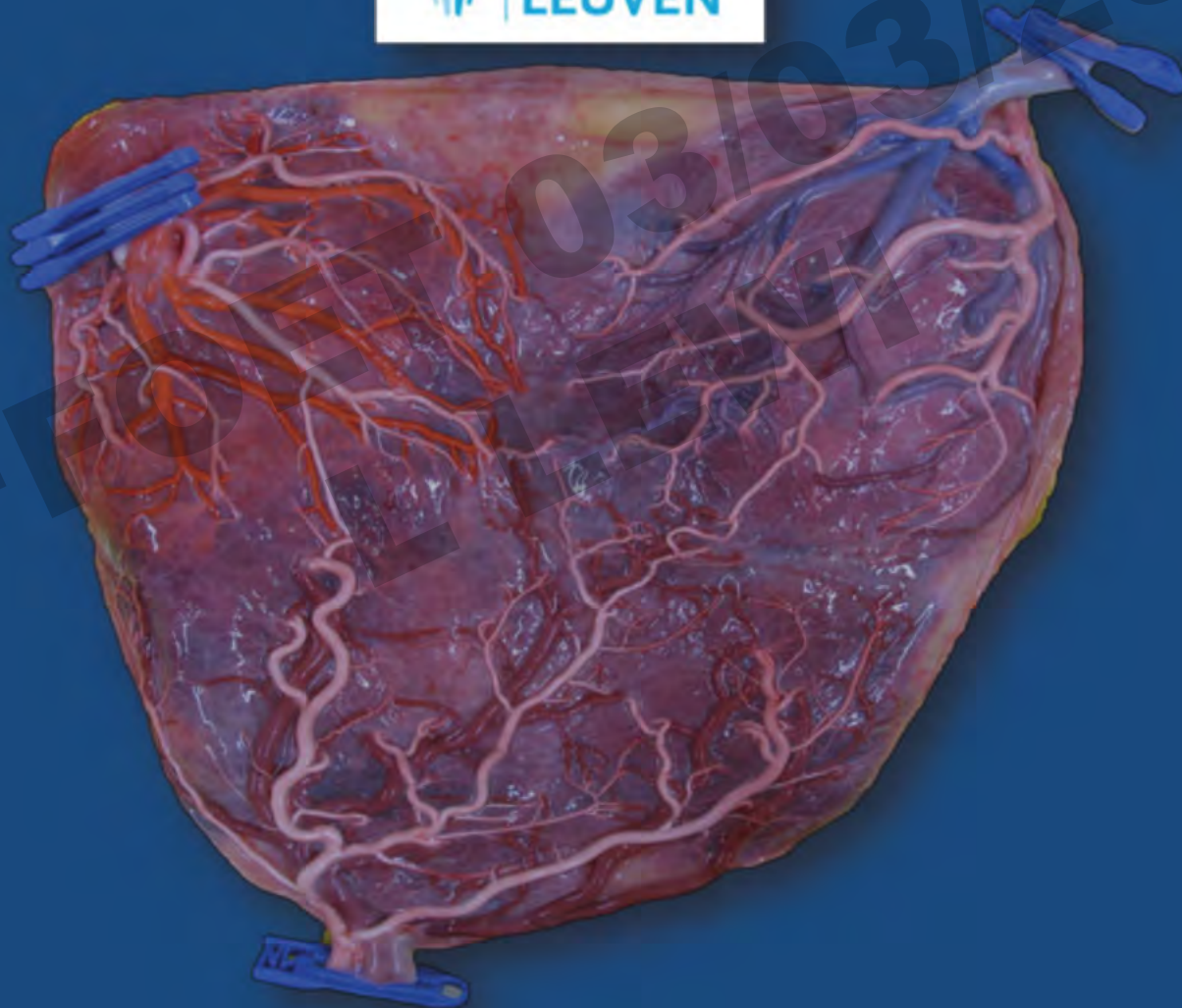


The placenta, septum and cord in multiple pregnancies

L Lewi University Hospitals Leuven Belgium



The placenta

The role of the anastomoses in complicated monochorionic pregnancies

The septum

Intermediate forms of chorionicity and amnionicity

The cord

Insertion site and single umbilical artery

The placenta

The role of the anastomoses in complicated monochorionic pregnancies

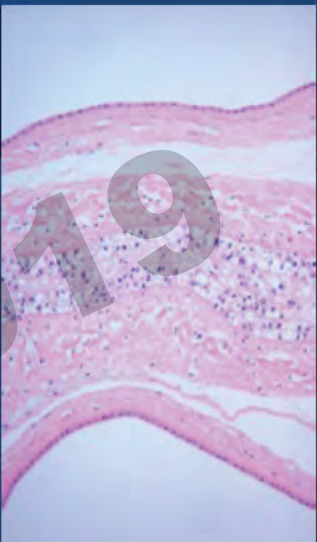
The septum

forms of chorionicity and amnionicity

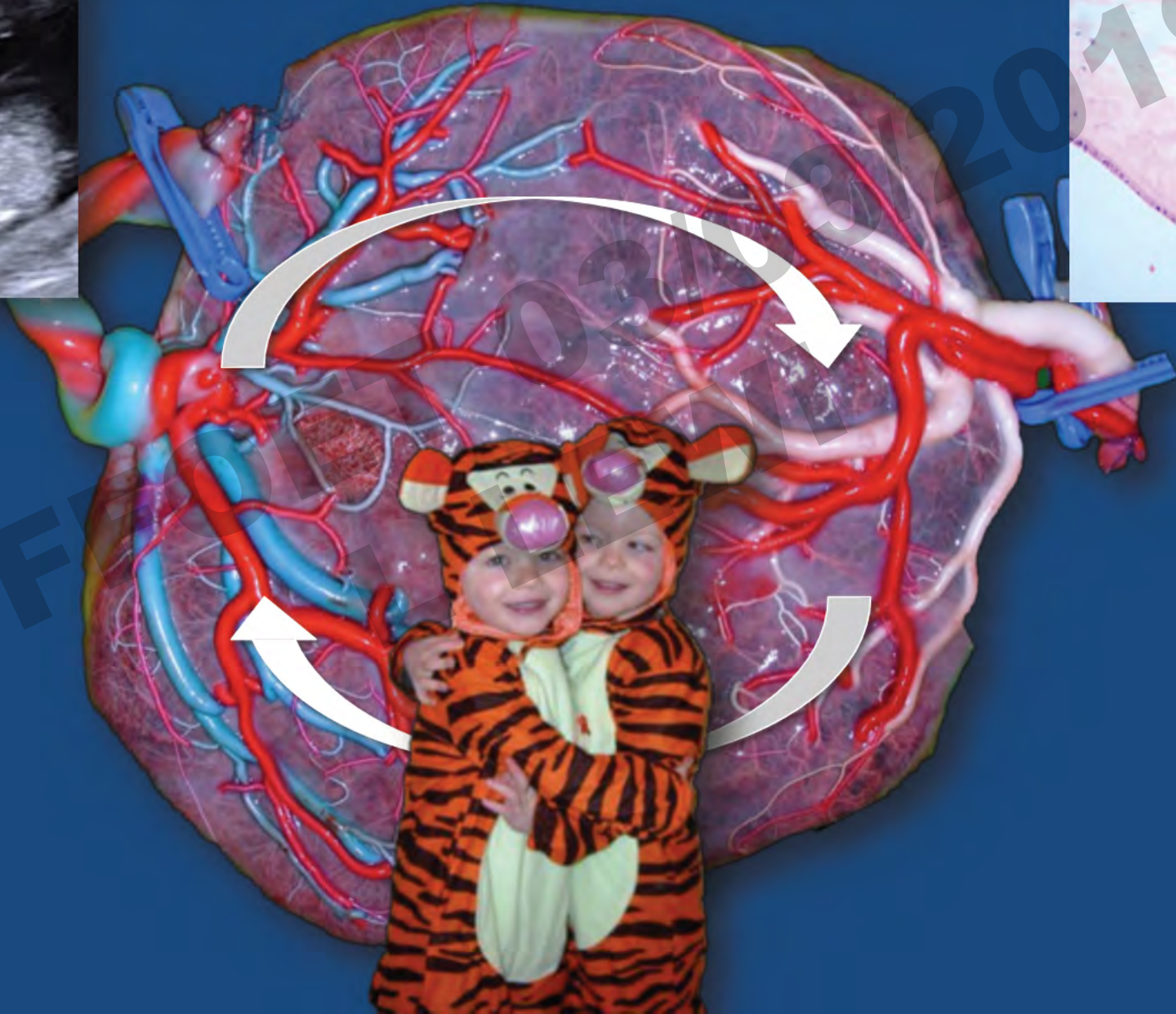
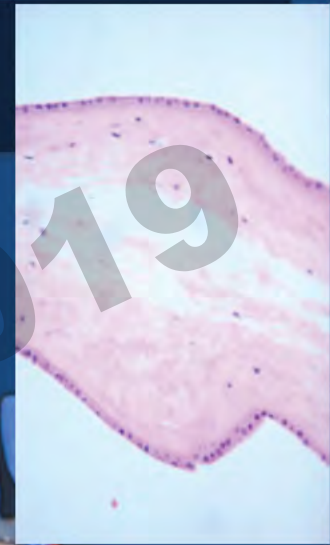
The cord

