Teaching Tools for Pediatric and Adolescent Gynecology In Your Educational Programs: A SAHM Workshop

KJ Browner-Elhanan, MD
Hina J. Talib, MD
Paritosh Kaul, MD, FSAHM

March 17th, 2015

Health professionals committed to the reproductive needs of children and adolescents

North American Society for Pediatric and Adolescent Gynecology – Resident Education Committee
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We, Paritosh Kaul, Hina J. Talib, Caroline Barangan, & Kanani Titchen have no commercial relationships to disclose.

I, Karen J Browner-Elhanan, have the following commercial relationship(s) to disclose:

American Academy of Pediatrics and Merck – faculty speaker
American Academy of Pediatrics and Center for Communicable Diseases-faculty speaker
March of Dimes – grant recipient
North American Society for Pediatric and Adolescent Gynecology (NASPAG)

The North American Society for Pediatric and Adolescent Gynecology (NASPAG), founded in 1986, is dedicated to conducting and encouraging programs of medical education in the field of pediatric and adolescent gynecology. Its focus is to provide a forum for education, research and communication among health professionals who provide gynecologic care to children and adolescents.

For more information and to join please visit our website at www.naspag.org!

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NASPAG Resident Education Committee Members

- Nathalie Fleming, MD and Patricia Huguelet, MD, co-chairs
- Hina J. Talib, MD
- Paritosh Kaul, MD
- KJ Browner-Elhanan, MD

- Yolanda Evans, MD MPH
- Meredith Loveless, MD
- Nicole Karjane, MD
- Carole Wheeler, MD
- Kanani Titchen, MD, trainee member
Why use a curriculum?

• To ensure uniformity in teaching our learners PAG
  – Not all learners will have the same clinical experiences
  – Many topics in PAG are uncommon
  – Some programs do not have PAG faculty and/or clinical rotations in PAG
What we need to teach

- Educational Objectives for PAG
  - Anatomy and Physiology
  - Pediatric Gynecology
  - Puberty (normal and abnormal)
  - Disorders of Development of the Urogenital Tract
  - Adolescent Gynecology
  - Reproductive Health Issues
PAG Curriculum: Points to Ponder

• Reflect on your educational setting
  – What is the level of your learners?
  – What is your educational setting?
  – How much time do you have?

• What do you want your learners to learn?
PAG Curriculum
Tools and Challenges

• What TOOLS could you utilize to teach these topics?
• What might be some of the CHALLENGES teaching this topic?
PAG Curriculum
Champions and Partnerships

• Name two partnerships you could develop at your institution

• Name one champion at your institution
PAG Curriculum Worksheet

• Two minutes to complete your own worksheet

• Work in your groups for five minutes

• Report out to the large group
Short Curriculum

Resident Education Curriculum in Pediatric and Adolescent Gynecology: The Short Curriculum

Nathalie Fleming, MD, Anne-Marie Amies Oelschlager, MD, K.J. Browner-Elhanan, MD, Patricia S. Huguelet, MD, Paritosh Kaul, MD, Hina J. Talib, MD, Carol Wheeler, MD, Meridith Loveless, MD

1Department of Obstetrics and Gynaecology, Faculty of Medicine, University Kebangsaan Malaysia, Kuala Lumpur, Malaysia
2Department of Paediatric and Adolescent Gynaecology, Royal Children’s Hospital, Melbourne, Australia
3Department of Public Health, Faculty of Medicine, University Kebangsaan Malaysia, Kuala Lumpur, Malaysia

Abstract

Congenital adrenal hyperplasia (CAH) is the commonest cause of ambiguous genitalia for female newborns and is one of the conditions under...
Short Curriculum

- Week 1: Focus on Pre-pubertal child
  - Day 1: Anatomy & exam
  - Day 2: Vulvovaginitis and vulvar skin disorders
  - Day 3: Vaginal bleeding
  - Day 4: Precocious puberty
  - Day 5: Delayed puberty
Short Curriculum

- **Week 2: Focus on Adolescent**
  - Day 1: Confidentiality & communication
  - Day 2: Congenital anomalies
  - Day 3: Menstrual abnormalities
  - Day 4: Pelvic pain

Day 5: Adolescents with disabilities
Long Curriculum

• Goal: Provide a comprehensive curriculum in PAG for resident education.

