PRIMARY DSYMENORRHEA

FLAME LECTURE: 217

OOSTERHOUSE / OZCAN 5.14.19

LEARNING OBJECTIVES

- To define dysmenorrhea and distinguish primary vs. secondary
- To describe the pathophysiology of primary dysmenorrhea
- To identify the etiologies of primary dysmenorrhea
- To discuss evaluation and management options for dysmenorrhea
- Prerequisites:
  - None
- Closely related topics:
  - FLAME LECTURE 218: SECONDARY DYSMENORRHEA

WHAT IS DYSMENORRHEA?

- **Dysmenorrhea** refers to pain and cramping during menstruation that is severe enough to interfere with normal activities
- 50-90% of menstruating women suffer from dysmenorrhea and 10% of these are incapacitated from 1-3 days each month[1]

PRIMARY VS. SECONDARY DYSMENORRHEA

- Primary Dysmenorrhea:
  - The presence of recurrent, crampy, lower abdominal pain occurring during menstruation, in the absence of underlying gynecologic disease
- Secondary Dysmenorrhea:
  - Pain during menstruation that is caused by an underlying disorder in the reproductive system
    - Ex. cervical stenosis, reproductive tract anomalies, endometriosis, pelvic inflammatory disease (PID), fibroids, or adenomyosis

PATHOPHYSIOLOGY

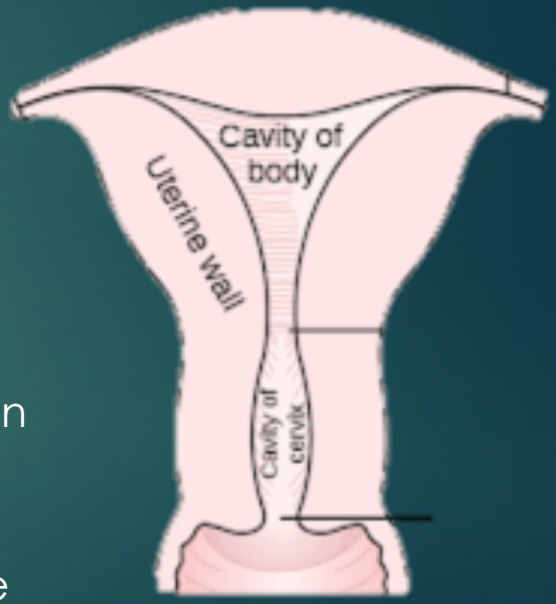
- No obvious organic causes have been linked to primary dysmenorrhea
- Pain may originate from increased levels of endometrial prostaglandin (PG) production derived from the arachadonic acid pathway via cyclooxygenase (COX-2)[1]
- Further, PGF2α and estradiol (E2) shed during the first 2 days of menstruation stimulate myometrial contractions, ischemia and sensitization of nerve endings[2]
- Making things worse, high local levels of estrogen during menses can also induce the COX pathway of PG synthesis which leads to induction of aromatase which increases estrogen further (positive feedback loop)[3]

HISTORY

- Menstrual history and timing of symptoms
  - The pain is recurrent and occurs in nearly all menstrual cycles
  - The pain is often characterized by cramps, but can be intermittently intense or appear more as a dull ache
  - The pain interferes with normal activities (school, work, sports, social)
  - It may accompany other symptoms such as nausea, vomiting, diarrhea, dizziness
- Family history of cramps, endometriosis, or other Gyn pathology?
- History of abuse or psychosocial concerns?
- Treatments attempted and response
  - Especially dose information if NSAIDs previously attempted

PHYSICAL EXAM FINDINGS

- Speculum & Bimanual exam (unless virginal) evaluating for masses, tenderness, or infection
  - Recto-abdominal exam for non-sexually active patients
  - Consider Q-tip can be used to check for hymenal abnormalities or vaginal septae[3]
- Pain usually appears strongest in the midline
  - However, some women can have severe back pain or thigh pain
  - If pain is non-midline (and especially if pain is unilateral or severe), consider ultrasound for uterine anomaly, endometriosis, ovarian cyst, or alternative diagnosis[4]



DIAGNOSIS

- Primary dysmenorrhea usually presents during adolescence
  - Usually one to three years after menarche
  - Very unusual for symptoms to start within 6 months of menarche[4]
- Pain often occurs on the 1st day of menstruation and decreases 12-72 hours after onset
  - Can start 1-2 days prior to menses and continue for 3-5 days[3]
  - Menstrual calendar can help elucidate

DIAGNOSIS (CONT'D)