Insertion site and single umbilical artery

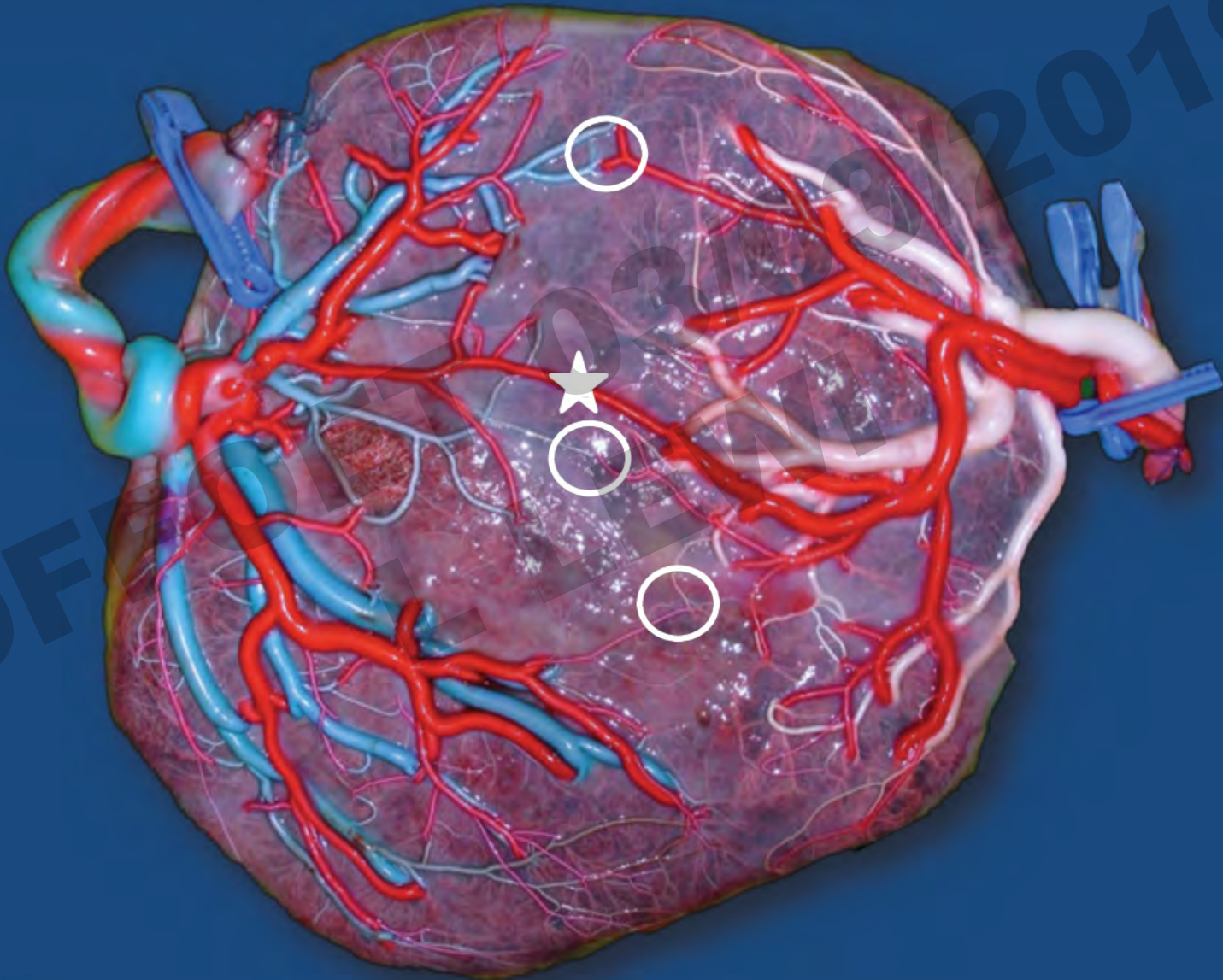
Dichorionic twin pregnancy



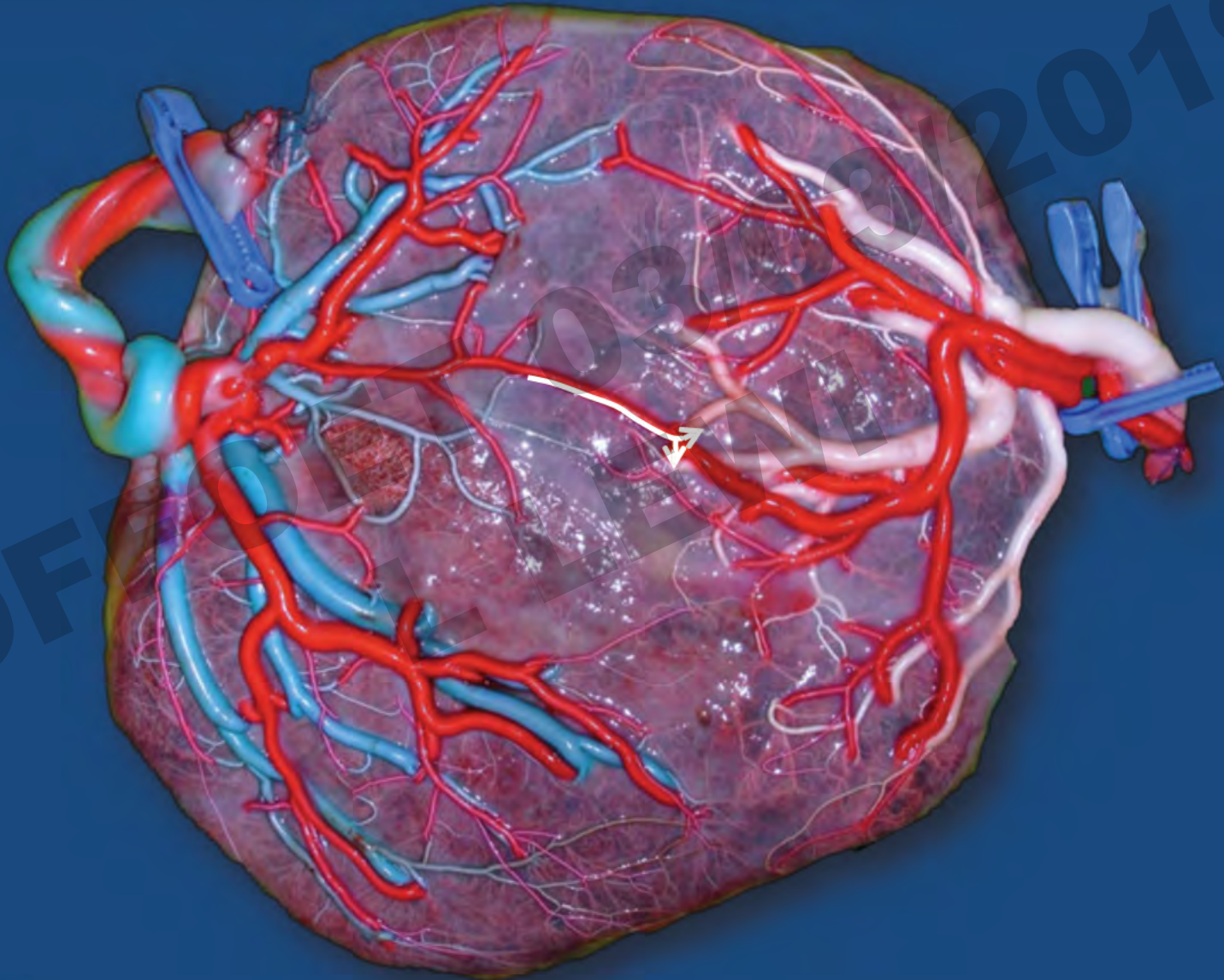
Monochorionic twin pregnancy



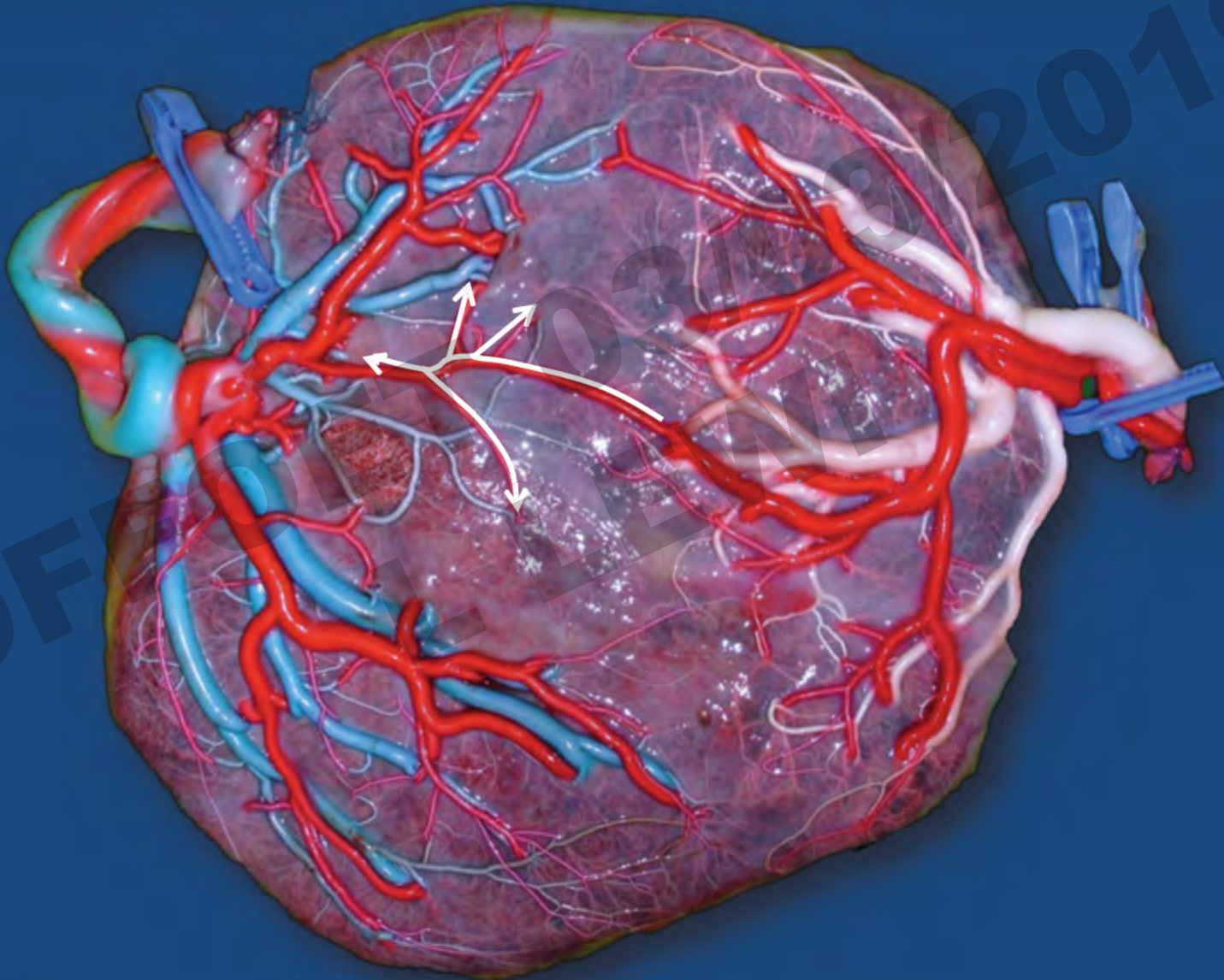
Monochorionic twin pregnancy



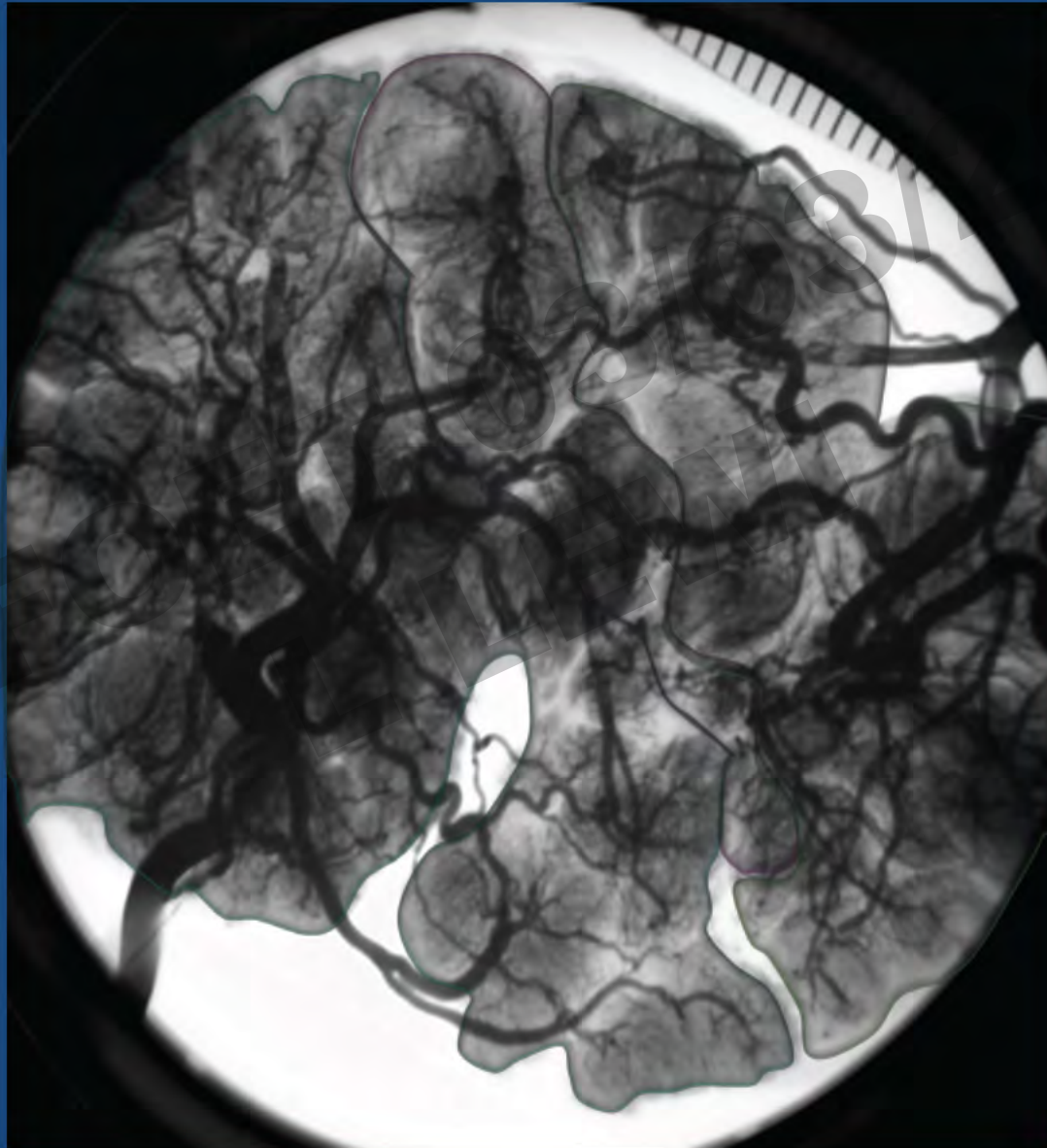
Monochorionic twin pregnancy



Monochorionic twin pregnancy



Monochorionic twin pregnancy



The role of the anastomoses in the complications of monochorionic pregnancies

Discordant anomaly

Discordant amniotic fluid volume - TTTS

Discordant hemoglobin - TAPS

Discordant Growth

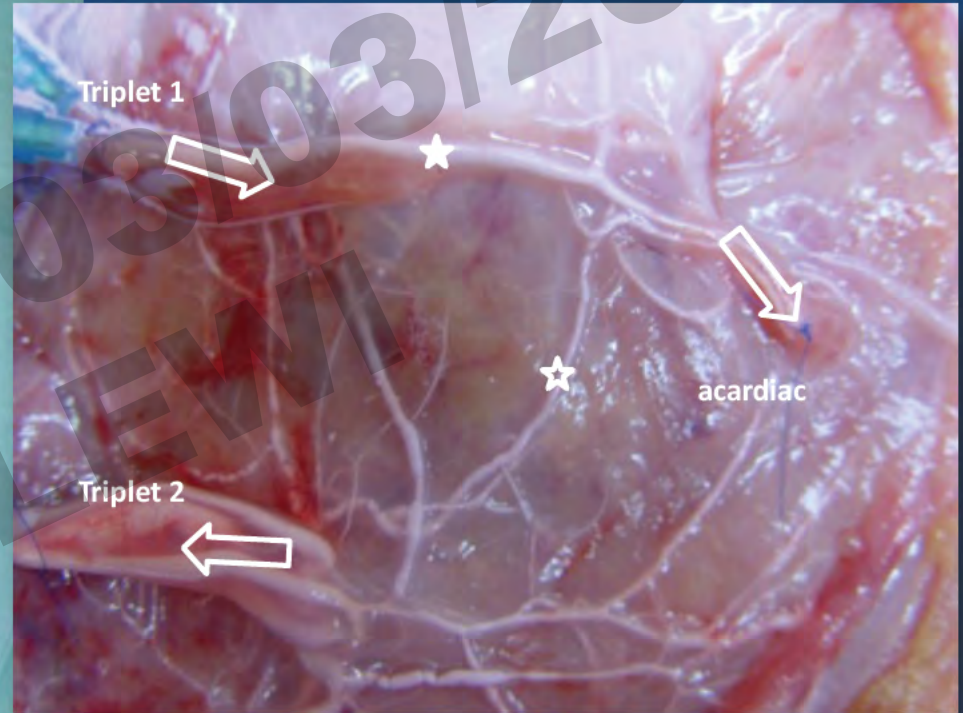
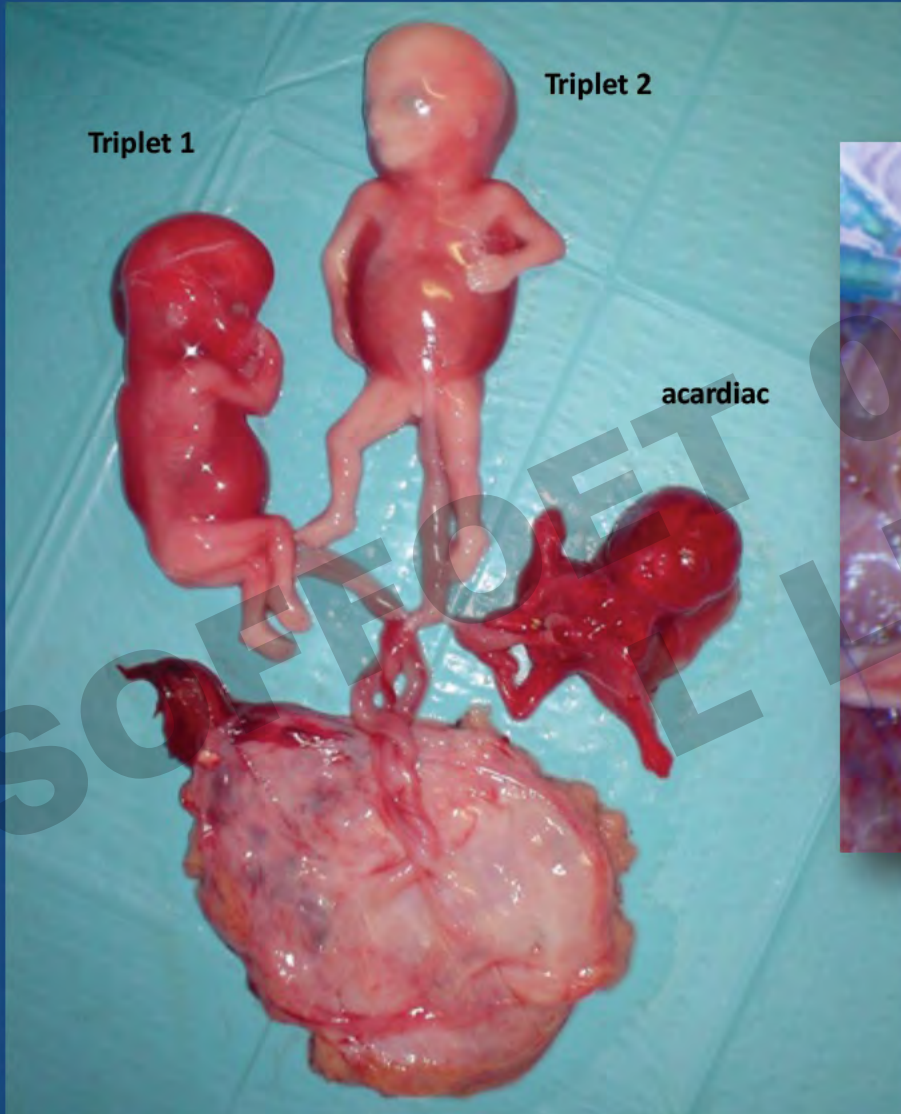


