ISOLATED TORSION OF THE FALLOPIAN TUBE IN AN ADOLESCENT GIRL: A DIAGNOSTIC DILEMMA

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Disclosures

• We have no disclosures and no conflicts of interest

Background

• Rare entity

• Incidence 1 in 1.5 million in women of reproductive age group.

• Vague symptoms + varying radiological findings = Diagnostic Dilemma

Casey et al., J Pediatr Adolesc Gynecol, 2013
Aim of Case Presentation:

To delineate this diagnostic dilemma and to emphasize the need for a high index of suspicion.

Timeline - Clinical course

- Onset of Symptoms: 4 months
- Initial Presentation: 3 months
- Diagnosis & Management

2 ER visits + 4 Outpatient clinic visits

Case Description
Initial Presentation ER
• 16 yo F G0, postmenarchal, virgin
• March 5: Acute onset RLQ + N/V x 2 d
• h/o intermittent RLQ pain x 4 months (3 self limiting episodes)
• Past H/o: Type 1 DM on insulin, remainder unremarkable

Initial Presentation ER
• Examination:
  ➢ Vitals wnl
  ➢ RLQ tenderness +++, minimal guarding, obturator sign +, psoas sign +
  ➢ Urine pregnancy test: negative
• Labs: WBC 7.2

Initial Presentation- Imaging
• CT Abdomen Pelvis with Contrast ordered- to r/o appendicitis
  ➢ A normal appendix.
  ➢ Prelim Report: R adnexal 5 cm cyst → ordered US to r/o torsion
  ➢ Final report: 5.8 x 5.5 x 5 cm R simple appearing para-ovarian cyst
CT ABD PELVIS W CONTRAST:
5.8 x 5.5 x 5 cm Right simple appearing para-ovarian cyst and a normal appendix. B/L ovaries normal.

Initial Presentation- Imaging

- Trans-abdominal ultrasound to rule out torsion of R ovary
  - Normal bilateral ovarian flow
  - R ovary: 3.3 x 2.6 x 1.9 cm
  - L ovary enlarged: 6.2 x 5.9 x 3.9 cm.
    - Large simple cyst present: 5.4 x 3.7 x 4.0 cm. This is the cystic area seen on the CT scan.
Initial presentation - Inpatient

• Admitted for 23 hour observation to r/o intermittent torsion
• Pain eased with meds
• Ultrasound Pelvis next day showed bilateral ovarian flow

Initial Presentation - Inpatient

• Discharged home – COCPs and Narcotics
• To follow up outpatient
Outpatient Follow up: 1st Visit

• April 3rd (one month later)
• Pain resolved 4 days after discharge.
• Another episode (April 1st) at school, resolved with pain medications.
• Repeat ultrasound showed a stable right para-ovarian cyst.

Outpatient Follow Up- 2nd Visit

• May 1st (one month later)
• Pain had improved
• Plan was follow up in another 3 - 4 weeks

Outpatient Follow Up- 3rd Visit

• May 27th (3 weeks later)
• Recent Episode: RLQ pain with nausea since May 24th
• Relieved with acetaminophen with codeine
• Missed school yesterday; was concerned about missing more school as her exams where in 2 weeks.
Outpatient Follow Up - 3rd Visit

- Exam: In no acute distress; Unremarkable
- Vital signs stable
- Counselling about possible surgery if her pain persisted.

2nd ER Visit

- June 14th (2 weeks later)
- Severe RLQ and R flank pain x 2 d
- Vomiting x 2 and Nausea

2nd ER Visit

- VSS; Abdomen: soft, tenderness +
- TVUS: stable R para-ovarian cyst with flow
- Pain relieved with IV pain meds
- Discharged home on pain medications to follow up outpatient
Outpatient Follow up - 4th Visit

- June 17th (2 days later)
- Scheduled for a diagnostic laparoscopy possible cystectomy

Operating Room

- June 19th (2 days later)
- Plan: Diagnostic laparoscopy possible cystectomy

[Image of medical procedure and anatomy]
Right Hematosalpinx

Torsed Right fallopian tube
Aspiration of Right Hematosalpinx
Specimen of Right Fallopian tube

Operative Findings

- R fallopian tube torsion with necrosis
- 6 x 6 cm right hematosalpinx
- Laparoscopic Right Salpingectomy was performed

Postoperative Course

- Uneventful
- Discharged home same day of surgery
- Pathology: Hemorrhagic necrosis; aspirate cultures negative
- Postop visit 2 months later: pain gone
Case Discussion:
Isolated torsion of the Fallopian tube

