Practice Guidelines for Performance of the
Routine Mid-Trimester Fetal Ultrasound Scan

ISUOG Prenatal Ultrasound Screening Task Force

Clinical Standards Committee

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A. INTRODUCTION:

Ultrasonography is widely used for the prenatal evaluation of growth and anatomy as well as for the management of multiple gestations. This procedure provides diagnostic findings that often facilitate the management of problems arising in later pregnancy. As an example, abnormal fetal growth is a leading cause of perinatal morbidity and mortality among both industrialized and developing countries. In 2005, the World Health Organization (WHO) concluded that impaired fetal growth had many causes related to genetic factors, maternal characteristics, such as nutrition, lifestyle including smoking, age and disease; complications of pregnancy; and the physical, social and economic environment (1, 2). A mid-trimester fetal ultrasound scan serves as an important baseline against which later scans may be compared for the evaluation of growth and health. Ultrasonography can also be used to detect congenital anomalies (3-6). The Eurofetus study examined the accuracy of routine mid-trimester ultrasonographic examination in unselected populations (7). This multicenter project involved 61 obstetrical ultrasound units from 14 European countries. Over one-half (56%) of 4,615 malformations were detected and 55% of major anomalies were identified before 24 weeks of gestation.

Although many countries have developed local guidelines for the practice of fetal ultrasonography, there are still many areas of the world where they have not been implemented. Most countries offer at least one mid-trimester scan as part of standard prenatal care although obstetrical practice varies widely around the world. This can be related to the availability of qualified practitioners and equipment, local medical practice, and legal considerations; in some countries, insurance-related cost reimbursements strongly influence how routine mid-trimester scans are implemented. Nonetheless, a WHO Study Group stated, “Worldwide, it is likely that much of the ultrasonography currently performed is carried out by individuals with in fact little or no formal training.” (8). The intent of this document is to provide further guidance for health care practitioners in the performance of mid-trimester fetal ultrasound scan.
B. GENERAL CONSIDERATIONS:

What is the purpose of a mid-trimester fetal ultrasound scan?

The main objective of a routine mid-trimester fetal ultrasound scan is to provide accurate diagnostic information for the delivery of optimized antenatal care with the best possible outcomes for mother and fetus. This procedure is used to determine gestational age and fetal measurements for the timely detection of growth abnormalities later in pregnancy. Other goals are to detect congenital malformations and multiple pregnancies.

Prenatal screening examination includes an evaluation of the following:

- Cardiac activity
- Fetal number (and chorionicity if multiple pregnancy)
- Fetal age/size
- Basic fetal anatomy
- Placental appearance and location

Although many malformations can be identified, it is acknowledged that some may be missed even with sonographic equipment in the best of hands or they may develop later in pregnancy. Before starting the examination, a health care practitioner should counsel the woman/couple regarding the potential benefits and limitations of a routine mid-trimester fetal ultrasound scan

Who should have a mid-trimester fetal ultrasound scan?

Many countries routinely offer at least one routine mid-trimester fetal ultrasound scan. As one example, an imaging workshop organized by the Eunice Kennedy Shriver National Institute of Child Health and Human Development in the United States (9) reached a consensus that all pregnant women should be offered an ultrasound scan for the detection of fetal anomalies and pregnancy complications. Serial scans may be helpful for some mothers with risk factors for adverse pregnancy outcome (e.g. hypertension or diabetes) and others may benefit from more detailed scans that are targeted to their specific situation. Repeated or detailed examinations, however, are not considered to be routine scans.
When should the mid-trimester fetal ultrasound scan be performed?

A routine mid-trimester ultrasound scan is often performed between 18 and 22 weeks of gestation. This period represents a compromise between dating the pregnancy (more accurate if established earlier) and the timely detection of major congenital anomalies. Countries where pregnancy termination is restricted should balance detection rates against the time needed for counseling and additional investigation. Some centers perform the anatomic survey using transvaginal scanning at approximately 13-16 weeks gestation. This earlier approach can provide useful information about gestational age as a baseline for growth assessment or determination of chorionicity for twins, but may require special training for the early interpretation of anatomic structures.

