Abnormal Uterine Bleeding
2018
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Menstrual Flow

• Mean
  - length 28 +/- 7
  - duration 4 +/- 2
  - blood loss 40 +/- 20 mL

Abnormal Menstrual Bleeding

• Menorrhagia now heavy menstrual bleeding—>80 ml or >7 days.

• Metrorrhagia now intermenstrual bleeding between menses

• Polymenorrhoea—menses <21 days apart

• Oligomenorrhoea—menses >35 days apart
Differential Diagnosis for AUB

PALM-COEIN

- Polyp AUB-P
- Adenomyosis AUB-A
- Leiomyoma AUB-L
- Malignancy&hyperplasia AUB-M

AUB-COEIN

- Coagulopathy AUB-C
- Ovulatory dysfunction AUB-O
- Endometrial AUB-E
- Iatrogenic AUB-I
- Not yet classified AUB-N
Causes of AUB

Physiologic:
• Adolescence
• Perimenopause
• Lactation
• Pregnancy

Evaluation of AUB

History:
• Patient age
• Signs hemostatic disorder
• Cycle history, Severity, Pain (PCO patients generally have always had irregular cycles)
• Medical conditions and medications

Evaluation of AUB

Physical:
• Endocrinology problems eq. acne or hirsutism, galactorrhea, Acanthosis nigricans
• Weight and body habitus, apple or pear fat
• Cx mucus, cervicitis, cervical polyp
• Uterine size
Lab Testing
• Pregnancy testing
• CBC
• PT, PTT, Plts, VonWillebrand factor and Ristocetin cofactor
• TSH and Prolactin
• Chlamydia screen

Imaging Tests
• Saline infusion sono. (SIS)
• Transvaginal ultrasound
• MRI
• Hysteroscopy

Age Considerations in Evaluating AUB
• Adolescents (13-18 years)
• Reproductive Age (19-39 years)
• Women of Later Reproductive Age (40 years to menopause)
Adolescents
• Anovulatory bleeding is physiologic in perimenarcheal years.
• Rule out pregnancy
• Coagulation disorder screen (PT, PTT, Platlets, von Willibrand factor ristocetin cofactor activity, factor 8 level. STD screen in those sexually active
• Abdominal or vaginal ultrasound

Coagulation Disorders in Adolescents
• Speroff & Fritz quote 10-20%

Reproductive Age 19-39
• Anovulation bleeding most common
• PCO syndrome the most common endocrinopathy in reproductive age women: Anovulation plus either hyperandrogenism or US PCO appearance is diagnostic-no labs
• Rapid progressing hirsutism or virilization suggests tumor. Very Rare!
Diagnostic Evaluation

- History and Physical—focus on endocrine abnormalities, STD, pelvic pathology, endometrial hyperplasia.
- Lab studies: CBC, TSH, PRL, hCG. Possible T, DS, 170HP level R/O adult onset CAH.
- Coagulation studies (13% VonWillebrands with menorrhagia.) Same lab studies as mentioned previously

Diagnostic Evaluation

- Transvaginal sonography (TVS) poor sensitivity 56% and specificity 73%. Saline infusion sonography (SIS) best option. MRI best used in myoma eval. before difficult robotic myomectomy.

- Hysteroscopy (HS) Gold standard for intrauterine evaluation

SIS vs. HS

- Equal in detecting polyps and submucus fibroids (SIS on cycle day 4-10)
- SIS made HS unnecessary in 2 out of 3 premenopausal AUB cases Dueholm et al Ultrasound Obstet Gynecol 2001; 18:54-61.
- SIS provides info re myometrium
- HS allows tissue removal for bx and treatment. Newer office HS options very efficient
Exclude Malignancy

- Pap
- Endometrial Biopsy 1) all > 45 yrs old, and 2) those younger than 45 with unopposed estrogen history eg PCOS and anovulatory obese patients, 3) failed medical management and persistent AUB
- Postmenopausal bleeding with endometrial thickness < 4mm

Exclude Malignancy

- D & C if biopsy normal but fails medical therapy IS NOT ACCEPTABLE!!
- HS to rule out focal hyperplasia/cancer. Can do D & C at same time.
Endometrial Sampling
• Missed Cancer dx. in 46% with endo. Suction bx., and in 27% with D&C.
• Most D&C’s sample less then half the uterine cavity.
• In at risk patients HS with D&C best

Endometrial Cancer Risk

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Risk per 100,000</th>
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<tbody>
<tr>
<td>13-18</td>
<td>0.1</td>
</tr>
<tr>
<td>30-34</td>
<td>2.3</td>
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<tr>
<td>35-39</td>
<td>6.1</td>
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<tr>
<td>40-49</td>
<td>36.2</td>
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ACOG Recommendations
• Sample all women > 45 yrs. old
• <45 biopsy if chronic anovulation, PCOS, diabetes, hypertension, or obesity present.
• Biopsy if failed therapy.
• Biopsy all postmenopausal with >4mm endometrial thickness
Treatment of AUB

Dependent on:
• Age
• Diagnosis
• Patient desires

Medical Therapy for AUB
• Adolescents 13-18 years

• Reproductive age women 19-39 years

• Late reproductive age to menopause >40 years

AUB-O in Adolescents
• Cyclic Progestins

• Oral Contraceptives

• Antiprostaglandin medication

• Desmopressin, Tranexamic acid and LNG-IUD for coagulopathy problems
Treatment of Acute Severe AUB-O

