

# SAFA 2 : Examination and Injuries

Prof Anuruddhi Edirisinghe

MBBS,MD (For Med), DLM, DMJ(Lond), MFFLM

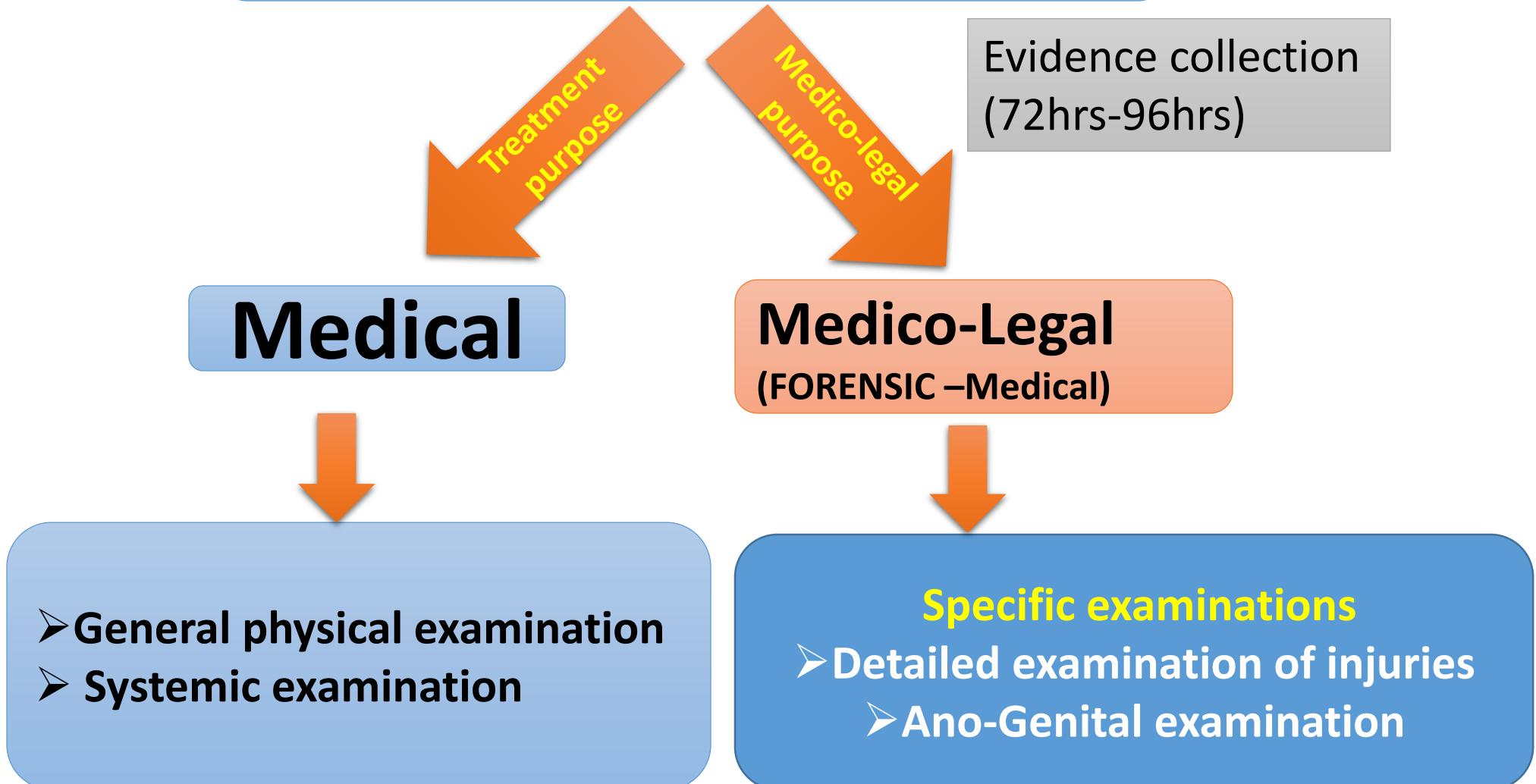


University of Kelaniya  
Faculty of Medicine



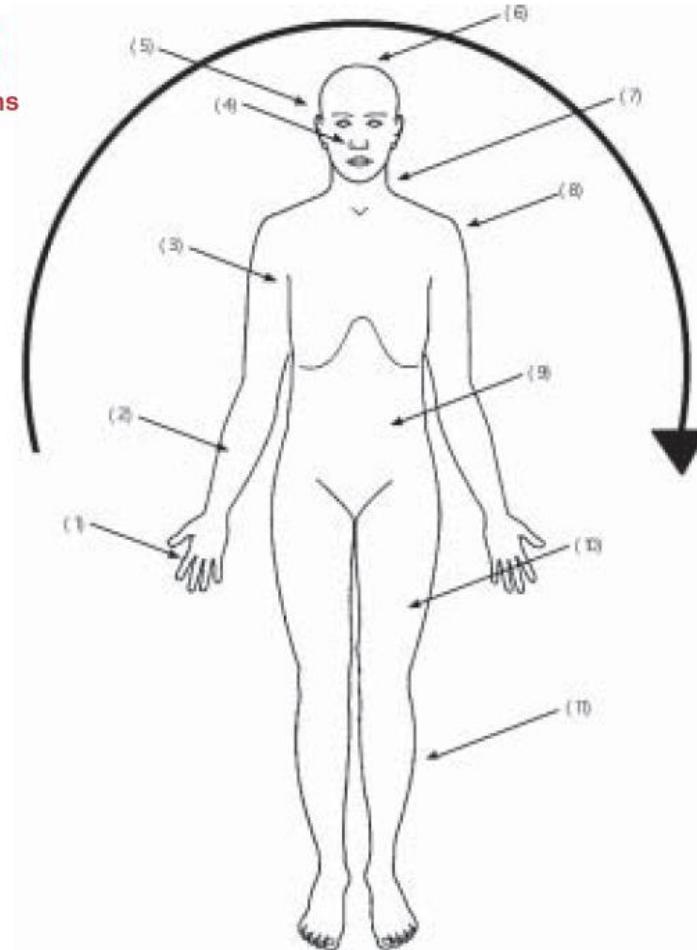
# Examination: injuries (body, genitalia and anus)

# Examinations



# The “head-to-toe” physical examination

Figure 1 **Inspection sites for a “top-to-toe” physical examination of victims of sexual violence**



observation of general appearance and demeanor

Starts with hands : reassurance

Vital signs: pulse, blood pressure, respiration temperature.



# Recording of injuries



Medium range photograph to show the injury



Close up



Close up with scale

- Use of diagrams
- Photographic recording
- Measurements
- Anatomical position
- Exact position
- Colour
- Direction
- Features



# Hands/forearms



# Injuries in upper arms



Fig. 89 Bite to arm.



Fig. 90 Fingertip bruising to arm.



# Injuries in face, ears, scalp



# Oral petechia after forced oral copulation.

Courtesy: Malinda Wheeler, RN,  
MN, CFNP



# Injuries in the neck



Kelaniya  
Medicine



Abrasion due to  
rough surface



Multiple injuries of blunt force



# Injuries in breasts and trunk



Source: Knoop KJ, Stack LB, Storrow AB: *Atlas of Emergency Medicine*,  
2nd Edition: <http://www.accessemergencymedicine.com>

Copyright © The McGraw-Hill Companies, Inc. All rights reserved.  
 Accessmedicine

# Injuries in the breast and trunk

# Abdomen



Examination for bruising, abrasions, lacerations and trace evidence.

Abdominal palpation should be performed to exclude any internal trauma or to detect pregnancy.



