NHS Worcestershire Acute Hospitals NHS Trust

PROTOCOL FOR THIRD TRIMESTER ULTRASOUND SCANS

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION

These guidelines concern situations in third trimester where a scan may prove helpful, in women who have had their mid-trimester scan and now present with a potential problem that may affect the management of the pregnancy.

THIS GUIDELINE TO BE USED BY THE FOLLOWING STAFF:

Sonographers, doctors and other health professionals qualified to a minimum standard equivalent to the Postgraduate Certificate in Ultrasound

Lead Clinician(s)

Mr S Agwu — Consultant Obstetrician/Gynaecologist
Miss Rachel Duckett — Consultant Obstetrician
Dr R Johnson — Radiology Clinical Director
Dr Anna Fabre-Gray — Consultant Obstetrician

Key amendments to this guideline

Date	Amendment	Approved by: (name of committee or accountable director)
24 June 2010	Extended for a further period without amendment.	Miss R Imtiaz
10/07/12	A positive EDF (end diastolic flow) will indicate an umbilical artery Doppler within normal limits.	Mr S Agwu
29.10.2014	1) Liquor volume changed to Single Deepest Pool rather than AFI. 2) Perform Doppler if SDP <2cm 3) Placental localisation: If low repeat at 34/40. TV scan is safe and should be done if placental edge not visualised. Anterior is clear if 2cm and posterior if 3cm from os. 4) RPD: If >7mm at 20/40 then repeat at 32/40. If >10mm at 32/40 then refer to consultant ANC and needs Paediatric alert. 5) No growth scans after 38/40.	R Duckett C Stabler
1.5.2018	Serial Growth scans for IUGR to be performed at 28/40, 34/40 and 38/40. Growth scans after 38/40 other than IUGR protocol must be Consultant requests only.	C Stabler A Morrison R Duckett
27/02/2019	Review and amendments to the guideline as per latest national recommendations	A Morison C Stabler R Duckett

		A Fabre-Gray

PROTOCOL FOR THIRD TRIMESTER ULTRASOUND SCANS

INTRODUCTION

Ultrasound is of limited use in the third trimester though in certain situations it can be instrumental in reaching the diagnosis and formulating management plan. These guidelines concern those situations where a scan may prove helpful.

COMPETENCIES REQUIRED

Sonographers, midwives, radiologists and obstetricians holding a Certificate in Obstetric Ultrasound.

PATIENTS COVERED

Women who have had their mid-trimester scan and now present with a potential problem that may affect the management of the pregnancy.

GUIDELINE

Ultrasound examinations of pregnancy in the third trimester can only help to identify a limited number of situations.

Scans should only be requested where the result will affect the management of the pregnancy or delivery.

Requests should be clear and concise and include relevant clinical details.

Scan should be requested on ICE by staff member involved in the patient's care.

FETAL GROWTH MONITORING

Most patients now have customised growth charts. Indications for ultrasound scans to monitor fetal growth are as follows:-

1. On the first plot at 24 - 26 weeks if the symphysis fundal height measurement is less than the 10th centile.
2. If during the course of the antenatal care the symphysis height measurements cross the centiles.
3. If the symphysis height measurement is above the 90th centile and becomes steeper than any curve on the chart (showing exponential increase).

If the scan is normal only repeat if further discrepancy found on measurements of fundal height.

1. INTRAUTERINE GROWTH RETARDATION (IUGR)

- Growth scans

Antenatally, when there is a significant risk of IUGR serial growth scans should be offered.

Serial growth scans are commonly offered at 28, 34 and 38 weeks.

In certain conditions growth scans may be requested from earlier gestations i.e. 24 weeks and performed fortnightly instead of monthly depending on the severity of the risk.

- Liquor Volume

Liquor volume should be assessed using Single Deepest Pool (SDP). If no cord free pool is present then it should be documented.

