VAGINAL BLEEDING IN PREMENARCHEAL GIRLS

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VAGINAL BLEEDING IN CHILDREN

- How common is the problem?
- Why are we worried when vaginal bleeding occur in young girls?
- Could it be a presentation of serious underlying causes?
- What are the causes of VBPMG?
- How to evaluate & manage these cases?
Aribarg A, Phupong V. Thailand

Girls < 10 years 1981 - 2000
55 girls with vaginal bleeding

41 / 55 girls (74.5%) ⇒ local lesion of the genital tract.

Genital tumors ⇒ 4 girls
- hemangioma of the vulva
- sarcoma botryoides of the vagina
- functional ovarian cyst
- granulosa cell tumor of the ovary

14 girls (25.5%) ⇒ systemic hormonal etiology.

1 girl ⇒ precocious puberty with hypothyroidism

6 girls ⇒ constitutional causes
Genital bleeding in premenarcheal children


62 girls < 10 Y ⇒ genital bleeding 1984-1993

46 / 62 pt (74%) ⇒ local lesion of the vagina:
-28 ⇒ vulvovaginitis -6 ⇒ urethral prolapse
-6 ⇒ trauma -3 ⇒ foreign bodies
-3 ⇒ vaginal tumors ⇒ 2 sarcoma botryoides
⇒ 1 endodermal sinus tr

16 pt (26%) ⇒ precocious puberty
-6 pt ⇒ - prec puberty 2ry to a hormonally active ovarian tr
- 5 had breast development
-3 pt ⇒ idiopathic prec puberty non had secondary sexual development
-7 pt ⇒ no specific etiology
The aetiology of vaginal bleeding in children. A 20-year review

Br J Obstet Gynaecol. 1989 Apr
Hill NC, Oppenheimer LW, Morton KE., London.

52 patients with vaginal bleeding < 10 years of age
28 (54%) ⇒ a local lesion
- 11 (21%) ⇒ malignant genital tumours.
11 (21%) ⇒ precocious puberty
13 (25%) ⇒ no cause could be found
Genital hemorrhage in girls before puberty
Apropos of 33 cases

Sem Hop. 1984 Apr

Vaginal bleeding in young girls is rare.
33 cases observed during a 21 year period

Vaginal foreign bodies (10 cases, 30%)
Vaginitis (10 cases, 30%)

3 cases of benign vulvar tumors (9%)
3 cases of malignant vaginal tumors (9%)

3 cases \(\Rightarrow\) idiopathic (premature menarche)

Local causes 78%
CAUSES OF VAGINAL BLEEDING IN CHILDREN

Vulvar & vaginal disorders
- Vulvovaginitis
- Urethral prolapse
- Foreign bodies
- Lichen sclerosus

Trauma
- Accidental injuries
- Sexual abuse

Genital tumors
- Adenocarcinoma of the vagina
- Hemangioma
- Ovarian cysts
- Sarcoma botryoides

Endometrial shedding
- Precocious puberty

Rare causes
Vulvovaginitis is the most common gynecologic problem in prepubertal girls. Specific causative organisms are isolated in 20-50% of cases. Gp A β-hem Strept (GAHS) accounts for 18% of swabs from girls with Vulvovaginitis. GAHS causes vaginal bleeding and distinctive fiery red vulvitis. The history suggests URTI. Spread by oral-digital route to the genital area (autoinoculation).
VULVOVAGINITIS IN PREPUBERTAL GIRLS

A- β-hemolytic streptococci

Archives of Disease in Childhood 2003;88:324-326
T Stricker, F Navratil and F H Sennhauser

- Retrospective study ⇒ 80 girls, 2–12 Y, with V.V.
- Pathogenic bacteria were isolated in 36% of cases
- 59% of these cases gp A β-haem strept was isolated
<table>
<thead>
<tr>
<th>Features</th>
<th>No.</th>
<th>(%)</th>
</tr>
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<tbody>
<tr>
<td>Vaginal discharge</td>
<td>74</td>
<td>(92%)</td>
</tr>
<tr>
<td>Itching</td>
<td>36</td>
<td>(45%)</td>
</tr>
<tr>
<td>Redness</td>
<td>24</td>
<td>(30%)</td>
</tr>
<tr>
<td>Dysuria</td>
<td>15</td>
<td>(19%)</td>
</tr>
<tr>
<td>Pain</td>
<td>6</td>
<td>(8%)</td>
</tr>
<tr>
<td>Bleeding</td>
<td>4</td>
<td>(5%)</td>
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**B-Shigella**