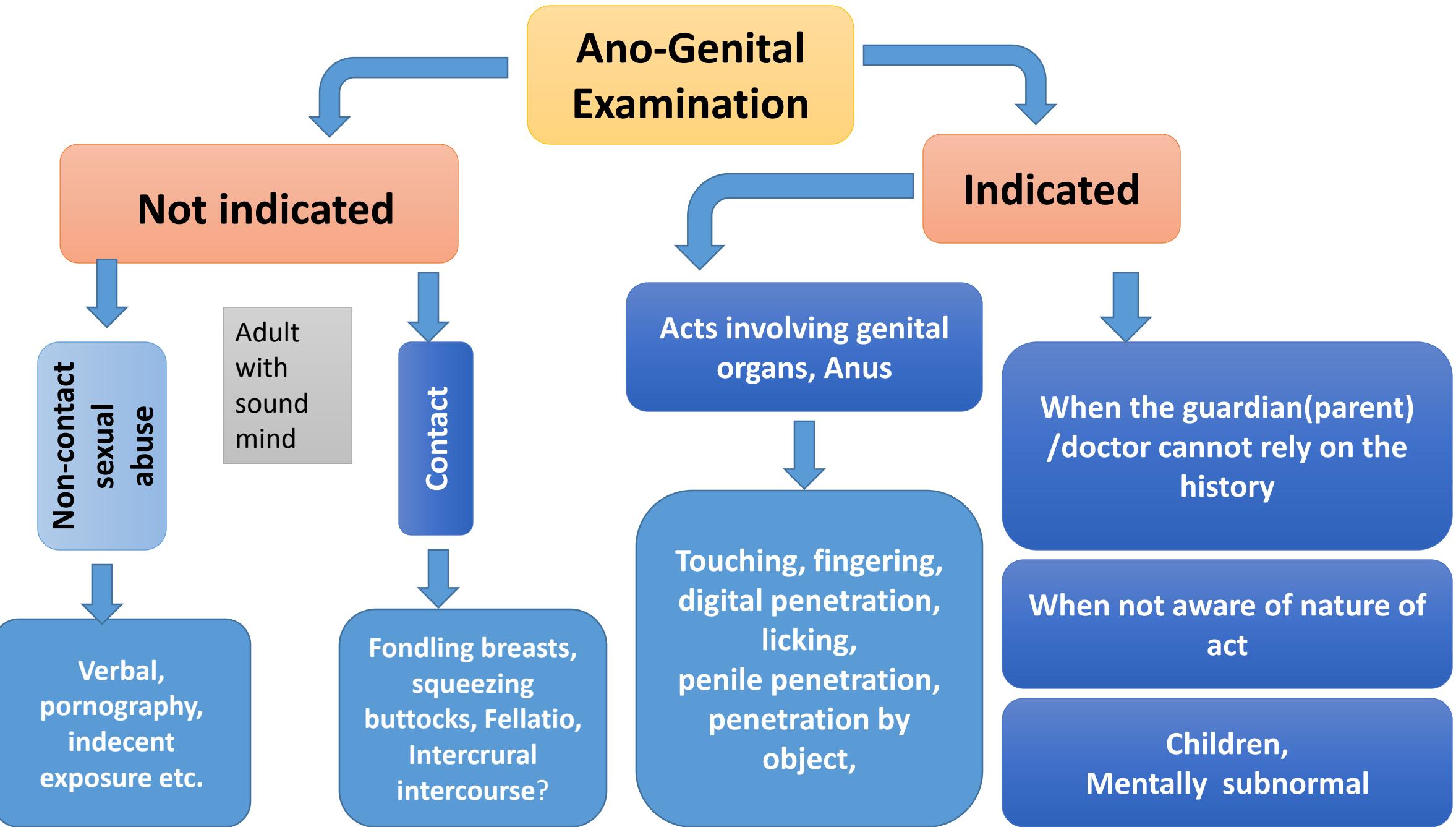
# Back & Legs



Kelaniya  
Medicine



Kelaniya  
Medicine



# The genito-anal examination



Lithotomic  
position

Other areas  
covered by  
clothing

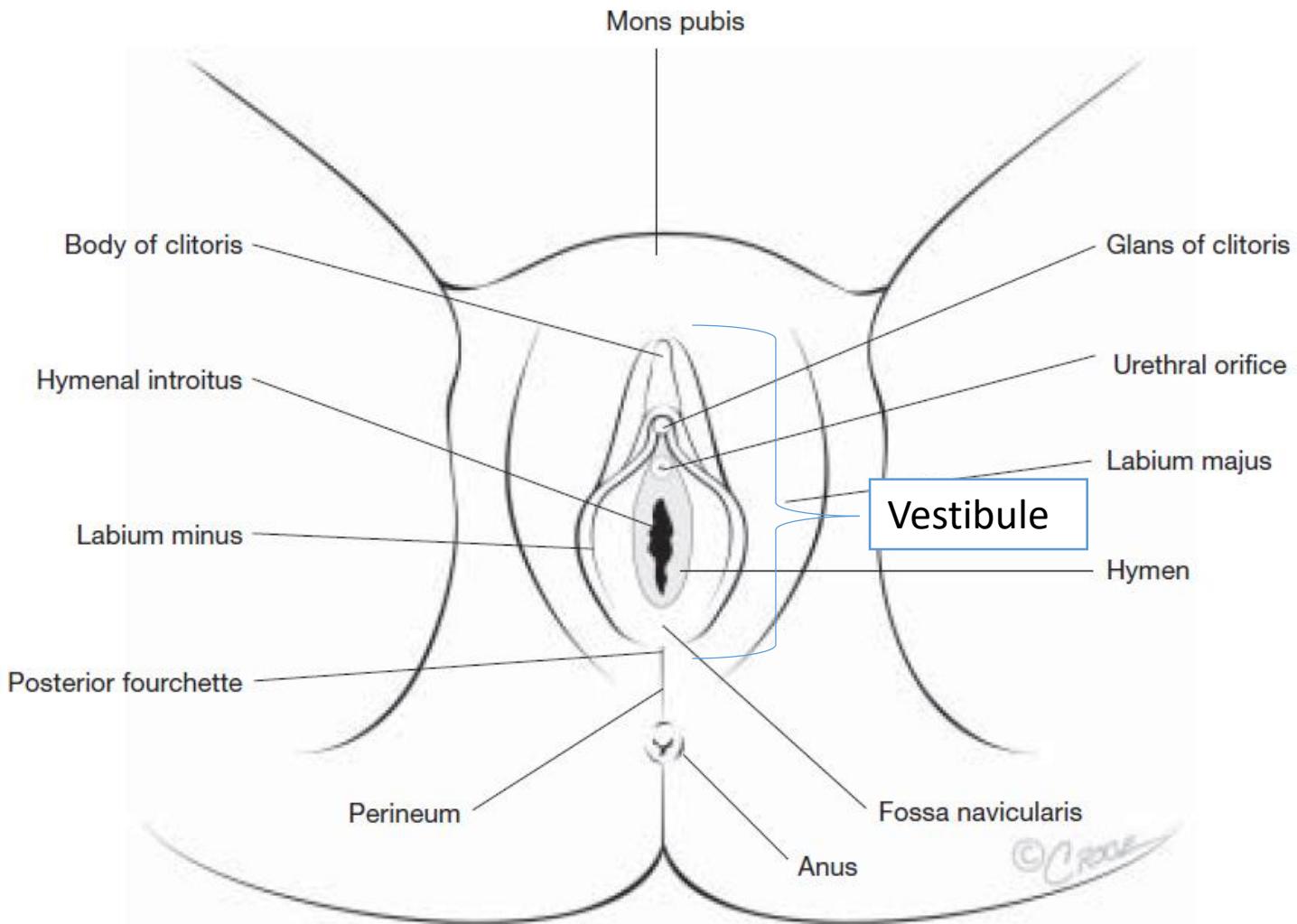
Lighting  
directed to  
vulva



analgesia/ anaesthesia may be  
required

# Anatomy of External genitalia: Female (vulva)

Figure 2 Anatomical sites on the external genitalia of a mature female

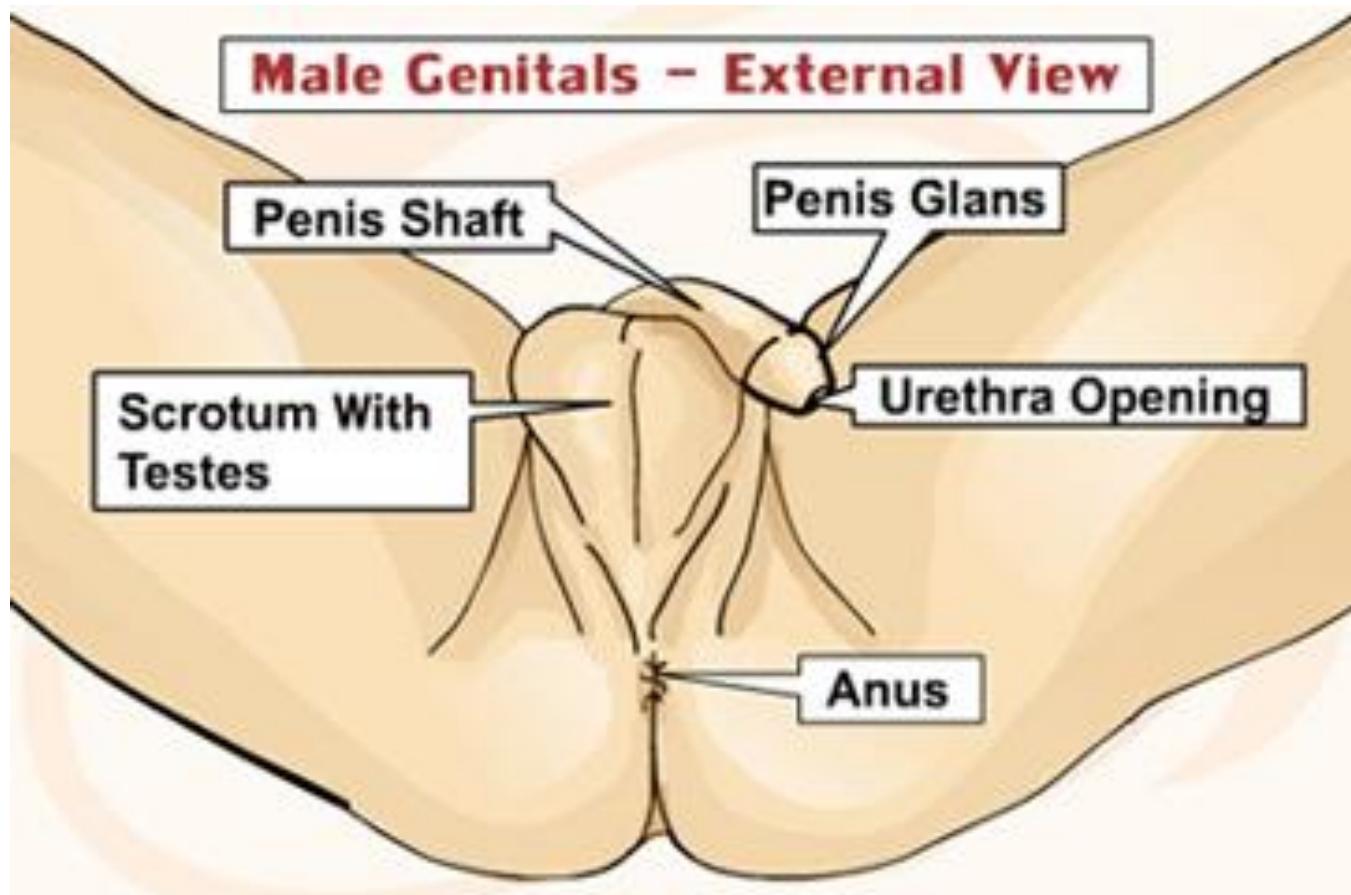


Bartholin glands : mucus secreting glands

Arterial supply of the vulva : pudendal branch of femoral  
Venous drainage: Pudendal veins to long saphenous veins  
Lymphatic drainage Superficial inguinal nodes

Nerve supply: Ilioinguinal nerve (L1), Perineal nerve (S3), Perennial branch of posterior cutaneous nerve of the thigh (S2)

# Anatomy of external genitalia : male



# Methods of examination

## Supine Frog Leg Position



Illustrations by Marcia Hartsuck



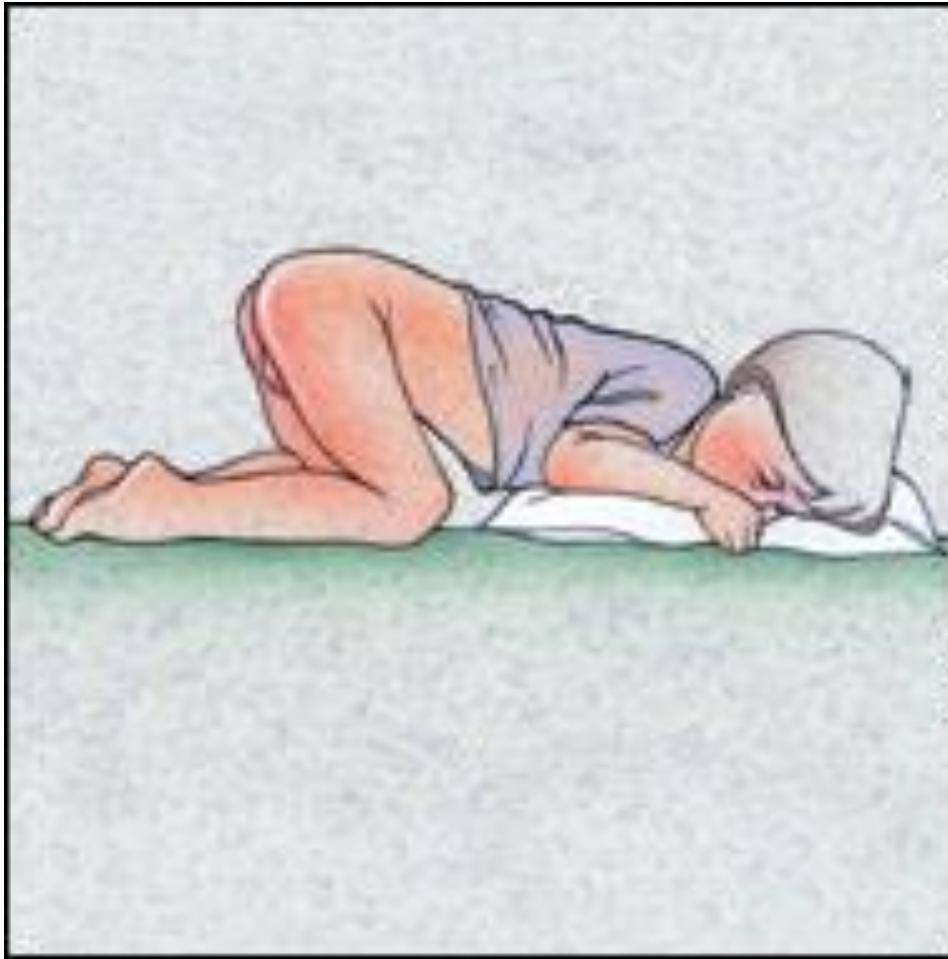
Frog-leg position



Frog -leg positin on lap



Illustrations by Marcia Hartsock



## Knee chest position



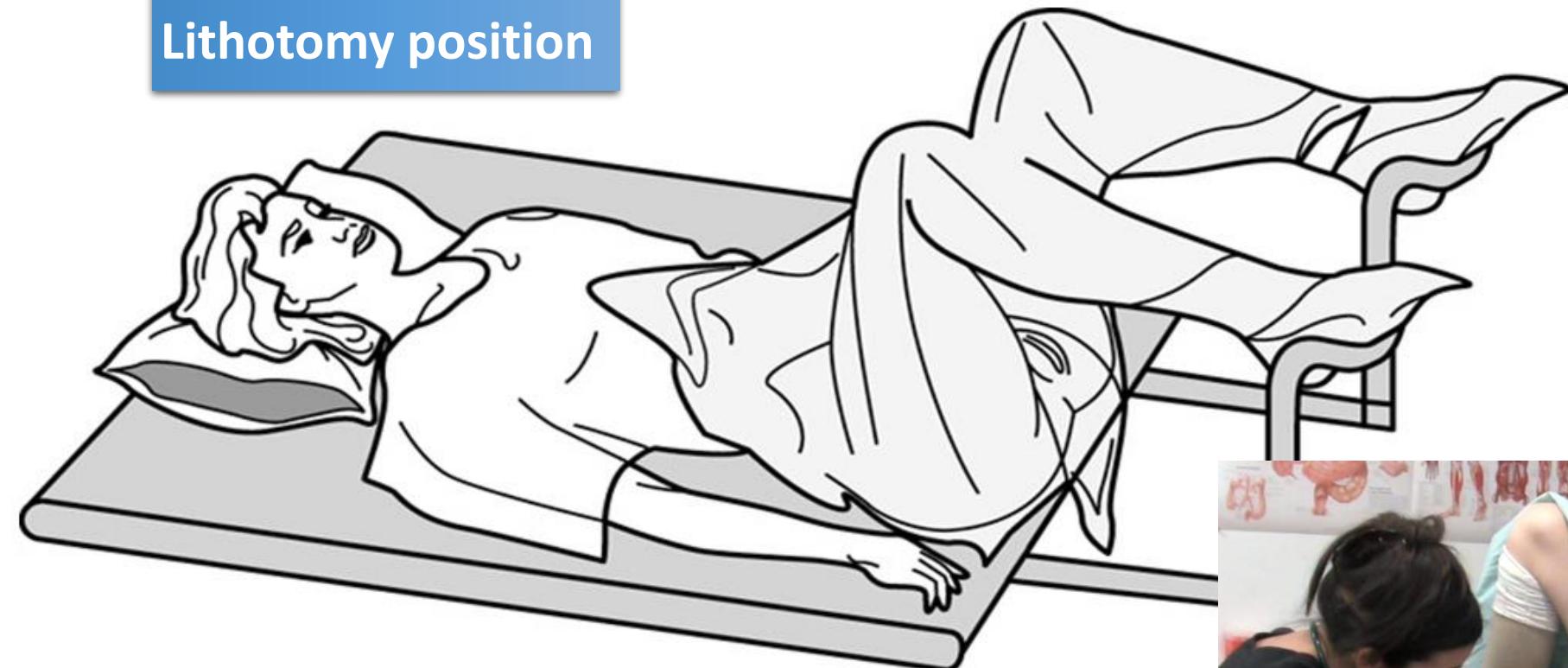
Kelaniya  
Medicine

## Knee chest position



Prone Knee Chest Genital Examination Technique

## Lithotomy position



# Genital Examination

Place victim in lithotomy position.