Who should perform the mid-trimester fetal ultrasound scan?

Individuals who routinely perform obstetrical scans should have specialized training for the practice of diagnostic ultrasonography in pregnant women. However, the requirements for this activity may vary depending on each country.

In order to achieve optimal results from routine screening examinations it is suggested that scans should be performed by individuals that fulfill the following criteria:

- trained in the use of diagnostic ultrasonography and related safety issues
- regularly perform fetal ultrasound scans
- participate in continuing medical education activities
- have established appropriate referral patterns for suspicious or abnormal findings
- routinely undertake quality assurance and control measures (10)

What ultrasonographic equipment should be used?

For routine screening, equipment should have at least the following capabilities:

- real time, grey scale ultrasound capabilities
- transabdominal ultrasound transducers (3 – 5 MHz range)
- adjustable acoustic power output controls with output display standards.
- freeze frame capabilities
- electronic calipers
- capacity to print/store images
- regular maintenance and servicing are important for optimal equipment performance.

What document should be produced/stored/printed or sent to the referring health care provider?

An examination report should be produced either as an electronic and/or paper document sent to the referring care provider in reasonable time. A sample reporting form is available as Supplemental material on the Journal website. Images of standard views (stored either electronically or as printed copies) should also be produced and stored. Motion videoclips are especially useful for the fetal heart. Local laws should be followed. Many jurisdictions require image storage for a defined period of time.

Is prenatal ultrasonography safe?

Prenatal ultrasonography appears to be safe for clinical practice. To date, there has been no independently confirmed study to suggest otherwise. Fetal exposure times should be minimized using the lowest possible power output needed to obtain diagnostic information using the ALARA principle (As Low As Reasonably Achievable). More details are available from the ISUOG Safety Statement (11).

What if the examination cannot be performed in accordance to these guidelines?

These recommendations represent minimum practice guidelines for the mid-trimester fetal ultrasound scan. Consideration must be given to local circumstances and medical practices. Reasons for deviations from these recommendations should be documented. If the examination cannot be completely performed in accordance to adopted guidelines, the scan should be repeated, at least in part at a later time, or the patient can be referred to another practitioner. This should be done as soon as possible, to minimize unnecessary patient anxiety
and unnecessary delay in the potential diagnosis of congenital anomalies or growth disturbances.

**What is the role of a more detailed ultrasonographic examination?**

Individuals who perform ultrasonographic scans during pregnancy should have referral mechanisms in place to manage suspected or detected abnormalities. A minimum examination, following the guidelines presented herein, should be performed before referring the patient unless technical factors prevent completion of the initial evaluation.

**C. GUIDELINES FOR EXAMINATION:**

**FETAL BIOMETRY AND WELL BEING:**

The following sonographic parameters can be used to estimate gestational age and for fetal size assessment (12-14):

1. Biparietal diameter (BPD)
2. Head circumference (HC)
3. Abdominal circumference (AC) or diameter (AD)
4. Femur diaphysis length (FDL)

Measurements should be performed in a standardized manner on the basis of strict quality criteria (15). An audit of results can help to ensure accuracy of techniques with regard to specific reference tables. An image (s) should be taken to document the measurement(s). Examples of still images appropriate for fetal biometry are demonstrated in Figure 1.

If gestational age has not already been established at a “dating scan” or “first trimester scan”, it should be determined at the mid-trimester scan on the basis of fetal head size (BPD and/or HC) or femur diaphysis length (FDL). The chosen reference standards should be indicated in the report (16). Subsequent scans should not be used to recalculate a new estimated date of confinement if age has already been established by a high quality scan during earlier pregnancy. Subsequent measurements, optimally at least 2 weeks from a...
preceding scan, are usually reported as deviations from mean values with their expected ranges for a given age. This information can be expressed as Z scores, percentile reference ranges, or on a graph although the degree of deviation from normal at this early stage of pregnancy that would justify action (e.g. a follow-up scan to assess fetal growth or fetal chromosomal analysis) has not been firmly established.

Combination of measurements significantly improves the accuracy compared with the prediction based on HC alone (17). However, the clinical significance of this improvement is marginal because the improved accuracy represents less than one day (18).

