ED GUIDELINE

Evaluation of possible adnexal torsion

Age <25 years

Children's MINNESOTA

Aim: Utilize a standardized clinical score to guide efficient, effective, and equitable workup of possible adnexal torsion.

Patient with ovaries presents to ED with features of adnexal torsion: lower abdominal pain/pelvic pain. Vomiting commonly present but not required for diagnosis.

Yes

Initial ED workup and management

- NPO, place peripheral IV
- Obtain menstrual history (age at menarche, last menstrual period, time between periods, duration and frequency, heaviness of bleeding)
- Obtain ultrasound ASAP (transvaginal vs. transabdominal US, see Notes 2-4)
- Obtain urinalysis (UA) and Urine Pregnancy Test (UPT). Prioritize US before giving urine sample.
- No specific labs needed for suspected adnexal torsion
  - Consider other labs based on differential diagnosis (Note 1)
- Control pain (NSAIDs ok if no additional bleeding risk or renal insufficiency), often requires an opioid
- Control nausea/vomiting (ondansetron)

No

Off-guideline
Consider other diagnosis (Note 1)

Dermoid cyst OR paratubal/paraovarian cyst present on US?

Yes

Consult Gynecology
Remainder of management off-guideline

No

Calculate Schwartz composite score
(Table 1 and Note 5)

Independent risk factor	Pre-menarchal	Menarchal	Score
Vomiting	No	No	0
	Yes	Yes	2
Affected adnexal volume, mL (Note 4)	<6	<105	0
	6-17	---	1
	>17	≥105	2
Adnexal ratio (Note 4)	<1.25	<2	0
	1.25-21	2-21	1
	>21	>21	2
Table 1. Schwartz Composite score (Note 5)			Total (0-6)

Low (≤1)
Predicted risk: 0%

Suggested management:
- Manage off-guideline
- Consider other diagnoses (Note 1)

Intermediate (2*-3; Note 5)
Predicted risk: 3-10%

Suggested management:
- Consult gynecology
- Consider observation vs surgical exploration
- **If score of 2 is from vomiting alone without other concerning features (e.g., normal US) risk for adnexal torsion is low*

High (≥4)
Predicted risk: >25%

Suggested management:
- Consult gynecology STAT
- Surgical exploration recommended
  - Goal "decision to incision time" is 60 minutes or less

Exclusion guidelines:
- Known genitourinary anomaly
- Critically ill
- Trauma

Evaluation of possible adnexal torsion
Age <25 years

Aim: Utilize a standardized clinical score to guide efficient, effective, and equitable workup of possible adnexal torsion.

Note 1. Differential diagnosis includes (not limited to):
- ***Gyn:*** simple ovarian cyst, hemorrhagic ovarian cyst, mittelschmerz, ectopic pregnancy, sexually transmitted infection, pelvic inflammatory disease
- ***Non-Gyn:*** appendicitis, constipation, bowel obstruction, gastroenteritis, urolithiasis, UTI, pancreatitis

Note 2. Ultrasound type
- **Transvaginal ultrasound** (with empty bladder) is gold standard test of choice in all menarchal patients who are either sexually active or use tampons.
  - Benefits= quick, can do with empty bladder, probe is size of a super-tampon
- **Transabdominal ultrasound:** for patients not meeting transvaginal criteria (e.g., have not had menarche yet OR in menarchal patients who are not sexually active or do not use tampons).
  - Downsides: needs a full bladder, takes time to fill bladder (Note 3)

Note 3. For quick bladder filling (if patient needs transabdominal ultrasound and bladder not full enough to obtain adequate imaging): Strongly consider urinary catheter placement to retrofill bladder if clinical suspicion for adnexal torsion is high, as follows:
- Consider patient comfort measures: urojet (topical lidocaine gel) plus fentanyl/morphine, child life if available
- Place urinary catheter (Foley), size per typical Foley sizing. Obtain 60 ml catheter syringe, sterile water, and catheter plug.
- Instill sterile water into catheter. Goal volume = (Age + 2) x 30 (for a max volume of 500 mL)
- At Children's Minnesota: Ultrasound tech will do portable ultrasound once urinary catheter is placed; bladder can be filled at bedside during ultrasound
- Leave urinary catheter in place until diagnosis known. If positive for torsion, leave urinary catheter in place.

Note 4: Ultrasound interpretation:
- Do not rely on doppler studies; arterial and venous flow is NOT predictive of the presence or absence of adnexal torsion
- To calculate adnexal volume (if not reported), use the following formula: length x width x height x 0.523 (in centimeters)
- To calculate the adnexal ratio: volume of affected side/volume of unaffected side
- Presence of paratubal/paraovarian cyst (next to fallopian tubes or ovary, of any size) or dermoid/teratoma increases risk of torsion and should prompt urgent gynecology consultation regardless of other findings. Small ovarian cysts (follicles of 3 cm or less are considered normal in postmenarchal patients) may have low risk for torsion, however, proceed with Schwartz composite scoring.

Note 5: Schwartz composite score predicts risk of adnexal torsion in children and adolescents.
- *If score of 2 is from vomiting alone without other concerning features (e.g., normal ultrasound) risk for ovarian torsion is low and must consider other diagnosis.
- There were no cases of torsion in menarchal patients who had adnexal volume <20 mL

Workgroup: Ronning, Miller, Halverson, Brunsberg

References:

- Schwartz et al. Creation of a Composite Score to Predict Adnexal Torsion in Children and Adolescents. J Pediatr Adolesc Gynecol 31 (2018) 132-137
- Koff, SA. Estimating Bladder Capacity in Children. Urology. 1983 Mar;21(3):248
- Levine D, et.al. Management of asymptomatic ovarian and other adnexal cysts imaged at US: Society of Radiologists in Ultrasound Consensus Conference Statement. Radiology. 2010 Sep;256(3):943-54. doi: 10.1148/radiol.10100213. Epub 2010 May 26. PMID: 20505067