• Can be used to teach learners on a rotation dedicated to PAG training or broken down with different objectives covered throughout the entire residency training.

Journal of Pediatric and Adolescent Gynecology (JPAG), in press.
Going Beyond a Curriculum...

- Lack of PAG providers & PAG electives
- Translation from reading to practice
- Modalities outside of lectures, curriculum and clinical experience
Evolving methods to teach PAG

- Case-based Learning
- Visual Diagnosis
- Simulations
Case-based Learning: PAG WEB ED

- 20 clinical cases, and growing
- Accessible from Smartphones and tablets
- Formerly run by Association of Professors of Gynecology and Obstetrics (APGO)
Support for Web-based learning in PAG topics

- OBGYN residents
- Web-based teaching series of cases involving common topics in PAG
  - Pre and post-test were used to assess knowledge
  - Residents were asked for feedback
- Scores improved
  - Pre-test mean 60%
  - Post-test mean 80%
- Conclusion: A computer-based self-tutorial in PAG is an effective and satisfactory teaching adjunct to PAG.

De Silva, et al. JPAG 2010
Dietrich, et a. JPAG 2010
Case-based learning: CD ROM

- NASPAG/ACOG in PAG
- CD-ROM
- Updated version
- For purchase via NASPAG

Health professionals committed to the reproductive needs of children and adolescents
NASPAG CD-ROM

- 12 Topics with 34 cases
  - Congenital Anomalies
    - Pediatric Gynecology
    - Puberty
    - Dysfunctional Uterine Bleeding
  - Sexually transmitted infections
  - Endocrine disorders
  - Ovarian masses
  - Breast concerns
  - Contraception
  - Patients with disabilities
  - Fertility Preservation in cancer patients
Case-based Learning: ASRM Modules

- **ASRM MODULES**
  - [http://www.asrm.org/eLearn/](http://www.asrm.org/eLearn/)

- Modules specifically related to PAG
  - Pediatric and Adolescent Gynecology
  - Precocious Puberty
  - Adolescent Gynecology
  - Delayed Puberty
  - Amenorrhea

---

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Visual Diagnosis: NASPAG PEDIGYN SLIDE SET

- CD and binder with picture legends
- Now on DropBox
- Images may be incorporated into slides or other educational activities

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Simulation: PAG Model

• Simulation helps streamline teaching for learners and enhances the use of proper techniques

• ACGME promoting the use of simulation for learners
  – Increase patient safety
  – Provide experience prior to attempting task on a “live” patient
  – Teach topics that are not commonly seen
  – Promote consistency in learning
  – Improve provider confidence
Simulation as a teaching tool
Support for Simulation to Teach PAG topics

• A Simulation Program for Teaching Obstetrics and Gynecology Residents the Pediatric Gynecology Examination and Procedures

• Simulation protocol with digitally recorded encounters with a standardized patient scenario using a pelvic simulation model.

• A faculty member and resident served as standardized patients (SP) playing the roles of child and parent.

• Followed a standardized script which asked the resident to perform the following:
  ◦ 1. History and physical exam
  ◦ 2. Collection of microbial cultures
  ◦ 3. Vaginal lavage
  ◦ 4. Vaginoscopy

Loveless, et al. JPAG  2011
Support for Simulation to Teach PAG topics

• After the initial encounter residents received didactic training and returned in 4-10 wks
  ◦ Pre and Post- evaluations were scored by blinded evaluator
• Pre score  6.1
• Post-training mean of 16.7 (p=0.0001)

• Conclusion: Simulation is an effective tool to improve resident knowledge and performance of the skills needed to accomplish the pediatric gynecologic exam.