A. BIPARIETAL DIAMETER (BPD):

Anatomy:

Cross-sectional view of the fetal head at the level of the thalami.

Ideal angle of insonation is 90° to the midline echoes

Symmetrical appearance of both hemispheres

Continuous midline echo (falx cerebri) broken in middle by the

cavum septi pellucidi and thalamus

No cerebellum visualized

Caliper placement:

Both calipers should be placed according to a specific methodology because more than one technique has been described (e.g. ‘leading edge to leading edge’ versus ‘outer edge to outer edge’) at the widest part of the skull using an angle that is perpendicular to the midline falx (Figure 1) (19). The technique used to establish the reference chart should be used. The cephalic index is a ratio of the maximum head width to its maximum length. Abnormalities in head shape (e.g. dolichocephaly and brachycephaly) can lead to misleading estimates of fetal age when the BPD is used under these circumstances, in which case the HC is more reliable (20).
B. HEAD CIRCUMFERENCE (HC):

Anatomy:

Same as described for the BPD, ensuring that the circumference placement markers correspond to the technique described on the reference chart.

Caliper placement:

If the ultrasound equipment has ellipse measurement capacity, then the HC can be measured directly by placing the ellipse around the outside of the skull bone echoes (Figure 1). Alternatively, the HC can be calculated from the BPD and occipitofrontal diameter (OFD) by using the equation HC = 1.62 x (BPD + OFD). This technique to calculate HC makes special corrections for skull and skin thickness and requires that the calipers be placed at specific sites: BPD leading edge, OFD middle of the bone echo at forehead and occiput.

C. ABDOMINAL CIRCUMFERENCE (AC):

Anatomy:

Transverse section of the fetal abdomen (as circular as possible)
Umbilical vein at the level of the portal sinus.
Stomach bubble visualized
Kidneys should not be visible.

Caliper placement:

The AC is measured at the outer surface of the skin line either with ellipse calipers or it can be calculated from linear measurements made perpendicularly to each other, usually the anterior-posterior abdominal diameter (APAD) and transverse abdominal diameters (TAD) (Figure 1). To measure the APAD the calipers are placed on the outer borders of the body outline from the posterior aspect (skin covering the spine) to the anterior abdominal wall. To measure the TAD the calipers are placed on the outer borders of the body outline, across the
abdomen at the widest point. The AC is calculated using the formula \[ AC = \pi \times \frac{(APAD + TAD)}{2} = 1.57(APAD + TAD) \] or by a direct ellipse measurement.

**D. FEMUR DIAPHYSIS LENGTH (FDL)**

*Anatomy:*

The femur diaphysis length is optimally imaged with both ends of the ossified metaphysis clearly visible (21, 22). The longest axis of the ossified diaphysis is measured. The technique used to establish the reference chart should be used with regard to the angle between the femur and the insonating ultrasound beams. An angle of insonation between 45 and 90 degrees is typically used for this purpose.

*Caliper placement:*

Each caliper is placed at the ends of the ossified diaphysis without including the distal femoral epiphysis if it visible and avoiding the artifactual triangular spurs that appear to extend the length of the femoral ends *(Figure 1).*

**E. ESTIMATED FETAL WEIGHT (EFW)**

Mid-trimester sonographic measurements can be used to identify abnormalities of fetal size (23, 24). Some countries also use this information to estimate fetal weight as a baseline parameter for the detection of subsequent growth problems. Many “size discrepancies” are explained by incorrect menstrual age estimates, even in women with “certain dates” (25, 26). If gestational age is determined at an earlier scan, EFW can be compared to dedicated normal, preferably local, reference ranges for this parameter (14, 27, 28). However, the degree of deviation from normal at this early stage of pregnancy that would justify action (e.g. follow-up scan to assess fetal growth or fetal chromosomal analysis) has not been firmly established.
F. AMNIOTIC FLUID ASSESSMENT

Amniotic fluid volume can be estimated subjectively or from using sonographic measurements. Subjective estimation is not inferior to the quantitative measurement techniques (e.g. deepest pocket, amniotic fluid index) when performed by experienced examiners (29, 30). Patients with deviations from normal should have more detailed anatomical evaluation and clinical follow up.

