Dysmenorrhea: Diagnostics

Background

1. Definitions
   o Cramping lower abdominal pain that occurs just before or during menstruation
     ▪ Primary: painful menses in absence of underlying anatomic abnormality
     ▪ Secondary: painful menses caused by underlying anatomic abnormality

2. General information
   o Most common gynecologic problem in menstruating women

3. See also Secondary dysmenorrhea

Pathophysiology

1. Pathology
   o Action of uterine prostaglandins
     ▪ During endometrial sloughing, endometrial cells release prostaglandins
     ▪ Prostaglandins stimulate myometrial contractions and ischemia
   o Women with most severe dysmenorrhea have highest levels of PGF2 alpha
   o Levels are highest during first 2 days of menses (when symptoms peak)
   o NSAIDs (which inhibit prostaglandin synthetase) relieve symptoms

2. Incidence/prevalence
   o 20-90% of menstruating women (depending on measurement method)
   o Highest in adolescence

3. Risk factors
   o Nulliparity
   o Earlier age at first menarche
   o Heavy/longer menstrual flow
   o Smoking
   o Depression/anxiety
   o Disruption of social networks
   o Attempts to lose wt
   o Age < 30
   o Low BMI
   o PMS
   o Sterilization
   o Sexual abuse
   o Obesity/alcohol use (controversial)

4. Morbidity
   o Leading cause of short-term school absence in adolescent girls
   o Rates of absenteeism at work/school: 34%-50%
   o 600 million lost work hours/$2 billion lost productivity

Diagnostics

1. History
o History is diagnostic
  o Usually 6-12 mo after menarche once cycles ovulatory/regular
  o Pain
    ▪ Begins within hours of onset of menses
      ▪ Peaks in first 1-2 d of cycle
      ▪ Lasts 3-4 d
    ▪ Commonly severe enough to miss school/work
    ▪ Sharp, intermittent spasms, usually centered in suprapubic area
    ▪ May radiate to back of legs/lower back
  o Commonly assoc symptoms
    ▪ Nausea/vomiting
    ▪ Diarrhea
    ▪ Headache
    ▪ Backache
    ▪ Fatigue/malaise
  o Inquire about
    ▪ Sexual hx
    ▪ Exposure to STDs
    ▪ Abnormal Pap smears
    ▪ Contraceptive method
    ▪ Pregnancy hx
  o Critical to rule out secondary causes of dysmenorrhea
    ▪ See also Secondary dysmenorrhea
  o Failure to respond to NSAIDs should bring Dx into question

2. Physical exam
  o General and abdominal exam sufficient in young adolescents who are not sexually
    active and have typical hx
    ▪ Findings generally negative during non-menstrual phase of cycle
    ▪ If pain is reproducible, it will be nonspecific and limited to midline
  o Pelvic exam if sexually active
    ▪ STD screen

3. Diagnostic testing
  o Usually none
  o Laboratory evaluation (nml in primary dysmenorrhea)
    ▪ Usually not indicated
    ▪ Do STD testing if sexually active and/or PID suspected
    ▪ Potentially useful tests
      ▪ CBC
      ▪ ESR
      ▪ UPT
      ▪ Pap smear
      ▪ Wet prep
      ▪ Cervical cultures
      ▪ UA
      ▪ TSH
  o Diagnostic imaging (nml in primary dysmenorrhea)
- Not routine
- Used to rule out anatomic abnormalities if severe/refractory to usual therapy
- Consider
  - Ultrasound
  - Hysteroscopy
  - Hysterosalpingogram (HSG)
  - Laparoscopy

4. Diagnostic criteria
   - Dx usually made based on history and neg phys exam

**Differential Diagnosis**

1. **Secondary dysmenorrhea**
   - Suspect if Sx appear after many yrs of painless menses
   - Consider obstruction if onset during first 6 mo after menarche
   - Rule out if severe and/or refractory to usual therapy

2. **PMS**
   - Pain generally restricted to breast tenderness, abdominal bloating
     - Sx do not include crampy lower abdominal pain
   - Sx begin before menstrual flow begins
     - Resolve shortly after flow begins