Loveless, et al. JPAG 2011
Simulation as a Tool for PAG Education

Methods of contraception—effective methods

<table>
<thead>
<tr>
<th>High</th>
<th>Effective</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>IUDs/ Implants</td>
<td>Injections</td>
<td>Condoms</td>
</tr>
<tr>
<td>Sterilization</td>
<td>Ring/Patch</td>
<td>Female condoms</td>
</tr>
<tr>
<td></td>
<td>Birth control pills</td>
<td>Other barrier methods</td>
</tr>
</tbody>
</table>
Long acting reversible contraceptives

• IUDS
• Implants
Intrauterine devices

- First line contraceptive, even in nulliparous women
- Risk of PID and sequelae not due to IUD specifically
• Safe, effective, long acting
• Inserted through cervix
• Rapid return of fertility
• Use in adolescents increasing
# Intrauterine devices

<table>
<thead>
<tr>
<th><strong>Skyla</strong></th>
<th><strong>Mirena</strong></th>
<th><strong>ParaGard</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Works by releasing a low amount of hormone (14 micrograms per day)</td>
<td>Works by releasing a low amount of hormone (20 micrograms per day)</td>
<td>Works because it has a small amount of copper in it—no hormones</td>
</tr>
<tr>
<td>Plastic frame of the IUD is 1.1 by 1.2 inches</td>
<td>Plastic frame of the IUD is 1.3 inches square</td>
<td>Plastic frame of the IUD is 1.3 by 1.4 inches</td>
</tr>
<tr>
<td>Tube used to place the IUD is 0.15 inches wide</td>
<td>Tube used to place the IUD is 0.19 inches wide</td>
<td>Tube used to place the IUD is 0.16 inches wide</td>
</tr>
<tr>
<td>Can be used for up to 3 years</td>
<td>Can be used for up to 5 years</td>
<td>Can be used for up to 12 years</td>
</tr>
</tbody>
</table>

**Health professionals committed to the reproductive needs of children and adolescents**
<table>
<thead>
<tr>
<th></th>
<th>Mirena</th>
<th>ParaGard</th>
<th>Skyla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>5+ years</td>
<td>10 years</td>
<td>3 years</td>
</tr>
<tr>
<td>Understanding periods</td>
<td>• Spotting</td>
<td>• Spotting</td>
<td>• Spotting</td>
</tr>
<tr>
<td></td>
<td>• Irregularities</td>
<td>• Irregularities</td>
<td>• Irregularities</td>
</tr>
<tr>
<td></td>
<td>• Amenorrhea (no period)</td>
<td>• Amenorrhea (no period)</td>
<td>• Amenorrhea (no period)</td>
</tr>
<tr>
<td>Uterus</td>
<td>Releases a progestin hormone called levonorgestrel</td>
<td>Does not contain hormones, yet releases a small amount of copper</td>
<td>Releases a progestin hormone called levonorgestrel</td>
</tr>
</tbody>
</table>

Health professionals committed to the reproductive needs of children and adolescents
Mirena (Levonorgesterol-IUS) vs. Paraguard vs. Skyla (Levonorgesterol-IUS)
Implanon vs. Nexplanon

• Contains etonogestrel (progestin only)
• 3 years
• Cost is $300-600
• Mechanism inhibits ovulation
• May cause irregular bleeding/amenorrhea
Nexplanon
Teaching Tools for Pediatric and Adolescent Gynecology In Your Educational Programs: Break Out Session

Case Based Learning & Visual Diagnosis Tools

Hina J. Talib, MD

March 19th, 2015

North American Society for Pediatric and Adolescent Gynecology – Resident Education Committee
Tools

• CASE BASED LEARNING
  – PAG WEB ED (1 screen shot example)
  – NASPAG CD ROM Cases
  – ASRM Teaching Modules (Sc

• VISUAL DIAGNOSIS
  – NASPAG PEDIGYN SLIDE SET (DROP BOX)
PAG WebED

Log in to your account

[Input fields for username and password]

Login

Sign up  Reset password  Re-send confirmation

The development of this program was supported by funding from a Medical Education Endowment Grant from the Association of Professors of Gynecology and Obstetrics.

Access granted per NASPAG
Case-based Learning: PAG WEB ED

- 20 clinical cases, and growing
- Accessible from Smartphone's and tablets
- Formerly run by Association of Professors of Gynecology and Obstetrics (APGO)
CASE 1

A 13-year-old, non-sexually active female presents to the ER with severe pain. She reports that her first menses began 3 months ago. Last week, during her second cycle she noted right-sided abdominal pain. The pain was severe by day 3 of her cycle and continued to worsen until her cycle completely stopped on day 6, at which time the pain gradually improved, but did not go away.