Drape appropriately.

Explain procedure and assist victim to relax.

Let the examinee open the legs wide to increase examiner visibility.

Inspect the mons pubis and vaginal vestibule

Swabbing should be done before digital or speculum examination

A gentle stretch at the posterior fourchette to visualize injuries

Pulling labia towards examiner will improve visualizing of hymen



**FIGURE 1**

**Examination of  
prepubertal girl  
with traction on  
buttocks**



**FIGURE 2**

**Examination  
of prepubertal  
girl using labial  
traction**



# Hymenal examination

Pulling labia towards examiner will improve visualizing of hymen and peri-urethral tissue



# Video-Colposcopy examination

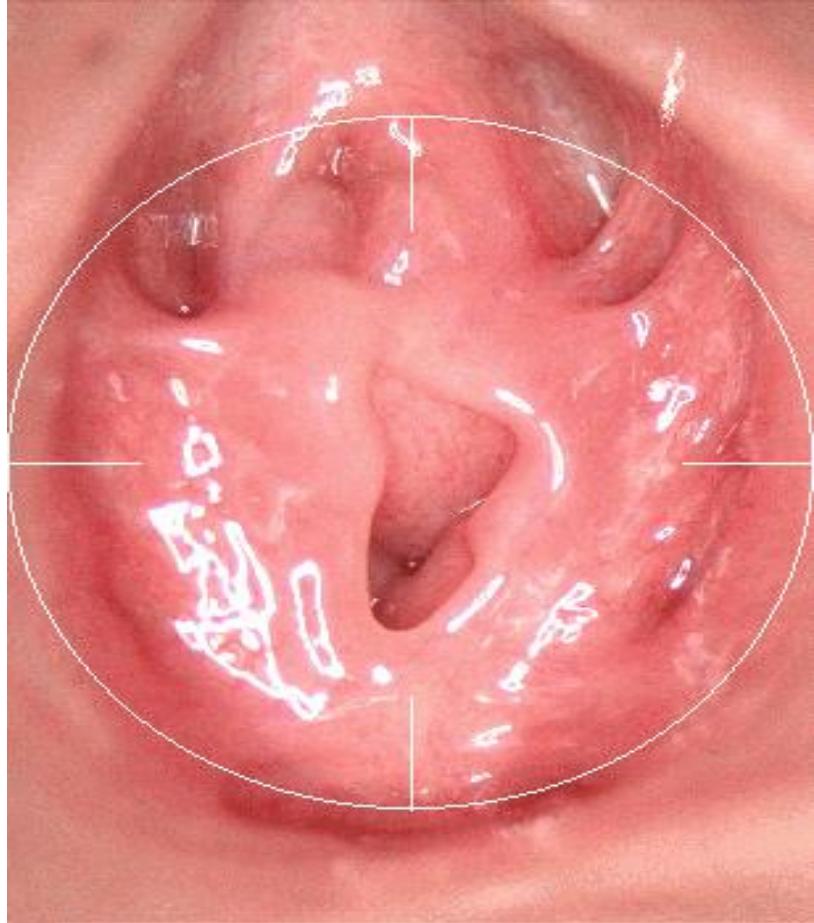


Kelaniya  
Medicine



Take at least 2 photographs. If trauma is present, more photos may be required

# Supine Labial Traction Vs. Prone Knee Chest



Supine Labial Traction

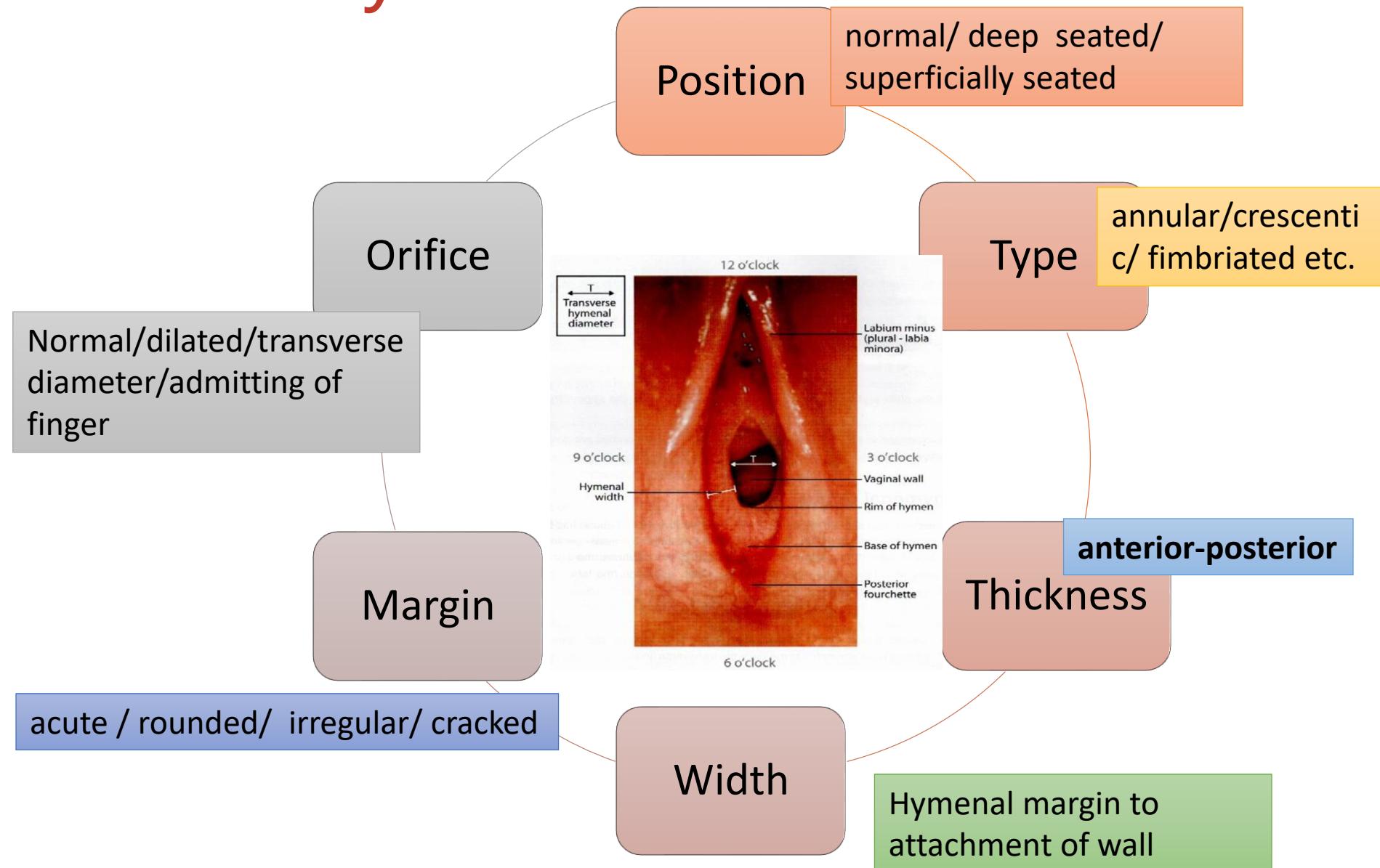


Kelaniya  
Medicine



Prone Knee Chest

# Features of Hymen



# Things you should know about hymen

- Hymen how it is formed/ development : Embryological
- Mullarian duct
- Hymen and age related changes
  - Hymen at birth
  - Hymen pre-pubertal
  - Hymen pubertal/ adolescence/ oestrogenized
  - Hymen adult
  - Hymen older women

# Hymen Anatomy

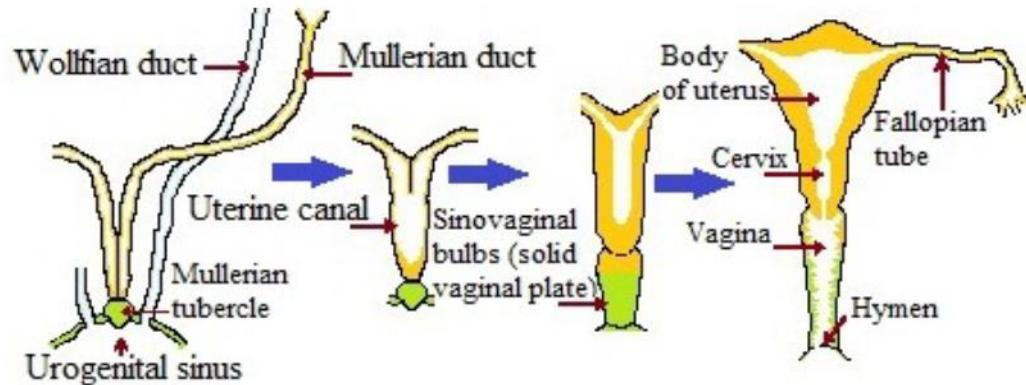


Figure 2: Development of female genital ducts (coronal sections).

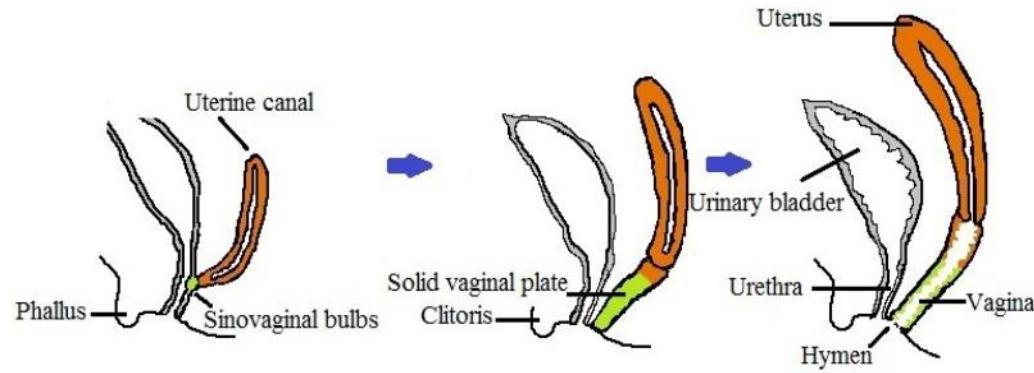


Figure 3: Development of vagina and uterus (sagittal sections).

