

Protocol # 23- Maternal Fetal Medicine, University of New Mexico

Ultrasound Examination Protocol

1st Trimester:

Perform transabdominal or endovaginal examination to:

1. Determine presence or absence of an intra-uterine pregnancy by doing a General Survey to assess global pelvic anatomy; place the transducer in transverse plane at symphysis pubis and scan inferior to superior
2. Date the pregnancy; the gestational sac size can be consistently measured at about 10mm at 5weeks MA (Menstrual Age)
3. Confirm visualization or absence of a double decidual-reaction
4. Note the yolk sac and the embryonic pole, which is consistently seen at 6 weeks MA
5. Measure the CRL (Crown Rump Length) to most accurately date the pregnancy once the embryonic pole is visualized
6. Document presence (+) or absence (-) of Embryonic Heart Motion
7. Document both ovaries and adnexa
8. First trimester screening protocol is a separate protocol and may also include the NT, nasal bone, and ductus venosus. This exam is out of context for this document.

2nd and 3rd Trimester:

A. Limited examination for:

1. Fetal position-
 - a. Perform General Survey
 - b. Assess fetal head, spine, and placenta locations, and subjective fluid volume
 - c. Document ML sagittal image for fetal and placenta position relative to the cervix
 - d. Document presence (+) or absence (-) of Fetal Heart Motion (FHM)
2. Amniotic Fluid Index (AFI)-
 - a. Perform General Survey
 - b. Document ML sagittal image for fetal and placenta position relative to the cervix
 - c. Before 26 weeks, subjectively assess if amniotic fluid is adequate (wnl) or non-adequate
 - d. After 26 weeks:
 - i. Document a 4 quadrant AFI or
 - ii. Document the largest vertical pocket (LVP) anterior posterior diameter
 - e. Document presence (+) or absence (-) of FHM
3. Cervix- EV exam is performed when:
 - a. There is suspicion of abnormal placental or cervical abnormalities

b. There is an increased risk for cervical insufficiency or Pre-Term Labor (PTL)

- B. Comprehensive examination for all prenatal exams:
1. Perform General Survey to assess fetal head, spine, and placenta locations, and subjective fluid volume
 2. Document ML sagittal image for fetal and placenta position relative to the cervix
 3. Date average ultrasound age (AUA), estimated fetal weight (EFW), and weight per centile per measurements of:
 - a. BPD
 - b. HC
 - c. AC
 - d. FL
 4. Document the following:
 - a. fetal stomach, bladder, and kidneys
 - b. presence of all upper and lower extremities
 - c. cord insertion to assess the integrity of the anterior abdominal wall
 - d. three vessel cord
 - e. spine at all levels in sagittal or coronal and transverse planes to visualize vertebral bodies and posterior elements and intact skin line
 - f. intracranial anatomy including the ventricular atria, choroid plexuses, cerebellum, cisterna magna and (from 14-22 weeks) the nuchal fold thickness
 - g. integrity of the upper lip
 - h. four chamber heart to assess the heart size, situs, and position, chamber symmetry, overall contractility, atrio-ventricular valve excursion, and integrity of the inter-ventricular septum
 5. Measure the LVOT and RVOT just distal to the semi-lunar valves
 6. Assess the aortic arch and ductal arch to ensure appropriate exit locations and extending cephalic branches off the aorta
 7. If expected anatomic structure is not seen, it's absence should be documented
 8. Vaginally assessing the cervix is not performed on every exam. An endovaginal exam is performed when:
 - a. There is suspicion of abnormal placental or cervical abnormalities
 - b. There is an increased risk for cervical insufficiency or PTL

CONSULTATION: Twenty-four hour consultation is available by calling the Maternal Fetal Medicine service at the University of New Mexico Hospital. 1-888-866-7257.

References

1. ACR-ACOG-AIUM Practice Guideline for the Performance of Obstetrical Ultrasound Revised 2009 (Res. 19)*
http://www.acr.org/SecondaryMainMenuCategories/quality_safety/guidelines/us/us_obstetrical.aspx
2. J Ultrasound Med 22:1116-1125 • 0278-4297 AIUM Practice Guideline for the Performance of an Antepartum Obstetric Ultrasound Examination
3. C Verroti, L Bedocchi, G Piantelli. Amniotic fluid index versus largest vertical pocket in the prediction of perinatal outcome in post-term pregnancies. ACTA Bio Medica Ateneo Parmense 2004;75: Suppl 1:67-70.
4. Manning FA. Antepartum fetal testing: a critical appraisal. Current Opin in Obstetrics & Gynecology Aug 2009 ; 21(4): 348-352
5. Nabhan MP, Abdelmoula YA. Amniotic fluid index versus single deepest vertical pocket: a meta-analysis of randomized control trials. Int J Gynaecol Obstet 2008; 104: 184-188