G. FETAL MOVEMENT

Normal fetuses typically have a relaxed position and show regular movements. There are no specific movement patterns at this stage of pregnancy. Temporary absence or reduction of fetal movements during the scan should not be considered as a risk factor (31). Abnormal positioning or unusually restricted or persistently absent fetal movements may suggest abnormal fetal conditions such as arthrogryposis (32). The biophysical profile is not considered as part of a routine mid-trimester scan (33).

H. DOPPLER ULTRASONOGRAPHY:

The application of Doppler techniques is not currently recommended as part of the routine second trimester ultrasound examination. There is insufficient evidence to support universal use of uterine or umbilical artery Doppler evaluation for the screening of low risk pregnancies (34-36).

I. MULTIPLE GESTATION:

The evaluation of multiple pregnancies should include the following additional elements:

- Visualization of the placental cord insertion
- Distinguishing features (gender, unique markers, position in uterus)
- Determination of chorionicity is sometimes feasible in the second trimester if there are clearly two separate placental masses and discordant genders.
Chorionicity is much better evaluated before 14-15 weeks (lambda or “t-sign”).

Abnormalities of umbilical cord insertion into the placenta, such as velamentous cord insertion, are more common in multiple gestations and can be associated with several pregnancy complications such as fetal growth restriction, vasa previa, and abnormal fetal heart rate patterns (37, 38). Unfortunately, many cases of vasa previa may not be recognized during pregnancy (39).

Follow up of multiple pregnancies should be arranged in accordance to local guidelines and clinical practices.

ANATOMIC SURVEY

Recommended minimum requirements for a basic fetal anatomic survey during the mid-trimester of pregnancy are summarized in Table 1.

A. HEAD

SKULL:

Four areas of the fetal skull should be routinely evaluated: size, shape, integrity and bone density. All these characteristics can be visualized at the time of the head measurements and when the brain is evaluated for anatomic integrity (Figure 2) (40).

Size: Measurements are performed as mentioned in the biometry section.

Shape: The skull normally has an oval shape without focal protrusions or defects and interrupted only by narrow echolucent sutures. Alterations of shape (e.g. lemon, strawberry, cloverleaf, etc) should be documented and investigated (41).
**Integrity:** No bony defects should be present. Rarely, brain tissue can extrude through defects of the frontal or occipital bones although cephaloceles may occur at other sites as well.

**Density:** Normal skull density is manifested as a continuous echogenic structure that is interrupted only by cranial sutures in specific anatomical locations. The absence of this whiteness or extreme visibility of the fetal brain should raise suspicion of poor mineralization (e.g. osteogenesis imperfecta, hypophosphatasia) (42). Poor mineralization is also suggested when the skull becomes easily depressed as a result of manual pressure from transducer placement against the maternal abdominal wall.

**BRAIN:**

Standard scanning planes for the basic examination of the fetal brain have already been described in an ISUOG guideline document (http://www.isuog.org) (19). Two axial planes permit visualization of the cerebral structures relevant to the anatomic integrity of the brain. These planes are commonly referred to as the transventricular and transthalamic planes (Figure 2). Imaging artifacts may obscure the hemisphere closest to the transducer. A third axial transcerebellar plane can be added to evaluate the posterior fossa. The following brain structures should be evaluated:

- lateral ventricles (including choroid plexi)
- cavum septi pellucidi
- thalami
- cerebellum
- cisterna magna

**B. FACE**

Suggested views for minimum evaluation of the fetal face include the presence of both orbits (Figure 3a), evaluation of the nose/nostrils and presence of the mouth (Figure 3b). If
technically feasible, a median facial profile view can be obtained (Figure 3c). A coronal view of the upper lip can be used to identify cleft lip anomalies (43).

C. NECK

The neck normally appears as cylindrical with no protuberances, masses or fluid collections (44). Obvious neck masses such as cystic hygromas or teratomas should be documented.