The role of the placenta in monochorionic twin complications

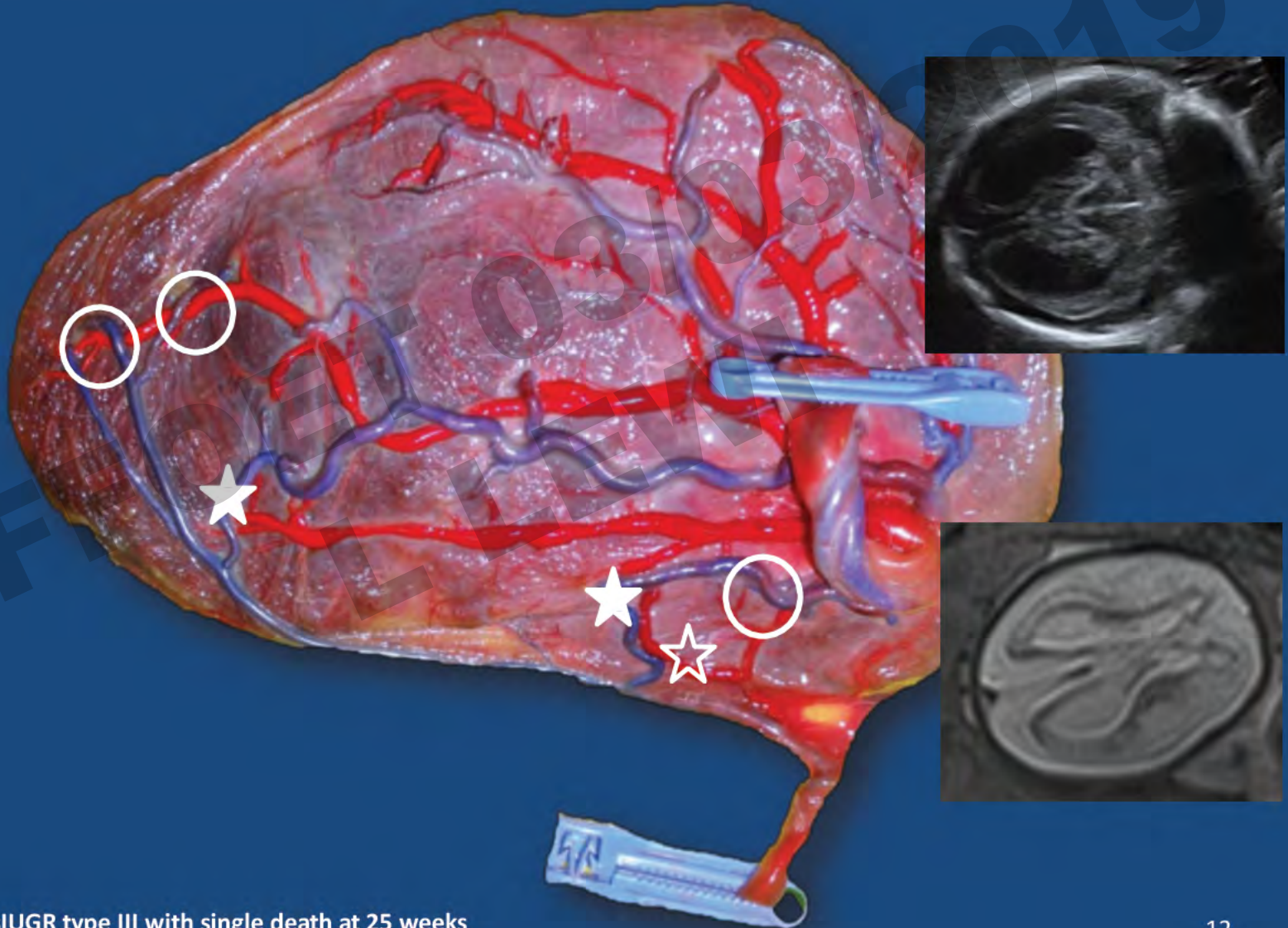
Discordant anomaly



Discordant anomaly: TRAP sequence



Discordant anomaly: Brain damage after single death



SIUGR type III with single death at 25 weeks

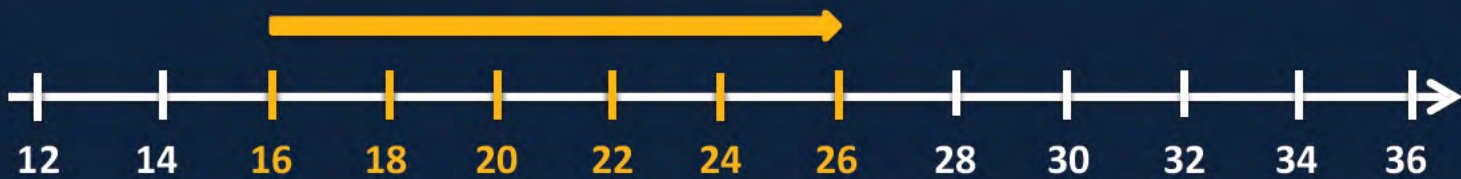
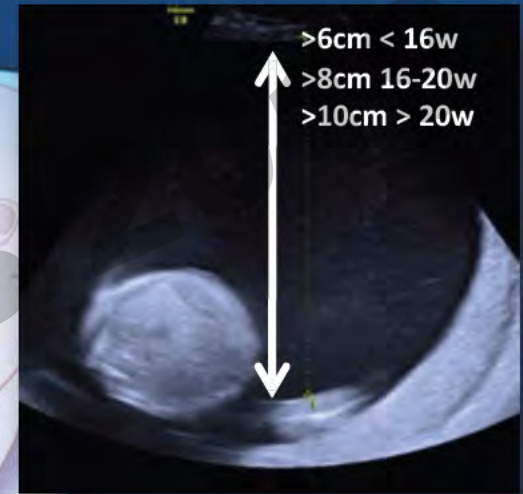
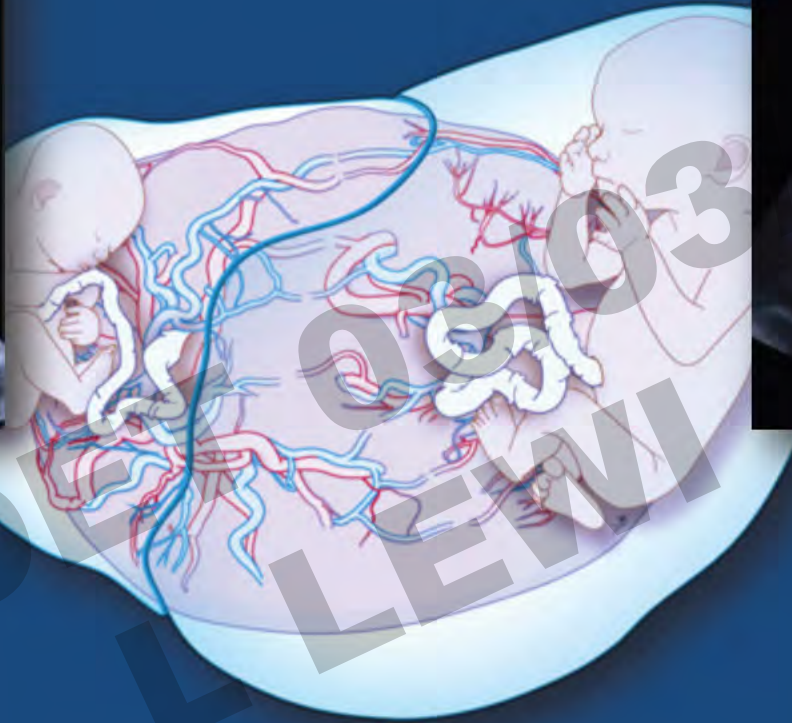
The role of the placenta in monochorionic twin complications

Discordant anomaly

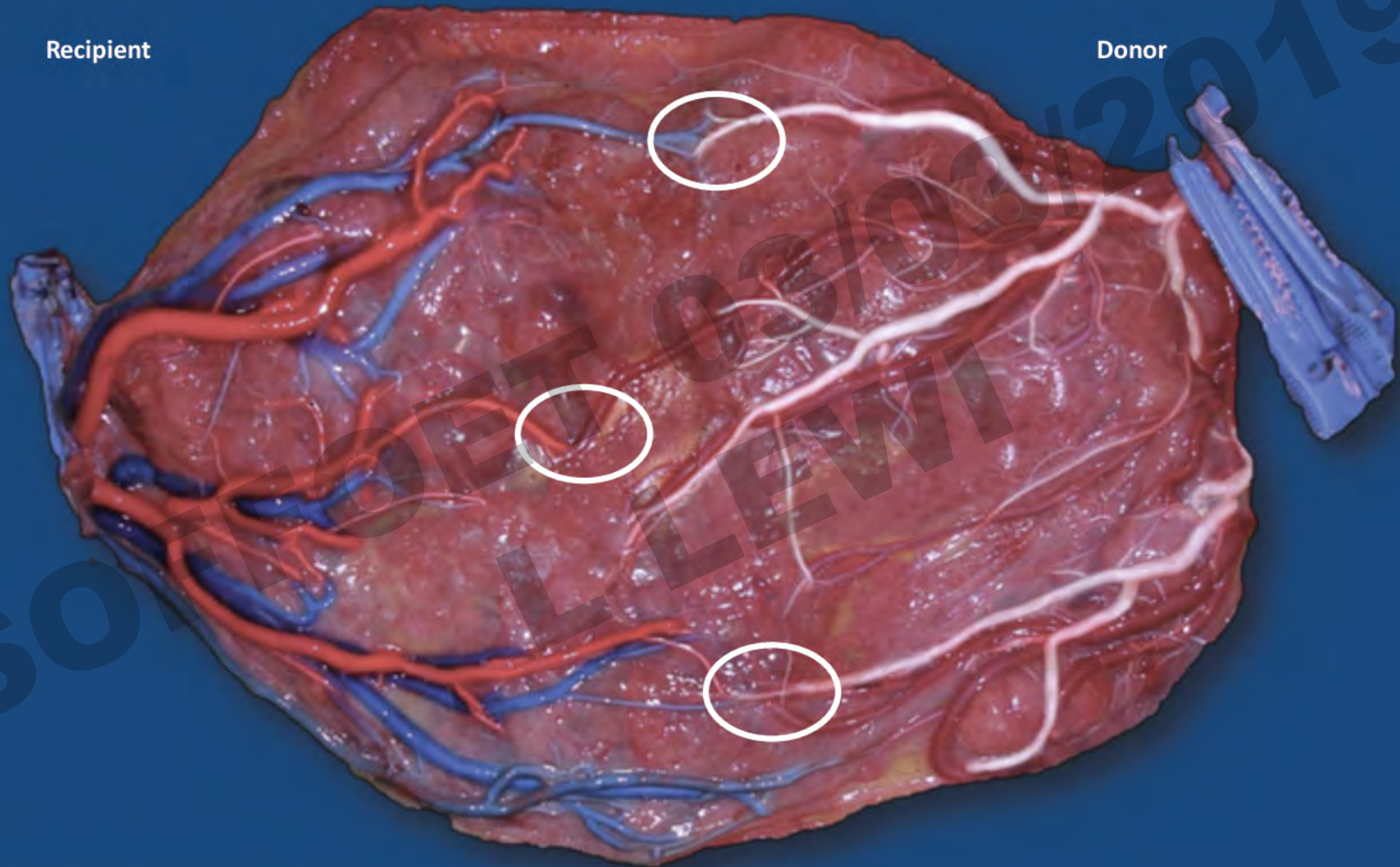
Discordant amniotic fluid volume - TTTS



Discordant amniotic fluid volume - TTTS



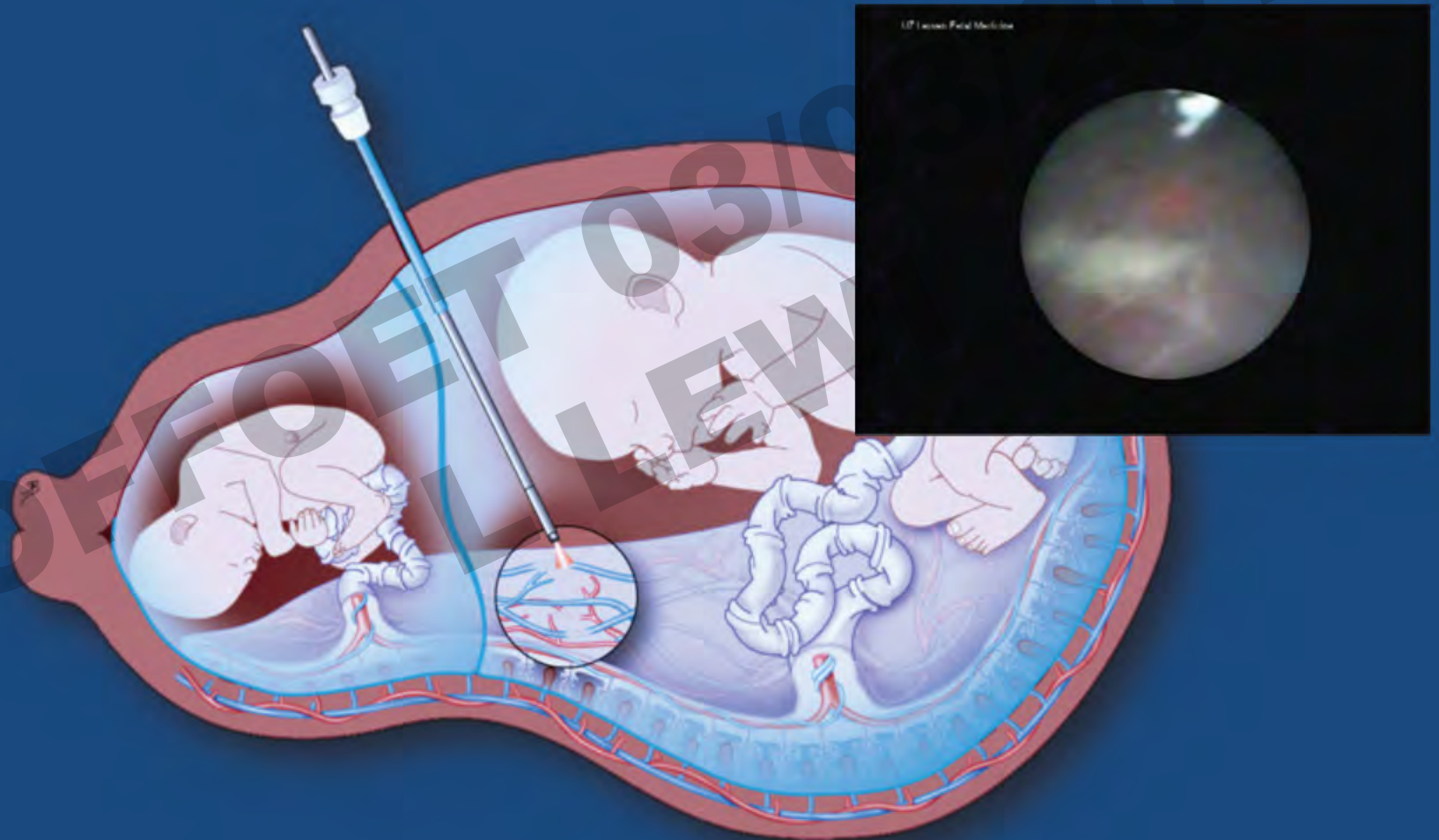
Discordant amniotic fluid volume - TTTS



18 weeks; spontaneous miscarriage

Discordant amniotic fluid volume - TTTS

Fetoscopic laser coagulation of the vascular anastomoses

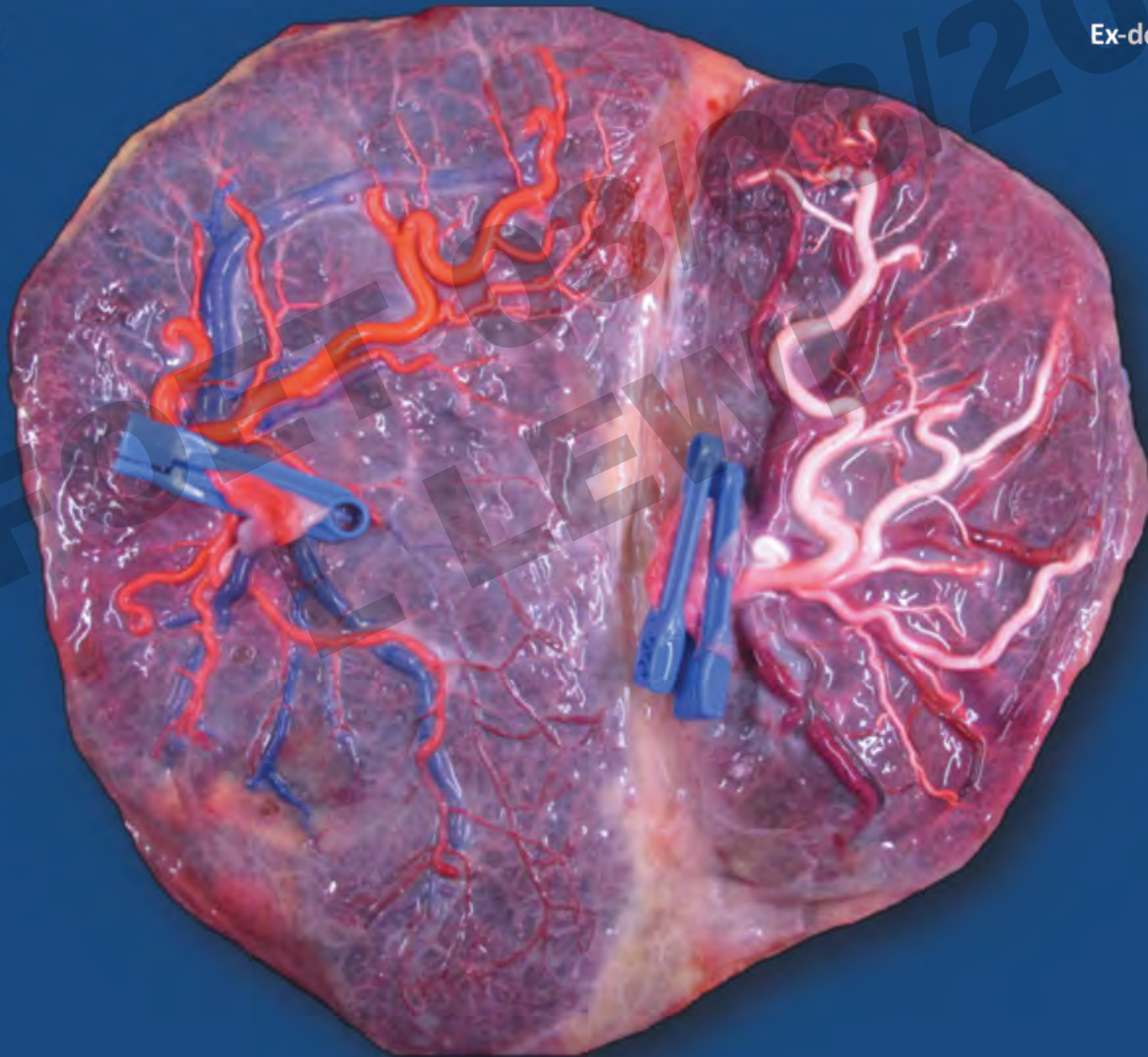


Discordant amniotic fluid volume - TTTS

Fetoscopic lasercoagulation of the vascular anastomoses

Ex-recipient 2560 g

Ex-donor 2000g



Discordant amniotic fluid volume - TTTS

Persistent transfusion after successful laser.....