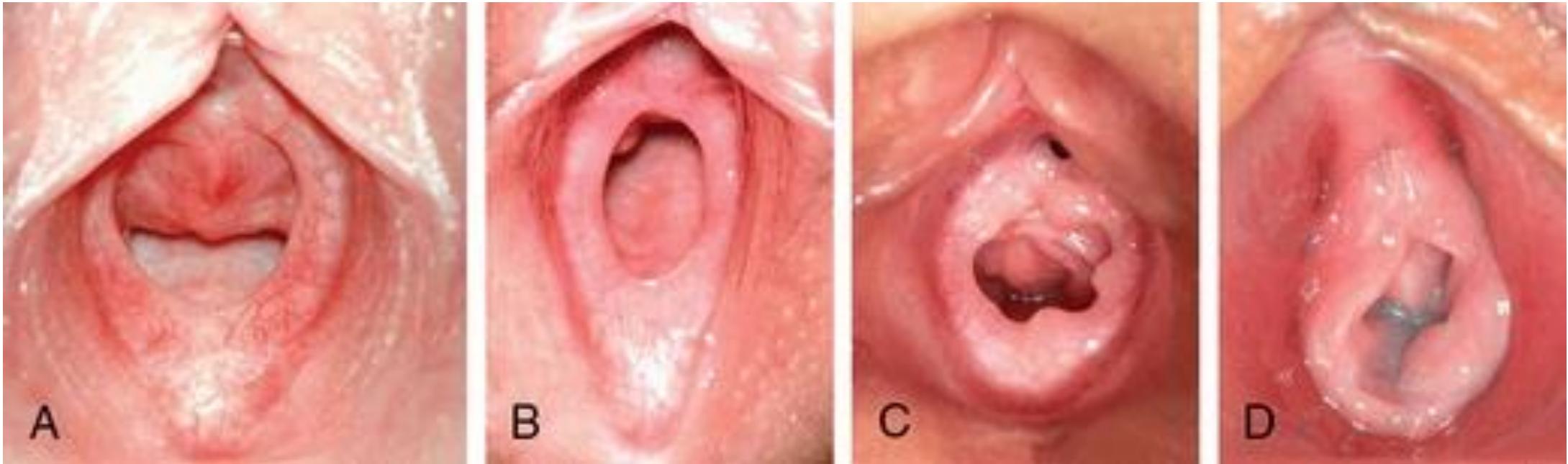
Hymen is the thin fold of mucus membrane situated just within the vaginal orifice

It is perforated to allow egress of menses. Aperture ranges from pin point to that admits the tip of one or two fingers (Williams Obstetrics 23<sup>rd</sup> Edition 2010)

At birth hymen is commonly annular, crescentic in children (3 year above), thick and oestrogenized in puberty, redundancy of hymen decreases in 75% subjects by the adulthood.



# Types of Hymen seen in pre-pubertal



Normal Hymens, A Crescentic. B, Annular. C, Fimbriated. D, Redundant.



Table 1: Hyemal configuration in previous studies

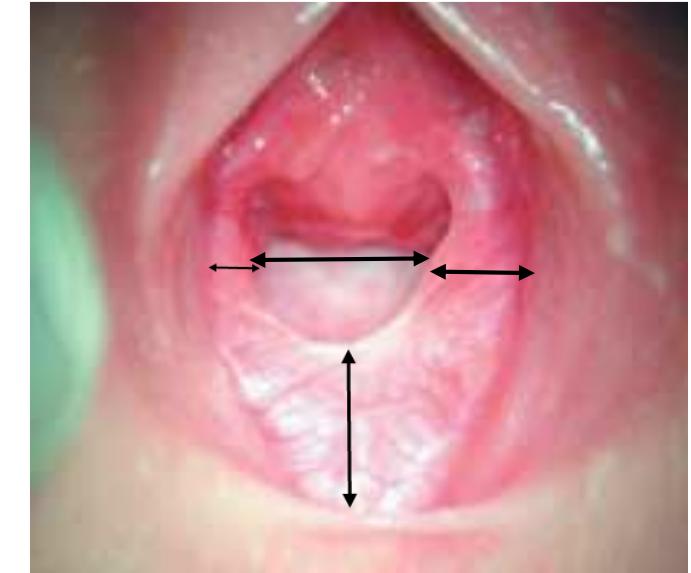
	Cases (n)	Age (m)	M (annular/ concentric)	Crescentic/ Posterior rim	Sleeve like/ small orifice	Fimbriated	Septate
Berenson et al. <sup>23</sup>	468	nb	80			19	1
Al Herbish <sup>24</sup>	345	nb	60	4.9	22	12.5	
Berenson and Grady <sup>25</sup>	135	36	39	61	2		1
	93	60	23	77	2		1
	80	84	18	82	3		1
	61	108	10	90	3		1
Heger et al. <sup>26</sup>	147	63	53	29.2	14.9		2
Myhre et al. <sup>27</sup>	194	69	6.7	78.4		0.5	

Data is mentioned as %.



# Measurements of the hymen: Orifice and membrane

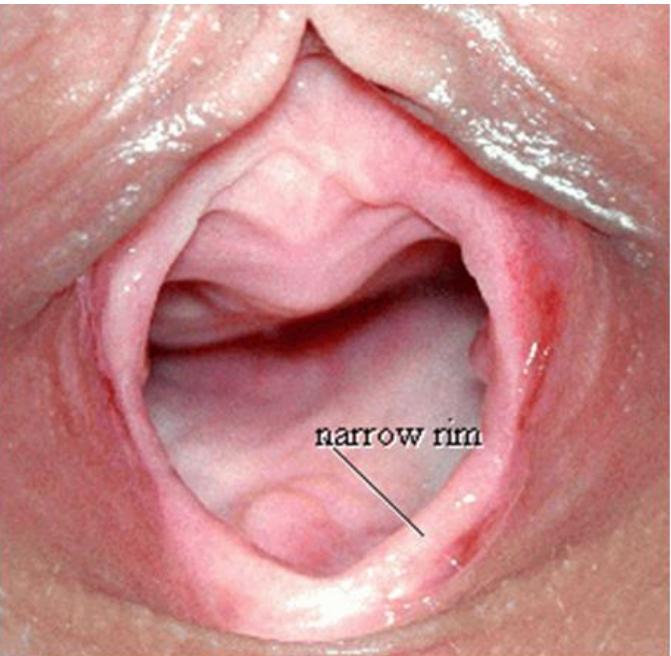
- Many attempts have been made to determine the normal size of hymenal orifice in pre-pubertal girls
- Some studies indicate that the transverse diameter of the hymen at 6 o'clock position is 4mm and some go upto -8mm as indicator of child abuse
- Transverse diameter varies
  - Child' s age
  - Type of hymen
  - Position of examination
  - Relaxation and cooperation



Width of hymenal tissue from edge of the hymen to the muscular portion of the vaginal introitus at 3, 6, and 9 o'clock has been attempted to indicate sexual abuse (attenuation). Some studies indicate upto 1mm at 6'o clock position is as normal. However there are many overlapping between normal and abuse. Thus interpreting trauma need caution.



# Attenuation of hymen

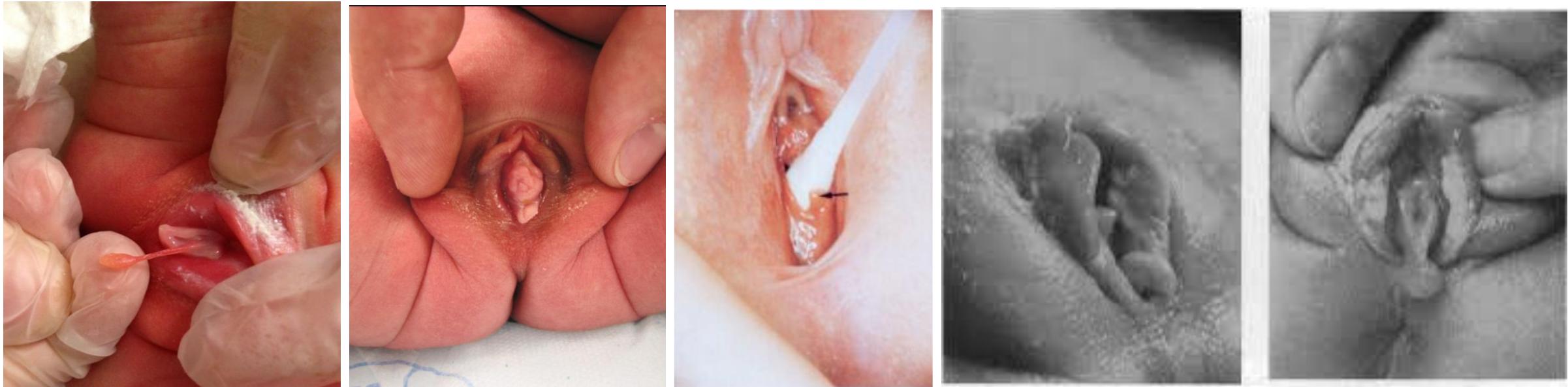


10 Yr. Old, narrow irregular-hymeneal rim. 5 episodes of penile penetration 1 year back

- Actual loss of hymenal tissue as the result of a traumatic process is thought to follow chronic abuse when the hymen is rubbed away.
- When gross, the hymen appears as a thin rim of tissue.
- Lesser degrees require a consideration of the thickness of hymenal tissue and the evenness of its distribution.
- Attenuation is frequently associated with a wide hymenal orifice and a gaping orifice.
- Thickening, asymmetry, and rounding of the hymenal edge are also thought to be associated with CSA.



# Abnormalities of the hymen –hymenal polyps and tags



Vaginal fibroepithelial polyp in a newborn girl.

Elongated projections of hymenal tissues protruding beyond hymeneal ring. Usually in midline. Resolve spontaneously and rarely seen after 3 years.

# Abnormalities: Hymenal ridges and bands

## Longitudinal intravaginal ridge

- They may be observed in all 4 quadrants



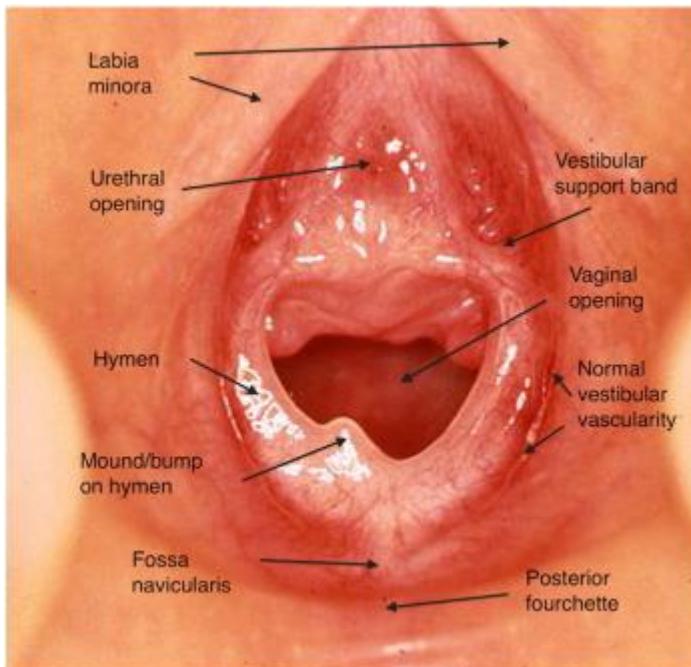
## External hymenal ridge

- Usually in midline 6 and 12 o' clock
- Tends to resolve by 3 years



# Abnormalities: Hymenal mounds/ bands

## Hymenal mounds



## Peri-urethral bands



# Notch / Clefts in Hymen

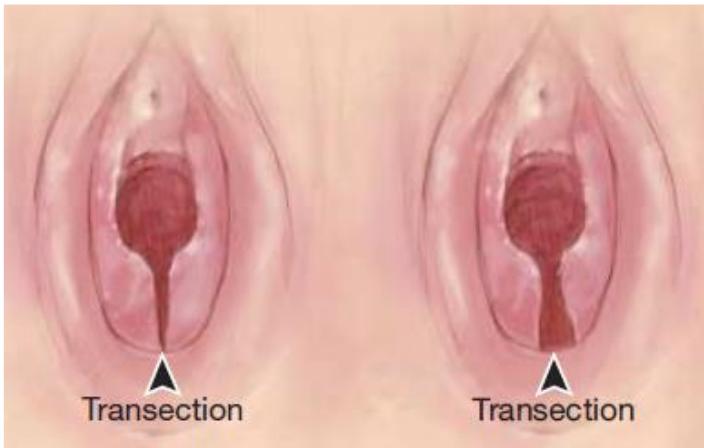


- Notches/ clefts used interchangeably
- Indentation on the edge of the hymenal membrane.
- Superior or lateral notches are seen in 35% of new borns
- A notch may be angular (v-shaped) or curved (u-shaped)
  - Superficial Notch extending <50% of width of hymen
  - Deep Notch extending >50% of width of hymen almost to the base of the hymen
- Notches / clefts in the posterior half (3-9 o' clock position in pre-pubertal children has a strong relationship to sexual trauma

A notch extending to the junction of the hymen and vestibule in any location has been shown only in victims of abuse/trauma and should not be considered as congenital finding

