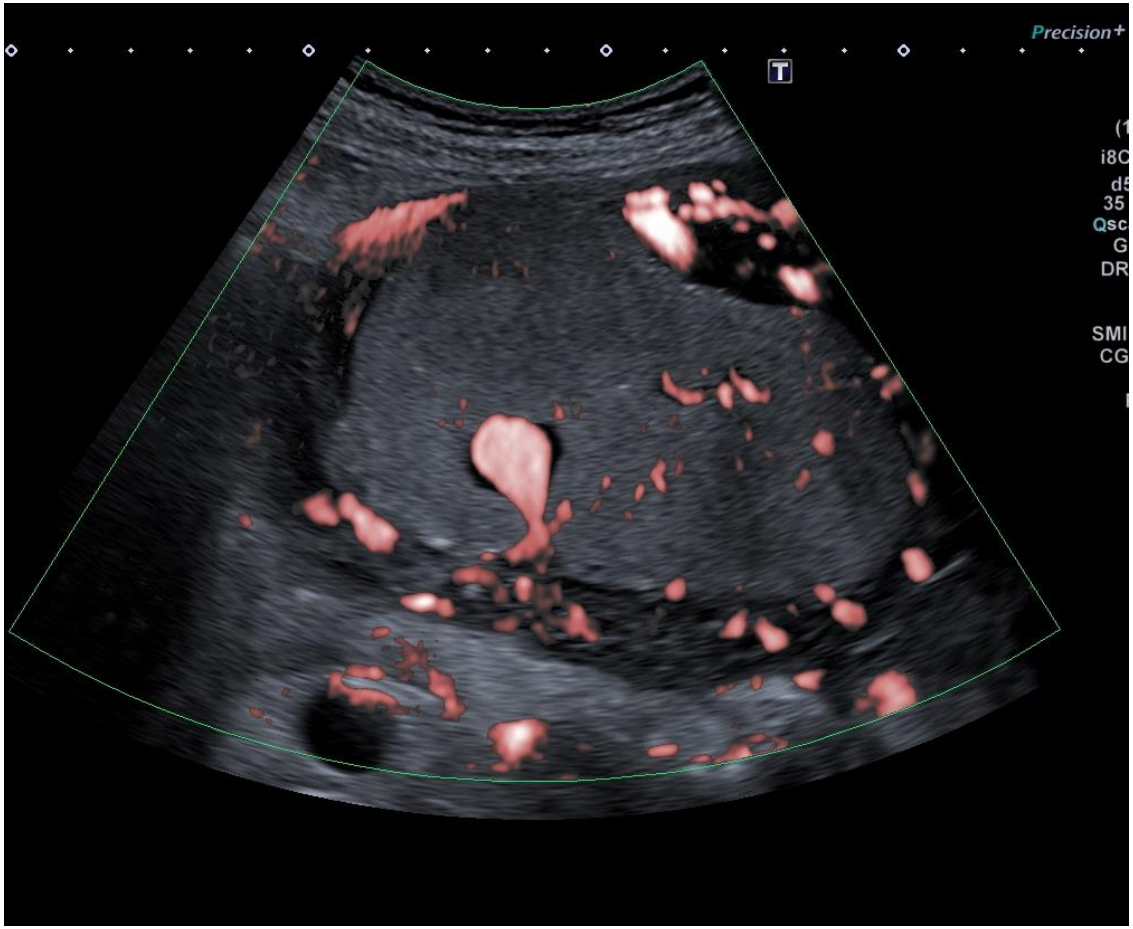




Sometimes placental lakes show vascular supply with one prominent vessel. Colour Doppler is used to visualise presence of any larger feeder vessel.