Over the last couple of days, she had noted more difficulty in attempting to empty her bladder and ultimately today she was unable to urinate, so she was taken to her local ER. There she was noted to have urinary retention that was relieved by foley catheterization. A CT scan in the ER revealed a single left kidney and a pelvic mass, but the uterus and ovaries were not well visualized. She was referred to the Children's Hospital for further evaluation.

You are called to see the patient in the Children's Hospital ER. She currently complains of mild right lower quadrant pain that is better since the catheterization. She notes her abdominal pain is still present and is intermittent and crampy in nature. She is having normal bowel movements, no nausea, vomiting, fevers or chills. She completed her menses 2 days ago.
PAST MEDICAL HISTORY: None.
PAST SURGICAL HISTORY: None.
ALLERGIES: Amoxicillin—hives.
MEDICINES: None.
SOCIAL HISTORY: She has 4 other siblings. She has an older sister and 2 younger sisters and a younger brother. Lives with her mom and dad. She plays soccer.
FAMILY HISTORY: No significant GYN problems.
GYN HISTORY: Menarche 3 months ago with normal pubarche. Denies coitarche. She is not yet using tampons.

PHYSICAL EXAM
VITAL SIGNS: Temperature=98.5°F, Pulse=98, Respiratory Rate=22, Blood pressure=138/86
Weight= 54 kg Height=5'0" BMI 21
GENERAL: Alert and oriented, anxious appearing.
CVS: Regular rate and rhythm.
LUNGS: Clear to auscultation bilaterally.
BREASTS: Sexual Maturity Rating stage 4, left breast one cup size larger than the right, no masses, nodes, discharge.
ABDOMEN: Positive bowel sounds, soft, nontender, nondistended. Discomfort to deep palpation bilateral lower quadrants. No rebound, guarding.
EXTREMITIES: No clubbing, cyanosis or edema.
MUSCULOSKELATAL: No scoliosis.
PELVIC: Sexual Maturity Rating stage 4, normal external genitalia. External vagina appears patent. No internal exam performed.
RECTAL: Palpable bulge approximately 3 cm above the perineum toward the right side.

LABS PERFORMED IN THE ER
CLICK HERE for Normal Laboratory Reference Ranges
(After you have reviewed, press the back arrow to return to the case)

Hemoglobin=12.6 g/dL
Hematocrit=38%
Platelets=363
Platelets=363
Na=141 mEq/L
K=3.8 mEq/L
BUN =12mg/dL
Creatinine=0.6 mg/dL
Urine pregnancy test=negative
AFP =2.4 ng/ml
LDH=180 IU/L
HCG=2

QUESTION 1 of 4

What additional test would you plan to order?

CHOOSE AN ANSWER

* Answers
  - MRI pelvis
  - VCG
  - Liver function tests
  - Vaginal culture
What additional test would you plan to order?

**Correct!**
MRI is the gold standard imaging study for suspected reproductive tract anomalies.

- MRI pelvis
- VCUG
- Liver function tests
- Vaginal culture

Submit

Next
You order the imaging study below. What is your diagnosis?

* Answers

- Ovarian tumor
- Imperforate hymen
- Uterine didelphys with obstructed hemivagina
- Tubo ovarian abscess

Submit
Correct!
MRI is the gold standard imaging study for suspected reproductive tract anomalies and in this instance, clearly demonstrates 2 uteri, 2 cervices and one side with an obstructed hemivagina. Both hematometra and hematocolpos is demonstrated on the obstructed side.

* Answers

- Ovarian tumor
- Imperforate hymen
- Uterine didelphys w/ obstructed hemivagina
- Tubo ovarian abscess
QUESTION 3 of 4

What is the best treatment plan given this clinical scenario?

CHOOSE AN ANSWER

* Answers

- Start antibiotics
- Drain the fluid collection with an ultrasounds guided needle
- Resect the obstructed hemivaginal septum
- Place ureteral stents

Submit
What is the best treatment plan given this clinical scenario?