D. THORAX

The shape should be regular with a smooth transition to the abdomen (45). The ribs should have normal curvature without deformities. Both lungs should appear homogenous and without evidence for mediastinal shift or masses. The diaphragmatic interface can often be visualized as a hypoechoic dividing line between the thoracic and abdominal content (e.g. liver and stomach) (46, 47).

E. FETAL HEART

General considerations for cardiac examination:

The ‘basic’ and ‘extended basic’ cardiac ultrasonographic examinations are designed to maximize the detection of congenital heart disease during a second-trimester scan (Figure 4) (48). A single acoustic focal zone and relatively narrow image field of view can help to maximize frame rates. Images should be magnified until the heart fills at least a third to one half of the display screen.

‘Basic cardiac’ examination:

The basic cardiac screening examination is interpreted from a four-chamber view of the fetal heart. A normal regular rate ranges from 120 to 160 beats per minute. The heart
should be located in the left chest (same side as the fetal stomach) if the situs is normal. A normal heart is usually no larger than one-third the area of the chest and without pericardial effusion. The heart is normally deviated about 45 ± 20 degrees (2 SD) toward the left side of the fetus (49).

‘Extended basic’ cardiac examination

An ‘extended basic’ evaluation which includes the aortic and pulmonary outflow tracts can increase the detection rates for major cardiac malformations above those achievable by the four-chamber view alone. Additional views to the basic examination are more likely to identify conotruncal anomalies such as tetralogy of Fallot, transposition of the great arteries, double outlet right ventricle, and truncus arteriosus. Normal great vessels are approximately equal in size and should cross each other as they exit from their respective ventricular chambers.

Some investigators have described an optional ‘three-vessels and trachea view’ that may also be useful for evaluating the pulmonary artery, ascending aorta, and right superior vena cava in terms of their relative sizes and anatomic relationships (50). For a more detailed description of fetal cardiac screening, the reader is referred to the ISUOG guidelines for the fetal cardiac examination. This document can be downloaded from the Society’s website (www.isuog.org).

F. ABDOMEN

Abdominal organ situs should be determined (51). The fetal stomach should be identified in its normal position on the left side. Bowel should be contained within the abdomen and the umbilical cord should insert into an intact abdominal wall.

Abnormal fluid collections of the bowel (e.g. enteric cysts, obvious bowel dilatation) should be documented.

Aside from the left-sided stomach, a fetal gallbladder may be seen in the right upper quadrant next to the liver although this latter finding is not a minimum requirement of the
basic scan. Any other cystic structures seen in the abdomen should be referred for a more detailed scan.

The fetal umbilical cord insertion (Figure 5a) site should be examined for evidence of a ventral wall defect such as omphalocele or gastroschisis. Cord vessels may also be counted using gray-scale imaging as an optional component of the routine anatomic survey.

G. KIDNEYS AND BLADDER

The fetal bladder and both kidneys should be identified (Figures 5b and 5c). If either the bladder or renal pelvis appears enlarged, a measurement should be documented. Persistent failure to visualize the bladder should prompt a referral for a more detailed assessment.

H. SPINE:

A satisfactory examination of the fetal spine requires expertise and meticulous scanning, and the results are heavily dependent upon the fetal position (Figures 5c and 5d). Complete evaluation of the fetal spine from every projection is not a part of the basic examination although transverse and sagittal views are usually informative. The most frequent of the severe spinal abnormalities, open spina bifida is usually associated with abnormal intracranial anatomy such as a characteristic cerebellar deformity (“banana sign”) and obliterated cisterna magna. Other views of the fetal spine may identify other spinal malformations including vertebral abnormalities and sacral agenesis (19).

I. LIMBS AND EXTREMITIES

The presence or absence of both arms/hands (Figure 6a) and both legs/feet (Figure 6b) should be documented using a systematic approach (52). Counting fingers or toes is not required as part of the routine mid-trimester scan.

J. GENITALIA
Characterization of external genitalia, to determine fetal gender, is not considered mandatory in the context of a mid-trimester routine scan. Reporting of gender should be considered only with parental consent and in the context of local practices.