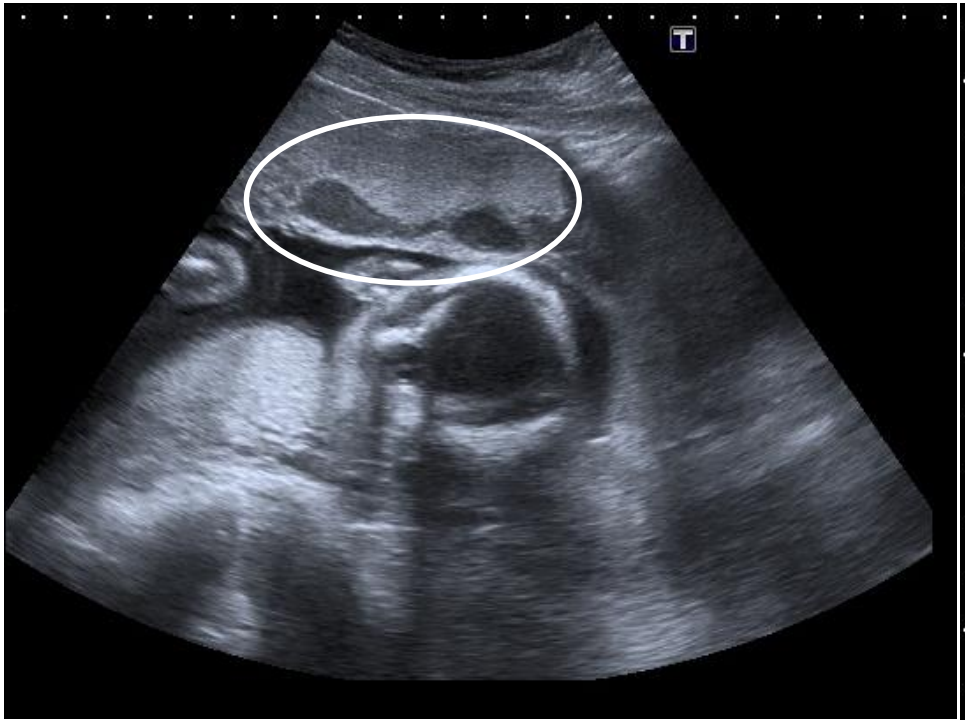
Placental Lake

some lakes present with feeder vessels with vascular flow

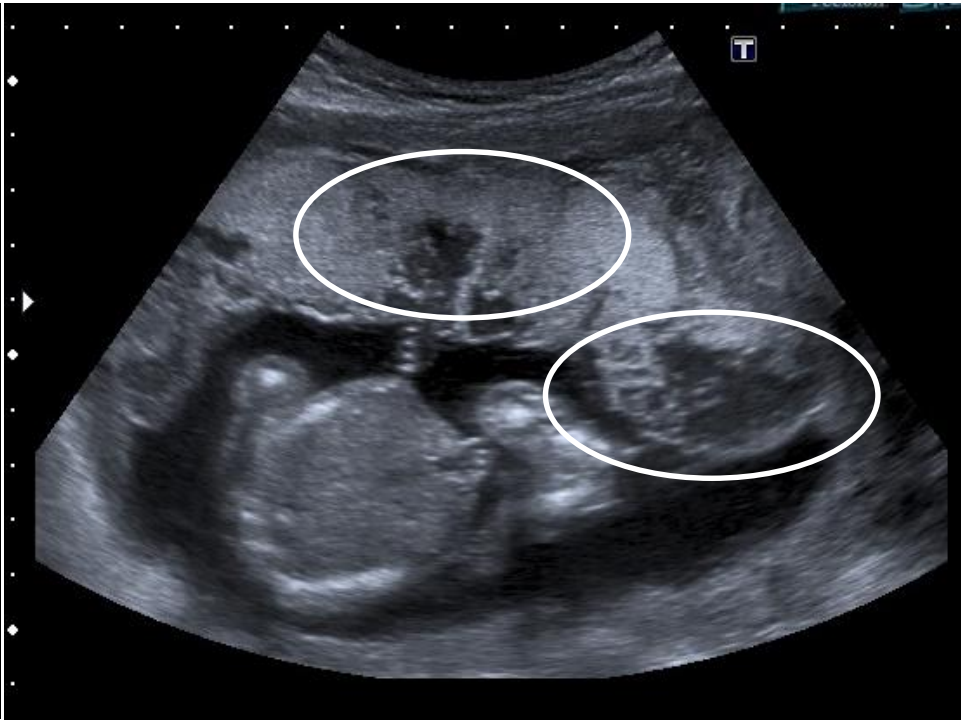


SMI-mode – possibility to assess blood flow in/to the lesion to detect any low velocity flow