Amniotic fluid volume changes with gestation and approximate values in third trimester are:

SDP	2-10cms	normal
	< 2cms	reduced liquor
	>10cms	increased liquor

In cases of abnormal liquor volumes fetal stomach, bladder, kidneys and movements should be checked and documented. If possible fetal face should be visualized in cases of excessive liquor

- **Umbilical Artery Doppler (UAD)**

Used as a surveillance tool in women diagnosed with fetal growth restriction (FGR), it can distinguish FGR caused by utero-placental disease from non-hypoxic or constitutional causes. Monitoring FGR pregnancies with UAD measurement has been shown to reduce mortality, antenatal admissions, IOL and CS delivery. In contrast routine UAD measurement in a low risk population, does not improve outcomes.

Doppler causes heating of the insonated tissues and should **only** be used where it is of **proven** clinical value i.e. in cases of FGR.

UAD should be performed if the EFW is below the 10th centile, if there is a sudden drop in growth velocity or the AC has dropped below previous centiles.
UAD assessment should be carried out in cases of reduced liquor if there is a single deepest pool of less than 2cm.

UAD's will only be carried out following consultant request in cases which do not meet the above criteria.
A raised UA PI (>95th centile) with positive end diastolic flow (EDF) and EFW <10th centile – refer to obstetric consultant on-call for review (unless scan followed by ANC appointment).Refer to obstetric guideline WHAT-TP-094 (management of IUGR)
Absent/Reversed EDF – fetal medicine referral (via obstetric consultant on-call) offer admission, daily UAD and liquor assessment.
Document a single PI on report (lowest reproducible result).
Note that excessive FM or lying too flat may give a high reading
Absent/Reversed EDF to be reported as 'urgent' on ultrasound report alert system

2. MULTIPLE PREGNANCIES

Serial growth scans should be offered in

- **Dichorionic pregnancy (DCDA)** – 4 weekly from 24 weeks. The usual schedule will be at the approximate weeks of gestation: 20, 24, 28, 32, and 36.

  Increase frequency to 2 weekly with weekly UAD assessment if there is evidence of growth restriction / discordance.

- **Monochorionic, diamniotic pregnancy (MCDA) -** 2 weekly from 16 weeks (exclude TTTS and to monitor growth). If growth is normal serial scans may be performed every 3 to 4 weekly from 24 weeks gestation. The usual schedule of scans will be at the following weeks of gestation: 16,18,20,22,24,28,32 and 34.

- **Monochorionic monoamniotic pregnancy (MCMA)** - 2 weekly from 16 weeks and consideration of IP monitoring from 28 weeks.

For further information please refer to obstetric guideline: WHAT-TP-094-multiple pregnancy.

- **Twin to twin transfusion syndrome- (TTTS)**

Scan Appearance:

- MCDA twins
- Discordant growth

  - Oligohydramnios - polyhydramnios sequence.
  - Smaller twin – oligohydramnios
  - Larger twin – polyhydramnios

- **Staging of TTTS**

  I- Donor bladder visible & normal doppler
  II- Donor bladder empty & normal Doppler
  III- Donor bladder empty & abnormal doppler
  IV- Hydrops
  V- Demise of one/both twins.

- **Criteria for Abnormal Doppler**

- UADPI >95th centile or absent/reverse end-diastolic flow.(AREDF)
- Ductus venosus: negative a-wave
- MCA – low PI with the cerebro-placental ratio<1.

3. MATERNAL DIABETES

Serial growth scans are commonly offered at 28, 32 and 36 weeks.

4. MATERNAL CHRONIC MEDICAL CONDITIONS

- Chronic medical conditions: 4 weekly growth assessments from 28 weeks

Autoimmune conditions confer a risk of fetal growth restriction and fetal growth assessments are indicated at approximately 28, 34 38 weeks. The risk of FGR is greatest in such conditions if there is a flair-up.

5. BREECH PRESENTATION

Scan for fetal weight estimation should be offered for trial of external cephalic version / trial of labour in breech presentation at 36 weeks.

6. PLACENTAL LOCALISATION

If the placenta is reported as clear of os at 20 weeks – even if low lying – a repeat scan is not indicated.

If the placenta is reported as abutting/covering the internal os at the 20 week scan, a follow up scan should be arranged at 34 weeks

Transvaginal ultrasound is safe in the presence of placenta praevia and is more accurate than transabdominal ultrasound.

Unless the placental edge is clearly demonstrated trans-abdominally a TV scan must be performed.