The role of the placenta in monochorionic twin complications

Discordant anomaly

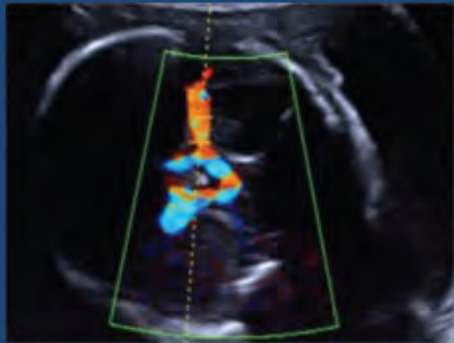
Discordant amniotic fluid volume - TTTS

Discordant hemoglobin - TAPS

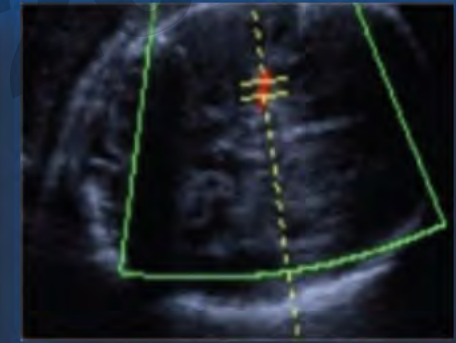
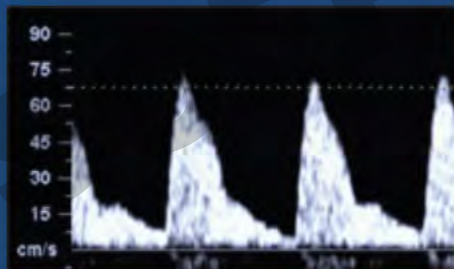


Discordant hemoglobin -TAPS

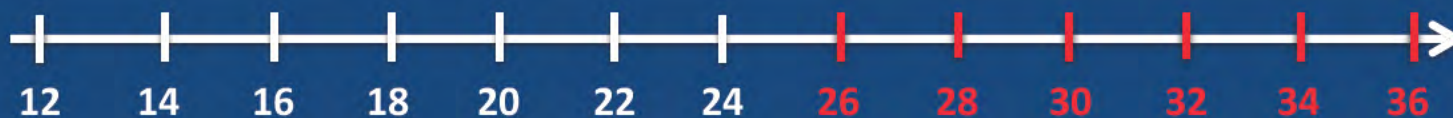
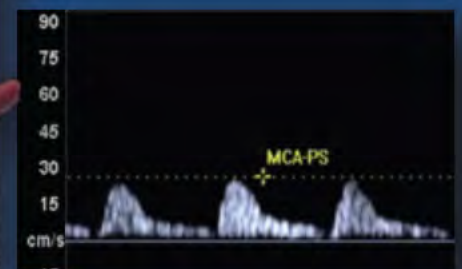
Δ MCA-PSV > 0.5 MoM



MCA-PSV > 1.5 MoM



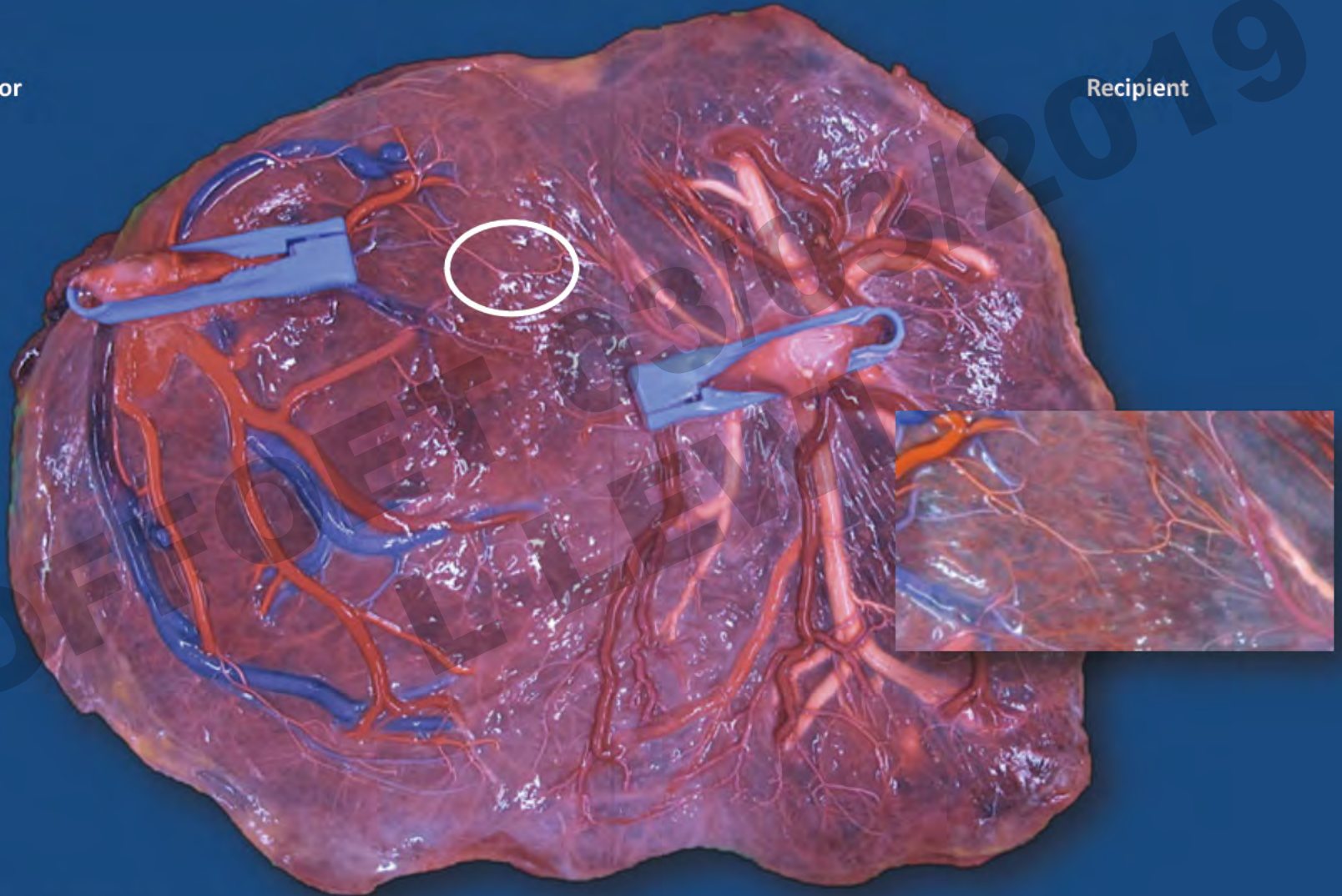
MCA-PSV < 1 MoM



Discordant hemoglobin -TAPS

Donor

Recipient

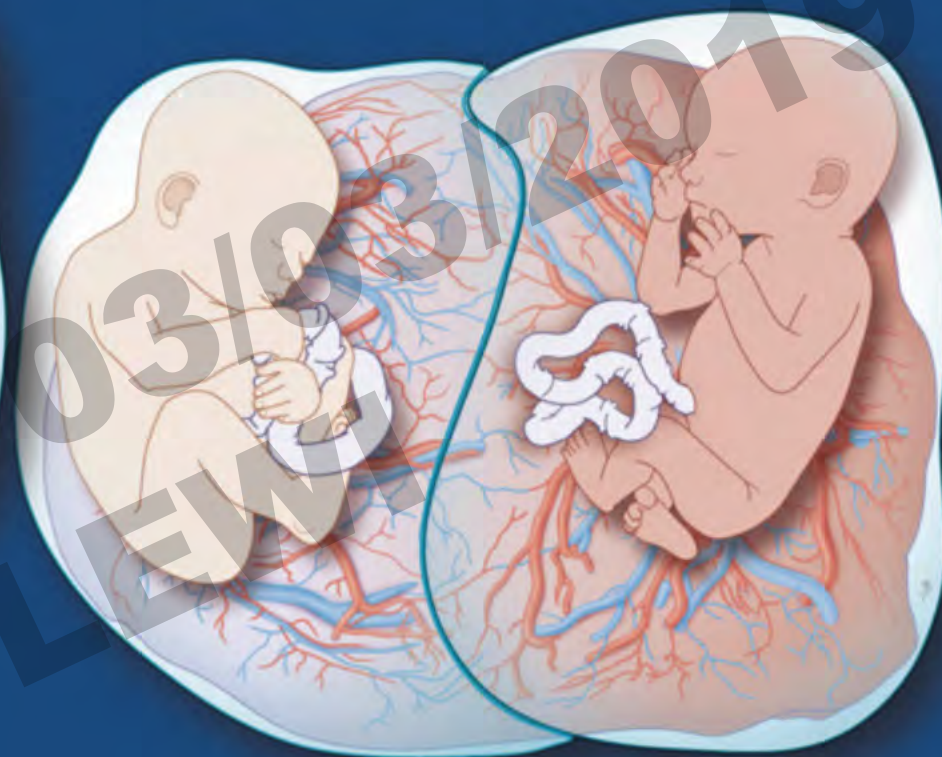
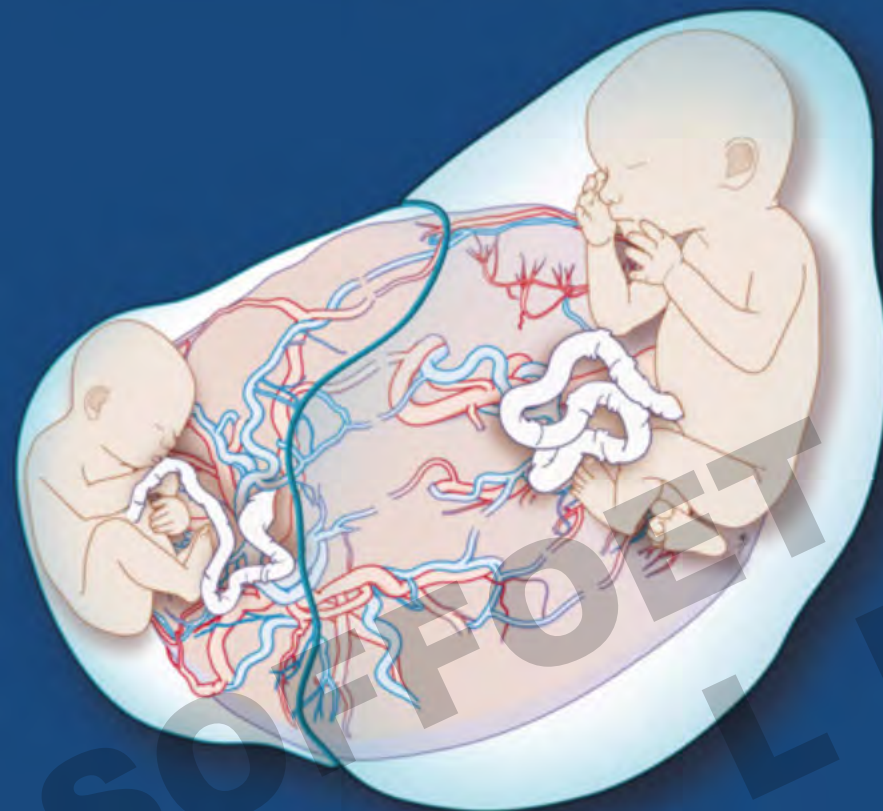


33 weeks; induced birth after 1 IUT Hb 10 g/dL and 23 g/dL

TTTS discordant fluid

versus

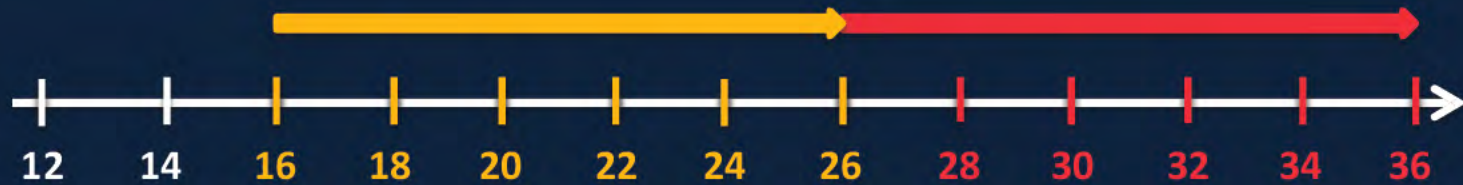
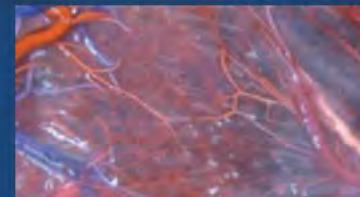
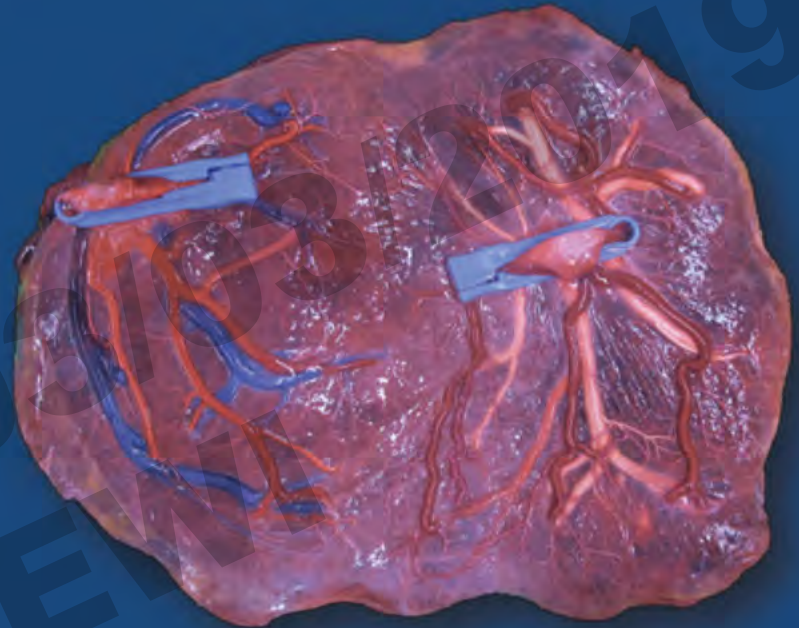
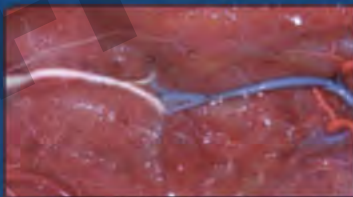
TAPS discordant hemoglobin