- Spread from the GIT to the genital region (4-24%)
- Diarrhea is absent in most of the pt
- Mucopurulent, malodorous, bloody disch (47%)
Chronic vulvovaginitis caused by antibiotic resistant *Shigella flexneri* in a prepubertal child

- **Pediatr Infect Dis J** 2002 Feb
  Baiulescu M, Hannon PR, Marcinak JF, Janda WM, Schreckenberger PC

- A 7.5-Y girl Dx with *Shigella flexneri* VV

- The child had intermittent vaginal bleeding, dysuria and foul smelling vaginal discharge for 3-years

- Initial Rx with successive courses of antibiotic using Ampicillin, Augumentin, cefixime and Bactrim failed

- Infection finally resolved by a 14-day course of Ciprofloxacin.
2. URETHRAL PROLAPSE

- Protrusion of the urethral mucosa through the meatus forming a hemorrhagic donut shaped mass.

- Average age of onset 5 years/ common in black girls

- Usually occurs following an episode of ↑ abdominal pressure

- Management:
  1. Small & urination not obstructed ⇒ Sitz bath & topical estrogen cream + Ab if infection occurs
  2. Recurrence ⇒ 67%
  3. Large, necrotic or urination is obstructed ⇒ surgical resection
Urethral prolapse: an often misdiagnosed cause of urogenital bleeding in girls

Pediatr Emerg Care. 1995 Aug
Anveden-Hertzberg L, Gauderer MW, Elder JS. Cleveland, Ohio, USA.

Urethral prolapse is an uncommon disorder in girls

24 pt during an 11-Y span

Mean age 4.9 Y

The initial diagnosis was correct in only five girls (21%)

20/24 children presented with urogenital bleeding

16 girls operative correction, with one recurrence.

8 girls were treated nonoperatively

⇒ 5 no improvement ⇒ surgical repair.
3-FOREIGN BODIES

- Purulent, foul, bloody discharge (50%)
- Does not respond to Ab
- Commonly toilet paper (79%)
- Vaginal irrigation or EUA Vaginoscopy for removal
A destructive inflammatory condition causing pruritis

Ivory colored plaques that bruise easily

Rx local steroids
In the neonate

Due to withdrawal of maternal hormones

Ceases within the first 7-10 days of life
The appearance of secondary sexual changes before 8 years of age or menarche before 10 years.

**TYPES**

- **a-Central PP**
  - CPP is physiologically normal pubertal development that occurs at an early age
  - GnRH dependent
  - Idiopathic 80-90%, CNS TR, CNS dysfunction
2-Precocious Puberty

b- Peripheral PP

⇒ GnRH independent

⇒ Due to inappropriate sex hormone secretion or exposure to exogenous sex steroids

⇒ Functioning ovarian tumors or ovarian cysts, Adrenal tumors, Congenital adrenal hyperplasia, chronic 1ry hypothyroidism, McCune-Albright syndrome
c-Isolated premature menarche
- Excessive sensitivity of the target tissue to low levels of sex steroids
- Spontaneous regression of ovarian cysts
- Hypothyroidism
- McCune Albright Syndrome

Rx of CPP ⇒ Rx the cause
GnRH analogues
A-Blunt trauma  eg. straddle injury

⇒ hematoma
- Managed conservatively with ice packs
- If it continues to expand ⇒ evacuation & ligation of bleeding vessels is indicated
**1-ACCIDENTAL INJURIES**

**B- Penetrating injury**

- Hymenal injury alone ⇒ usually there is no active bleeding ⇒ conservative management
- Active bleeding ⇒ indicates involvement of the vagina
  - ⇒ Exploration & repair under GA to exclude injury to the upper vagina
- If the vaginal vault is involved ⇒ Laparotomy
- Bladder & bowel integrity must be confirmed

**2-Sexual abuse**
Genitourinary trauma in the pediatric patient

Urology. 1993 Nov
McAleer IM, Kaplan GW, Scherz HC, Packer MG, Lynch FP, San Diego, California.

August 1984 to May 1990
Blunt trauma ⇒ 98 percent of the injuries
Renal injuries is the most common.
vaginal lacerations (8)
Genitourinary injury is common in children but rarely requires surgical management.
1-Vaginal tumors

- Sarcoma Botryoids
- Endodermal sinus tumor
SARCOMA BOTRYOIDES

- Most common in children 90% < 5Y
- An aggressive malignant tumor that can affect vagina, uterus, bladder or urethra
- Classically presents with a polypoid mass protruding through the vagina
- May present with vaginal bleeding, foul smelling discharge, abdominal pain

Rx ⇒ 1-Chemotherapy followed by
   2-Surgical resection preserving bladder & rectum
   3-Post-op radiotherapy

Survival ≥ 85%
2-Adenocarcinoma of the Cx & vagina

3-Hemangioma
Polyps of the uterine cervix during the hormonal resting phase in childhood

Geburtshilfe Frauenheilkd. 1977 Jan, Terruhn V.

