Ultrasound – Complete Transabdominal Pelvis Evaluation

PURPOSE:
To evaluate the uterus (myometrium and endometrium), adnexa (ovaries and fallopian tubes), and cul-de-sac in non-pregnant women when transvaginal imaging is deferred.

SCOPE:
Applies to all ultrasound pelvis studies performed in Imaging Services / Radiology

ORDERABLES:
- EPIC Order: US Pelvis

CHARGEABLES:
- US Pelvis Transabdominal Complete (cpt 76856)

INDICATIONS:
- Signs (example: mass) or symptoms (examples: pain, bleeding) referred to the pelvis
- Technically limited clinical pelvic exam
- Localization of an intrauterine device (IUD)
- Abnormal lab values (decreased hemoglobin, increased CA-125, etc)
- Abnormal pelvic findings on other imaging studies
- Post-partum complications, fever or pain.
- Follow up known pelvic abnormalities
- Evaluate for primary neoplasm in setting of risk factors

CONTRAINDICATIONS:
- No absolute contraindications

EQUIPMENT:
Curvilinear transducer with a frequency of 1-5 MHz or greater that allows for appropriate penetration and resolution depending on patient's body habitus for transabdominal approach.

PATIENT PREPARATION:
- Review any prior imaging, making note of abnormalities requiring further evaluation.
- For transabdominal approach, bladder should be distended with urine.
- * For women of child-bearing potential presenting to the Emergency Department, a urine pregnancy test (UPT) or serum bHCG level MUST be obtained prior to exam initiation. If UPT is negative or bHCG is 0.0, then proceed with this exam.
    - A negative UPT must be from within the last 24 hours and documented in EPIC. A home UPT is not sufficient.
- **If UPT/bHCG is positive, then use protocol "US OB First Trimester."**

EXAMINATION:

GENERAL GUIDELINES:
- This protocol should be used when a transvaginal exam has been declined by the patient or is contraindicated for other reasons.

* - UTSW ER patients only

- Transabdominal pelvic exam should only be reserved for unemancipated minors for whom verbal consent from a parent/legal guardian is not obtained, for patients who are virginal, and/or patients who refuse the transvaginal exam.
- A complete examination includes evaluation of the entire uterus (myometrium and endometrium), adnexa (ovaries and fallopian tubes), and cul-de-sac.

EXAM INITIATION:

- Introduce yourself to the patient.
- Verify patient identity using patient name and DOB
- Explain test
- **Obtain patient history including symptoms and last menstrual period (LMP).** Enter and store data page.
  - For women of child-bearing potential presenting to the Emergency Department, record urine pregnancy test (UPT) or bHCG results. For these exams, UPT should be negative / bHCG should be 0.0. **A negative UPT must be within the last 24 hours and documented in EPIC. A home UPT is insufficient.**
- Place patient in supine position.

TECHNICAL CONSIDERATIONS:

- Always review any prior imaging, making note of abnormalities requiring further evaluation.
- Uterine length is measured on the long axis image from fundus to cervix (external os). In a flexed uterus, segmental measurements may be needed. AP dimension or depth of the uterus is measured on the same long axis view perpendicular to the length from anterior to posterior wall. Maximum width is measured on the transverse view.
- Evaluate myometrium and cervix for contour change, echogenicity, masses, and cysts.
- Measure the largest fibroid(s) with particular attention to any fibroids that contact the endometrium.
- Endometrial thickness is measured on the midline longitudinal image including anterior and posterior basal endometrium and excluding adjacent hypoechoic myometrium and endometrial fluid.
- Evaluate the endometrium for uniformity, focal abnormality, fluid/masses in the endometrial cavity, and presence/location of an IUD.
- Mullerian anomalies (eg. Unicornuate, bicornuate, didelphys, etc) are often associated with renal anomalies (eg. Agenesis), so images of each kidney are helpful with mullerian anomalies are suspected.
- Measure the ovaries in 3 dimensions on views obtained in 2 orthogonal planes. Ovaries may not be identifiable, usually prior to puberty, after menopause, or in the setting of large fibroids. Survey the adnexal region, cul-de-sac, and around the uterine fundus.
- Survey the adnexal region for masses and dilated tubular structures. Normal fallopian tubes are not commonly identified.
- If the ovaries are not visualized, include image labeled “Adnexa” including the ipsilateral iliac vessels
- Evaluate cul-de-sac for presence of free fluid or mass. Differentiate mass from bowel loops.
- Focal abnormalities should be documented with size measurements in 3 dimensions, color Doppler, and its relationship to adjacent structures.
- Note and report any tenderness during the exam.

