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MRS. OLGA KARLOUKOVSKA
142 TULKETH ROAD
ASHTON-ON-RIBBLE
PRESTON
LANCASHIRE
PR2 1AR

Detailed Anomaly

Patient: **KARLOUKOVSKA OLGA**, DOB: 27/10/1981, 142 TULKETH ROAD
ASHTON-ON-RIBBLE, PRESTON, PR2 1AR
Exam date: 26/09/2024

Indication MCDA sIUGR

Fetal Growth Overview (Fetus 1)

Exam date	GA	BPD (mm)	HC (mm)	AC (mm)	FL (mm)	HL (mm)	EFW (g)
23/09/2024	18w 2d	42.0 37%	148.8 31%	127.7 29%	24.1 8%		214
26/09/2024	18w 5d	43.3 43%	154.0 43%	134.9 63%	26.4 29%		244

Fetal Growth Overview (Fetus 2)

Exam date	GA	BPD (mm)	HC (mm)	AC (mm)	FL (mm)	HL (mm)	EFW (g)
23/09/2024	18w 2d		137.1 3%	109.9 <1%	20.3 <1%		159
26/09/2024	18w 5d	40.0 5%	138.5 <1%	110.9 <1%	22.5 <1%		174

Method

View: Sufficient

Pregnancy

Twin pregnancy. Monochorionic-diamniotic. Number of fetuses: 2

Dating

	Date	Details	Gest. age	EDD
Agreed dating	based on the external assessment		18 w + 5 d	22/02/2025

General Evaluation (Fetus 1)

Cardiac activity present.
Fetal movements visualised.
Presentation transverse fetal back down.
Placenta posterior, high.
Amniotic fluid Largest pool 5.1 cm.

Fetal Biometry (Fetus 1)

BPD	43.3 mm		43%
HC	154.0 mm		43%
AC	134.9 mm		63%
Femur	26.4 mm		29%
HC / AC	1.14		23%

Fetal Weight Calculation:

EFW	244 g
EFW (lb,oz)	0 lb 9 oz
EFW by	Hadlock (BPD-HC-AC-FL)
EFW discordance	28.7 %

Extremities / Bony Structures Biometry:

FL / BPD	0.61		6%
FL / HC	0.17		18%
FL / AC	0.20		12%

Fetal Doppler (Fetus 1)

Umbilical Artery: Sampling site: midcord. EDF: positive

PI	1.46
RI	0.75
PS	35.84 cm/s
ED	8.94 cm/s
TAmix	18.39 cm/s
MD	6.42 cm/s
S / D	4.01
HR	138 bpm

Mid Cerebral Artery:

PI	1.61
RI	0.78
PS	27.72 cm/s
PS	1.16 MoM

Ductus Venosus:

S-wave	-24.30 cm/s	positive flow	
D-wave	-21.93 cm/s		
A-wave	-9.07 cm/s		
TAmix	-18.60 cm/s		
PIV	0.82		
PVIV	0.69		
PLI	0.63		
S/a	2.68		
a/S	0.37		2%
D/a	2.42		
HR	146 bpm		

General Evaluation (Fetus 2)

Cardiac activity present.
Fetal movements visualised.
Presentation transverse fetal back down.
Placenta posterior, high.
Amniotic fluid Largest pool 1.9 cm.

Fetal Biometry (Fetus 2)

BPD	40.0 mm		5%
HC	138.5 mm		<1%
AC	110.9 mm		<1%
Femur	22.5 mm		<1%
HC / AC	1.25		83%

Fetal Weight Calculation:

EFW	174 g
EFW (lb,oz)	0 lb 6 oz
EFW by	Hadlock (BPD-HC-AC-FL)
EFW discordance	28.7 %

Extremities / Bony Structures Biometry:

FL / BPD	0.56		<1%
FL / HC	0.16		3%
FL / AC	0.20		27%

**Fetal Doppler
(Fetus 2)****Umbilical Artery:** Sampling site: midcord. EDF: absent

PI	0.89
RI	0.54
PS	-25.91 cm/s
ED	7.14 cm/s
TAmx	-11.35 cm/s
MD	7.25 cm/s
S / D	2.18
HR	150 bpm