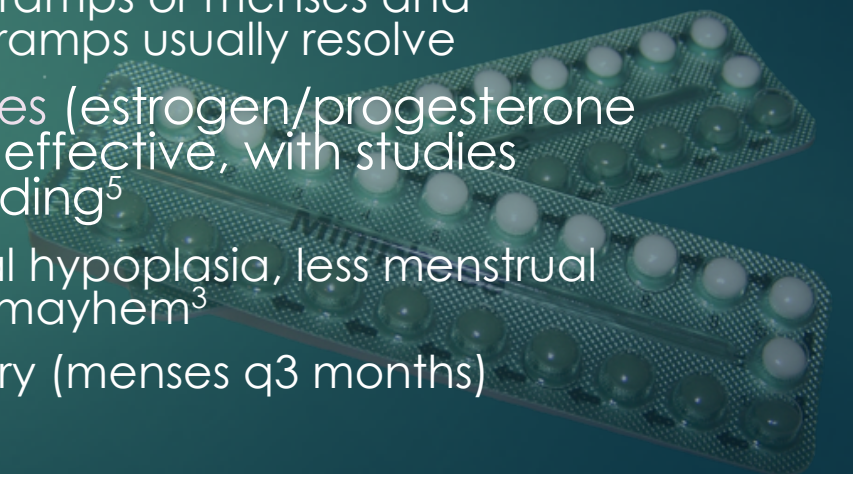
- Diagnosis primarily made on the absence of diagnosis of underlying pathology (i.e. it is a diagnosis of exclusion)
- Can sometimes be misdiagnosed as endometriosis
- MUST exclude causes of secondary dysmenorrhea
  - See following Table

DIFFERENTIAL
SECONDARY AMENORRHEA

For dysmenorrhea beginning < 6 months after menarche (especially first 1-2 cycles) → consider congenital outflow obstruction
Associated infertility or dyspareunia → consider endometriosis, PID, pelvic/abdominal adhesions
Associated heavy menstrual flow or irregular cycles → consider leiomyoma, polyps, adenomyosis
Lastly, if dysmenorrhea began after 25 year of age, or there is little or no response to standard therapies for primary dysmenorrhea, look for reproductive tract pathology

TREATMENT OPTIONS

- NSAIDs are effective in 64%-100% of patients with primary dysmenorrhea[5]
  - They have analgesic & anti-inflammatory properties
    - Inhibition of COX-2 → decreased prostaglandin synthesis
    - Some NSAIDs have selective COX-2 inhibition and some also antagonize activity of already formed prostaglandins[3]
  - Start (with food) at first symptoms of cramps or menses and continue 1-2 days into cycle or until cramps usually resolve
- Combination hormonal contraceptives (estrogen/progesterone oral pills/vaginal ring/patch) are also effective, with studies showing up to 90% of patients responding[5]
  - They lead to anovulation, endometrial hypoplasia, less menstrual flow → fewer prostaglandins causing mayhem[3]
  - Can utilize extended-cycle if necessary (menses q3 months)



TREATMENT OPTIONS

- Lifestyle modifications
  - Exercise, well-balanced diet, reduce stress
  - Magnesium therapy effective in some studies[3]
  - Some herbs have anti-inflammatory properties (lemon verbena, curcumin, ginger)
- Lack of pain relief using the above treatments is usually a sign to investigate secondary causes of dysmenorrhea further
  - Laparoscopy to exclude endometriosis/organic causes
- Small studies show some evidence of refractory cases using acupuncture, thiamine, transdermal nitroglycerin, and transcutaneous electrical nerve stimulation[5]

References

1. Callahan TL, Caughey AB. *Blueprints Obstetrics and gynecology*. 6th ed. Baltimore, MD: Lippincott Williams and Wilkins; January 1, 2013.
2. Coco, A. S., MD. (1999, August 1). Primary Dysmenorrhea. Retrieved January 29, 2017, from http://www.aafp.org/afp/1999/0801/p489.html
3. Laufer MR. (2012). Gynecologic pain: Dysmenorrhea, acute and chronic pelvic pain, endometriosis, and premenstrual syndrome. In SJ Emans & MR Laufer (Eds), *Pediatric & Adolescent Gynecology* (pp. 238-241). Philadelphia, PA: Lippincott Williams & Wilkins.
4. Smith, R. P., MD, & Kaunitz, A. M., MD. (2015, June 8). Primary Dysmenorrhea in Adult Women: Clinical Features and Diagnosis. Retrieved January 29, 2017, from https://www.uptodate.com/contents/primary-dysmenorrhea-in-adult-women-clinical-features-and-diagnosis
5. Smith, R. P., MD, & Kaunitz, A. M., MD. (2016, June 9). Treatment of Primary Dysmenorrhea in Adult Women. Retrieved January 29, 2017, from https://www.uptodate.com/contents/treatment-of-primary-dysmenorrhea-in-adult-women