**Correct:**
Resection of the septum is the most appropriate way to relieve this obstruction.

- **Answers**
  - Start antibiotics
  - Drain the fluid collection with an ultrasound guided needle
  - **Resect the obstructed hemivaginal septum**
  - Place ureteral stents

Submit

Next
QUESTION 4 of 4

For further preventative care between the age of 21-30, what is unique about her needs?

CHOOSE AN ANSWER

* Answers

- She will need to have additional HPV testing
- She will need to have 2 pap smears
- She will need repeat exams under anesthesia
- She will need a kidney transplant

Submit
For further preventative care between the age of 21-30, what is unique about her needs?

**Correct!**
Following resection of the septum the cervix on the obstructed side will also be exposed and therefore at age 21 years, the patient will need evaluation of both cervixes.

*Answers*

- She will need to have additional HPV testing
- She will need to have 2 pap smears
- She will need repeat exams under anesthesia
- She will need a kidney transplant

Submit  
Next
Patients with uterine didelphys present with a complete or partial vaginal septum in 75% of cases. In the case of an obstructed hemivagina, ipsilateral renal agenesis is common. This syndrome is also known as Herlyn-Werner Wunderlich syndrome. Girls with a uterine didelphys and obstructed hemivagina typically have regular periods, as they have one side with a nonobstructed vagina, normal cervix, and normal hemiuterus. They may experience progressively worsening dysmenorrhea with menses as the obstructed side enlarges. On physical exam, a mass is felt to bulge from the lateral wall of the vagina toward the midline. Imaging is helpful in making the diagnosis.

MRI is the gold standard for evaluation of reproductive tract abnormalities. In this case, the wall of the obstructed hemivagina needs to be surgically resected to relieve the obstruction and allow for menses to occur from both hemiuteri. After resection, the patient has normal flow from both hemiuteri, although the vaginas are conjoined as a result of septum resection. There is no alteration to sexual function as a normal caliber and length vagina are typical.

Long term, she will need 2 pap smears, as she has 2 cervicalis, once 21 years of age. Though most women with a uterine didelphys have normal fertility, there is an increased risk of miscarriage, preterm labor, and labor complications with this uterine abnormality. It is important to counsel patients on these potential complications.
KEY POINTS

1. In the situation of progressively painful menses, consider ordering additional imaging to rule out an obstructive component.
2. Mullerian anomalies do not exclude patients from continuing routine gynecologic care later in life.

REFERENCES

Case-based learning: CD ROM

- NASPAG/ACOG Clinical Cases in PAG
- CD-ROM
- Updated version in the Works
- For purchase via NASPAG
NASPAG CD-ROM

- 12 Topics with 34 cases
  - Congenital Anomalies
    ◦ Pediatric Gynecology
    ◦ Puberty
    ◦ Dysfunctional Uterine Bleeding
    ◦ Sexually transmitted infections
    ◦ Endocrine disorders
    ◦ Ovarian masses
    ◦ Breast concerns
    ◦ Contraception
    ◦ Patients with disabilities
    ◦ Fertility Preservation in cancer patients

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Case-based Learning: ASRM Modules

• ASRM MODULES
  ◦ [http://www.asrm.org/eLearn/](http://www.asrm.org/eLearn/)

• Modules specifically related to PAG
  ◦ Pediatric and Adolescent Gynecology
  ◦ Precocious Puberty
  ◦ Adolescent Gynecology
  ◦ Delayed Puberty
  ◦ Amenorrhea
Resources:

ASRM eLearn

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Many courses now iPad compatible!