K. PLACENTA

During ultrasonography, the placental location (Figure 6c), its relationship with the internal cervical os and appearance should be described. Examples of abnormal placental findings include the presence of hemorrhage, multiple cysts with triploidy, and placental masses such as chorioangioma. In most cases of the routine second trimester examination, transabdominal ultrasonography permits clear definition of the relation between the placenta and internal cervical os. If the lower placental edge reaches or overlaps the internal os, a follow-up examination in the third trimester is recommended (53, 54).

Women with a history of uterine surgery and low anterior placenta or previa are at risk for placental attachment disorders. In these cases, the placenta should be examined for findings of accreta, the most sensitive of which are the presence of multiple irregular placental lacunae that show arterial or mixed flow (55, 56). Abnormal appearance of the uterine wall-bladder wall interface is quite specific for accreta, but is seen in rather few cases. Loss of the echolucent space between an anterior placenta and uterine wall is neither a sensitive nor a specific marker for placenta accreta. Although placenta accreta may be suspected during a routine mid-trimester scan, a more detailed evaluation is usually required to further examine this possibility.

L. CERVIX, UTERINE MORPHOLOGY AND ADNEXA

Several studies have demonstrated a strong correlation between short cervical length on transvaginal scan and subsequent preterm birth. However, several randomized controlled trials that examined the combination of routine cervical length measurement and subsequent interventions (cerclage, progesterone) failed to conclusively demonstrate cost-effectiveness of
such screening programs (57, 58). Currently, there is insufficient evidence to recommend routine cervical length measurements at mid trimester in an unselected population (59).

Identification of women with short cervical length may have significant benefit for research purposes and further intervention studies, but this is not a justification for routine cervical scanning. Such a universal screening program would not only require significant resources and quality assurance, but also cause potential disadvantages by introducing anxiety and unnecessary intervention.

Uterine fibroids and adnexal masses should be documented if they are likely to interfere with labor (60).

**SUPPORTING INFORMATION ON THE INTERNET**

The following Supplementary Material may be found in the online version of this article:

Ultrasound Report Form.pdf
REFERENCES:


25. **Tunón K, Eik-Nes SH, Grøttum P.** Fetal outcome when the ultrasound estimate of the day of delivery is more than 14 days later than the last menstrual period estimate. *Ultrasound Obstet Gynecol* 1999; 14:17-22.


Table 1. Minimal Components for the Mid-Trimester Fetal Anatomic Survey

<table>
<thead>
<tr>
<th>Section</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>intact cranium, cavum septi pellucidi, midline falx, thalami, cerebellum,</td>
</tr>
<tr>
<td></td>
<td>cerebral ventricles, cisterna magna</td>
</tr>
<tr>
<td>Face</td>
<td>presence of both orbits, median facial profile*, upper lip intact, mouth</td>
</tr>
<tr>
<td></td>
<td>present</td>
</tr>
<tr>
<td>Neck</td>
<td>absence of masses (e.g. cystic hygroma)</td>
</tr>
<tr>
<td>Chest/Heart</td>
<td>normal appearing shape / size of the chest and lungs, presence or absence</td>
</tr>
<tr>
<td></td>
<td>of heart activity, four-chamber view of the heart in normal position,</td>
</tr>
<tr>
<td></td>
<td>aortic and pulmonary outflow tracts*, no evidence for diaphragmatic hernia</td>
</tr>
<tr>
<td>Abdomen</td>
<td>stomach in normal position, bowel not dilated, kidneys, cord insertion site</td>
</tr>
<tr>
<td>Skeletal</td>
<td>no spinal defects or masses (transverse and sagittal views), arms and hands</td>
</tr>
<tr>
<td></td>
<td>present, normal relationships, legs and feet present, normal relationships</td>
</tr>
<tr>
<td>Placenta</td>
<td>position, no masses present, accessory lobe</td>
</tr>
<tr>
<td>Umbilical Cord</td>
<td>three-vessel cord*</td>
</tr>
<tr>
<td>Genitalia</td>
<td>male or female (optional)</td>
</tr>
</tbody>
</table>

* optional component of checklist can be evaluated if technically feasible
Figure 1. **Measurements of the fetal head, abdominal circumference, and femur diaphysis length.**