# Transection of the hymen

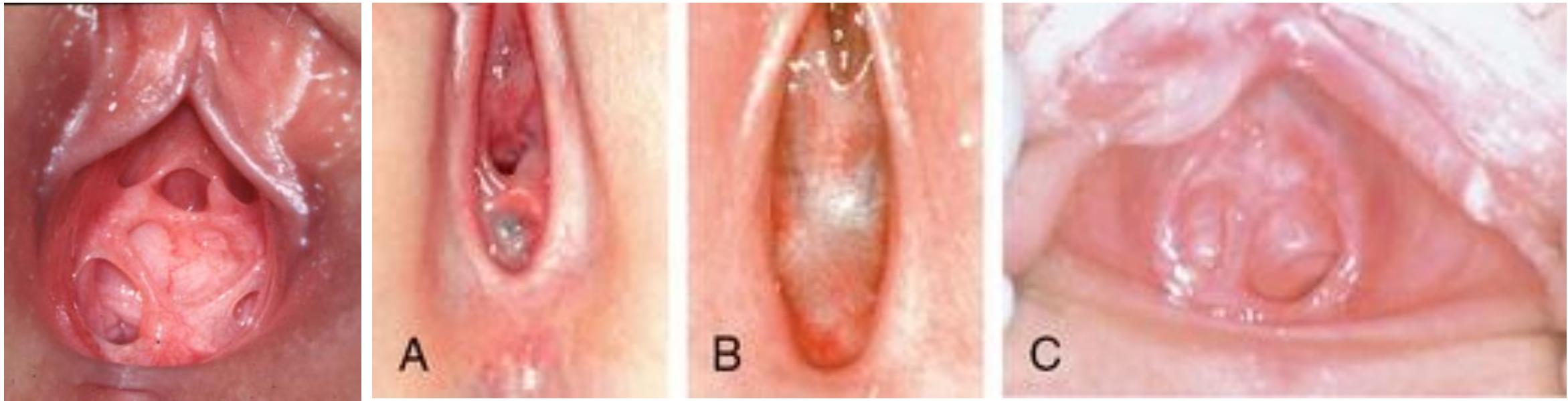
- A tear (separation or interruption) through the entire width of the hymenal membrane extending to or through its attachment to the vaginal wall



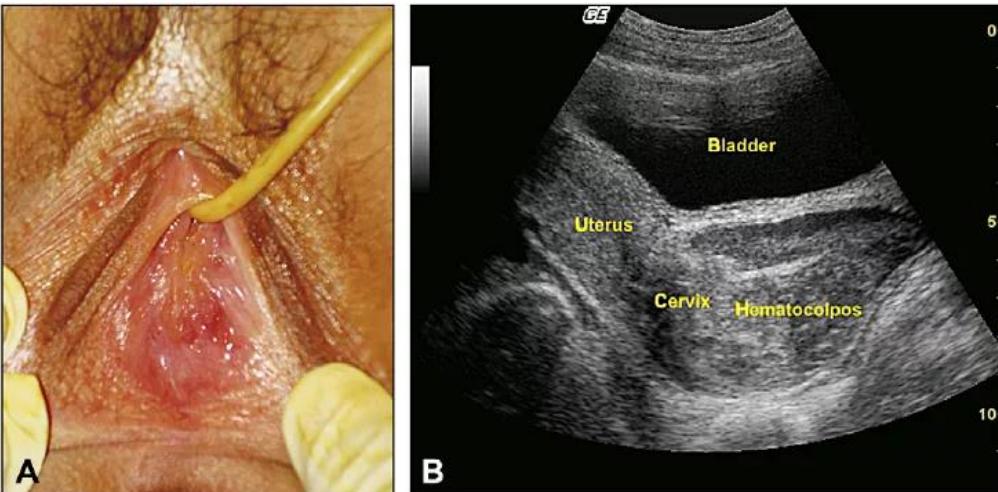
According to Bercoff et al, 2008  
Transection in the posterior hymen are  
consistent with genital trauma from sexual  
abuse with positive LR of 3.1 but has a  
large CI so that the diagnostic impart is  
uncertain (95% CI, 0.13-76)



# Types of abnormal Hymen



Abnormal hymens : A, Cribriform. B, Imperforate. C, Septate.



Imperforate hymen leads to Haematocolpus  
Seen in  
Imperforate hymen seen in 0.1% of new born

# Use of a moistened cotton swab



1A



1B

1 A twelve-year old girl. 1A. Labial traction.

1B. The use of a moistened cotton for viewing deep notch at 4 o'clock position.

# Hymenal examination

Pulling labia towards examiner will improve visualizing of hymen and peri-urethral tissue

# Foley Catheter Technique for Visualizing Hymenal Injuries in Adolescent Sexual Assault



The Foley catheter technique uses an inflated balloon in the distal vaginal vault to expand the estrogenized hymen to its full capacity so that the edge may be readily visualized for signs of trauma.

# My experiences

# My experience partial tear in 3 o' clock



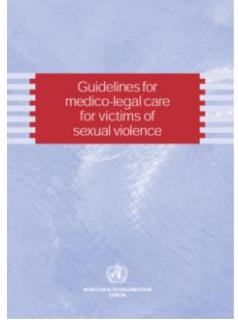
Figure 1. : Hymen of a 15-year-old nullipara after a sexual assault. Note what seems to be a small laceration at the 9-o'clock position



Figure 2.  
Hymen of the same 15-year-old girl as in Figure 1 with obvious laceration shown using the Foley catheter balloon technique.

# Internal Vaginal Examination

## WHO Guideline



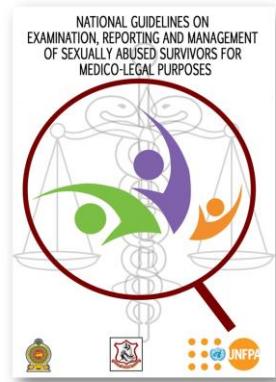
- most examinations in pre-pubertal children are non-invasive and should not be painful
- for adults and post-pubertal girls, a speculum examination may be required in the following situations:
  - genital pain, bleeding, if a foreign body was used during the assault, and for assaults that occurred more than 24 hours prior to the examination
  - to collect swabs from the cervical canal.
- That a bimanual examination (a clinical procedure that also involves inserting fingers to detect medical conditions of the uterus or urinary tract) is “rarely indicated post sexual assault,” meaning that such examinations are rarely medically justified in this context.

## 6.7. FEMALE GENITAL EXAMINATION

Take all genital samples prior to examination of each component of genital examination. (X)

(See attachment 1 : Steps 7 to 13 for sample collection)

- Note appearance of pubic hair for secondary sexual characteristics and other observations. (X)
- Note the appearance of labia majora, labia minora, posterior fourchette, fossa navicularis. (Refer Annex 3 : labeled diagram on female genitalia) (X)
- Observe for the presence of bleeding, discharge, presence of foreign materials etc.
- Note and draw the type of hymen(X) and position of hymen. (X)
- Record the presence of recent injuries such as abrasions, contusions and lacerations according to the position of the clock. Observe for signs of swelling, tenderness and redness to indicate a fresh injury or whether injury is healing or is completely healed. Please mark on the diagram form provided. (Refer Annex III : labeled diagram on female genitalia) (X)
- When describing hymenal injuries use standard nomenclature given in Attachment II.
- Note whether the hymen is attenuated. (Z)
- Record the examining position and technique used (supine/prone/knee elbow) especially in recording of the hymenal injuries. (X)
- Note the size of the hymenal orifice. (X)
- Note the presence of injuries in the vaginal wall (where relevant) and changes to the cervix (where relevant), urethra and perineum. (X)
- Look for evidence of pregnancy and delivery. (X)
- Look for STI relevance.
- All important negative findings should be recorded. (X)
- In case of inability to arrive at a conclusion at the end of the examination, contact the nearest specialist in Forensic Medicine ( in management or general guidelines section)

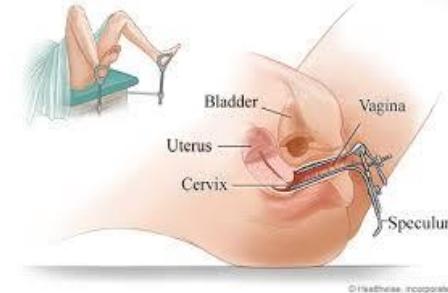


There is no place in  
two finger test in  
both National/  
International Guides  
regarding  
“habituated to sex”

## 6.8. USE OF ANY INSTRUMENT FOR GENITAL EXAMINATION IF RELEVANT

If necessary, a foley catheter/cotton swab/glass rod, speculum examination, colposcopy, toluidine test can be used for further examination of genital area. (Z)

# SPECULUM EXAMINATION:



Lubricate the speculum with water

select the smallest possible size speculum

Inspect vaginal walls for lacerations.

Inspect cervix and os.

# TOLUIDINE BLUE:

Nuclear stain

- intact skin has no nuclei

Abraded skin will expose the cells from the deeper layers of the dermis.

- blue stain will be picked up by those areas



# Use of 'TOLUIDINE BLUE' to enhance injury visualization

**Before Toluidine Blue Dye**



**After toluidine blue dye**



# Genital injury interpretations type/ healing/ time

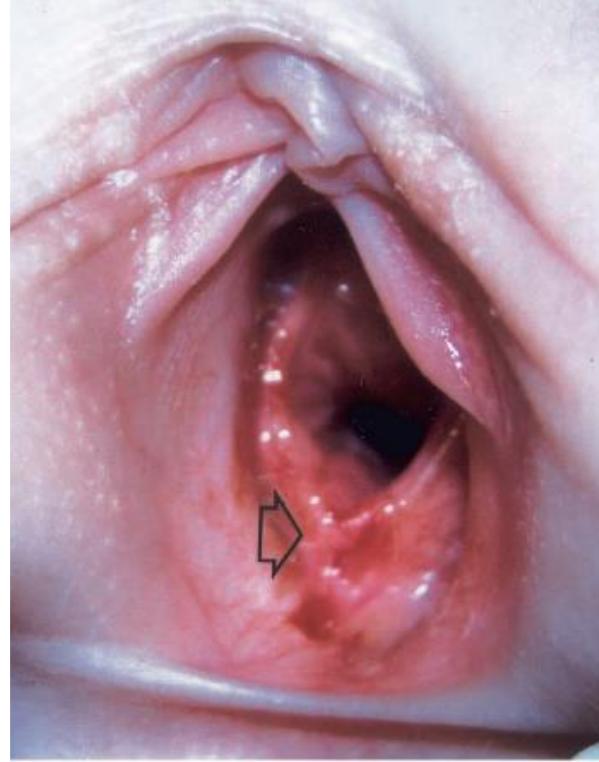
Pre-pubertal and Pubertal group



Kelaniya  
Medicine



Figure 3. Contusion to hymen after consensual intercourse.



Abrasion and tear in hymen of a child by digital fingering of an adult

Genital injury interpretation regarding consent is impossible and erroneous because both can result injuries