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DOCUMENTATION:

- **Transabdominal approach:**
  - Uterus
    - Longitudinal images:
      - Cervix and cul-de-sac
      - Right of midline, midline, and left of midline
      - Midline with length and AP measurement
      - Midline with endometrial thickness measurement and color Doppler (annotate LMP if not stored on data page)
    - Transverse images:
      - Cervix and cul-de-sac
      - Lower uterine segment
      - Mid body with transverse measurement
      - Fundus
    - Color Doppler
      - Longitudinal of endometrium
      - Any focal endometrial or myometrial abnormalities
    - Cine sweep, transverse (superior to inferior) and longitudinal through uterus
  - Ovaries, Right and Left
    - Longitudinal and transverse images through each ovary
      - or "adnexa" if ovary is not visualized
        - Include in image the ipsilateral iliac vessels
    - Representative images without and with measurements in 3 orthogonal dimensions, if well seen
    - Doppler
      - Representative color Doppler images
      - **Arterial and venous spectral Doppler waveforms if indication is pain, or suspicion for torsion**
    - Cine sweep, transverse (superior to inferior) and longitudinal of each ovary
  - Cul-de-sac
    - If not included above.
  - Other
    - For any suspicion of mullerian anomaly (eg. Primary amenorrhea; unicornuate, bicornuate, didelphys uterus, etc), longitudinal image of each kidney is required.
- Data page(s)

PROCESSING:

- Review examination images and data
- Export all images to PACS
- UTSW: Confirm data in Imorgon (where applicable)
- Document relevant history (including UPT results or bHCG level, if applicable *) and any study limitations.

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REFERENCES:

ACR-ACOG-AIUM-SPR-SRU Practice Guideline (Revised 2014)

REVISION HISTORY:

SUBMITTED BY:	David T. Fetzer, MD	**Title**	Medical Director
APPROVED BY:	David T. Fetzer, MD	**Title**	Medical Director
APPROVAL DATE:	11-09-2015		
REVIEW DATE(S):	10-30-2018		Theresa Huang, MD
REVISION DATE(S):	11-25-2015	**Brief Summary**	Added need to obtain UPT or bHCG prior to exam
	08-15-2016	**Brief Summary**	Clarified use of this protocol when TV is contra-indicated
	09-05-2016	**Brief Summary**	Clarified orderables and chargeables
	03-10-2019	**Brief Summary**	Added Appendix with info regarding RPOC
	5-4-2019		Updated details regarding when, when not to obtain UPT/bHCG
	05-31-2020		Updated format. Fixed inconsistencies with TA+TV protocol
	11/22/2022		For suspected mullerian anomalies, single image of each kidney is required

APPENDIX:

Retained products of conceptions (RPOC):

- Exceedingly rare. May be more common in patients who have had elective or spontaneous abortions, who continue to have bleeding, though still rare.
- RPOC difficult on sonogram given similar appearance to blood clot, regardless of Doppler flow.
- A normal endometrial stripe/cavity is useful to exclude RPOC. Otherwise, diagnosis of RPOC is made based on clinical history/symptoms and presence of material in the endometrial cavity.
- bHCG levels are variable (even <2). Persistently elevated bHCG is more indicative of gestational trophoblastic disease.

Spectrum of US exam interpretation:

- Normal endometrium = no RPOC
- Heterogeneous endometrium/cavity without Doppler flow = likely blood/clot. RPOC cannot be entirely excluded.
- Focal heterogeneous hyperechoic endometrium with increased Doppler flow = suspect RPOC

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