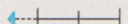
Mid Cerebral Artery:

PI	1.33
RI	0.71
PS	27.80 cm/s
PS	1.16 MoM

Right Mid Cerebral Artery:

PI	1.33
RI	0.71
PS	27.81 cm/s
ED	8.18 cm/s
TAmx	14.75 cm/s
MD	6.92 cm/s
S / D	3.40
HR	154 bpm

Ductus Venosus:

S-wave	-18.86 cm/s		
D-wave	-11.09 cm/s		
A-wave	-5.98 cm/s	positive flow	
TAmx	-10.53 cm/s		
PIV	1.22		
PVIV	1.16		
PLI	0.68		
S/a	3.15		
a/S	0.32		<1%
D/a	1.85		
HR	234 bpm		

Impression	MCDA Twins sIUGR type II
Discussion	Twin 1 - maternal right, transverse, representing Twin 2 - maternal left, upper, transverse
Follow-up	Scan confirms monochorionic, diamniotic (MCDA) twins with a single placenta, thin intertwin membrane, absence of lambda sign and concordant sex (XX)

There is discordant growth of 28.7% and discordant liquor and Dopplers. The normal sized twin has normal liquor, normal bladder and normal Doppler interrogations (normal UAD with positive EDF, normal MCA and DV Dopplers). The smaller twin has oligohydramnios, normal bladder and abnormal UA Doppler with AEDF. The MCA and DV Dopplers are normal. There is velamentous cord insertion of the umbilical cord of the smaller twin. This suggests selective intrauterine growth restriction (sIUGR) type II and occurs in 15% of MCDA twins. Type II is characterised by persistently AEDF in the UA. As in type I, sIUGR type II pregnancies show a distribution of placental anastomoses similar to uncomplicated MC twins, but with a more severe placental discordance.

Dopplers in MC twins show a longer latency period between onset of AEDF and delivery, on average ~10 weeks, compared with ~4 weeks in singletons and DC twins with IUGR with similar UA Dopplers.

Discussed that this is a serious condition which has a substantial increase in perinatal morbidity and mortality requires close fetal surveillance. The management is to try and get the twins to a reasonable gestation (usually at least 34 weeks) before contemplating delivery which is usually by caesarean section. However, while we are trying to get further with the pregnancy there is a risk that the sIUGR twin may get worse, defined as abnormal venous Doppler or biophysical profile (up to 90%), and die (up to 40%). Elective delivery is indicated in most of these pregnancies by 30 weeks of gestation. Therefore, there is a balance between leaving such MC twins in-utero to gain maturity against the risks of fetal demise and early delivery/prematurity.

There may also be a situation where if we know that the sIUGR is becoming worse and very poorly we may have to contemplate delivery sooner to save the normal sized twin, thereby sacrificing the sIUGR twin, to reduce long term problems to the normal sized twin. This will depend on the gestation and the estimated weights of each twin.

If everything is progressing normally then delivery will usually be at 34-36 weeks and by caesarean section with a course of steroids beforehand to promote lung maturity in the twins.