Adolescents (13-18 yrs old)
1. Medical management 90-95% response
   a) 25 mg conjugated Estrogen IV Q 4 hrs to 24 hrs
   b) 2.5 mg conjugated Estrogen oral Q 4 hrs up to 10 mg/day
   c) OC’s 2 pills/day x 7 days once bleeding has stopped

Treatment of Severe AUB-O

Adolescents (13-18 yrs old)
2. Surgical-D&C if medical management fails

Medical Treatment AUB-O in Reproductive Age Group (19-39)

• Cyclic Progestins
• OC’s (monophasic oc’s possibly best choice)
• Progestin IUD
• GnRH agonist or antagonist
• Desmopressin for VonWillibrands disease, Tranexamic acid also useful
Medical Treatment of AUB-O in Later Reproductive Age Women (40-Menopause)

- Cyclic Progestins
- OC’s (non-smokers)
- Estrogen with continuous or cyclic progestin
- Progestin IUD – Mirena 75-95% decrease in blood loss. Equal to 5mg NE TID (OC’s contain 1mg)

Surgical Care for AUB

- Endometrial Ablation
- Hysterectomy
- Uterine Artery Embolization (Fibroid cases)

Indications for Endometrial Ablation (EA)

- Disabling uterine bleeding that disrupts lifestyle, or unexplained bleeding on HRT (ACOG Tech Bulletin 1990)
- Failed traditional therapies
- Medical treatment contraindication
- Poor surgical risk for hysterectomy eq ITP, severe diabetes
- Patient insistence to preserve uterus
Pre Endometrial Ablation

Assessment:
- History and physical
- Lab including an hCG test
- Pap smear
- Pelvic imaging
- Hysteroscopy with biopsy/D&C

Endometrial Ablation

- Endometrial ablation is not a contraceptive procedure. Pregnancy, both intrauterine and ectopic have occurred after EA.
- Pregnancy after EA can be complicated by placenta accreta.
Steps of the NovaSure™ Procedure

2. Cavity Integrity Assessment Cycle ~ 8 seconds

NovaSure™ Ablation Profile

Myometrial Penetration:
- Cornua - 2-3 mm
- Mid-Body - 5-7 mm

Consistent Depths of Tissue Destruction Across Varied Uterine Sizes (post-ablation specimen)

Endometrial Ablation Summary

- 80-85% satisfaction rate
- Different techniques for different clinical situations
- Data in Canada, USA, and England show a decrease hysterectomy rate of 20-30% since EA introduced
- Long-term follow-up still needed
### Endometrial Ablation Summary

- Best in women in their 40’s with DUB
- Women in their 30’s have a higher chance of needing a repeat procedure or hysterectomy
- Levonorgesterol IUD has comparable results in some DUB studies. First line therapy in U.K. Also effective in adenomyosis and chronic illness eg renal disease

### Hysterectomy Option

- Traditional AUB treatment
- Permanent
- Satisfaction Surveys >90%
- Morbidity 7-15%
- Mortality 12/10,000
- Is it the best and most cost effective approach? What type hysterectomy?

### Hysterectomy Option

- 10-20% of endometrial ablation patients ultimately have hysterectomy
- LS hysterectomy has largely supplanted the abdominal or vaginal approach
- Endometrial ablation is approximately 50% the cost of an abdominal hysterectomy
Endometrial Intraepithelial Neoplasia

Benign Hyperplasia (No Atypia)
- 1-3% Endometrial cancer, mean time 10 years
- Progestin eg MPA 10-20 mg 12-14 days each month
- Repeat biopsy 3 months

Hyperplasia with Atypia
- 25% Endometrial cancer, mean time 4 years
- High dose progestin eg MPA 30-200 mg qd x, 3-4 months then repeat HS with D&C
- Hysterectomy if above fails
Uterine Fibroids and AUB

Uterine Fibroids and AUB: do not attribute AUB to myomas until other possibilities are excluded!

• Submucous Fibroids—HS resection
• Uterine Artery Embolization (UAE)
• MRI guided focused ultrasound surgery (MRgFUS)
• Hysterectomy

Uterine Artery Embolization

• Polyvinyl alcohol particles
• Tris-acryl gelatin microspheres
• Metal coils

UAE Complications

• Uterine infection, abscess, sepsis
• Labial, bladder necrosis, uterovesico fistula
• Groin hematoma, pulmonary emboli
• Life threatening complications 0.5%
• 5% morbidity
• 0.5% death
• Up to 14% ovarian failure
Pregnancy after UAE

- Increased preterm labor, delivery 28%
- Increased postpartum hemorrhage, 13%
- Increased SGA, 7%
- Increased C-section, 58%

ACOG Committee Opinion on UAE

- Insufficient data to support use when fertility desired
- Should not be used in menopausal patients

Conclusions

- Most abnormal uterine bleeding is AUB-O
- AUB-O is a dx of exclusion
- AUB-O’s have 4-16 fold increased endometrial cancer risk. Check endometrial thickness with US
- PCOS assoc. with increase CVD and endometrial cancer and Type II diabetes
Conclusions

• Medical management or IUD (Mirena) generally successful in AUB

• New endometrial ablation techniques an option to hysterectomy