3. **Endometriosis**
   - May present as progressive dysmenorrhea
   - Pain may be more generalized
   - Dyspareunia seen
   - Family hx likely
     - 7% of cases have first-degree relative with laparoscopic Dx of endometriosis

4. **Extensive DDx**
   - IBS
   - **Chronic pelvic pain**
   - Pregnancy
   - PID
   - Gonococcal cervicitis
   - Chlamydia genital infection
   - Gastroenteritis
   - UTI

**Goals**
1. Reduce/eliminate symptoms
2. Restore patient's ability to function

Pharmacotherapy

1. **NSAIDs (Grade 2A)**
   - First-line treatment
   - Inhibit prostaglandin synthesis
   - 65-90% of cases will respond
   - Can take up to 3 mo for full effect to be seen
   - All classes are effective; try different class if inadequate response
     - Propionic acid derivatives (ibuprofen, naproxen)
       - Relatively inexpensive
     - Acetic acid derivatives
       - Aspirin not potent enough at usual dose
     - Enolic acid (oxicam) derivatives
     - Fenamates (mefenamic acid, tolfenamic acid, flufenamic acid, meclofenamate)
       - Some studies suggested may have better efficacy
     - Cox-2 inhibitors
       - Also effective but more expensive
   - Titrate dose to Sx
   - Scheduled or as needed
   - Relief usually seen within 30-60 min
2. Acetaminophen less effective than NSAIDs in RCTs
3. **Narcotics** occasionally indicated in refractory cases
4. **Oral contraceptives (Grade 2B)**
   - Second-line therapy for most pts (first-line for women desiring contraception)
   - Mechanism of action
     - Reduction of menstrual flow
     - Suppression of ovulation
   - Up to 90% effective in some studies
   - Patches seem less effective than pills
   - Triphasics seem less effective than single formulation pills
   - Ring as effective as pills
   - Combination NSAIDs/oral contraceptives highly effective in refractory cases

Suppression of Menses

1. Extended cycles with combination OCPs
   - Withdraw Q 3 cycles, Q 5 cycles, or continuous oral contraception
2. **Depot Medroxyprogesterone**
3. **Levonogestrel** intrauterine system
4. Etonogestrel-releasing contraceptive
5. **Danazol**: rarely indicated
6. **Leuprolide** acetate: rarely indicated
Physical Modalities

1. Possibly effective methods
   - Topical heat (Grade 2A)
   - Exercise
   - Acupuncture/acupressure
   - High frequency transcutaneous electric nerve stimulation (TENS)
2. Spinal manipulation not effective

Nutritional Supplements

1. Fish oil supplements (3 g daily)
2. Low-fat vegetarian diet
3. Thiamine supplementation (100 mg daily)
4. Vitamin E supplementation (400 U daily)
5. Pyridoxine alone or w/ magnesium
6. Magnesium supplementation
7. Herbal remedies
   - Toki-shakuyaku-san (Japanese herb)

Psychological Counseling

1. Helpful if psychological component suspected/refractory cases
2. Pain mgmt training or relaxation might reduce Sx

Surgical Therapy

1. Insufficient evidence to recommend nerve interruption
2. Hysterectomy rarely indicated

Follow-up

1. Return to office
   - If Sx not improved in 3 mo
2. Refer to specialist
   - If combination NSAIDs/OCPs fail
3. Admit to hospital
   - Generally not indicated for primary dysmenorrhea

Prognosis

1. Usually excellent pain relief w/ NSAIDs
2. Sx may decline gradually w/ age after 25 yo.
3. May persist throughout reproductive yrs

Prevention
1. Complete prevention not possible
2. Partial prevention/symptom reduction
   - Proper nutrition
   - Regular exercise
   - Tobacco cessation
   - Minimal alcohol intake
   - Other generally good health habits

Patient Education

1. Handout found in Am Fam Physician 2005 Jan 15;71(2):292
2. Handout from Patient UK
   - http://www.patient.co.uk/showdoc/23068726/
3. Handout from McKinley Health Center, University of Illinois
   - http://www.mckinley.illinois.edu/Handouts/menstrual_cramps.html
4. Handout from Albemarle Pulmonary Medicine Associates, PA
   - http://www.apma-nc.com/httpdocs/PatientEducation/dysmenorrhea.htm

References


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