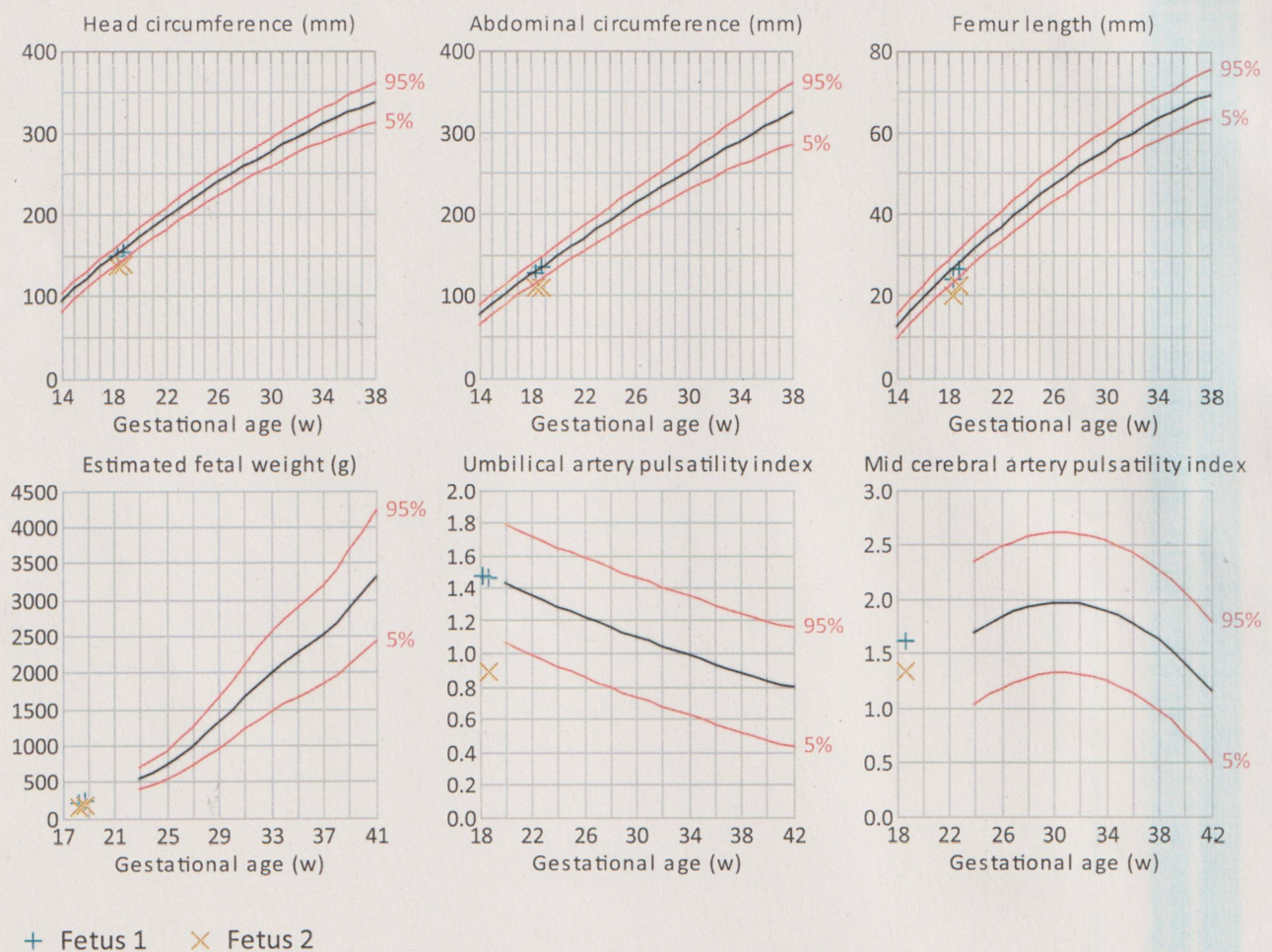
Discussed that at delivery if there are no NICU cots available then we will need to transfer out to another hospital for delivery for the safety of mother and babies - this prevents babies being separated from their mother and, potentially, each baby being in different hospitals.

There is an increased risk of neurodevelopmental impairment (NDI) ~10% in the sIUGR twin after delivery. While it will likely catch up on growth in few years there is a increased risk of NDI in this twin.

Plan:

Conservative management. However, there is a high probability of decompensation in one or both twins before 26 weeks leading to single or double demise. This will require 1-2 weekly scans. As already discussed 90% are delivered by 30 weeks. If decompensation occurs there may be single or double fetal demise. If single demise, there is a 15% chance of co-twin demise and there is a risk of brain damage to the surviving twin of up to 25%. This damage can take 3-4 weeks to become apparent on ultrasound scan. The surviving twin may develop signs of anaemia which may require treatment. Due to the uncertainty of the pregnancy the option of termination of the whole pregnancy. This is not unreasonable as this is a serious condition with a substantial increase in perinatal morbidity and mortality.

Plan: Scan weekly at local hospital by Dr Emma Ingram



DR K Chan
Consultant in Obstetrics and Fetal Medicine