Measurements of growth should not be routinely performed on patients presenting for placental localisation

The placenta is classed as clear if:

Anteriorly it is ≥2cm from the internal os

Posteriorly it is ≥3cm from the internal os.

If an unknown placenta praevia is found during the third trimester the consultant on-call should be contacted before the patient leaves the department so that a decision regarding management can be made.

7. VASA PRAEVIA

It should be emphasised that not all cases of vasa praevia can be recognised by sonography. (See guideline – WHAT-RAD -008 Vasa Praevia)

If vasa praevia is suspected at a third trimester scan consultant on-call should be contacted before the patient leaves the department so that a decision regarding management can be made.

It is important to differentiate the vasa praevia from cord presentation. In latter the vessel will move when patient change position, but not in case of vasa praevia.

Risk factors for vasa praevia

- Bilobed and succenturiate placentae
- Low-lying placentae at mid-trimester scan
- Multiple pregnancies
- Pregnancies resulting from IVF
- Marginal insertion of the cord
- Velamentous insertion of the cord
- Palpable vessel or a suspected amniotic band is felt on vaginal exam

E - ANTE-PARTUM HAEMORRHAGE (APH)

In cases of placentae abutting or covering os at 20 weeks a repeat scan for placental localisation will be performed at 34 weeks. If the placenta has been reported as clear of internal cervical os at 20 weeks a placental localization scan is not indicated.

Scans are not useful for the diagnosis of placental abruption or retro-placental clot.

In cases of significant APH, scan for fetal growth and amniotic fluid volume assessment should be considered.

8. UTERINE SCAR / LOWER UTERINE SEGMENT THICKNESS

Scan for the above indication should only be requested by a consultant.

Scan for the assessment of previous uterine scar or lower uterine segment may be considered in the following situations:

- Previous more than 1 LSCS & trial of VBAC
- Previous LSCS & low anterior lying placenta
- Scar pain

False Positive / Limitations

- Multiple pregnancy
- Polyhydramnios
- Increased BMI

Normal uterine scar thickness varies from 1-4mm
Reported risk of scar rupture is approximately

- 22% at <2mm
- 1% at 3.5mm
- Rare at >3.5mm

This information should be used in conjunction with the Obstetric Pathways – WAHT-TP-094. Use the version on the internet to ensure the most up to date information is being used.

It should be emphasized that most cases of scar dehiscence may not be recognized by sonography and diagnosis should be mainly based on clinical grounds. If there is clinical suspicion of placenta accreta/percreta an additional imaging technique MRI may need to be considered (usually after 28 weeks of gestation).

9. ABDOMINAL PAIN

Unless a specific clinical question is asked (e.g. possible gallstones / renal scan etc.) a scan will not be performed for maternal abdominal pain.

10. FETAL RENAL REVIEWS

Hydronephrosis measured as the AP diameter of the renal pelvis
>7mm from 14/40
>9mm from 24/40
Refer to FMU at WRH[i]

11. ANOMALIES

If an anomaly is found during a third trimester scan, the patient should be referred to fetal medicine and seen in the next available appointment. This should be arranged by the consultant obstetrician on call. This will be either at WRH or BWH depending on the situation.
Please refer to guideline – WHAT- TP-094 - Management of Suspected/Identified Fetal Anomaly.

12. - UNNECESSARY SCANS

Scans will not be performed for the following reasons:

- Growth scans at less than 2 weekly intervals
- A repeat of a scan performed at another hospital
- Insufficient clinical information is provided on the request card
- Growth scans after 38/40 other than IUGR protocol MUST be Consultant only requests

13. MONITORING TOOL

Annual audit by West Midlands Perinatal Institute (WMPI)

This is carried out by recordings of images obtained which are then checked by WMPI.

Results are fed back (anonymously) to individual sonographers.

REFERENCES:

RCOG green top guideline no.31 - The management of the small-for gestational age fetus

NICE guideline CG192, Multiple pregnancy: antenatal care for twin and triplet pregnancies

Twinings textbook of fetal abnormalities, Coady, AM, Bower, S.

Worcestershire Acute Hospitals NHS Trust

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[i] Twinings textbook of fetal abnormalities, Coady, AM, Bower, S.