View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by University of Missouri: MOspace

Dysmenorrhea: Diagnostics

Background

1. Definitions
   - 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
   - Most common gynecologic problem in menstruating women
3. See also Secondary dysmenorrhea

Pathophysiology

1. Pathology
   - Action of uterine prostaglandins
     - During endometrial sloughing, endometrial cells release prostaglandins
     - Prostaglandins stimulate myometrial contractions and ischemia
   - Women with most severe dysmenorrhea have highest levels of PGF2 alpha
   - Levels are highest during first 2 days of menses (when symptoms peak)
   - NSAIDs (which inhibit prostaglandin synthetase) relieve symptoms
2. Incidence/prevalence
   - 20-90% of menstruating women (depending on measurement method)
   - Highest in adolescence
3. Risk factors
   - Nulliparity
   - Earlier age at first menarche
   - Heavy/longer menstrual flow
   - Smoking
   - Depression/anxiety
   - Disruption of social networks
   - Attempts to lose wt
   - Age < 30
   - Low BMI
   - PMS
   - Sterilization
   - Sexual abuse
   - Obesity/alcohol use (controversial)
4. Morbidity
   - Leading cause of short-term school absence in adolescent girls
   - Rates of absenteeism at work/school: 34%-50%
   - 600 million lost work hours/$2 billion lost productivity

Diagnostics

1. History

- History is diagnostic
- Usually 6-12 mo after menarche once cycles ovulatory/regular
- 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
- Commonly assoc symptoms
  - Nausea/vomiting
  - Diarrhea
  - Headache
  - Backache
  - Fatigue/malaise
- Inquire about
  - Sexual hx
  - Exposure to STDs
  - Abnormal Pap smears
  - Contraceptive method
  - Pregnancy hx
- Critical to rule out secondary causes of dysmenorrhea
  - See also Secondary dysmenorrhea
- Failure to respond to NSAIDs should bring Dx into question

2. Physical exam
   - 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
   - Pelvic exam if sexually active
     - STD screen
3. Diagnostic testing
   - Usually none
   - Laboratory evaluation (nml in primary dsymenorrhea)
     - 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
   - 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 [3,4])
    - 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 [3]
        - Cox-2 inhibitors
        - Also effective but more expensive [4]
    - 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 [5,6])
    - 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 [5]
    - Triphasics seem less effective than single formulation pills
    - Ring as effective as pills [6]
    - 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 [7]
2. Depot Medroxyprogesterone [8]
3. Levonogestrel intrauterine system [9]
4. Etonogestrel-releasing contraceptive [10,11]
5. Danazol: rarely indicated
6. Leuprolide acetate: rarely indicated

Physical Modalities

1. Possibly effective methods [3]
    - Topical heat (Grade 2A [13,14])
    - Exercise [12]
    - 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 [3]
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 alchohol intake
    - Other generally good health habits

Patient Education

1. Handout found in Am Fam Physician 2005 Jan 15;71(2):292
    - http://www.aafp.org/afp/20050115/292ph.html
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

1. Proctor M, Farquhar C. Dysmenorrhoea. Clin Evid. 2004 Dec;(12):2524-47.
2. French L. Dysmenorrhea. Amer Fam Phys. 2005; 285-91.
3. Budoff PW. Use of mefenamic acid in the treatment of primary dysmenorrhea. JAMA. 1979;241:2713-6.
4. Proctor M, Farquhar C. Diagnosis and management of dysmenorrhoea. BMJ. 2006;332(7550):1134-8.
5. Audet MC, Moureau M, Koltun WD, et al. Evaluation of contraceptive efficacy and cycle control of a transdermal contraceptive patch vs an oral contraceptive: A randomized controlled trial. JAMA 2001; 285:2347-54.
6. Roumen FJ. The contraceptive vaginal ring compared with the combined oral contraceptive pill: a comprehensive review of randomized controlled trials. Contraception 2007; 75:420-9.
7. Edelman AB, Gallo MF, Jensen JT, et al. Continuous or extended cycle vs. cyclic use of combined oral contraceptives for contraception. Cochrane Database Syst Rev 2005; CD004695.
8. Harel Z, Biro FM, Kollar LM. Depo-Provera in adolescents: effects of early second injection or prior oral contraception. J Adolesc Health 1995; 16:379-84.
9. Varma R, Sinha D, Gupta JK. Non-contraceptive uses of levonorgestrel-releasing hormone system (LNG-IUS) - a systematic enquiry and overview. Eur J Obstet Gynecol Reprod Biol 2006; 125:9-28.
10. Croxatto HB. Clinical profile of Implanon: a single-rod etonogestrel contraceptive implant. Eur J Contracept Reprod Health Care 2000; 5 Suppl 2:21-8.
11. Walch K, Unfried G, Huber J, et al. Implanon versus medroxyprogesterone acetate: effects on pain scores in patients with symptomatic endometriosis - a pilot study. Contraception 2009; 79:29-34.

12. Golomb LM, Solidum AA, Warren MP. Primary dysmenorrhea and physical activity. Med Sci Sports Exerc 1998; 30:906-909.
13. Akin MD, Weingand KW, Hengehold DA, Goodale MB, Hinkle RT, Smith RPl. Continuous low-level topical heat in the treatment of dysmenorrhea. Obstet Gynecol 2001; 97:343-49.
14. Akin M, Price W, Rodriguez G Jr, et al. Continuous, low-level, topical heat wrap therapy as compared to acetaminophen for primary dysmenorrhea. J Reprod Med 2004; 49:739-45.

- Authors:
    - Marta H. F. Robertson
    - Shannon P. Starr
- Editor: Robert Marshall