As the hormonal signals between the brain and ovaries develop in adolescence, the formation of ovarian cysts (dominant follicles) is common and often physiologic.

Follicular cysts are simple cysts which are a normal physiological finding during the menstrual cycle when a developing follicle does not ovulate. After ovulation, follicles become a corpus luteum and can become hemorrhagic (containing a small amount of blood).

### Assessment
Perform a standard health history and physical exam (HPE) with probing questions regarding pubertal status, and review or obtain pelvic ultrasound (transabdominal). Pelvic exam is generally not indicated.

### Management/Treatment
Consider patient symptoms and ultrasound findings in determining follow-up.
- If asymptomatic or mild symptoms and simple/hemorrhagic cyst:
  - Less than 4 cm, reassure patient
  - 4–7 cm, repeat pelvic ultrasound in 6–12 weeks
  - Greater than or equal to 8 cm, refer to Cincinnati Children’s Gynecology
- If complex cyst, refer to Cincinnati Children’s GYN/Surgery Multidisciplinary Care.
- If follow-up ultrasound shows stable/enlarged cyst or patient is symptomatic, refer to Cincinnati Children’s Gynecology.

### Fast Facts
In adolescents, **most ovarian cysts are benign** and will resolve spontaneously.

~1/3 of patients with ovarian cysts will present with pain, though most are diagnosed incidentally.

<table>
<thead>
<tr>
<th>Benign</th>
<th>Malignant</th>
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<tbody>
<tr>
<td>Simple</td>
<td></td>
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<tr>
<td>Follicular/simple</td>
<td></td>
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<tr>
<td>Cystadenoma</td>
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<tr>
<td>Paraovarian/paratubal</td>
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<tr>
<td>Complex</td>
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<tr>
<td>Mature teratoma</td>
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<tr>
<td>Endometrioma</td>
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<tr>
<td>Cystadenofibroma</td>
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<tr>
<td>Tubo-ovarian abscess</td>
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<tr>
<td>• Sex cord stromal (e.g., granulosa cell tumor)</td>
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<tr>
<td>• Germ cell (dysgerminoma, immature teratoma)</td>
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<tr>
<td>• Epithelial</td>
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</tbody>
</table>

### HPE (History and Physical Exam) Red Flags

#### Situational History
- Premenarchal
- Virilization/voice deepening
- Acute, severe abdominal pain, nausea, vomiting

#### Patient History
- History of bleeding tendencies (frequent nosebleeds, bruises easily or prior hemorrhagic cysts)
- History of ovarian torsion
- History of oophorectomy or unilateral ovary

#### Family History
- Familial/hereditary cancer predisposition (e.g., DICER-1)
- Family history of bleeding disorder

### WHEN TO REFER
Refer as follows to Cincinnati Children’s Gynecology:
- If patient is premenarchal
- Simple cyst ≥8 cm
- Complex cyst
- Persistent symptoms or stable/enlarged cyst on follow-up ultrasound

With a referral, it is beneficial to send ultrasound images and report.

If acute, severe abdominal pain, nausea, vomiting refer to Cincinnati Children’s Emergency Department for evaluation.

If you have non-urgent clinical questions about patients with ovarian cysts, email gynecology@cchmc.org.

If you would like additional copies of this tool, or would like more information, please contact the Physician Outreach and Engagement team at Cincinnati Children’s.
Ovarian Cysts in Pubertal Patients

Current Symptoms
Patient Presents
Cyst identified on ultrasound

Standard Workup
- Medical and Menstrual History
- Family History
- Physical Exam

HPE (HISTORY AND PHYSICAL EXAM) RED FLAGS

Situational History
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Current Symptoms

Acute, severe symptoms
Ovarian torsion should be considered if:
- Acute pain, nausea and vomiting
- Unilateral enlarged ovary with or without peripheral follicles on ultrasound

Refer to Cincinnati Children’s Emergency for evaluation

None/mild symptoms (incidental finding)

Ultrasound findings

Simple or hemorrhagic

Less than 4 cm
Follow-up pelvic ultrasound in 6–12 weeks

4–7 cm

≥8 cm

Resolved
Still present:
- Stable
- Enlarged
- Symptomatic

No follow-up required

Refer to Cincinnati Children’s Gynecology

Complex
- Solid component
- Papillary projections
- Ill-defined borders
- Thick septation
- Ascites
- Lymphadenopathy

Refer to Cincinnati Children’s GYN/Surgery Multidisciplinary Care

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link® at 1-888-987-7997.