Adnexal (Ovarian) Torsion, ED

Last Updated: 09/09/26

INCLUSION CRITERIA

- Assigned female at birth patient with lower abdominal pain
- Current, persistent, lower abdominal pain that doesn't have any other clear diagnosis

EXCLUSION CRITERIA

- Positive pregnancy test

MEASURES

-
- Time from ED Arrival to:
  - Pelvic US with doppler completion
  - ED disposition
  - First surgery
- Time from pelvic ultrasound with doppler completion to OR arrival
- Percent of patients with ovarian preservation

IMPRESSION[1]

Concern for Adnexal Torsion: Current, persistent, lower abdominal pain without any other clear diagnosis.
High Suspicion for Adnexal Torsion: May include severe abdominal pain, Ill appearance, lack of response to pain control, h/o vomiting.

DISCHARGE HOME PLAN FOR MENARCHAL PATIENTS WITH OVARIAN/ADNEXAL CYSTS AND MASSES:

- **<3cm and simple/ hemorrhagic and no or minimal pain:** d/c home with reassurance. No follow up needed.
- **3-5cm (simple or hemorrhagic (pain well controlled with NSAIDs and no vomiting):**
  - May discharge home with NSAIDS and strict return precautions (worsening pain/ vomiting).
  - Follow up with PCP in approximately 1-2 weeks. PCP to order repeat Pelvic US to be done in 6 weeks.
  - If cyst size is unchanged or has enlarged, PCP should refer to Gynecology or Surgery.
- **If >5cm or complex features:**
  - Care as per the Gynecology vs. Surgery recommendations.

Include designation of menarchal status in intial assessment

Initial Assessment
Evaluation for lower abdominal pain
- NPO except for clears
- Administer ondansetron as needed for nausea or vomiting
- Have patients drink 8-16 oz clears as soon as they check into ED (waiting room if necessary)

Try to prevent child from urinating, if possible, at initial presentation to ED

LLQ or RLQ Pain?

LLQ → **Concern for adnexal torsion?[1]**
- No → **Consider alternative dx/eval**
- Yes → **Diagnostic Workup/Initial Management**
  - Insert IV and obtain CBC/serum HCG
  - Administer analgesia for pain control
  - Ensure bladder full and obtain STAT pelvic ultrasound (Consider transvaginal if appropriate. In Delaware, refer to Trans-vaginal ultrasound protocol in policy tech)
  - If bladder is not full
    - For high suspicion adnexal torsion[1] consider inserting foley, retrograde fill bladder
    - For low suspicion continue PO fluids and administer NS bolus

RLQ → **Concern Adnexal Torsion[1] or Appendicitis?**
- No → **Consider alternative dx/eval**
- Yes *Can evaluate both diagnoses simultaneously*
  - Concern for Adnexal Torsion → Review Impression[1]
  - Concern for Appendicitis → Review Impression[1] → Refer to **Appendicitis** Clinical Pathway

Ultrasound Results

- Normal Findings
- Low Torsion Risk Findings
- Non-diagnostic findings
- High Suspicion of Torsion
- Abnormal Findings

Persistent clinical concern?
- Yes → Consult: NCH-DE- Gyn vs GenSurg for dispo plan; NCH-FL- GenSurg for dispo plan
  - Consider rapid pelvic MRI imaging **[MRI Ovary w/ and w/o contrast (IMG1975)]:**
    - NCH-DE: ***phone call to MRI STAT for torsion**
    - NCH-FL: MRI is preferred over CT with contrast as long as the study can be performed quickly (ideally within 2 hours)
- No → **Disposition accordingly**

IMPRESSIONS OF ULTRASOUND FINDINGS

Normal Findings

- Each ovary is < 16 cm (menarchal patients)
- Ovarian volume asymmetry ratio of < 4
- Normal greyscale appearance
- Dominant follicles and small Corpora Lutea <3cm in menarchal patients
- are considered normal requiring no follow up
- Irregular follicles may be recently ruptured and do not require follow up.