Placental Lake subchorionic location

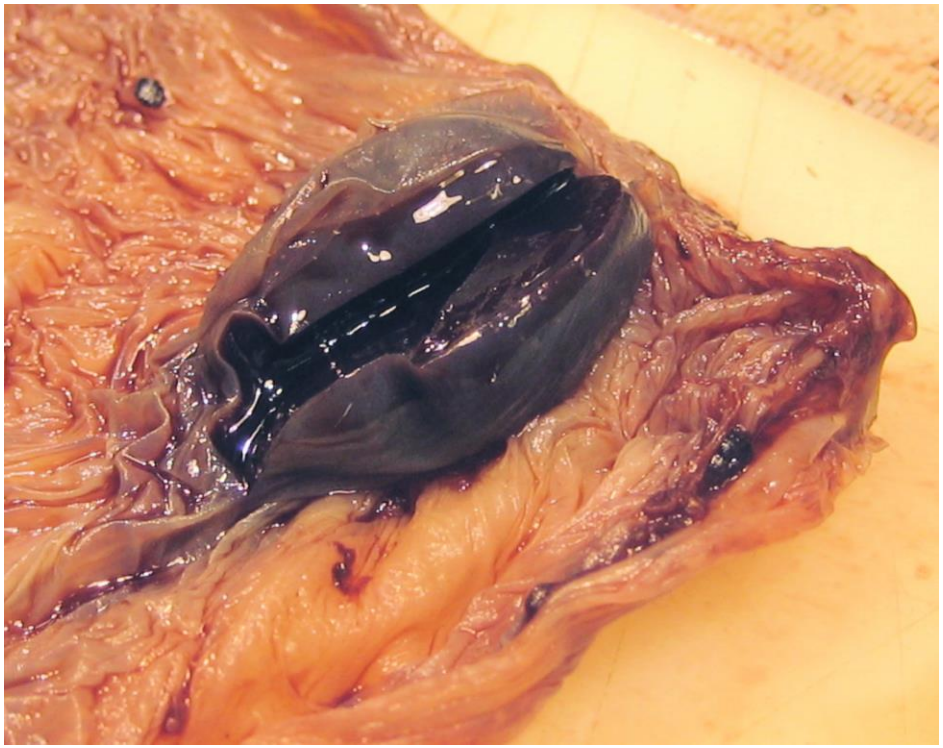


Subchorionic lake

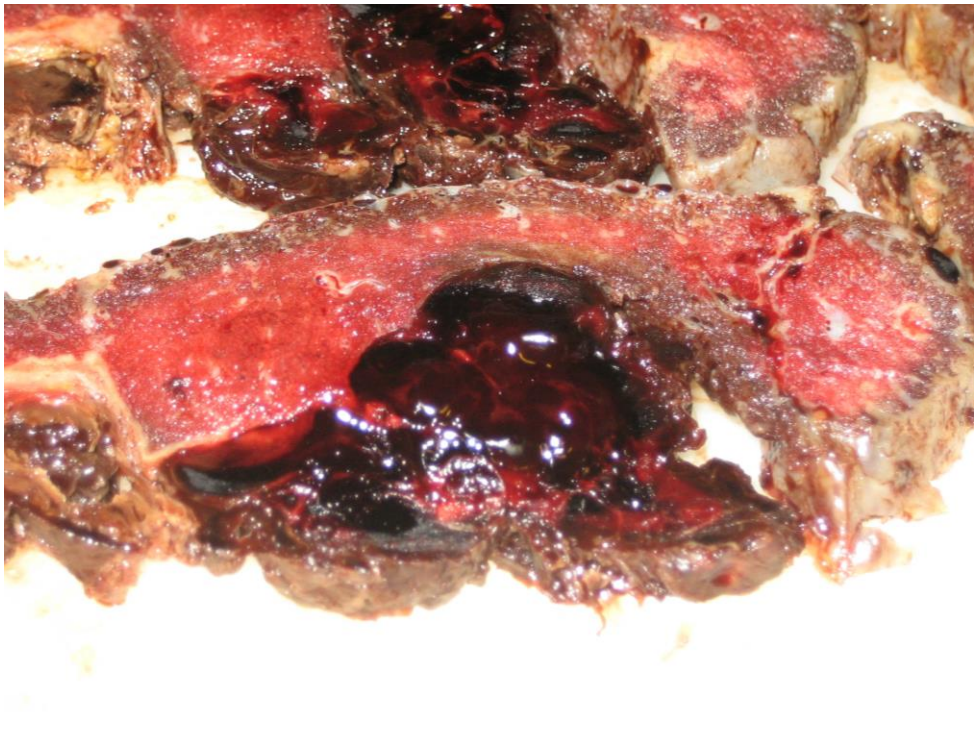


Subchorionic lake and intraplacental lakes

Placental Lakes
macroscopic appearance