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Please select the desired type of online education:

1. Click ☐ or ☐ collapse or expand a group or click title for more information or to register.

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PC Keyboard Shortcuts
- Ctrl + F

Mac Keyboard Shortcuts
- Command + F

Residents: Click here for FREE access to ASRM Practice and Ethics Committee eLearn modules

☐ Resident Education
- FREE DEMO - Evaluation of the Climacteric (RESDEMO)
  - Credit Available: No credits – demonstration only
  - Cost: No charge
  - Release And Expiration Dates: October 1, 2012 - September 30, 2015
  - Estimated Time To Complete Activity: 10 minutes:

- Recurrent Pregnancy Loss (RES012)
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Estimated Time To Complete Activity: 0.75 hours
• Pediatric Gynecology (RES000)
  iPad-compatible Course
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Release And Expiration Dates: November 1, 2012 - October 31, 2015
  - Estimated Time To Complete Activity: 1 hour

• Precocious Puberty (RES001)
  iPad-compatible Course
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Release And Expiration Dates: October 1, 2012 - September 30, 2015
  - Estimated Time To Complete Activity: 1 hour

• Developmental Disorders of the Urogenital Tract (RES002)
  iPad-compatible Course
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Release And Expiration Dates: October 1, 2012 - September 30, 2015
  - Estimated Time To Complete Activity: 1 hour

• Adolescent Gynecology (RES003)
  iPad-compatible Course
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Release And Expiration Dates: December 1, 2012 - November 30, 2015
  - Estimated Time To Complete Activity: 1 hour

• Delayed Puberty (RES004)
  iPad-compatible Course
  - Credit Available: CREOG Certificate
  - Cost: There is no charge for Resident Physicians in CREOG programs
  - Release And Expiration Dates: June 1, 2013 - May 31, 2016
  - Estimated Time To Complete Activity: 1 hour

children and adolescents
Course Information

ACTIVITY NUMBER: RES004

ACTIVITY TITLE: Delayed Puberty

CREDIT DESIGNATION STATEMENT

The American Society for Reproductive Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

This educational activity is designed to address the Unit 5 Reproductive Endocrinology educational objectives from the Council on Resident Education in Obstetrics and Gynecology (CREOG).


ESTIMATED TIME TO COMPLETE ACTIVITY: 1 hour

PROGRAM DESCRIPTION/IDENTIFICATION OF NEED

The diagnosis of true delayed puberty is often complicated by the wide variation in normal sexual development and its relative rarity. Etiologies of delayed puberty include primary hypergonadotropic
Prefix: Dr.
First Name: Patricia
Middle Name: Huguelet
Last Name: 
Degree:

- B.A.
- B.B.A.
- B.ch.
- B.S.
- B.S.N.
- B.S.W.
- B.Sc.
- Ch.B.
- D.D.S.
- D.N.P.
- D.O.
- D.Phil.
- D.Sc.
- D.V.M.
- E.L.D.
- Ed.D.
- H.C.L.D.
- J.D.
- L.C.S.W.
- LL.B
- M.A.
- M.B.
- M.B.A.
- M.B.B.Ch.
- M.B.B.S.
- M.D.
- M.Ed.
- M.H.A.
- M.L.T.
- M.P.H.
- M.Phil.
- M.S.
- M.S.N.
- M.S.W.
- M.Sc.
- M.T.
- M.T.O.M.
- N.P.
- P.A.
- Ph.D.
- Pharm.D.
- Psy.D.
- R.D.
- R.N.
- R.N.C.

Address 1: 12631 East 17th Avenue, Box B-198-2
Address 2:
Address 3:
City: Denver
State: CO
Zip: 80045
Country: USA
Email: patricia.huguelet@ucdenver.edu
Professional Status: Resident

Please enter your CREOG program number to continue.: 

Continue Registration
Important Browser Information: Internet Explorer users: click “Go” ---- Firefox PC users: right click on “Go” and open in new window ---- Mac users: only use Firefox — command/click on “Go” and open in new window. ----For complete instructions go to http://www.asrm.org/eLearn/compatible-browsers/

### My Learning

<table>
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<th>Type</th>
<th>Title</th>
<th>Course Link</th>
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<td>Tutorial</td>
<td>ASRM eLearning Instructions</td>
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<td>Pediatric Gynecology</td>
<td>Go</td>
<td>10/31/2015</td>
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<td>Online</td>
<td>Precocious Puberty</td>
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<td>09/30/2015</td>
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Pediatric Gynecology

AMERICAN SOCIETY FOR REPRODUCTIVE MEDICINE

RESIDENT EDUCATION
Exam : Take Pre Exam

Please read the following information to familiarize yourself with the structure and controls of this exam.