Isolated Torsion of the Fallopian tube

• First reported case Blandon Sutton in 1890
• Rarely bilateral, more common on the right side
• Etiology: Not fully understood

Comery et al, J Pediatr Adolesc Gynecol, 2013

Isolated Torsion of the Fallopian tube

• Predisposing factors:
  ➢ **Intrinsic Tubal Factors:** Tortuosity, para-tubal cysts, neoplasm, abnormal peristalsis, hydrosalpinx, hematosalpinx, anatomical abnormality, sterilization
  ➢ **Extrinsic Tubal Factors:** adhesions (endometriosis, PID), pelvic congestion, or drug-related spasms

Comery et al, J Pediatr Adolesc Gynecol, 2013
Presenting Symptoms

- Acute or Chronic
- Generalized or Non-specific abdominal pain
- Vague symptoms of Nausea and Vomiting

Casey et al., Pediatric Adolescent Gynecol, 2013

<table>
<thead>
<tr>
<th>Patient</th>
<th>Pain location</th>
<th>Ultrasonography Findings</th>
<th>Presenting Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Right lower quadrant</td>
<td>Right ovarian cyst</td>
<td>Acute pain</td>
</tr>
<tr>
<td>2</td>
<td>Left upper quadrant</td>
<td>Left ovarian cyst</td>
<td>Chronic pain</td>
</tr>
<tr>
<td>3</td>
<td>Right upper quadrant</td>
<td>Right adnexal mass</td>
<td>Acute pain</td>
</tr>
<tr>
<td>4</td>
<td>Left lower quadrant</td>
<td>Left tubo-ovarian abscess</td>
<td>Chronic pain</td>
</tr>
<tr>
<td>5</td>
<td>Right lower quadrant</td>
<td>Right tubo-ovarian abscess</td>
<td>Acute pain</td>
</tr>
<tr>
<td>6</td>
<td>Left upper quadrant</td>
<td>Left tubo-ovarian abscess</td>
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</tr>
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<td>7</td>
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<td>Acute pain</td>
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Casey et al., 2013, case series of 15 patients, mean age 12 (range: 8-15)

- Abdominal pain
  - 14 patients (93%)
- Localized to side of torsion
  - 8 patients (53%)

Boukaidi et al., 2011, case series of 13 patients, mean age 13.5 (range: 11-18)

Acute pelvic pain (13 patients; 100%)
Nausea (10 patients; 77 %); Vomiting (6 patients; 46 %)
Fever (1 patient; 8 %)

Presenting Symptoms

Boukaidi et al., 2011, case series of 13 patients, mean age 13.5 (range: 11-18)

Acute pelvic pain (13 patients; 100%)
Nausea (10 patients; 77 %); Vomiting (6 patients; 46 %)
Fever (1 patient; 8 %)

Journal of Pediatric Surgery, 2011
Laboratory Findings

- Casey et al, 2013,
  - 6/12 patients (40%): ↑ WBC count (normal defined as 4.1-9.43 x10^9/L)
- Boukaidi et al, 2011
  - 2/13 patients (15%) ↑ WBC count and CRP
- Our patient: WBC 7.2 on initial presentation

Laboratory findings appear to be non specific

Imaging Studies

- US modality of choice for adnexal torsion but not definitive
- In general, difficult to diagnose isolated tubal torsion on imaging
- Only few reports suggest the use of preoperative ultrasound to helped make a diagnosis

Imaging Studies

- Ultrasound findings that should raise suspicion
  - “Tubular structure” OR
    - Casey et al (2013): present in 4 of 13 cases on preop ultrasound and all had the correct preop diagnosis
  - Adjacent normal ovary or Cystic mass separate from the ovary
  - Normal flow does NOT rule out torsion- due to dual bloody supply
Diagnosis

• Comerci et al (2008) note: high index of suspicion

Ultrasound Findings

- Tubular structure/Cystic adnexal mass
- And normal ovary
- A high impedance or absent flow

Acute Adnexal pain

- & Predisposing risk factors

Tubal torsion

- Until proven otherwise

• Definitive diagnosis is only by Laparoscopy

Fertility and Sterility, 2006

Surgical Management

• Controversial: Detorsion vs Salpingectomy

• Casey et al, 2013 suggest that if level of damage to tube significant then salpingectomy should be performed

• A high index of suspicion and early intervention can lead to tubal preservation

Casey et al, J Pediatr Adolesc Gynecol, 2013

Conclusion
Conclusion

• Isolated tubal torsion be considered as a different diagnosis for acute adnexal pain in an adolescent female

• A high index of suspicion in the presence suggestive clinical and ultrasounds findings is essential

• Early surgical intervention can lead to preservation of the tube

THANK YOU

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Questions