- Polyps of the Cx in childhood is exceedingly rare
- 600 children had vaginoscopy ⇒ 9 children with Cx polyps
- All 9 ⇒ vaginal bleeding with malodorous discharge
- The polyp was removed and the base of the polyp was coagulated to avoid a recurrence
- Cx polyps in childhood will be found more often as the interest in pediatric gynaecology increases
Adult type granulosa cell tumor causing precocious pseudopuberty in a 6 year-old girl


Malignant ovarian tumors are responsible for 2-3% of all cases of precocious pseudopuberty (PPP) in girls.

The most common are the granulosa cell tumors.

As a cause of PP in young girls, adult type granulosa cell tumors (AGCT) are extremely rare.

A report of a 6 Y-old girl presenting with breast development and vaginal bleeding due to AGCT ovarian tumor.
ERARE CAUSES

A - 1ry Hypothyroidism

B - Congenital adrenal hyperplasia

C - Sliding Hernia
Primary hypothyroidism presenting as severe vaginal bleeding in a prepubertal girl.

J Pediatr Adolesc Gynecol. 1997 Feb
Gordon CM, Austin DJ, Radovick S, Laufer MR. Massachusetts, USA.

A case of acquired primary hypothyroidism in a prepubertal girl who presented with profound bradycardia, precocious puberty, and severe vaginal bleeding.

U/S ➔ markedly enlarged ovaries with numerous cysts.

Percutaneous cyst aspiration with L-thyroxine Rx ➔ appeared to halt vaginal bleeding, and led to resolution of cysts.
1-Complete History

- Duration
- Quantity
- Previous attacks
- Associated vaginal discharge or itching
- Urinary symptoms
- Medical illness
- Recent URTI
- Medications (AB., Hormonal preparations)
- Family hx
2- Physical Examination

- Requires an understanding of the techniques of the physical examination in PP girls
- Requires comprehension of the normal PP unestrogonized anatomy
- General exam \(\Rightarrow\) growth, signs of puberty, skin inspected for dermatological dis, pharynx & LN
- Abdominal palpation for masses
- Inspection of the underwear
- Genital exam \(\Rightarrow\) supine frog legged position or knee chest position
- P/R
3-Investigations
MSU
TFT
FSH, LH
E2 / Maturity index
U/S, MRI
Bone age
GnRH stimulation test
4-Vaginoscopy under GA
Use of the hysteroscope in ped gyn for Dx of vaginal hg and injury

Zentralbl Gynakol. 1993
Bacsko G. Debrecen. Germany

- The commonest indications for vaginoscopy in pediatric gynecology are vaginal bleeding, injury and suspected foreign body.

- The resectoscope with its small diameter, magnification and continuous fluid irrigation is ideal for endoscopic evaluation of vaginal disorders in babies and virgins.

- Biopsy and coagulation can be performed.
Continuous-flow vaginoscopy in children and adolescents

Golan A, Lurie S, Sagiv R, Glezerman M, Holon, Israel

22 children evaluated for

VV (15)
Vaginal trauma (4)
Bleeding (2)
Genital malformation (1)

Continuous-flow vaginoscopy with a 4-mm hysteroscope under GA
RESULTS

- No pathologic findings ------ 16
- A foreign body ------ 3
- Vaginal lacerations ------ 3
- No complications occurred
- The patients were discharged 4 to 24 hours after the procedure

CONCLUSION

- Continuous-flow vaginoscopy is quick and easy to perform in childr & adole. It should be used for the Dx of Gyn problems in this age gp
Vaginal bleeding in premenarchal girls has been shown to be relatively rare with only around 50 cases reported in reviews extending up to 20 years in different institutions.

It is an alarming clinical presentation & always a cause of concern for parents & medical staff.

Serious medical or sociological problems can underlay this symptom in young girls.

It requires careful medical evaluation to exclude serious underlying causes.
Local lesions of the genital tract are the most common cause of vaginal bleeding during the prepubertal period (74%).

Precocious puberty is the second most common cause of premenarcheal vaginal bleeding (25%).

Although rare, malignant neoplasms of the genital tract must be considered.

Vaginoscopy using the hystroscope is very helpful in the evaluation of young girls with vaginal bleeding.

Prompt and correct diagnosis will lead to successful management.