TTTS discordant fluid

versus

TAPS discordant hemoglobin



TTTS discordant fluid

versus

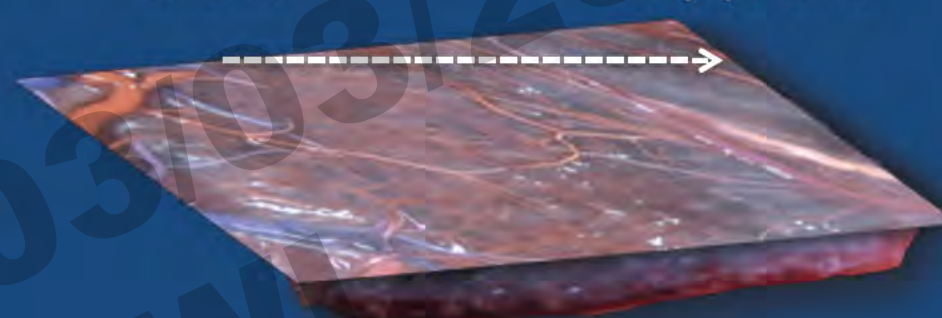
TAPS discordant hemoglobin

Anhydramnios

Polyhydramnios

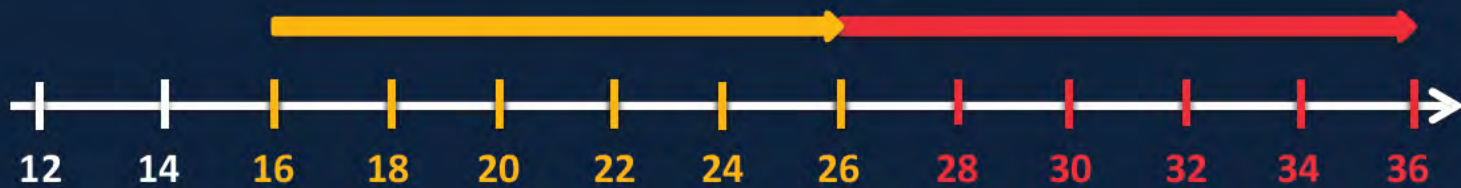
Anemia

Polycythemia

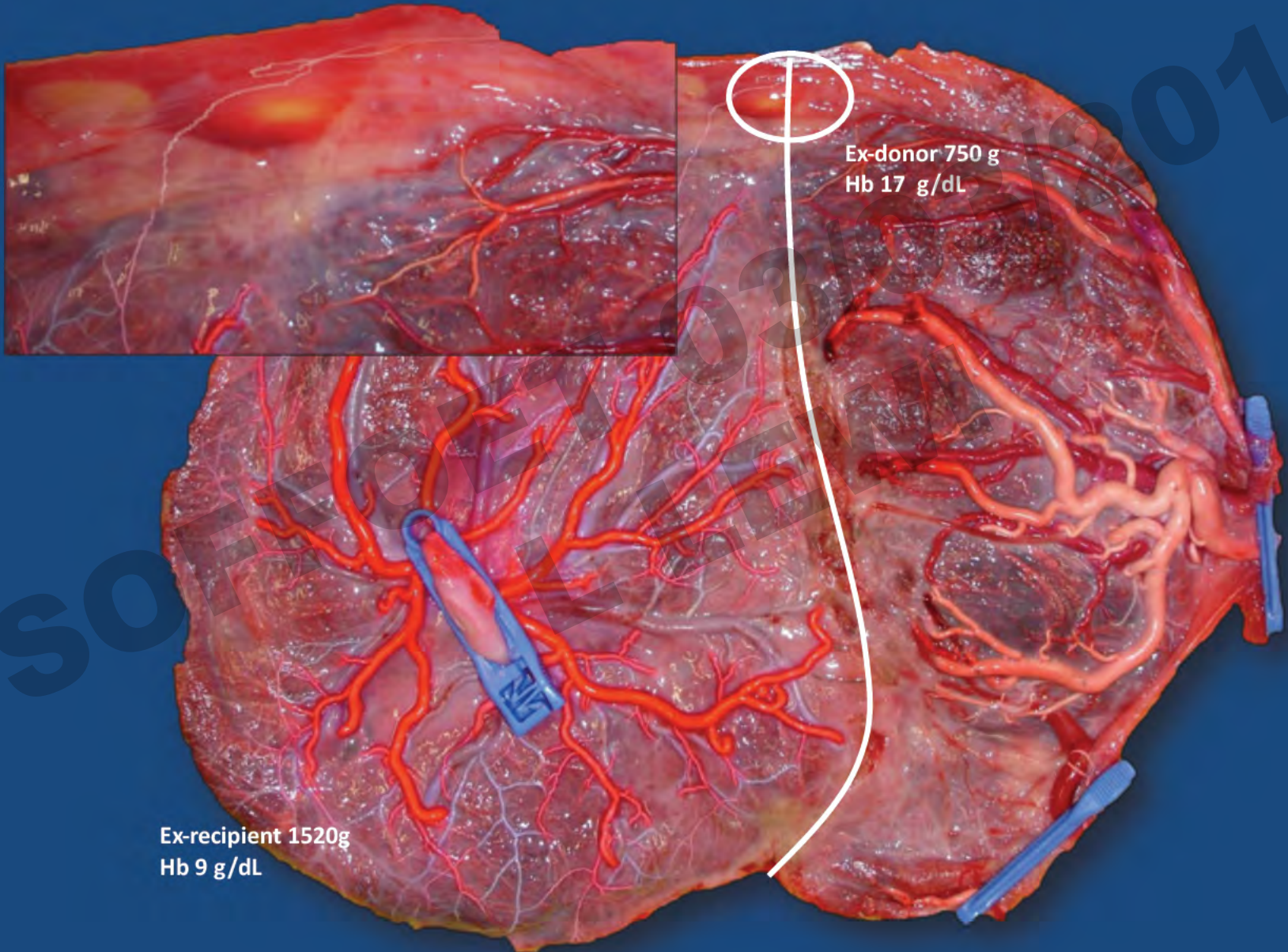


Net transfer of fluid

Net transfer of RBCs



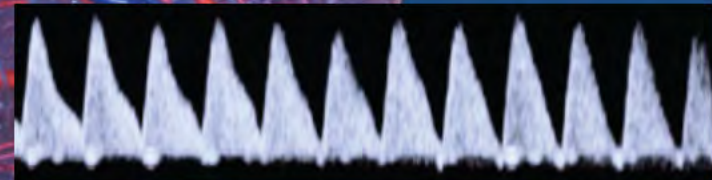
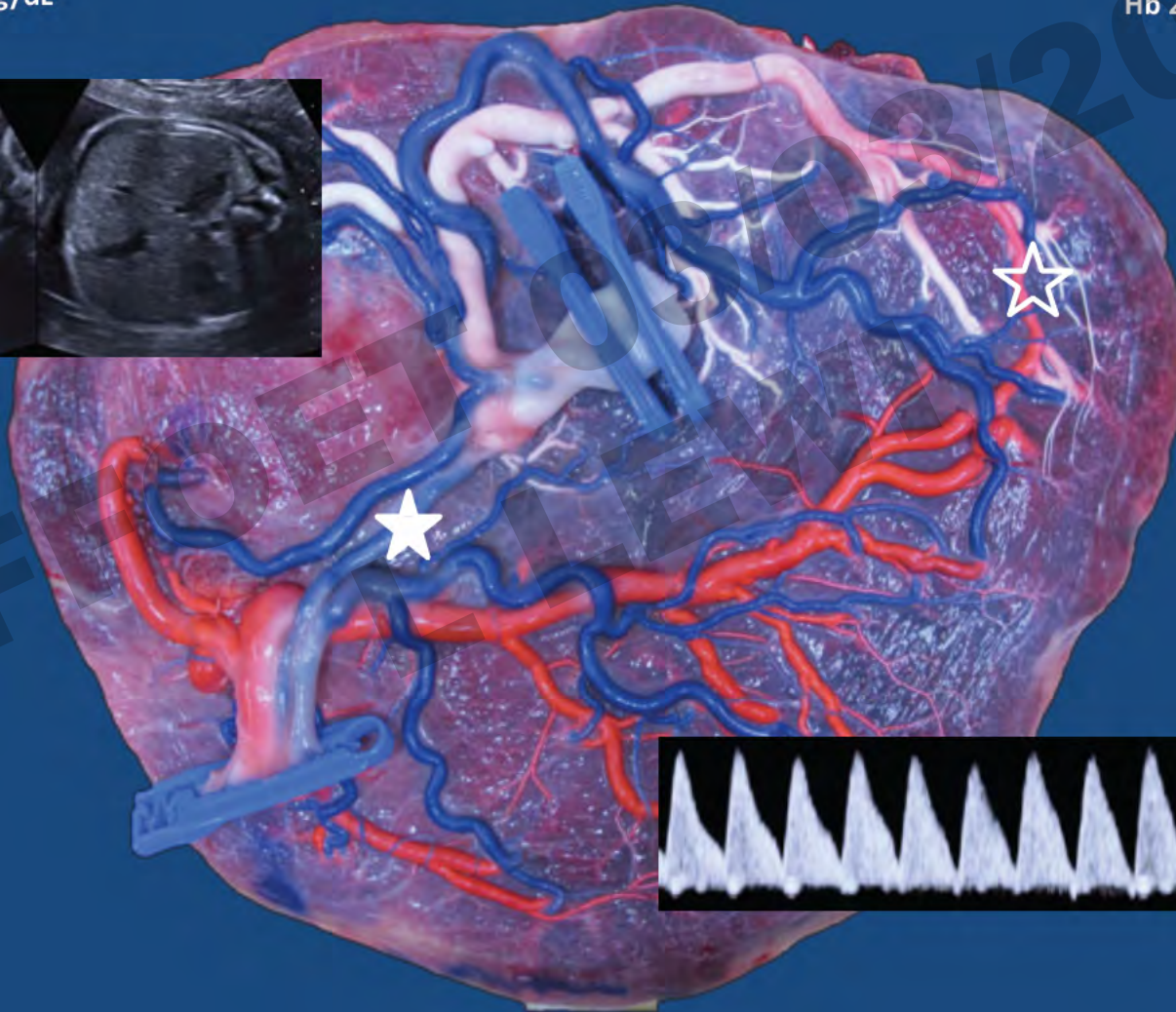
TAPS after TTTS



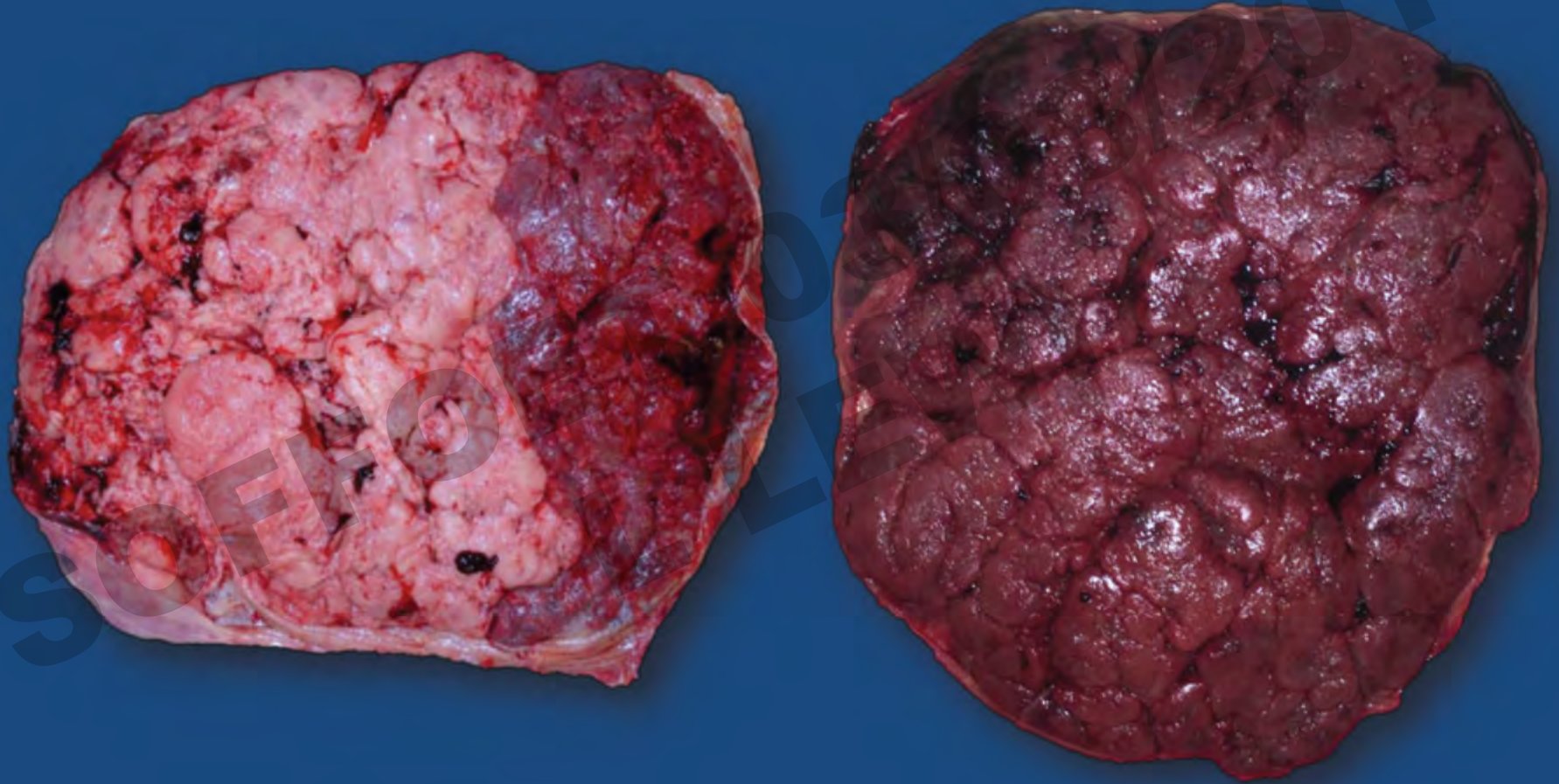
Chronic TAPS versus acute intrapartum transfusion