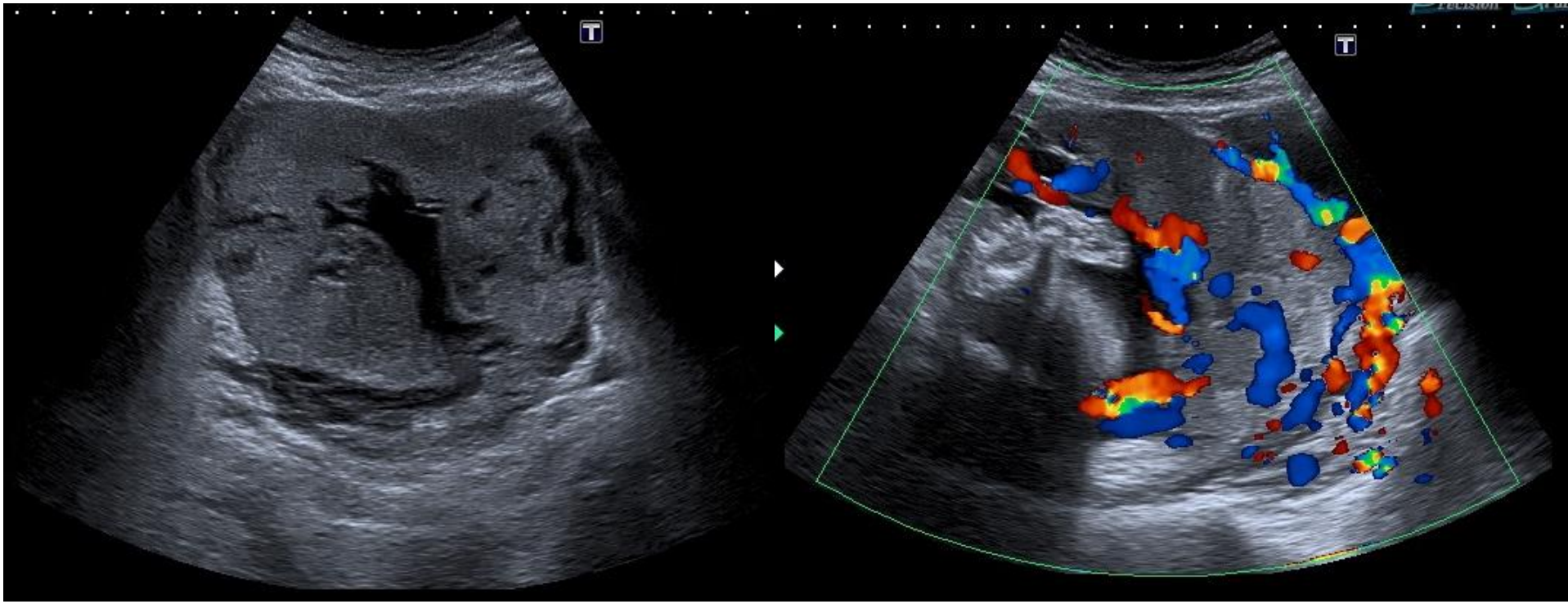


Subchorionic placental lakes



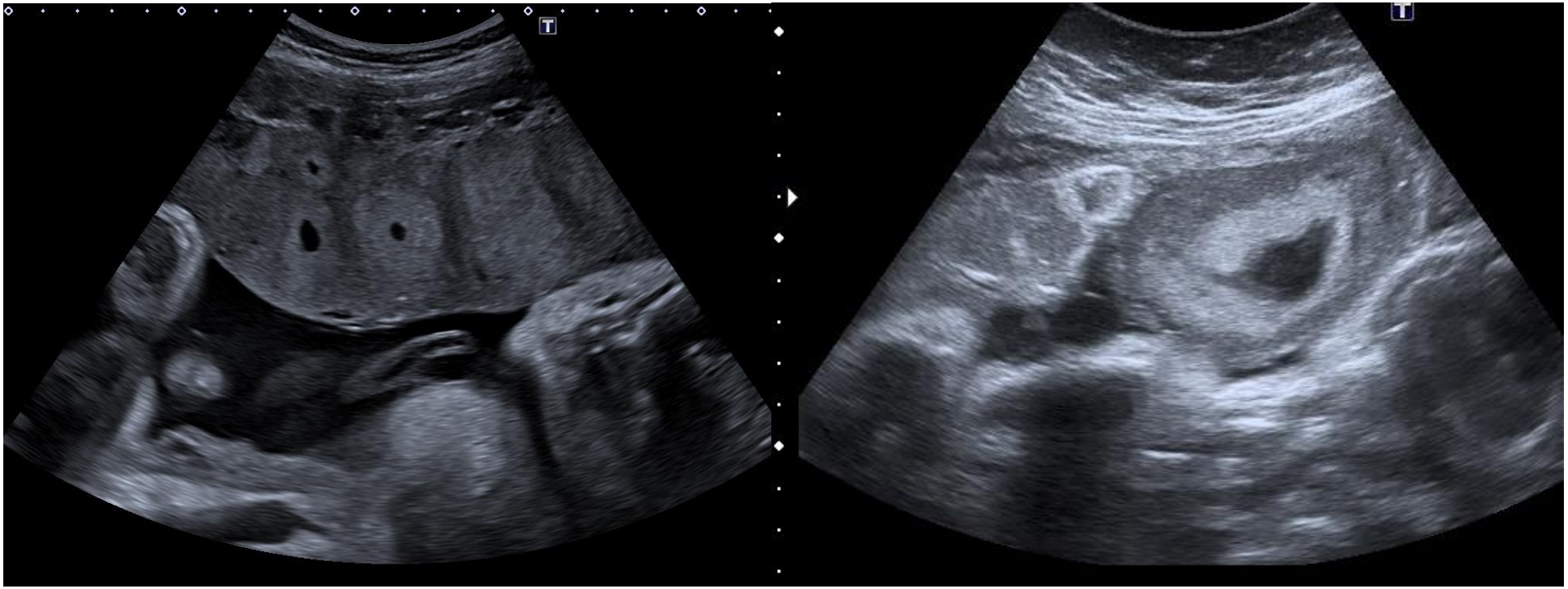
intraplacental lakes

Placental Lacunae typical for AIP



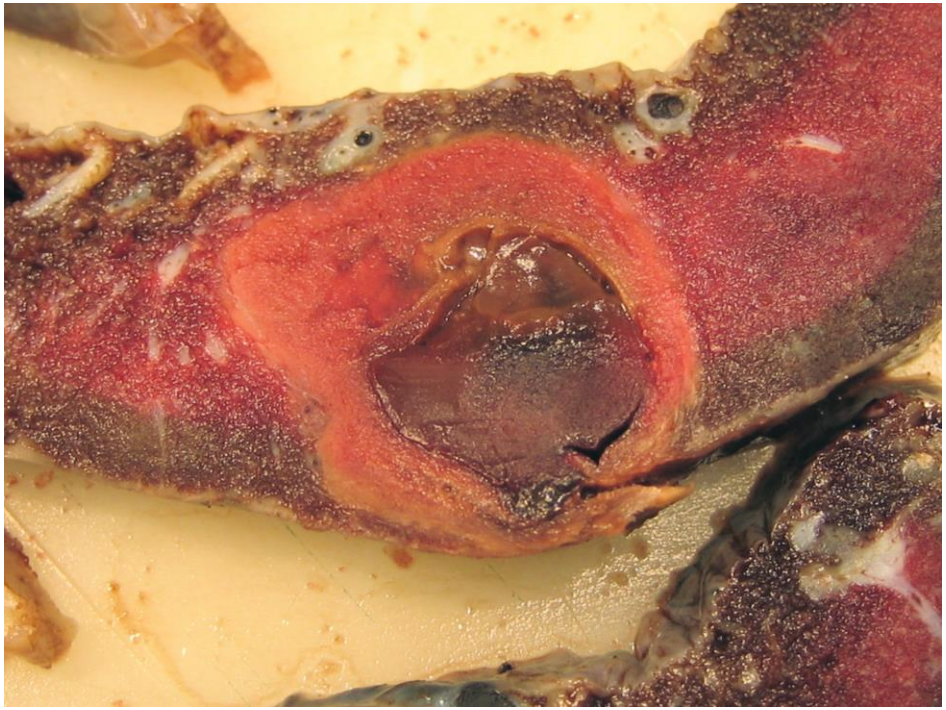