## Consensual & non consensual sexual intercourse



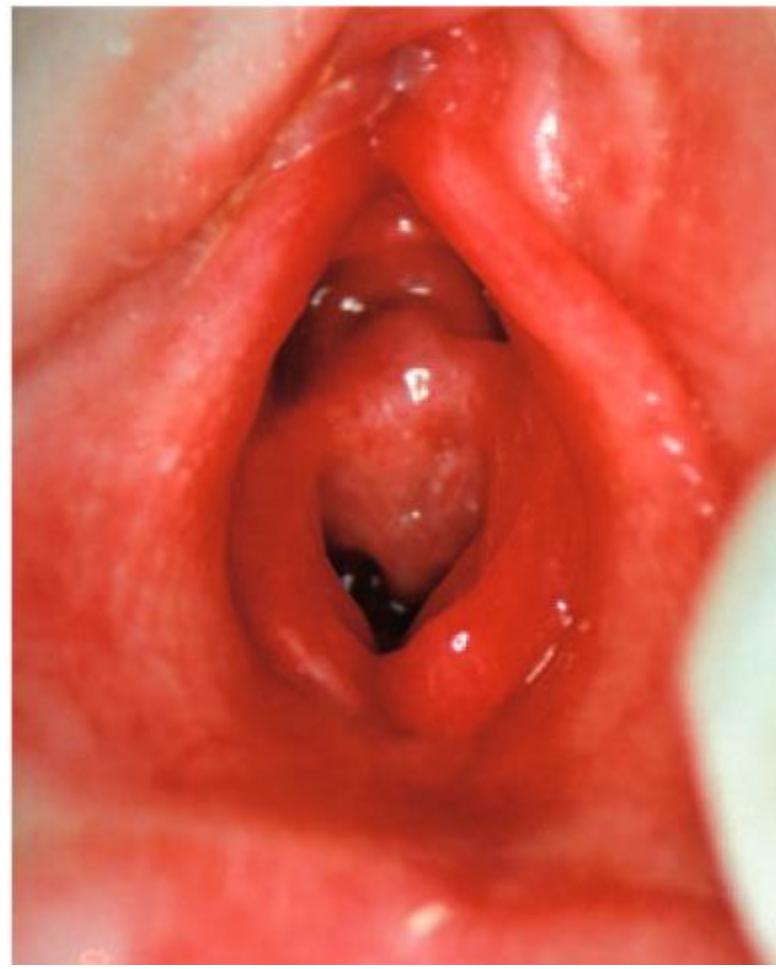
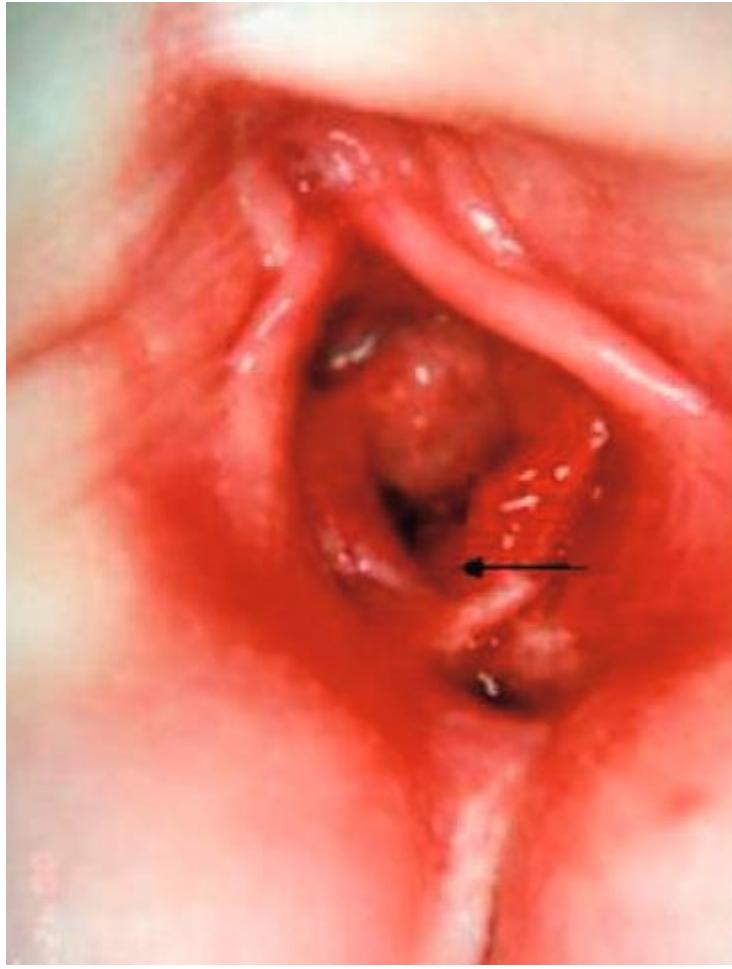


Figure 1: 8 month old child subjected assault penial penetration 3 days ago

Figure 2: 24 days later :small ridge with neovascularization

Infants and children injury interpretation is difficult with time

McCann, Miyamoto, Boyle, Rogers, Paediatrics 2007

# Children & healing of hymenal membrane



Kelaniya  
Medicine

Infants and children  
injury interpretation is  
difficult with time and  
opinion regarding digital  
or penile penetration is  
difficult to arrive

## Digital penetration of the hymen

Heppenstall-Heger et al  
Pediatrics 2003

**Fig 5.** Case 53, 6-year-old who disclosed digital vaginal penetration by cousin. Note partial tear of the hymen at 6 o'clock (arrow) and abrasion at the base of the hymen at 7 o'clock (below arrow).

**Fig 6.** Case 53, 12 days later, hymen and perihymenal trauma completely healed. Hymen is smooth-edged with a shallow notch or concavity at 6 o'clock.





**FIGURE 3**  
Case 2: A 14-year-old 12 hours after assault. Marked submucosal hemorrhages are present on the lower half of the hymenal membrane. Note the fresh-cut edge of a hymenal laceration at the 3 o'clock position. The patient was examined with the supine, labial traction method.



**FIGURE 4**  
Case 2: Twelve hours after assault. The submucosal hemorrhage seems to involve the entire posterior half of the hymenal membrane. The patient was examined with the prone, knee-to-chest position method.

In pubertal adolescents  
due to increased  
vascularity injury  
interpretation is difficult  
in the acute stage

McCann, Miyamoto, Boyle,  
Rogers, Paediatrics 2007



Kelaniya  
Medicine

# Submucosal haemorrhage in acute injuries in adolescents

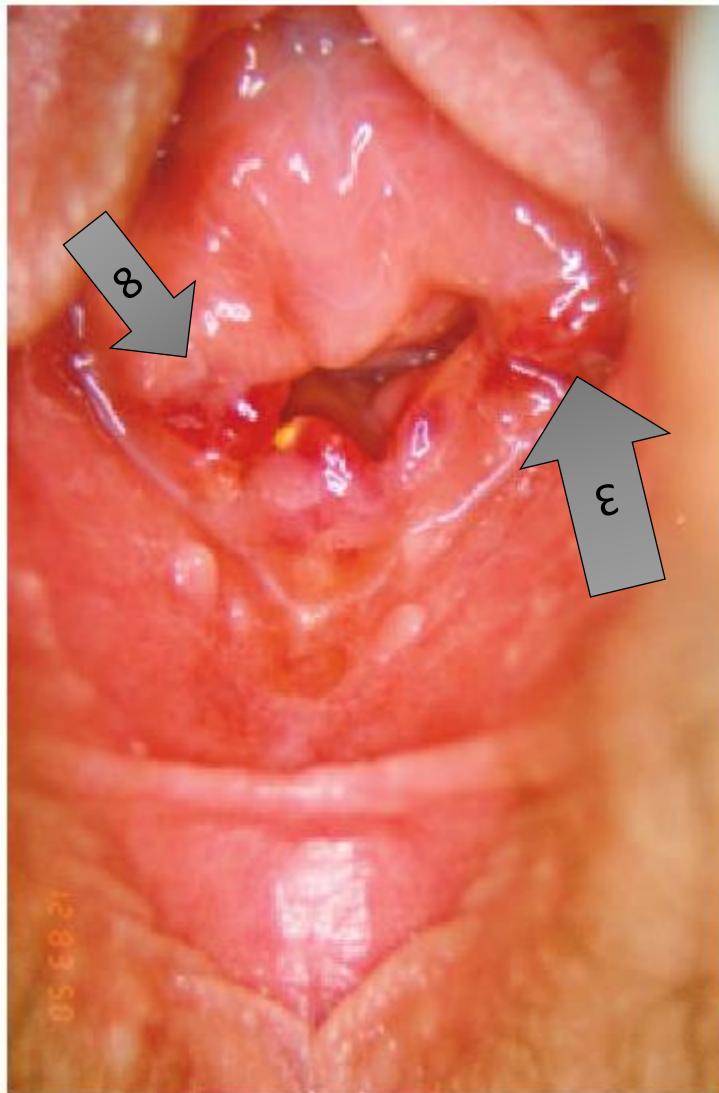


FIGURE 5

Case 2: Four days after assault. The major portion of the submucosal hemorrhage has resolved, exposing evidence of hymenal lacerations at the 3 o'clock and 8 o'clock positions. The patient was examined with the supine, labial traction method.

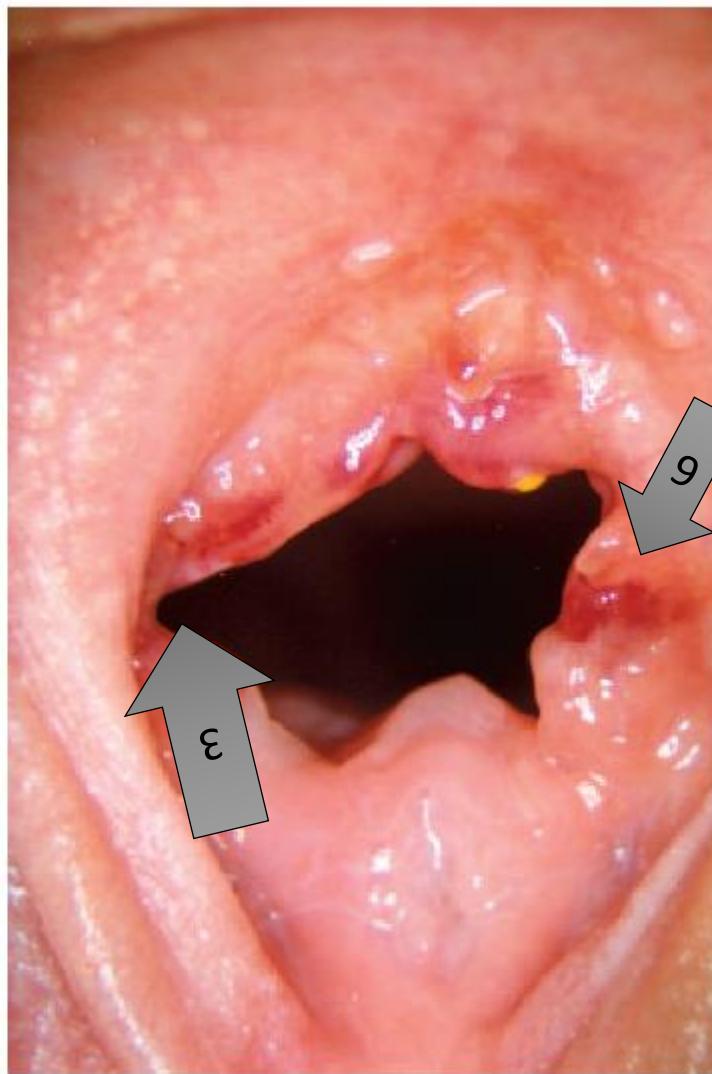
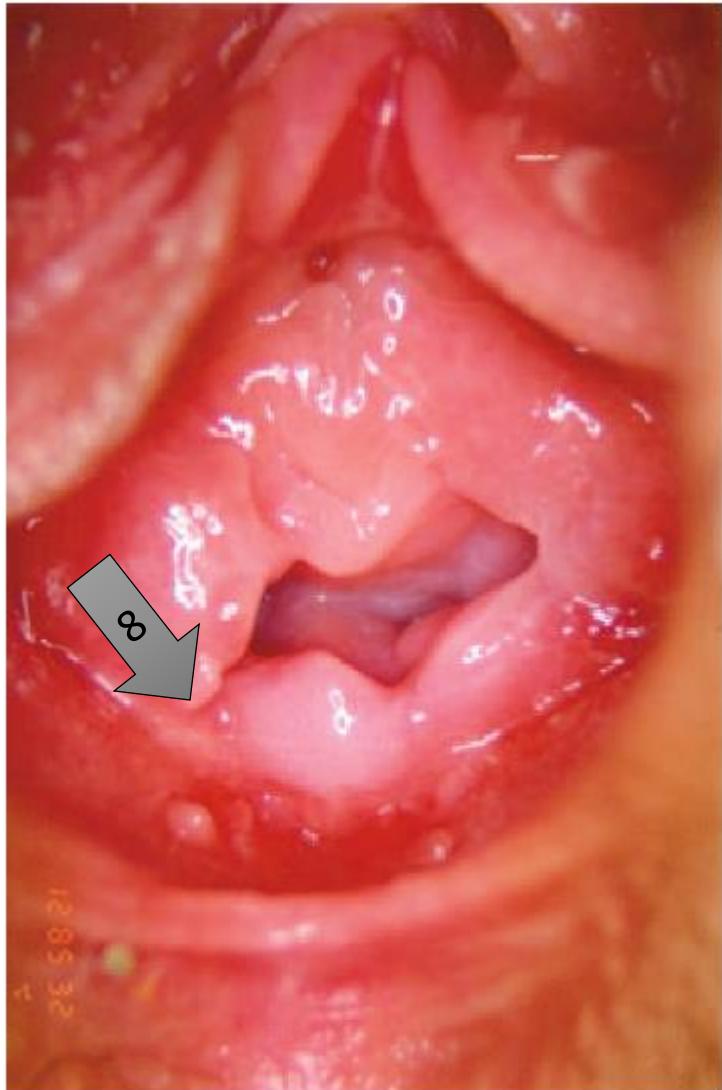


FIGURE 6

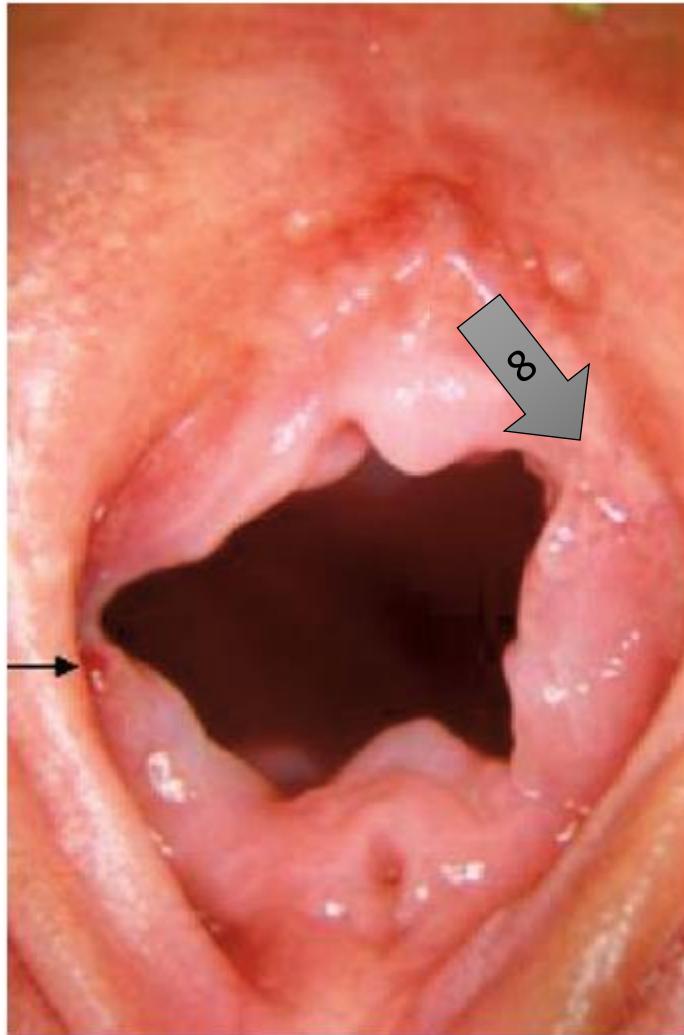
Case 2: Four days after assault. The lacerations at the 3 o'clock and 9 o'clock positions (supine) become more evident as the hymenal orifice opens during the prone, knee-to-chest position method.