Sonographic measurements are demonstrated for the biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC), and femur diaphysis length (FDL). In this example, callipers are placed on the outer and inner edges of the skull for BPD measurement. Some reference charts have been developed using different calliper placement for the BPD (e.g. outer edge to outer edge of the skull).
Figure 2. Transverse scanning planes for the fetal brain

Transverse views of the fetal head demonstrate standard transventricular (a), transthalamic, and transcerebellar (c) planes. The first two planes allow assessment of the anatomic integrity of the brain. A third plane permits evaluation of the cerebellum and cisterna magna in the posterior fossa.
Figure 3. Fetal orbits, nose, mouth, lips, and facial profile

Both fetal orbits should appear symmetrical and intact (Figure 3a). The mouth, lips, and nose are typically evaluated with a coronal view (Figure 3b). If technically feasible, a median facial profile provides important diagnostic clues for cleft lip, frontal bossing, micrognathia, and nasal bone anomalies (Figure 3c).
Figure 4. ‘Basic’ and ‘extended basic’ views of the fetal heart.

The ‘basic’ cardiac scan is obtained from a 4-chamber view when both ventricles are seen during end diastole (callipers, far left panel). An ‘extended basic’ scan of the great arteries demonstrate the left and right ventricular outflow tracts. Separate arterial outflow tracts (callipers, middle and far right panel), approximately equal in size, exit their respective ventricles by crossing over each other in normal fetuses.
Figure 5.

Fetal cord insertion site, bladder with umbilical arteries, kidneys, and spine.

The umbilical cord insertion site into the fetal abdomen (arrow) provides information about the presence of ventral wall defects such as omphalocele or gastroschisis (Figure 5a). The fetal bladder (*) and both kidneys (arrowheads) should be identified (Figures 5b and 5c). Axial and longitudinal views of the spine provide effective screening for spina bifida, especially when these scanning planes are abnormal in the presence of frontal skull deformation and an obliterated cisterna magna. (Figure 5c and 5d).
Figure 6.

Fetal upper extremity, lower extremity, and placenta.

The presence or absence of the upper and lower limbs should be routinely documented unless they are poorly visualized due to technical factors (Figures 6a and 6b). Placental position should be determined in relation to the maternal cervix (Figure 6c).
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**Mid-Trimester Fetal Ultrasound Scan Report Form**

**Patient:**

**ID number:**

**Date Of Birth (DD/MM/YYYY):**

**Referring physician:**

**Date of exam (DD/MM/YYYY):**

**Sonographer / Supervisor:**

**Indication for scan and relevant clinical information:**

**Gestational Age (W + D):**

Based on:  *LMP* / *previous US* / *Other*:

**Technical conditions:** *Good* / *Limited by:*

Singleton / Multiple (use 1 sheet/fetus) =* Chorionicity:

**PLACENTA:** Position:

Relation to cervical os:  ☐ clear ☐ covering ___ mm from os

Appearance  ☐ Normal ☐ Abnormal*

**AMNIOTIC FLUID:**  ☐ Normal ☐ Abnormal*

**FETAL MOVEMENT:**  ☐ Normal ☐ Abnormal*

### SONOGRAPHIC APPEARANCE OF FETAL ANATOMY:

(N=Normal; Ab=Abnormal*; NV=Not visualized)

<table>
<thead>
<tr>
<th>Gray=optional</th>
<th>N</th>
<th>Ab*</th>
<th>NV</th>
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**Gender (optional):** ☐ M ☐ F

Other:

### CONCLUSION:

☐ Normal and complete examination.

☐ Normal but incomplete examination.

☐ Abnormal examination*

☐ Plans:  ☐ No further ultrasound scans required

☐ Follow up planned in ..... weeks.

☐ Referred to ............... 

☐ Other:

---

**MEASUREMENTS**

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**Abnormal findings (please detail):**

---

**CONCLUSION:**

☐ Normal and complete examination.

☐ Normal but incomplete examination.

☐ Abnormal examination*

☐ Plans:  ☐ No further ultrasound scans required

☐ Follow up planned in ..... weeks.

☐ Referred to ............... 

☐ Other:

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**Stored**