Placental lacunae are sonolucent, numerous, large and irregular intraplacental spaces suggestive of abnormally invasive placenta (AIP). On Colour Doppler they also display subplacental hypervascularity with multidirectional flow and aliasing.

Differential Diagnosis
Placental infraction

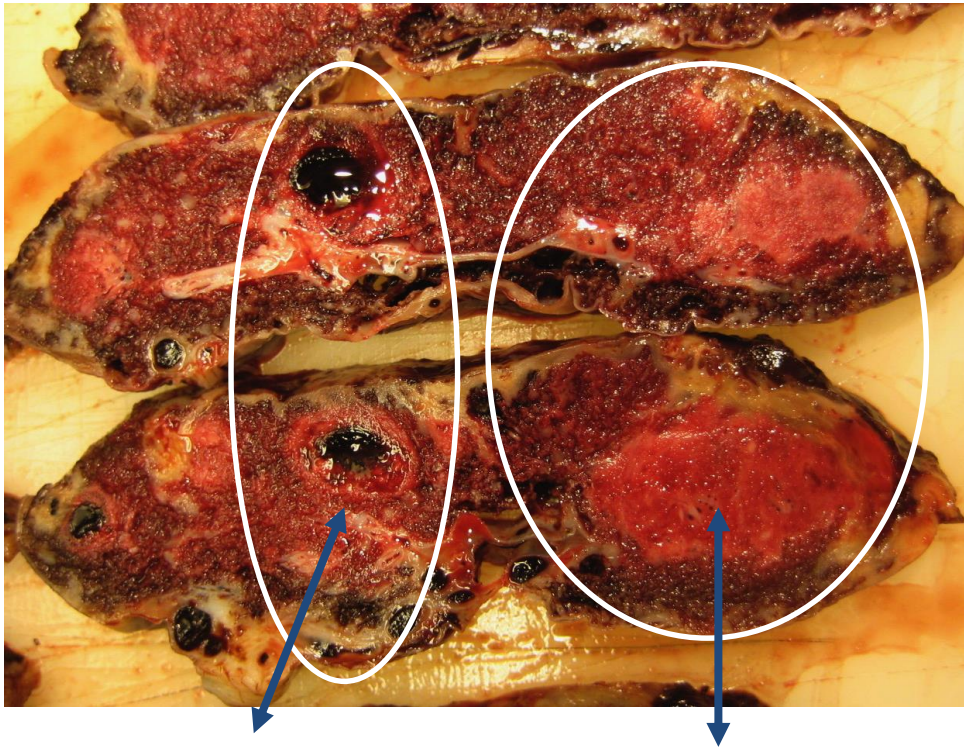


Placental infarction with hypo- to anechoic central necrosis area and a hyperechoic halo representing fibin deposition