4 days after assault,  
injuries are more  
clear : repeated  
examination may  
be necessary to  
interpret

McCann, Miyamoto, Boyle, Rogers,  
Paediatrics 2007



**FIGURE 7**  
Case 2: Sixteen days after assault. Evidence of the acute injuries has disappeared, leaving only a cleft at the 8 o'clock position. The patient was examined with the supine, labial traction method.



**FIGURE 8**  
Case 2: Sixteen days after assault. The "starburst" appearance created by the multiple lacerations of the hymenal rim become apparent during this examination method. A small blood blister is present at the 2:30 position supine (arrow). The patient was examined with the prone, knee-to-chest position method.

With time the injuries heal and appear like starburst/ notches  
Delayed presentations will be difficult to interpret with normal anatomical variations

McCann, Miyamoto, Boyle, Rogers,  
Paediatrics 2007

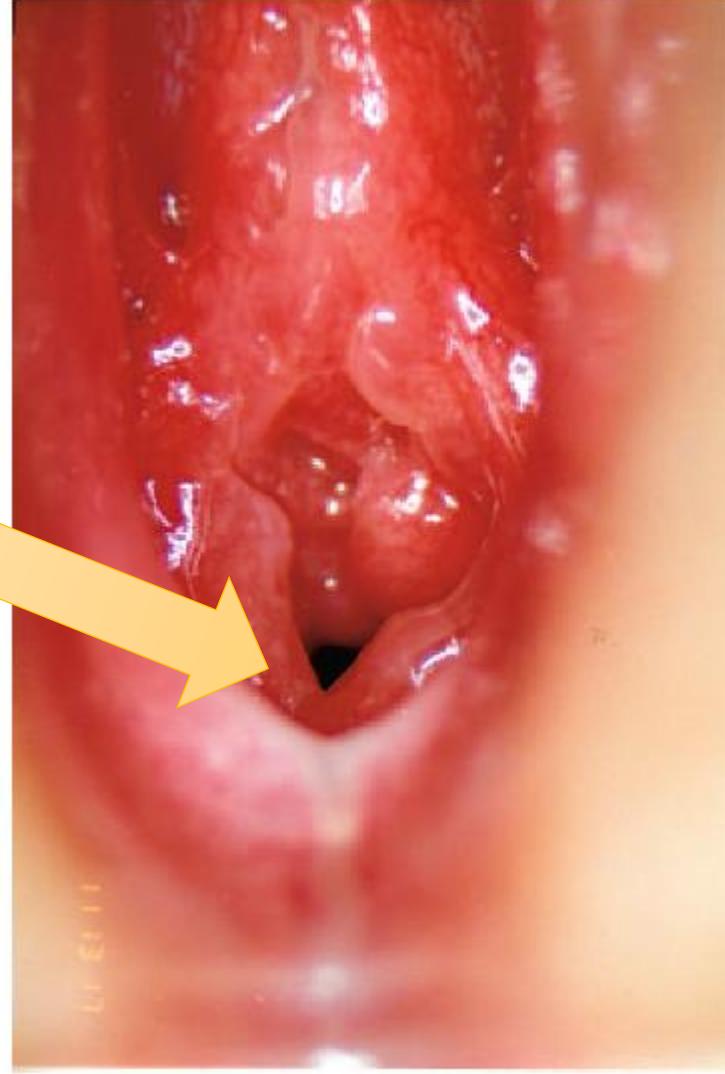


FIGURE 9

Case 3: A 9-year-old assaulted 3 days before. Deep V-shaped laceration is present at the 6:30 position. Fresh-cut edges of the wound are still visible. The patient was examined with the supine, labial traction method.



FIGURE 10

Case 3: Nineteen days after assault. The V-shaped laceration has smoothed off, leaving a "keyhole-type" appearance. Mounds on either side of the orifice formed by 2 intravaginal longitudinal ridge attachments. The patient was examined with the supine, labial traction method.

In pre-pubertal and pubertal age group hymenal injuries heal quickly and if examination is delayed, interpretation is difficult, unless done by an expert

McCann, Miyamoto, Boyle, Rogers,  
Paediatrics 2007

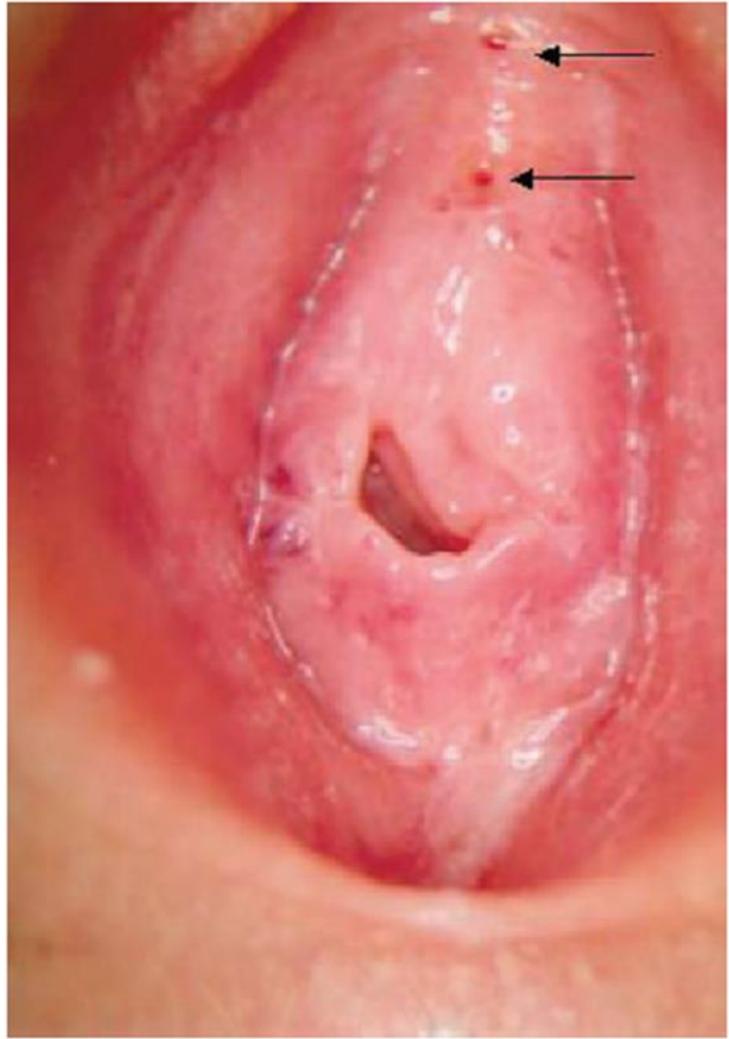


FIGURE 4

Case 2: a 12-year-old who was sexually assaulted by 2 teenaged boys 24 hours before the current examination. Two blood blisters (arrows) in the midline of the vestibule can be seen (supine labial traction method).

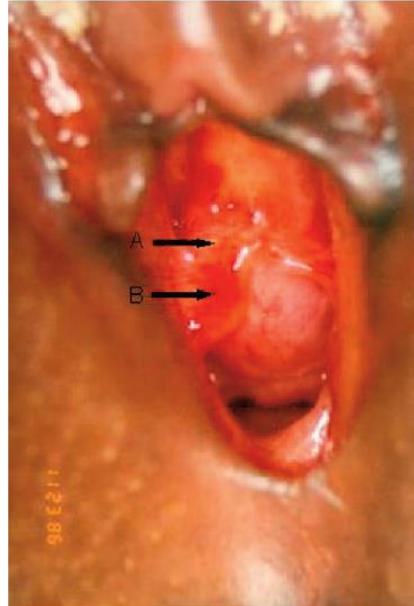


FIGURE 1

Case 1: a 4-year-old was sexually assaulted by her mother's boyfriend and examined on the same day. Petechiae (arrow A) and submucosal hemorrhage (arrow B) are present on the perurethral tissues within the vestibule (supine labial traction method).

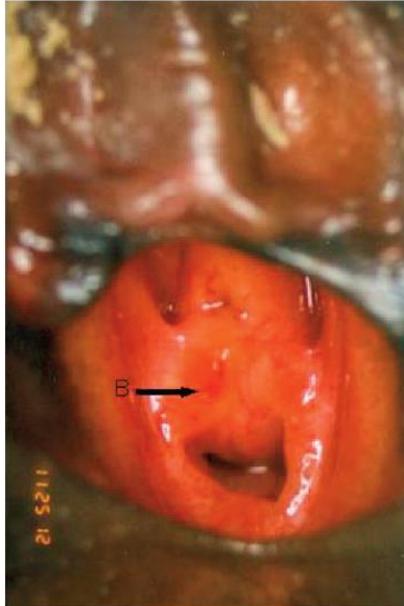


FIGURE 2

Case 1: 72 hours later. Petechiae have resolved, and the submucosal hemorrhages are fading (arrow B) (supine labial traction method).

In pre-pubatal and pubatal age group non- hymenal injuries are minute and heal quickly and if examination is delayed, interpretation is difficult, unless done by an expert

## Non hymenal genital injuries in sexual assault





Fig 1. Case 45, 7-year-old with history of straddle injury in bathroom. Note (arrow) bruising and abrasion of PF and labia majora.

Accident falls may mimic sexual assault: injuries in the fossa navicularis and perianal fold. Therefore corroboration of history and injury interpretation is important

## Accidental falls





Midline splitting  
injury from inline  
skating accident—  
8-year-old girl

**Fig 3.** Case 17, 5-year-old with straddle injury, laceration of the PF and FN.

**Fig 4.** Case 17, 8 days later after surgical repair. Large arrow indicates scarring of the PF. Small arrow indicates area of the FN that has not completely healed in 8 days.



# Injuries in the adult woman

- Genital injuries of consensual sex and non consensual sex (sexual assault) are similar
- There is no statistical differences in between two groups however the total percentage is higher in non consent group
- Therefore interpretations has to be cautious
- Older women (post menopausal) sustain more injuries due to lack of secretions ranging from mucosal lacerations to wall bleeding.
- Further injuries varies due to laxity of the tissues associated with child birth etc.

# Mucosal Lacerations of the vaginal wall- older woman

# ANAL EXAMINATION

Examine the buttocks and peri-anal skin in lateral position

Photograph any visible trauma

Collect dried and moist secretions and foreign materials.

Inspect anal verge/ photograph/ colposcope



Cleanse peri-anal area with water or moistened gauze pad

Obtain rectal swabs

Reflex anal dilatation/ Dilated anus



# Anal injury following sodomy



Bleeding from anus, pain in the anus, anal mucosal tears, lacerations, rectal perforation and sphincter injuries also can occurs esp using of foreign objects

Injuries are seen at anal verge or entrance to anal canal: due to high vascularity injuries heal quickly

Anal injury following sodomy. Courtesy: Malinda Wheeler, RN, MN, CFNP.