Twin 1 2220 g
Hb 10 g/dL

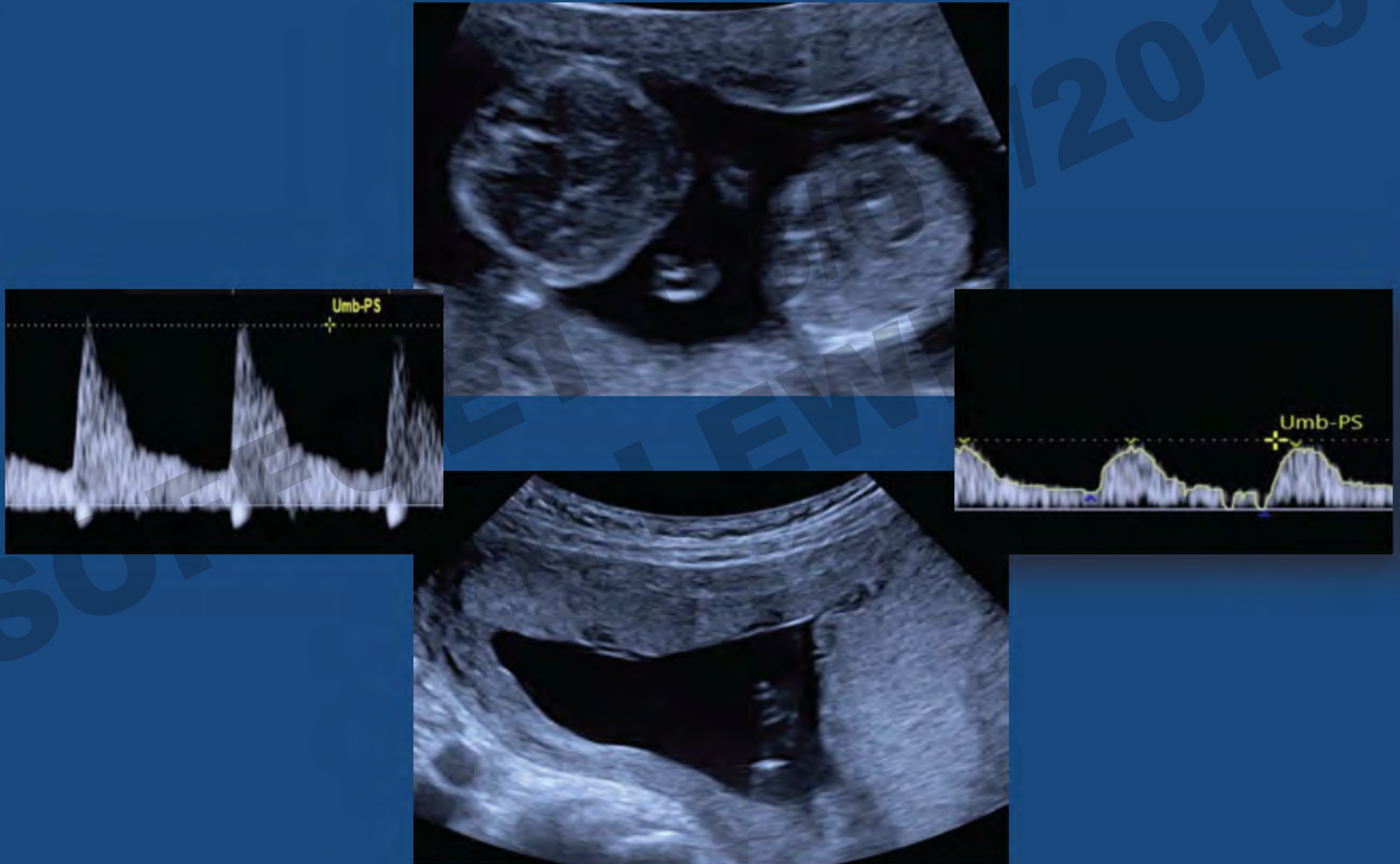
Twin 2 2125g
Hb 22 g/dL



Chronic TAPS versus acute intrapartum transfusion

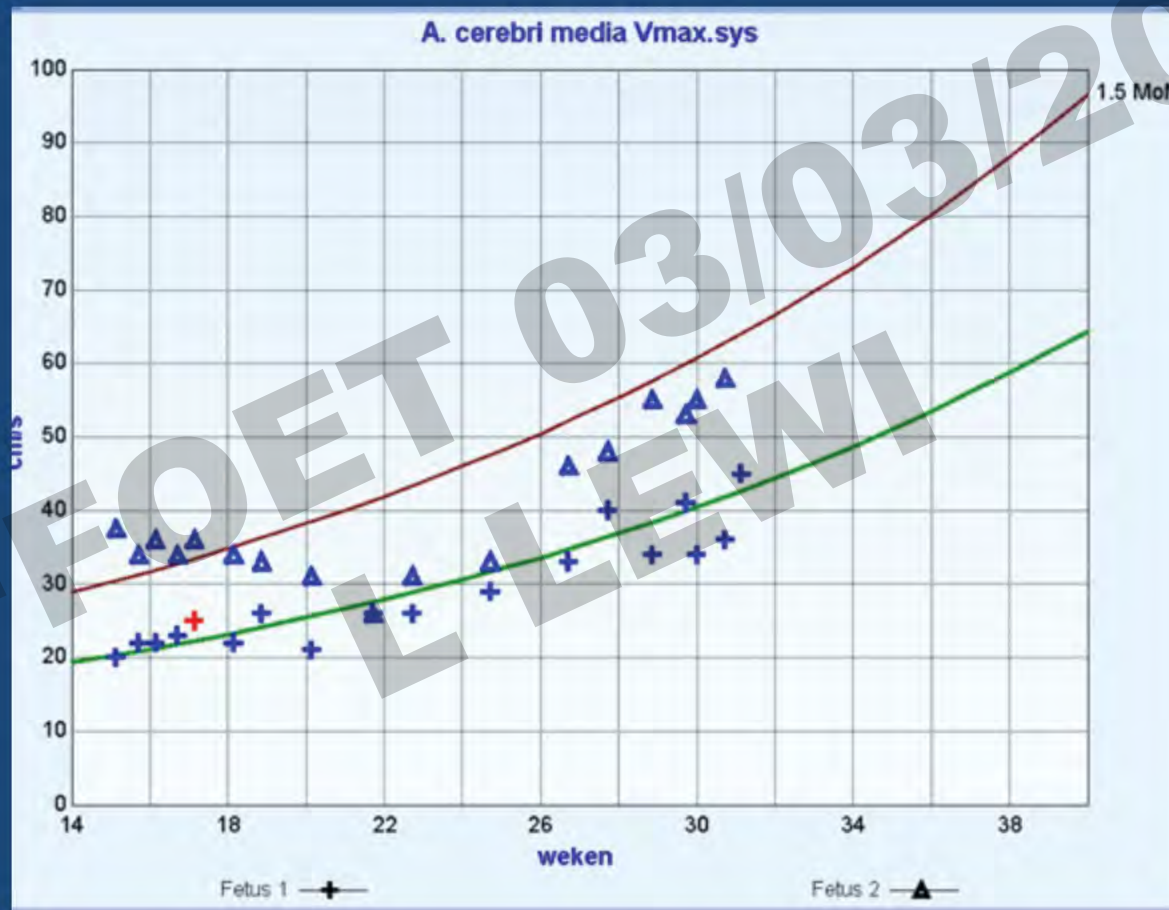


Early TAPS that disappeared spontaneously



15 weeks, 20% EFW discordance, MCA PSV >1.5 MoM and = 1 MoM

Early TAPS that disappeared spontaneously

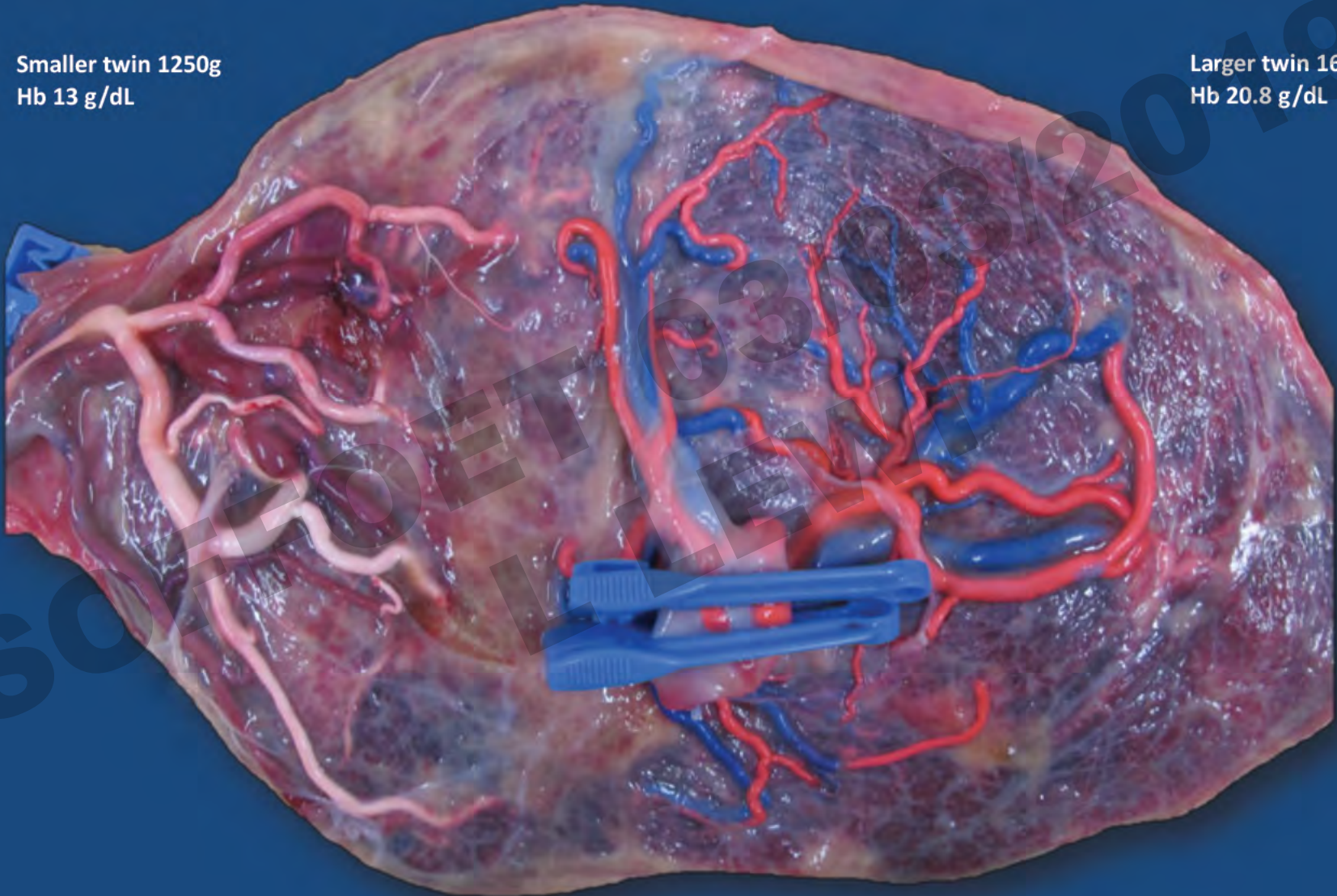


Discordance disappeared by 23 weeks to become progressively more discordant from 27 weeks

Early TAPS that resolved spontaneously

Smaller twin 1250g
Hb 13 g/dL

Larger twin 1650g
Hb 20.8 g/dL



PPROM at 31 weeks, no visible anastomoses on the chorionic surface

The role of the placenta in monochorionic twin complications

Discordant anomaly

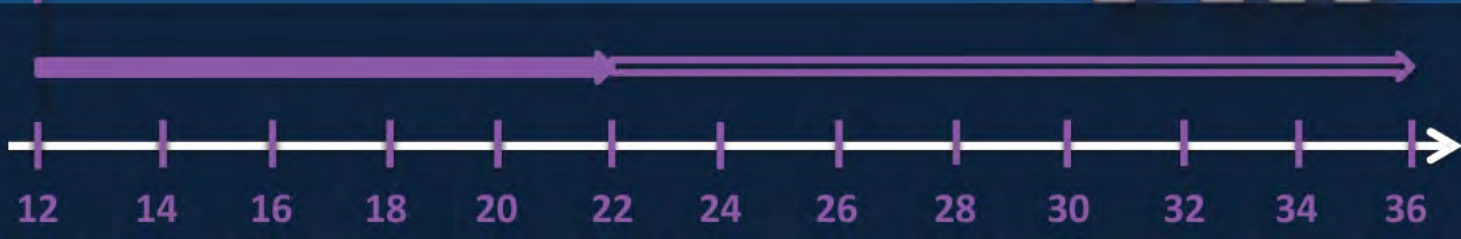
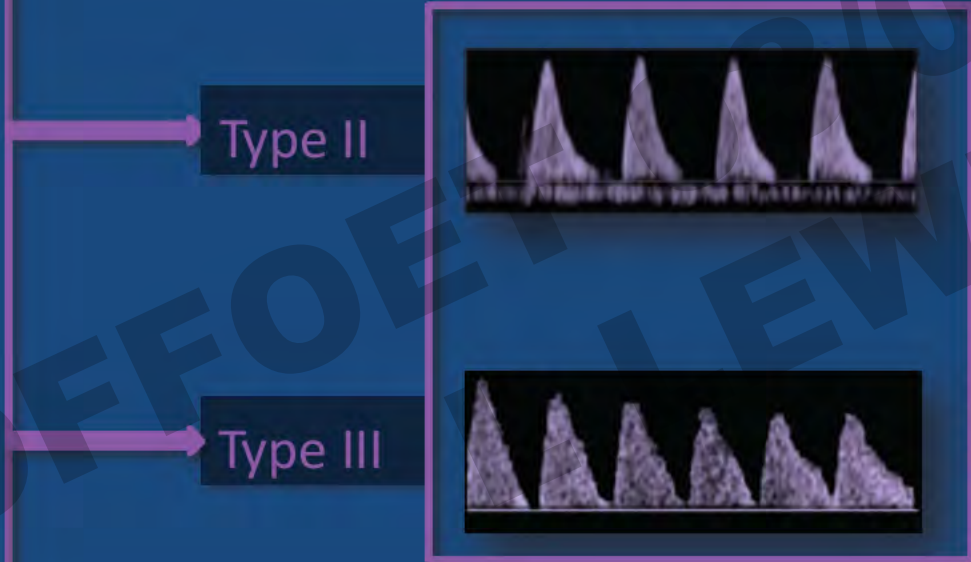
Discordant amniotic fluid volume - TTTS

Discordant hemoglobin - TAPS

Discordant Growth



Discordant Growth

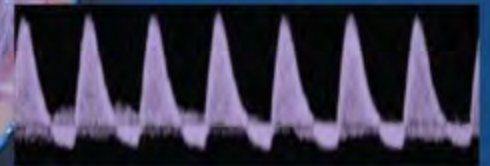
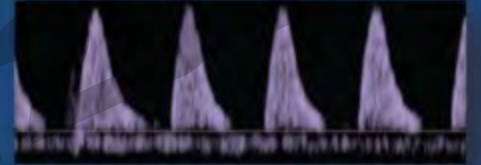
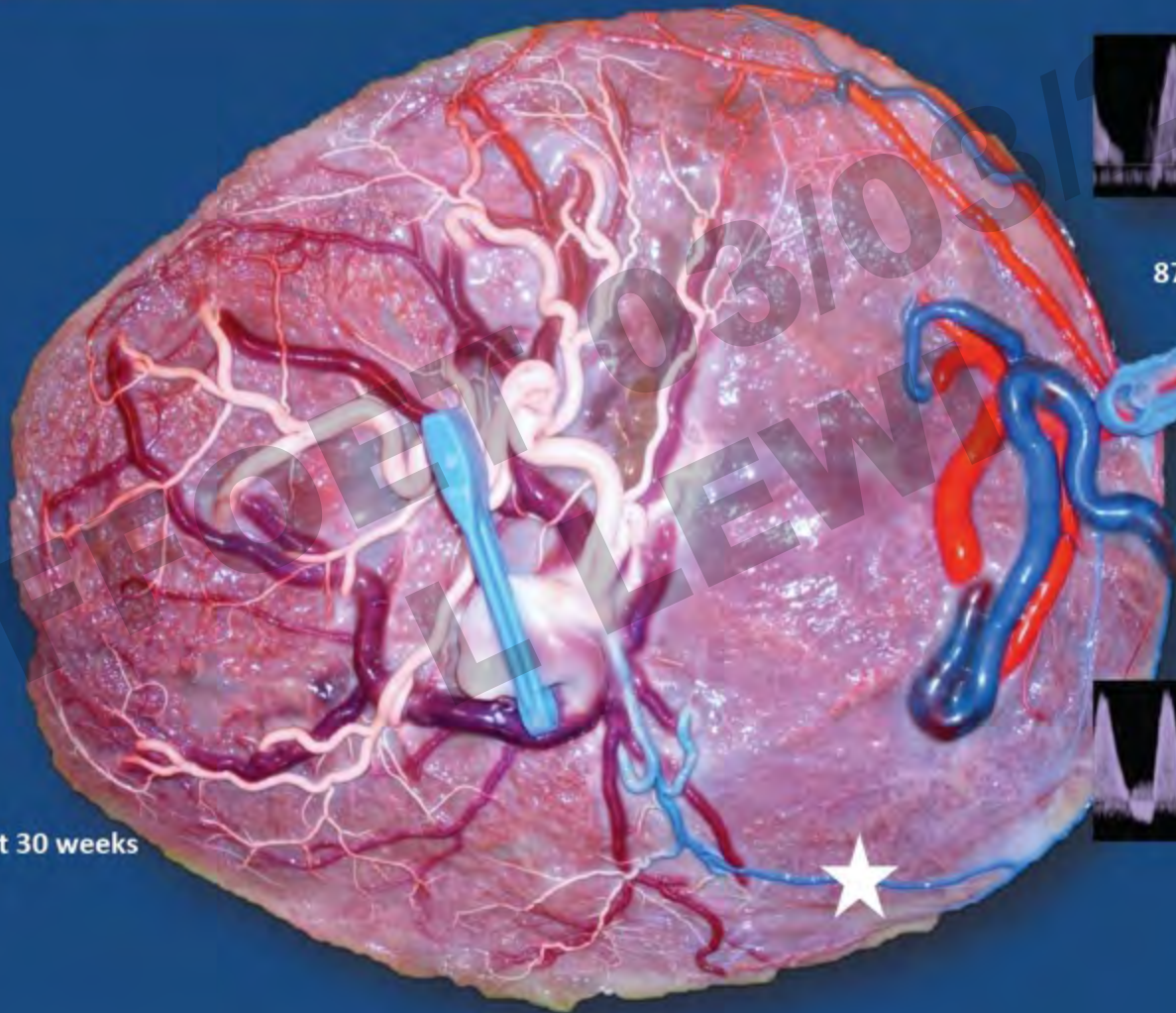