Exam is currently available

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<td>10</td>
<td>Unlimited minutes</td>
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Command buttons, located at the bottom of each exam page, allow you to control your pace throughout the exam. They include:

- **Quit**: Exit the exam without saving your work. This will register as one (1) exam attempt.
- **Save**: Save your work at any time during the exam and continue taking the exam. Note: Be sure to hit Save if you will be away from your desk for any length of time. If your session "times out" due to inactivity, unsaved answers will not be kept.
- **Bookmark**: Save your work and exit the exam. You can return to the exam at a later time and continue where you left off.
- **Back**: Return to a previous page within the exam to review and/or change answers to an earlier group of questions.
- **Next**: Proceed forward to answer the next group of questions within the exam.
- **Submit**: Finish the exam and submit it for evaluation.

When you are ready to begin, click **Continue**.
Learning Objectives

At the conclusion of this presentation, participants should be able to:

- Describe gynecologic problems experienced by pediatric patients.
- Elicit a pertinent history and list the components of a focused physical examination appropriate for the patient's age.
- Identify and/or interpret selected tests to diagnose a specific gynecologic disorder in a pediatric patient.
- Determine the medical and surgical treatment of pediatric gynecologic disorders.
- Describe the indications for referral to a subspecialist.
- Counsel the patient and her family about long-term prognosis and the effect of specific conditions on reproduction.
- List the components of a forensic examination (including appropriate laboratory tests) to evaluate sexual abuse.
5.II.A.1: Pediatric Gynecology Problems

- Vulvovaginitis
- Vulvar lesions
- Prepubertal vaginal bleeding
- Trauma
- Foreign body in the vagina
- Sexual abuse
- Abnormal pubertal development
- Ambiguous genitalia
5.II.A.1: Vulvovaginitis

- Inflammation of vulvar and vaginal tissues
  - Most common pediatric gynecologic complaint
  - 50% of outpatient visits
5.II.A.1: Vulvovaginitis

- **Risk factors**
  - Lack natural anatomic barriers
    - No pubic hair, no labial fat pads, close to rectum
  - Poor hygiene/irritants
  - Hormonal
    - Thin, atrophic vagina, ↑pH (6.5-7.5)
  - Other
    - Obesity
    - Diabetes mellitus
    - Other vulvar dermatoses
    - Immune status
5.II.A.1: Vulvovaginitis

- Differentiate from normal physiologic states
  - Leukorrhea of newborn (desquamation of vaginal and cervical epithelium) - gone by ~2 weeks
  - Premenarcheal after thelarche
  - Mature vs. immature squamous cells

- Signs and symptoms
  - Discharge (50%)
  - Dysuria
  - Pruritus
  - Pain
  - Genital irritation
  - Erythema (medial labia majora/vagina)
  - Excoriations
5.II.A.1: Vulvovaginitis

- Etiologies
  - Nonspecific (70%) mixed bacterial (often enteric)
  - Enteric: *Shigella*
  - Respiratory: *Haemophilus influenzae*
  - Skin: staphylococcal, streptococcal (beta-hemolytic)
  - *Candida*: vaginitis rare <2 years old
  - Diaper rash = *Candida albicans* vs. chemical dermatitis
  - Pinworms = *Enterobius vermicularis* (tape test)
  - Sexually transmitted infections (STI) (+wet mount)
    - *Neisseria gonorrhoeae, Chlamydia trachomatis*
    - Suspect sexual abuse
5.II.A.1: Vulvovaginitis

- Treatment
  - Education
  - Hygiene measures
  - Avoid irritants
  - Treat any specific pathogens
  - For severe inflammation
    - Topical estrogen cream
    - Topical steroid cream
5.II.A.1: Vulvar Lesions

- Molluscum contagiosum
  - Smooth papules, central cheesy plug, “umbilicated”
  - Self-limited
  - Sexual abuse rare cause
  - Treatment
    - None
    - Cryosurgery
    - Excision
    - Vesicants
      - Cantharidin 0.7%
      - Podophyllin 5%

5.II.A.1: Vulvar Lesions

- Condylomata acuminata = genital warts
  - Human papilloma virus (HPV)
  - Types 6 and 11 = 90% genital warts
- Perinatal transmission
  - If onset < 2-3 years old
- Suspect sexual abuse
  - If onset > 2-3 years old

