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The EM Educator Series

The EM Educator Series: Endometritis

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Case 1: A 25-year-old female presents 4 days after vaginal delivery saying she has felt unwell. When asked further, she has experienced nausea, myalgias, and fever. On abdominal examination, she has significant periumbilical and suprapubic tenderness.

Case 2: A 33-year-old female presents 2 days after C-section with fever.

Questions for Learners:

1. What are the causes of postpartum fever?
2. What is the approach to identifying the source of postpartum fever?
3. What are the risk factors for endometritis?
4. How do patients with endometritis present?
5. What is the ED evaluation?
6. What is the ED management?

Suggested Resources:

- Articles
    - emDocs
    - Radiopaedia
    - WikEM
- Journal Articles
    - EM Clinics North America
    - Stat Pearls

Answers for Learners:

1. **What are the causes of postpartum fever?**
    - Respiratory tract infection
    - UTI/urosepsis
    - Pyelonephritis
    - Intra-abdominal abscess
    - Superficial incisional site infections
    - Deep incisional site infections
    - Septic Pelvic Thrombophlebitis
    - Mastitis
    - Postpartum endometritis

2. **What is the approach to identifying the source of postpartum fever?**

In addition to the classic portions of the history of present illness, important details to elicit during history taking include:

- Time of delivery or abortion
- Surgical or vaginal delivery
- Prior surgical and medical history history
- Gestational age at the time of the delivery or abortion
- Complications of the pregnancy, including gestational diabetes, intrapartum infections, premature or prolonged rupture of membranes, chorioamnionitis, or preeclampsia/eclampsia
- Complications of the delivery, including prolonged labor, need for operative vaginal delivery, unplanned cesarean section, and postpartum hemorrhage
- GBS status
- Presence of foul-smelling lochia or excessive vaginal bleeding

Physical examination should include:

- Evaluation of the surgical incision (if present)
- Examination of the skin for crepitance, bullae, erythema, induration or drainage
- Palpation of the abdomen and the uterine fundus
- Sterile speculum and bimanual examination

As in all infectious conditions, evaluation should include blood and/or wound cultures prior to the initiation of antibiotics. If post-surgical deep organ infection is suspected, CT with intravenous contrast may help with diagnosis.

3. **What are the risk factors for endometritis?**
    - Cesarean delivery (most important)
    - Prolonged labor
    - Prolonged or premature rupture of membranes
    - Internal fetal or uterine monitoring
    - Large amount of meconium in amniotic fluid
    - Manual removal of placenta
    - Diabetes Mellitus
    - Preterm birth
    - Bacterial vaginosis

- Operative vaginal delivery
- Post-term pregnancy
- HIV infection
- Colonization with Group B Strep

4. How do patients with endometritis present?

5. What is the ED evaluation?

Endometritis is largely a clinical diagnosis. Findings suggestive of endometritis include fever, abdominal (uterine) tenderness, and foul-smelling lochia.

Evaluate for retained products of conception (e.g. pelvic ultrasound).

While the sonographic appearance of the uterus and endometrium may be normal in early stages, findings may include:

- thickened and heterogeneous endometrium
- intracavitary/cul-de-sac fluid
- increased vascularity on Doppler ultrasound
- intrauterine air

Computed Tomography (CT) shows similar findings but carries the benefit of identifying abscesses outside the uterus.

6. What is the ED management?

<48hrs Post Partum
Treatment is targeted against polymicrobial infections, most often 2-3 organisms of normal vaginal flora

- Clindamycin 900mg q8hrs PLUS Gentamicin 1.5mg/kg IV q8hrs OR
- Doxycycline 100mg IV PO q12hrs daily PLUS
    - Ampicillin/Sulbactam 3g IV q6hrs
    - Cefoxitin 2g IV q6hrs daily

>48hrs Post Partum

- Doxycycline 100mg IV or PO q12hrs + Metronidazole 500mg IV or PO q8hrs daily

** IV Clindamycin plus Gentamicin carries the highest cure rate (know your local antibiogram).

Consult OB/GYN first if are considering outpatient management as mild cases can be treated as such. Admit all patients who appear ill, have had a C-section, or underlying comorbid conditions.