Discordant Growth

Type II

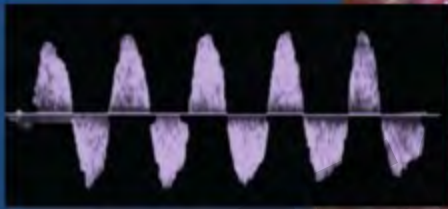
1385g at 30 weeks

870 g

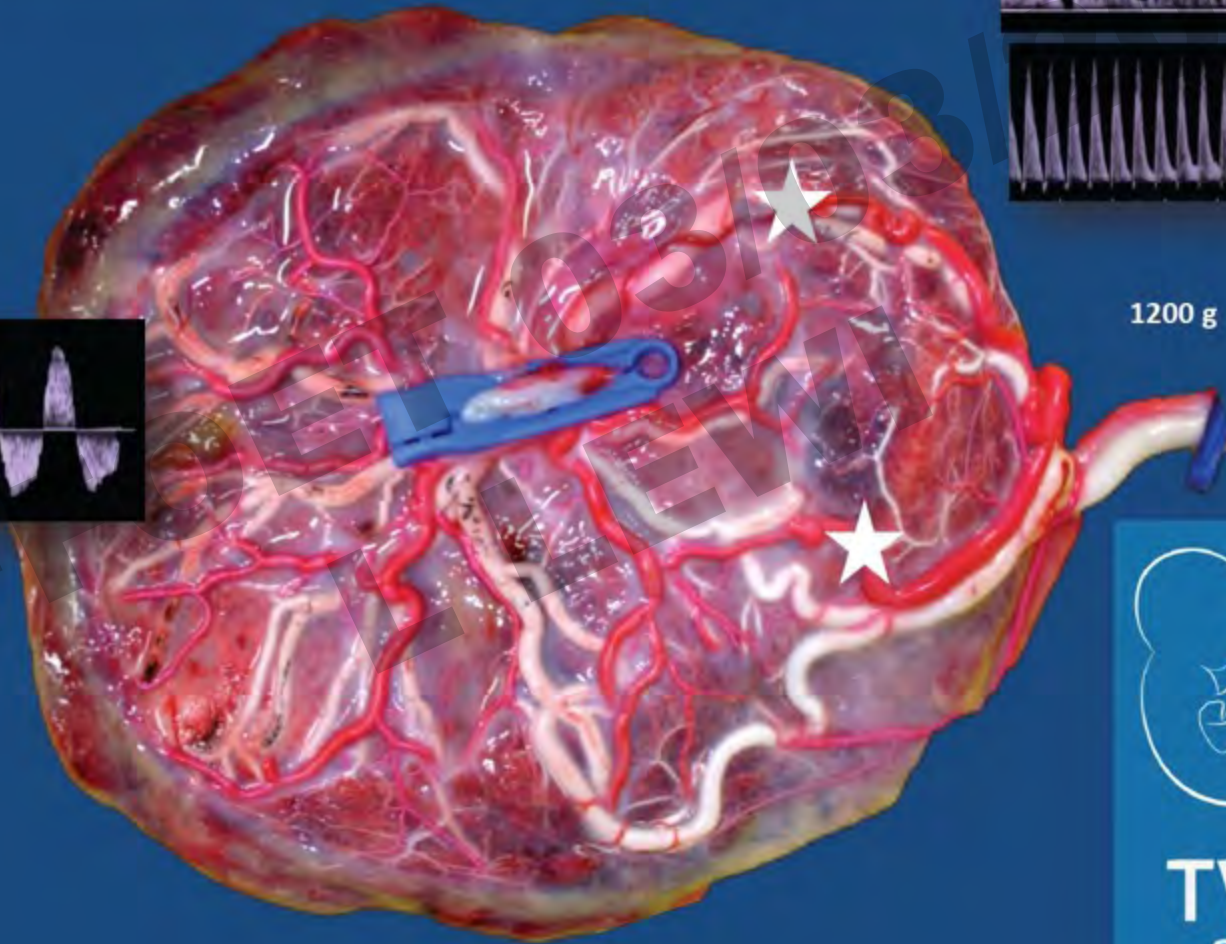


Discordant Growth

Type III



1780 g at 32 weeks

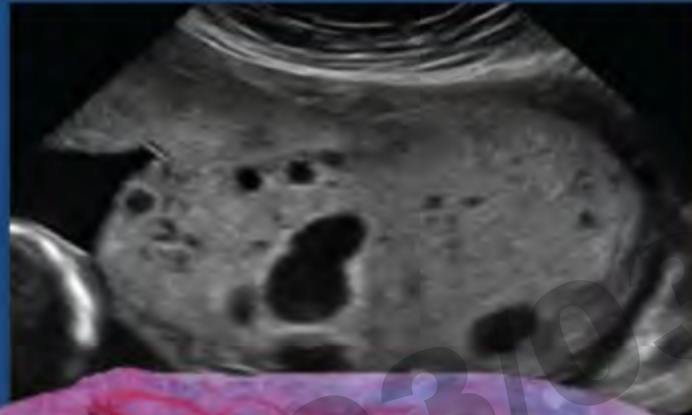


1200 g

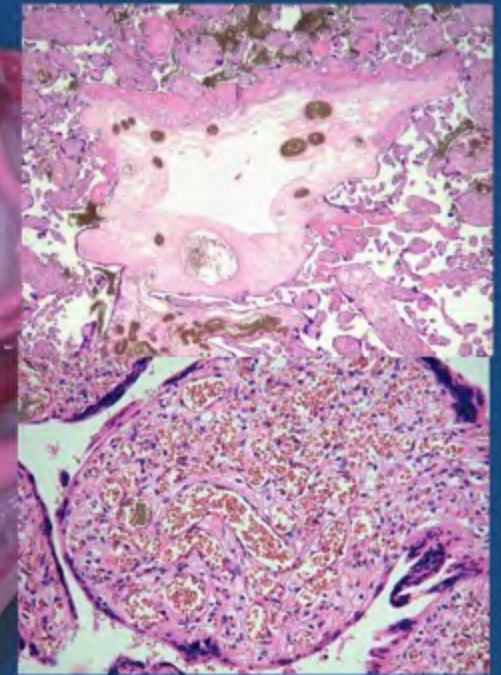


Discordance for placental mesenchymal dysplasia (PMD)

2130 g at 34 weeks



970 g



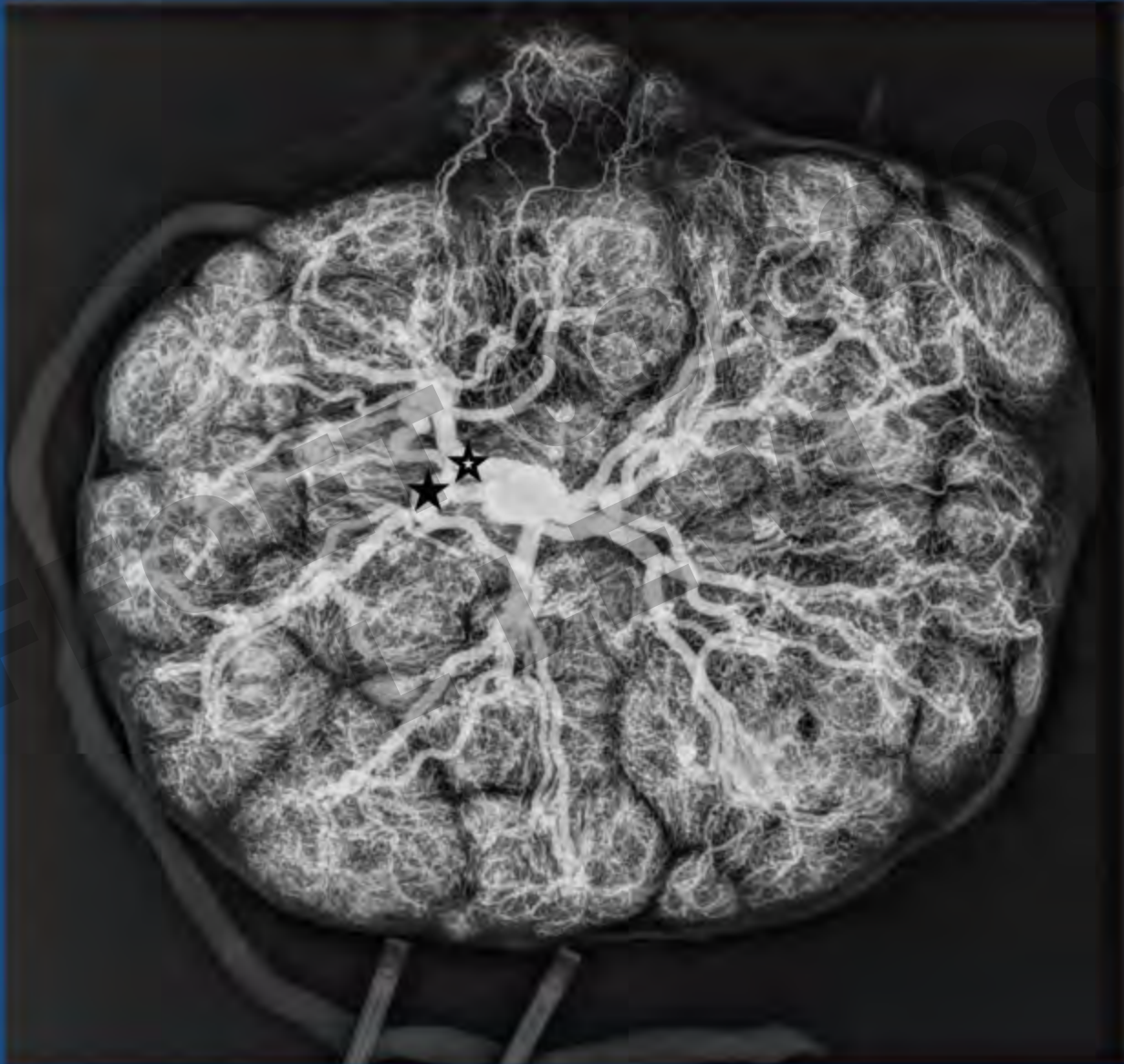
Placental recruitment after single demise



Placental recruitment after single demise



Placental recruitment after single demise



The placenta

The role of the anastomoses in complicated monozygotic pregnancies

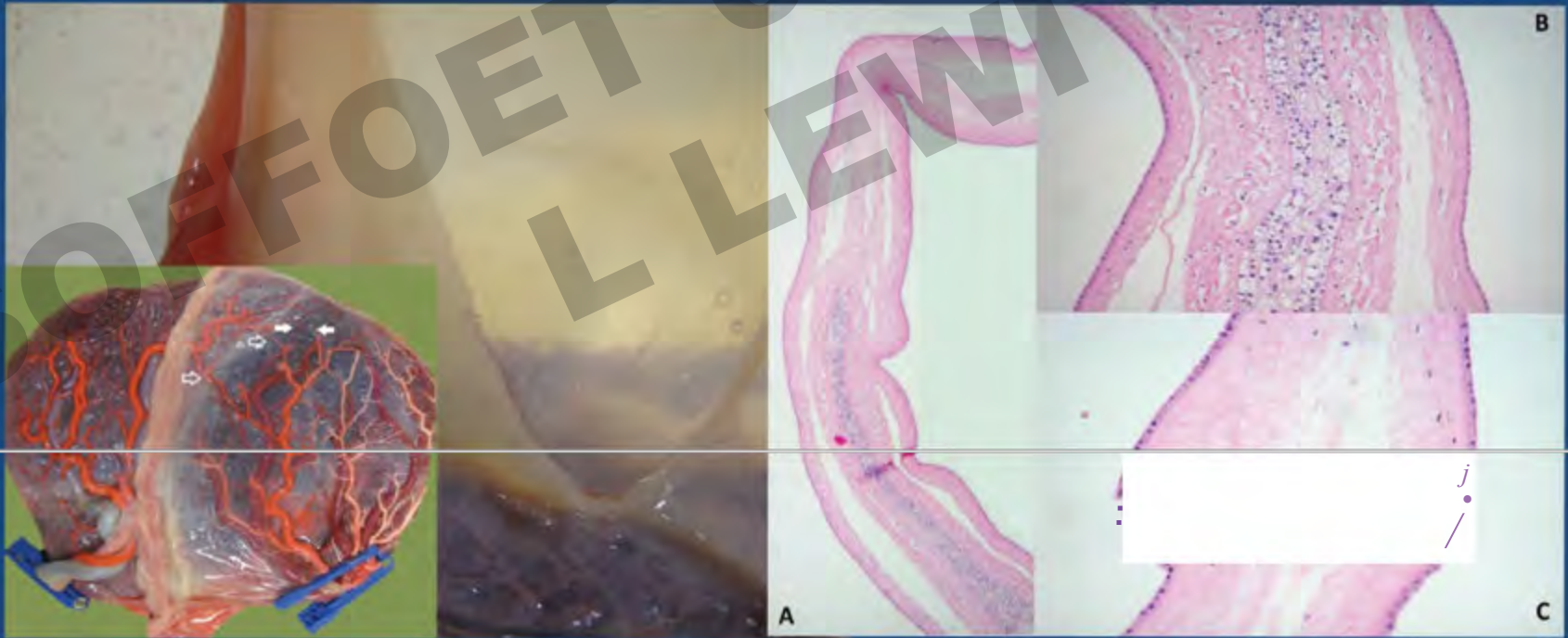
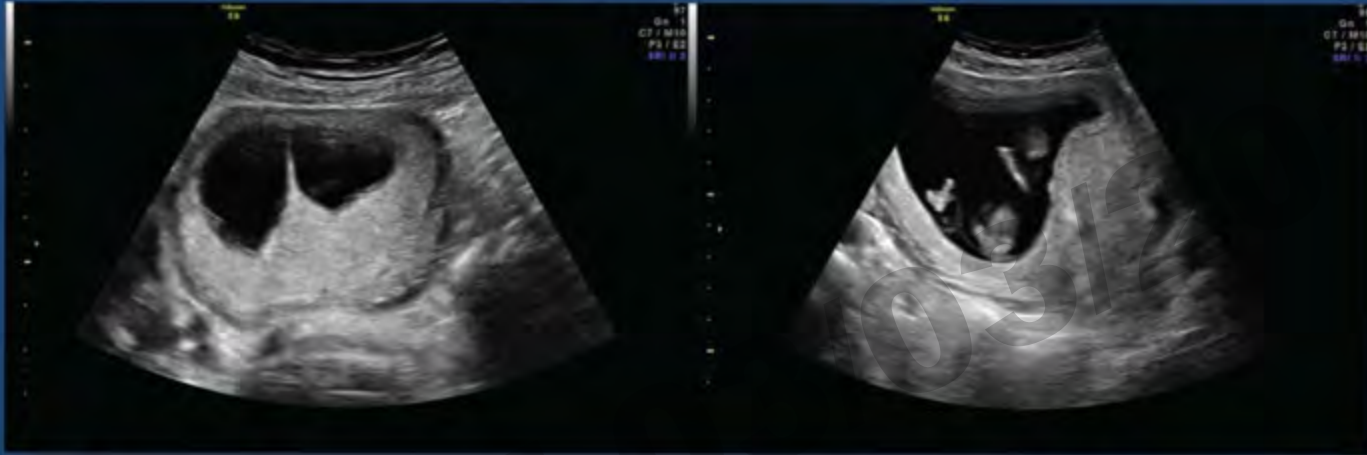
The septum