Low Torsion Risk Findings

- 3.0-4.9cm simple or hemorrhagic cyst
- Paratubal cyst <4.9cm
- Uterine anomaly
- Bladder abnormality
- Bilateral symmetric ovarian enlargement
- Polycystic ovaries

High Suspicion of Torsion

- Whirlpool sign on either color Doppler or greyscale
- Absent ovarian signal on Color Doppler

Abnormal Findings

- Enlargement of the adnexa/ovary ≥ 20 cm
- Asymmetric adnexal volume (including any adnexal lesion) with a volume ratio of > 4
- An ovarian or adnexal cyst of ≥ 5 cm diameter
- Peripheralized follicles with fluid/fluid levels.

Note: Because these lesions may act as lead points, torsion is not excluded by ultrasound imaging.

Non-diagnostic Findings

- Poor ovarian visualization/poor bladder distension
- Visualization of only one ovary

Medication	Dose	Route	Max Dose
Morphine	0.05mg/kg/dose	IV	4 mg
Ondansetron	0.15mg/kg/dose	IV	8 mg
Ondansetron ODT	0.15 mg/kg/dose	Oral	8 mg
Acetaminophen Chewable/tablet	15 mg/kg/dose	Oral	1000 mg
Acetaminophen Suppository	15 mg/kg/dose	Rectal	1000 mg
Acetaminophen	15 mg/kg/dose	IV	1000 mg
Sodium chloride 0.9%	20 ml/kg/dose	IV	1000 ml
Ibuprofen	10 mg/kg/dose	Oral	800 mg
Ketorolac	0.5 mg/kg/dose	IV	30 mg

VERSION MANAGEMENT

- Version 1.0 (12/17/2024): Go Live.
- Version 1.1 (8/12/2026): Updated Radiology template for reporting guidelines for ovarian torsion and added "low risk torsion" category to algorithm.
- Version 1.2 (9/9/2026): Updated to include MRI IMG #.

Questions about this pathway should be directed to **clinicalpathways@nemours.org**.

AUTHORS & REFERENCES

Central Florida Authors: Kamal Chavda (Emergency Medicine), Teerin Meckmongkol (General Surgery)

Delaware Valley Authors: Jillian Savage (Emergency Medicine), Sharon Gould (Radiology), Lauren May (Radiology), Beth Schwartz (Adolescent Medicine), Loren Berman (General Surgery), Judy Guidash (Quality & Safety)

- Adnexal torsion in adolescents: ACOG Committee Opinion No, 783. *Obstet Gynecol*. 2019;134(2):e56-e63. doi: 10.1097/AOG.0000000000003373
- Marcinkowski K, Saul D, Gould S, Berman L, Schwartz BI. Application of a composite score to predict adnexal torsion in premenarchal and menarchal children and adolescents. *J Pediatr Surg*. 2024;59(3):509-514. doi: 10.1016/j.jpedsurg.2023.09.041
- Park BL, Fenstermacher S, Stanescu AL, Rutman L, Kinneman L, Solari P. Improving pediatric ovarian torsion evaluation in the pediatric emergency department: a quality improvement initiative. *Pediatr Qual Saf*. 2023;8(6):e709. doi: 10.1097/pq9.0000000000000709
- Schwartz BI, Huppert JS, Chen C, Huang B, Reed JL. Creation of a composite score to predict adnexal torsion in children and adolescents. *J Pediatr Adolesc Gynecol*. 2018;31(2):132-137. doi: 10.1016/j.jpag.2017.08.007
- Schwartz BI, Mercier R, Gould S, et al. Clinical and radiologic factors associated with adnexal torsion in premenarchal and menarchal children and adolescents. *J Pediatr Surg*. 2023;58(4):767-773. doi: 10.1016/j.jpedsurg.2022.08.008