Placental Lesions macroscopic appearance

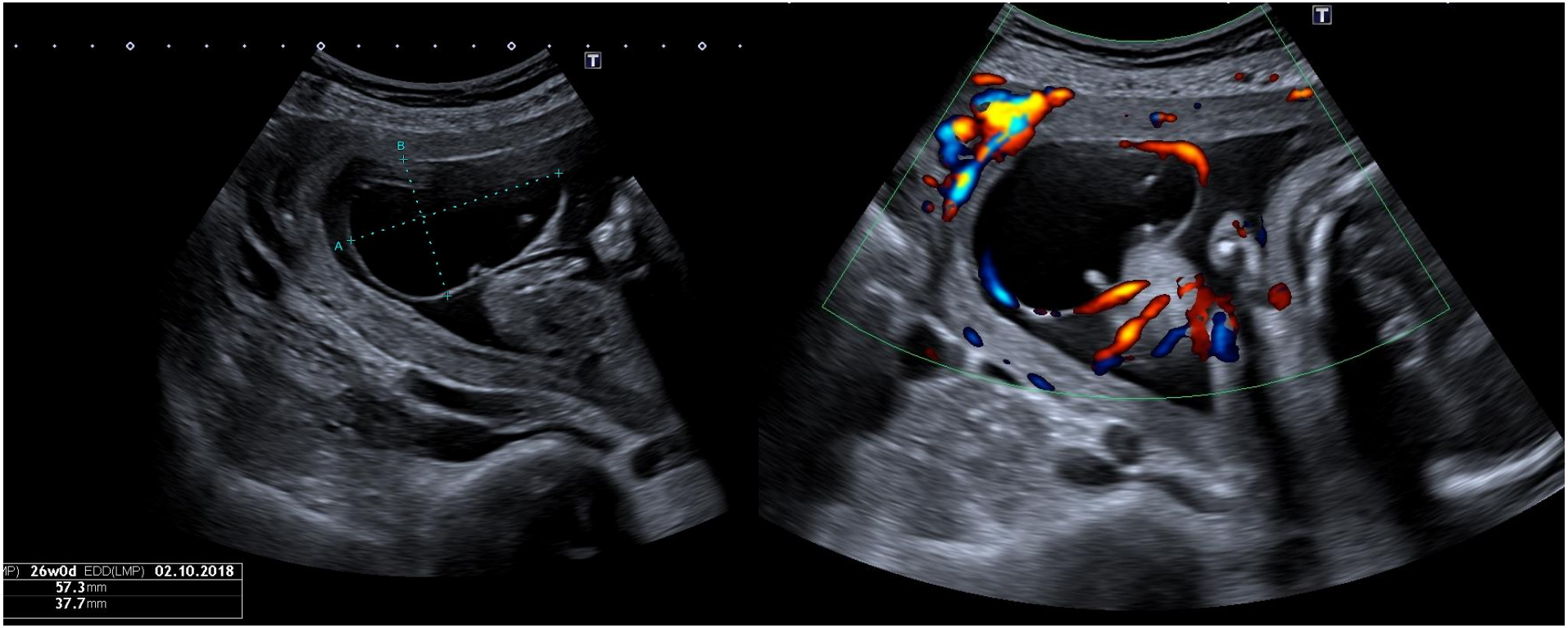


Hemorrhagic placental lesion with with visible fibrin deposit surround as a degeneration sign



on ultrasound – both lesions might appear quite similar, with hypo- to hyperechogenic lesion appearance

Differential Diagnosis
Placental Cyst



Cyst with anechoic appearance close to the umbilical cord insertion, use Colour Doppler to rule out pathologic vascular supply