Intermediate forms of chorionicity and amnionicity

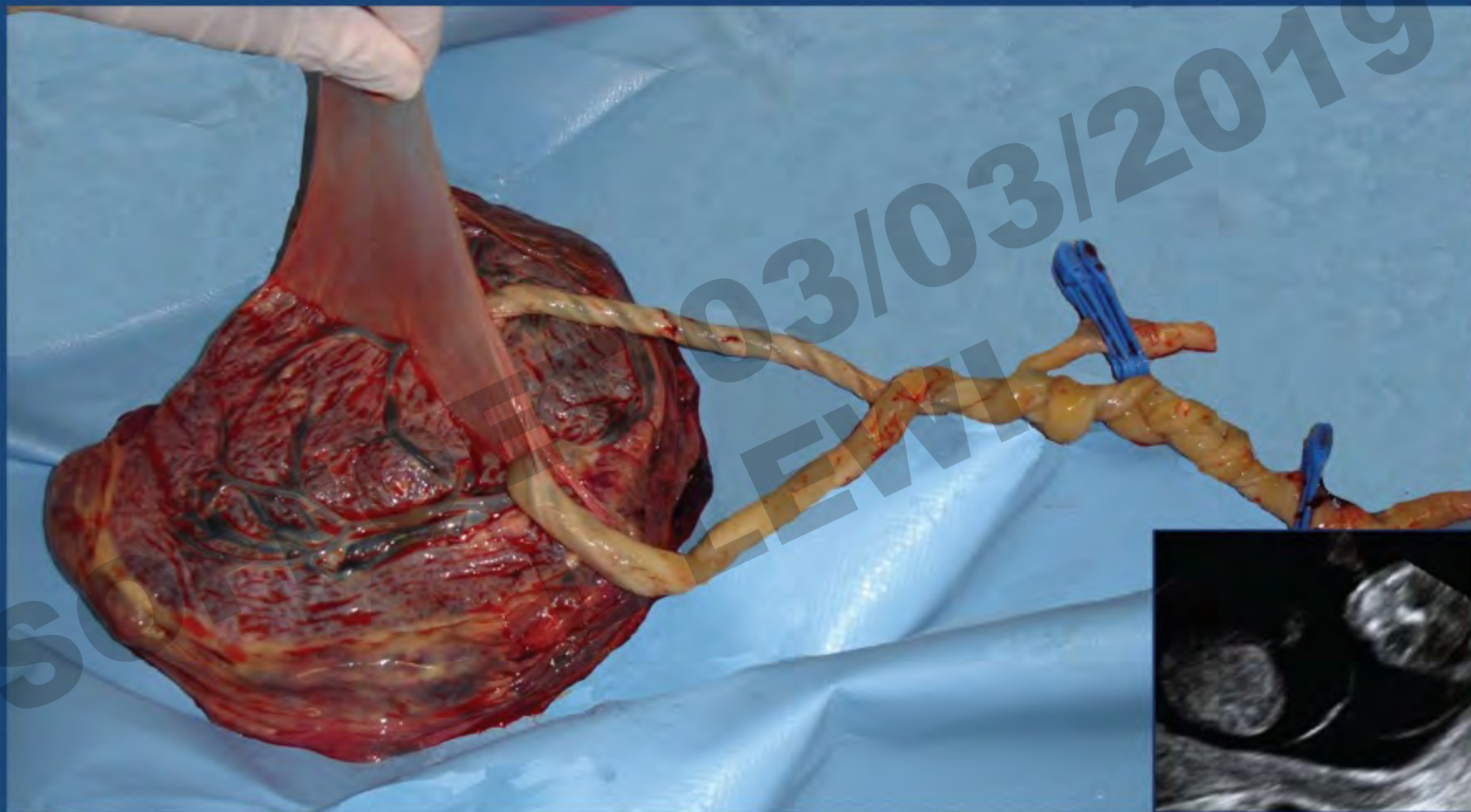
The cord

Insertion site and single umbilical artery

Septum: partial mono-chorionic and dichorionic twin pregnancies



Septum: partial mono-amniotic and di-amniotic twin pregnancies



Septum: iatrogenic monoamniotic twin pregnancies



Septum: amniocentesis through the intertwin septum



The placenta

The role of the anastomoses in the complications of monozygotic pregnancies

The septum

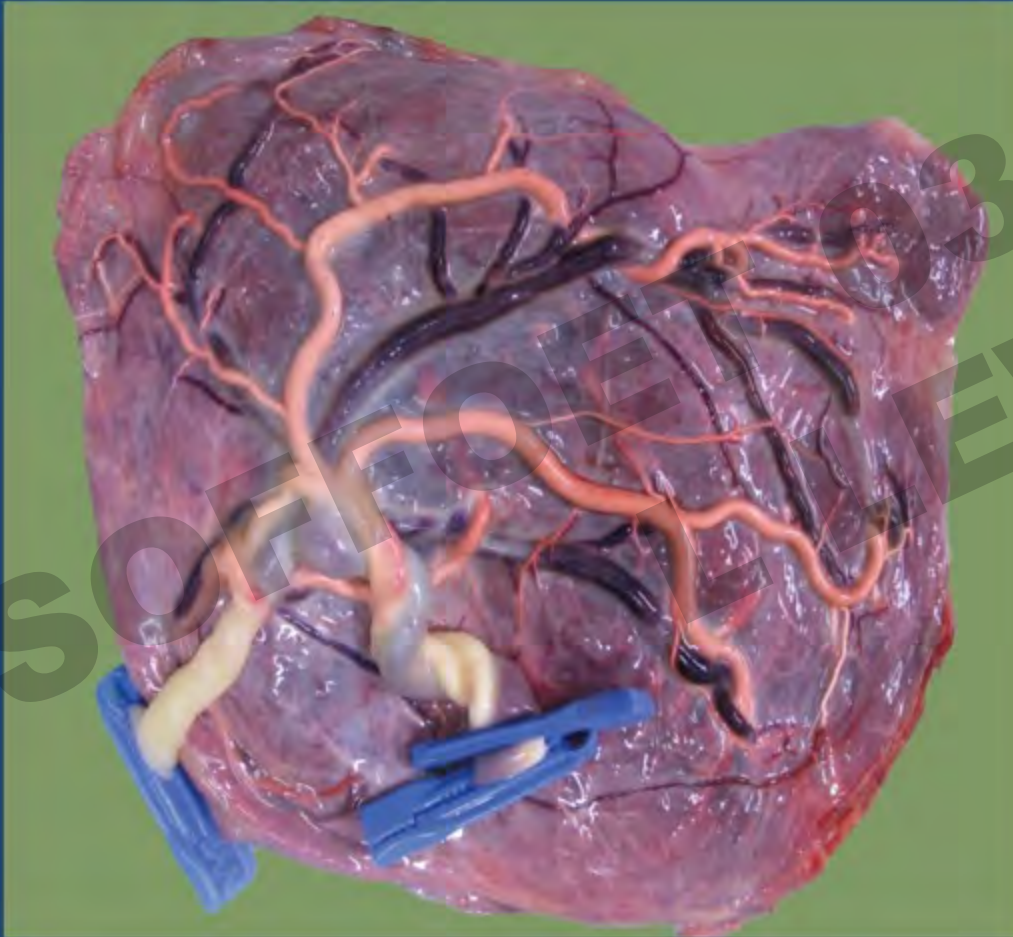
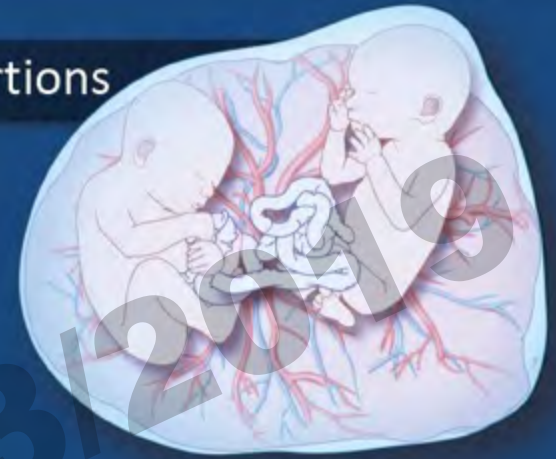
Intermediate forms of chorionicity and amnionicity

The cord

Insertion site and single umbilical artery

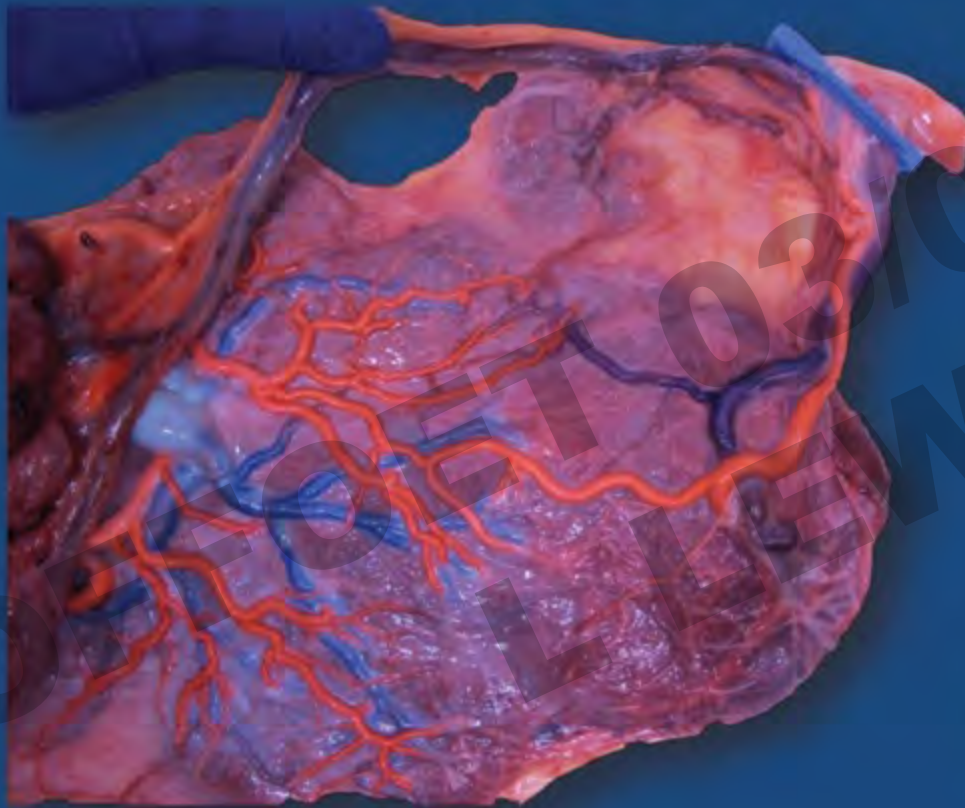
Cord insertion site: proximate insertions

50% of monoamniotic *versus* 3% of diamniotic twins



Insertion site: velamentous cord & vasa praevia

A velamentous cord is more common in twins– also increased risk of vasa praevia



A velamentous cord is present in 1 in 5 monozygotic and 1 in 10 dizygotic pairs
In monozygotic twins, a velamentous cord doubles risk of TTTS and discordant growth

Single umbilical artery

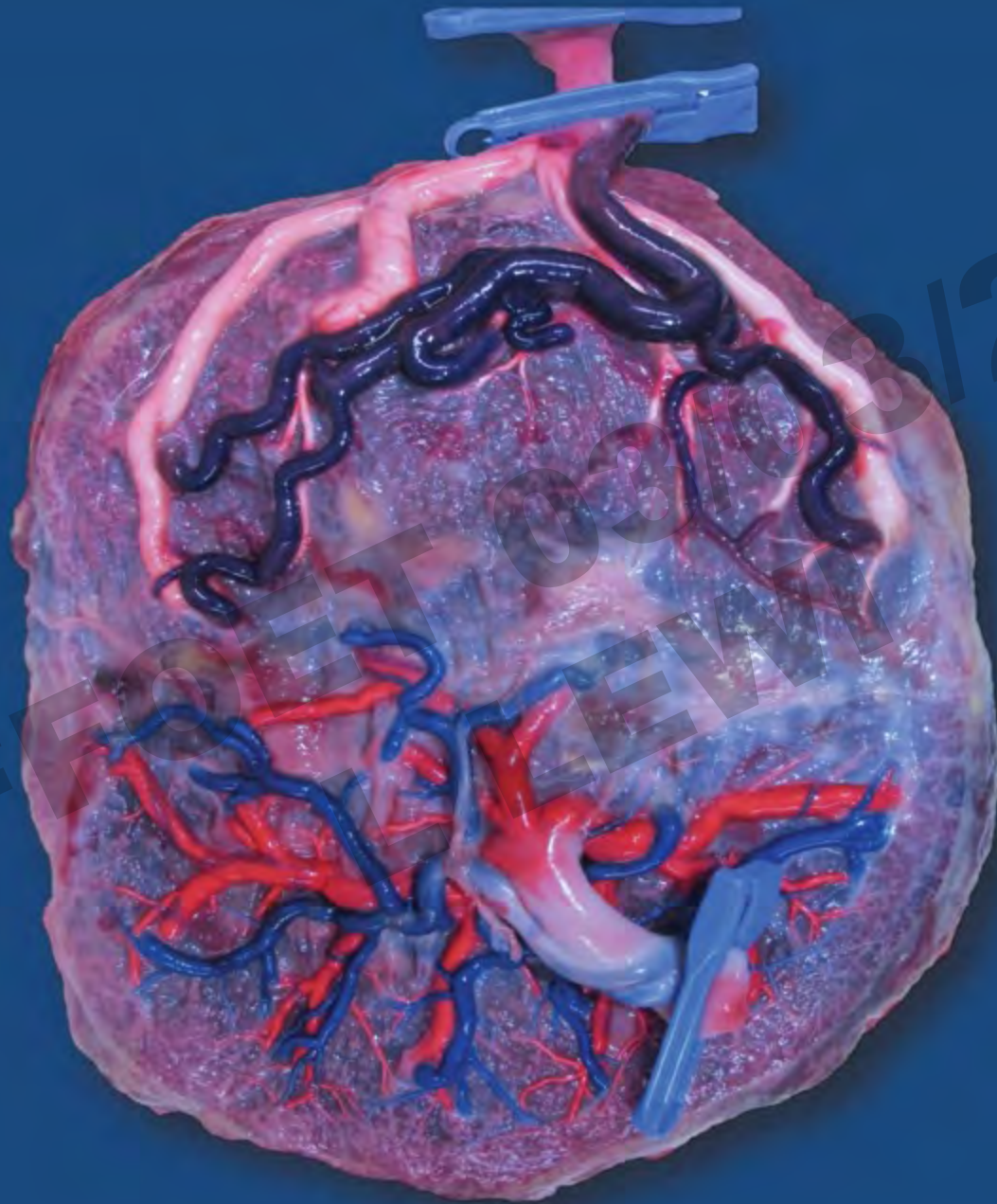
A single umbilical artery is more common in twins (2-5%) than in singletons (1%)



Same incidence of SUA in monochorionic and dichorionic twin pairs

Associated with small for gestational age – no compensatory dilatation as in singletons

INJECTION OF THE PLACENTA AFTER LASER



Take home message

Every monochorionic placenta is **unique!**

Placental color dye injection is of paramount importance

Pathogenesis of complicated MC pregnancies

Quality control for fetal therapy



Thank you!