5.II.A.1: Vulvar Lesions

- Condylomata acuminata - Treatment
  - Active nonintervention (75% spontaneous resolution 1 year)
  - Imiquimod cream
  - Trichloracetic acid, podophyllin, podophyllotoxin
  - Cryotherapy, cautery, laser vaporization
- No treatment FDA-approved for pediatric use
Case Presentation

- 5-year-old African-American female
- Kindergartener, lives with her parents and 8-year-old brother
- Blood-stained vaginal discharge for 3 weeks
- Associated with genital irritation
Exam: Take Post Exam

Question 1

Questions 1-2: A 26-year-old G1P1 woman comes to your office at almost 2 weeks postpartum after a full-term cesarean section for a baby girl complicated by severe preeclampsia. Upon finishing your evaluation of the patient, she tells you that she has noted blood in the baby’s diapers and also when she wipers her daughter’s vagina during diaper changes. She states that the amount is minimal and has been occurring since shortly after birth. You ask her if her daughter has any breast development and she denies this. Examination of the baby girl reveals Tanner stage 1 breasts and pubic hair.

What do you tell this woman about her 2-week-old daughter with vaginal bleeding?

- Recommend hormone testing for follicle stimulating hormone (FSH), luteinizing hormone (LH) and estradiol.
- Schedule the baby for a visit in 3 months to reevaluate.
- Schedule the baby for a vaginoscopy.
- Tell the mother to report if this continues after 1 more week.
- Tell the mother she should ignore any further bleeding.
Exam: Take Post Exam

Question 2

What is the most likely etiology of this 2-week-old girl's vaginal bleeding?

- Foreign body
- Sarcoma botryoides
- Sexual abuse
- True precocious puberty
- Withdrawal from maternal estrogen
Exam: Take Post Exam

Question 3

A 5-year-old girl is brought to your office by her mother with complaints of vaginal itching for the past 2 weeks. The mother and daughter report some yellowish discharge on the girl’s underwear. The mother states that her daughter wants to be a “big girl,” so she has been giving her more independence with her bathroom hygiene.

You would like to examine this patient and do the following:

- Ask her mother to leave the room.
- Ask your nurse to bring you the pediatric speculum.
- Instruct the girl in how to get in the supine frog-legged position.
- Pull out the footholds posteriorly for dorsal lithotomy positioning.
- Tell the girl to please put away the handheld electronic game she has been playing with during the visit.
Question 4

Upon examination, you notice that the labia minora are not visible posteriorly, and you diagnose labial agglutination. The mother is concerned about what this means for her daughter’s future. You tell her the following:

- The condition will most likely spontaneously resolve with the start of puberty.
- Estrogen cream treatment will cause precocious puberty.
- She will likely need vaginal dilators to gently stretch open the introitus in order to have normal reproductive function.
- The best chance at a cure is surgical separation.
- There is no need to help with her daughter’s bathroom hygiene practices.
Exam: Take Post Exam

Question 5

Questions 5-7: A 7-year-old girl presents with complaints of orange-yellow vaginal discharge for the past few weeks. She also complains of significant vaginal itching. She denies any dysuria or diarrhea. On examination you notice some discharge on her underwear and excoriation around her perineum and vulva. She has Tanner stage 1 breasts and pubic hair.

You recommend the following treatment:

- Antibiotics after vaginal cultures come back
- Broad-spectrum antibiotics
- Antifungal cream externally
- Diflucan orally
- Hygiene measures
Visual Diagnosis: NASPAG PEDIGYN SLIDE SET

- CD and binder with picture legends
- Now on DropBox
- Images may be incorporated into slides or other educational activities
Thank you!

• Break-out Groups
  – Curriculum
  – Electronic Tools
  – LARC Models
• For a list of resources presented today, please leave us your email address
Acknowledgements

We thank Caroline Barangan, MD and Kanani Titchen, MD for their assistance with the break out groups

North American Society for Pediatric and Adolescent Gynecology – Resident Education Committee
Health professionals committed to the reproductive needs of children and adolescents