# Anal injuries

Mucosal abrasions/  
lacerations in the anal fold.  
They are also seen in natural  
conditions such as  
constipation and even worm  
infestations



*Photo: Courtesy of the DOVE Program, Summa Health System*



Kelaniya  
Medicine

# Photograph of anal injuries taken approximately 12 hours after the event

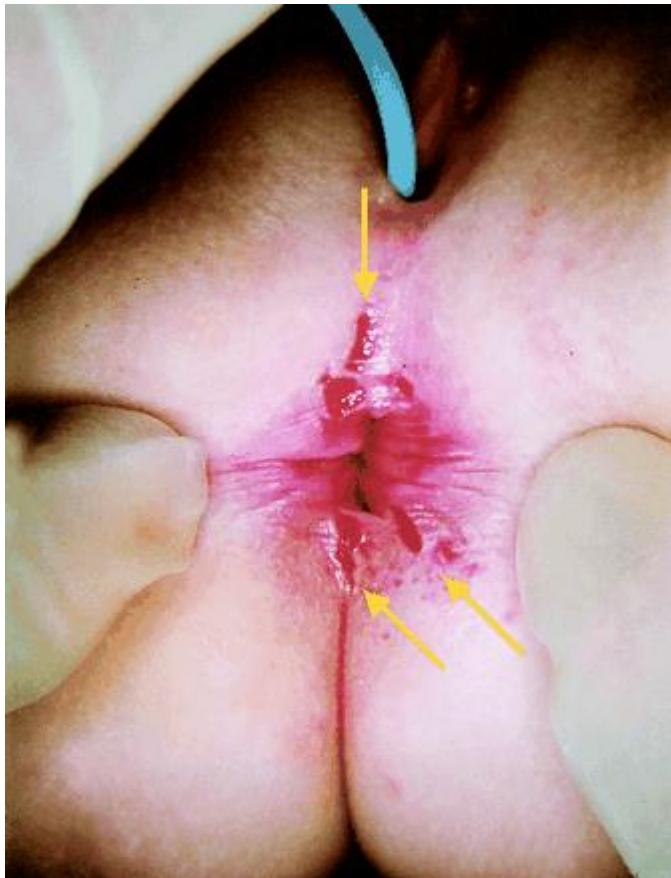


A case of severe anal injury in an adolescent male due to bestial sexual experimentation  
Roger O. Blevins, RN MS  
*Journal of Forensic and Legal Medicine*



Kelaniya  
Medicine

# Accidental injuries in anus may mimic child sexual abuse



Multiple fresh perianal lacerations run radially, extending from the anus at 5, 6, and 12 o'clock. Child pedestrian involved in low speed motor vehicle Boose, Pediatrics 2003

# Anal dilatation



Figure 18.2 Anal penetration of a young child with dilatation, laceration, marginal tearing and skin tags. Dilatation alone is sufficient for a firm diagnosis of buggery.



Fig. 136 Laceration and haematoma of the anus, with mild laxity.



Fig. 137 Markedly dilated anus with no stool present.



# Research findings on prevalence of genital injuries in alleged sexual violence

- The prevalence of genital injury resulting from sexual assault varies by examination type (5-87%)
- Three primary strategies exist for genital examination:
  - (a) direct visualization with the unaided eye 5-40% (Massey et al., 1971)
  - (b) staining techniques (Gentian violet, Lugol' s solution, toluidine blue, fluorescein, or a combination of these staining techniques), which are applied topically to highlight injuries and make them more visible to the eye; and (40-58%)
  - (c) colposcopy (use of a magnifying instrument [colposcope] with a light source and digital imaging and/or photographic capability). (64%-87%)

# Interpretation of Medical Findings in Suspected Child Sexual Abuse: An Update for 2018

Joyce A. Adams MD <sup>1,\*</sup>, Karen J. Farst MD <sup>2</sup>, Nancy D. Kellogg MD <sup>3</sup>

**A. Findings documented in newborns or commonly seen in nonabused children.**  
These findings are normal and are unrelated to a child's disclosure of sexual abuse

**B. Findings commonly caused by medical conditions other than trauma or sexual contact.** These findings require that a differential diagnosis be considered, because each might have several different causes

**C. Findings due to other conditions, which can be mistaken for abuse**

**D. No expert consensus regarding degree of significance.** These physical findings have been associated with a history of sexual abuse in some studies, but at present, there is no expert consensus as to how much weight they should be given, with respect to abuse.

**E. Findings caused by trauma.** These findings are highly suggestive of abuse, even in the absence of a disclosure from the child, unless the child and/or caretaker provides a timely and plausible description of accidental anogenital straddle, crush or impalement injury, or past surgical interventions that are confirmed from review of medical records. Findings that might represent residual/healing injuries should be confirmed using additional examination positions and/or techniques

**Table 1**  
2018 Updated Approach to Interpretation of Medical Findings in Suspected Child Sexual Abuse

**Section 1. Physical findings**

A. Findings documented in newborns or commonly seen in nonabused children. These findings are normal and are unrelated to a child's disclosure of sexual abuse

Normal variants

1. Normal variations in appearance of the hymen

a. Annular: hymenal tissue present all around the vaginal opening including at the 12 o'clock location

b. Septate: hymen with one or more septae across the opening

c. Redundant: hymen with multiple flaps, folding over each other

d. Hymen with strands or bumps on the rim at any location

e. Anynotra or cleft of the hymen (regardless of depth) above the 3 and 9 o'clock location

f. Imperforate hymen: hymen with no opening

g. Hymen with small openings

h. Septate hymen with 1 or more septae across the opening

i. Redundant hymen: hymen with multiple flaps, folding over each other

j. Hymen with strands or bumps on the rim at any location

k. Anynotra or cleft of the hymen (regardless of depth) above the 3 and 9 o'clock location

l. Notch or cleft in the hymen, at or below the 3 o'clock or 9 o'clock location, that does not extend nearly to the base of the hymen

m. Anynotra or cleft of the hymen that appears to be relatively narrow along the entire rim; right give the appearance of an "enlarged" vaginal opening

n. External ridge (ridges) or column(s)

o. External ridge on the hymen

p. Diastasis (smooth area)

q. Perianal skin tag(s)

r. Abnormal appearance of the skin of labia minora or perianal tissues in children of color

s. Dilatation of the urethral opening

t. Normal midline anatomic variations

u. Failure of midline fusion (also called perineal groove)

v. Median raphe (has been mistaken for a scar)

w. Lines vestibularis (midline vesicourethral crease)

x. External urethral orifice with normal appearance of the urethra and rectal mucosa seen when the anus is fully dilated

y. Partial dilatation of the external sphincter, with the internal sphincter closing; causing visualization of some of the anal mucosa beyond the perineal line, which might be mistaken for a laceration

z. Findings commonly caused by medical conditions other than sexual abuse or sexual contact. These findings might suggest a differential diagnosis be considered, because they might have several different causes

1. External orifices of the anal or genital tract

2. Increased vascularity of vulva and hymen

3. Labial adhesion

4. Visibility of the posterior fourchette

5. Vulvar discharge that is not associated with a sexually transmitted infection

6. Anal fissure

7. Venous congestion or venous pooling in the perianal area

8. Anal dilation associated with predisposing conditions, such as current or recent oral, rectal, vaginal, or anorectal enemas, or children who are sedated, under anesthesia, or with impaired neuromuscular tone for other reasons, such as postmenstrual

9. Findings due to other conditions, which can be mistaken for abuse

10. External orifices of the anal or genital tract

11. Lichen sclerosus et atrophicus

12. Vulvar ulcer(s), such as aphthous ulcers or those seen in Behcet disease

13. Erythema, inflammation, and fissuring of the perianal or vulvar tissues that are without atraumatic, firm, versus, parasites, or other infectious factors that are not sexually transmitted

14. Rectal prolapse

15. Red/purple discoloration of the genital structures (including the hymen)

16. No expert consensus regarding degree of significance. These physical findings have been associated with a history of sexual abuse in some studies, but at present, there is no expert consensus as to how much weight they should be given, with respect to abuse

17. Findings that are not explained by history, physical exam, or laboratory findings (1, 14) or a finding of residual traumatic injury (finding 37)

18. Complete anal dilation with relaxation of the internal as well as external sphincters, in the absence of other predisposing factors such as

congestion, encopresis, sedation, anesthesia, and neuromuscular conditions

22. Notch or cleft in the hymen rim, at or below the 3 o'clock or 9 o'clock location, which extends nearly to the base of the hymen, but is not a complete transaction. This is a very rare finding; it should be interpreted as normal unless an acute injury was documented at the same location or if the location of the notch or cleft is at the 3 or 9 o'clock location

28. Complete or suspected transaction to the base of the hymen at the 3 or 9 o'clock location

E. Findings caused by trauma. These findings are highly suggestive of abuse, even in the absence of a disclosure from the child, unless the child and/or caretaker provides a timely and plausible description of accidental anogenital straddle, crush or impalement injury, or past surgical interventions that are confirmed from review of medical records. Findings that might represent residual/healing injuries should be confirmed using additional examination positions and/or techniques

1) Acute trauma to genital/anal tissues

2) Acute laceration(s) or bruising of labia, penis, scrotum, or perineum

3) Discoloration of the posterior fourchette or vestibule, not involving the hymen

31. Bruising, petechiae, abrasions on the hymen

32. Acute laceration of the hymen, of any depth; partial or complete

33. Partial laceration with exposure of tissue below the demis

34. Perianal laceration with exposure of tissue below the demis

35. Residual (healing) injuries to genital/anal tissues

36. Perianal scar (a very rare finding that is difficult to diagnose unless an acute injury has occurred at the same location)

38. Scar of anterior fourchette or fossa (a very rare finding that is difficult to diagnose unless an acute injury was previously documented at the same location)

39. Complete hymenal transaction/complete hymen defect – a defect in the hymen below the 3-9 o'clock location that extends to or through the base of the hymen, with no hymenal tissue available at that location

40. Signs of FGM or cutting, such as less or part of all the perineal (dilator hood), clitoris, clitoral nodule or clitoral major, or vertical linear scar adjacent to the clitoris (type 4 FGM)

Section 2. Infection

A. Infections not related to sexual contact

39. Vulvitis caused by fungal infections such as Candida albicans, or bacterial infections transmitted by nonsexual means, such as Streptococcus type A or type B, *Staphylococcus sp.*, *Escherichia coli*, *Shigella* or other gram-negative organisms

40. Vulvitis caused by viral infections such as Epstein-Barr virus or other respiratory viruses

B. Infection that can be spread by nonsexual as well as sexual transmission

Interpretation of these infections might require additional information, such as mother-to-child serologic history (HIV or child's history of oral lesions (HSV), or presence of transmission in the family). Most of these infections have a low likelihood of sexual transmission. After complete assessment, a report to Child Protective Services might be indicated in some cases. Photographs or video recordings of these findings should be taken, then evaluated and confirmed by a pediatrician in an office setting, and a written account provided

41. Molluscum contagiosum in the genital or anal area. In young children, transmission is most likely nonsexual. Transmission from intimate skin-to-skin contact in the adolescent population has been described

42. Condyloma acuminata in the genital or anal area. Warts appearing for the first time after 1 year may be more likely to have been transmitted by sexual contact

43. HSV type 1 or 2 infections in the oral, genital, or anal area

C. Infection caused by sexual contact, if confirmed using appropriate testing, and perinatal transmission has been ruled out

44. Genital, rectal, or pharyngeal *Neisseria gonorrhoeae* infection

45. Genital or rectal *Chlamydia trachomatis* infection

47. Trichomonas vaginalis infection

48. HIV, if transmission by blood or contaminated needles has been ruled out

Section 3. Findings diagnostic of sexual abuse

49. Pregnancy

50. Semens identified in forensic specimens taken directly from a child's body

PGM: female genital mutilation; HPV: human papillomavirus; HSV: herpes simplex virus

This table lists medical and laboratory findings; however, most children who are evaluated for suspected sexual abuse will not have physical signs of injury or infection. The child's description of what happened and report of specific symptoms in relationship to the events described are both essential parts of a full medical evaluation.

# Normal and nonspecific ano-genital findings

- Hymenal tags
- Hymenal bumps or mounds
- Labial adhesions
- Clefts or notches in the anterior half of the hymen
- Vaginal discharge
- Genital or anal erythema
- Perianal skin tags
- Anal fissures
- Anal dilatation with stool in ampulla

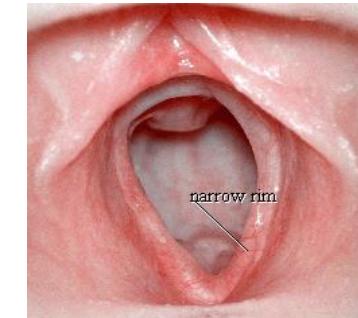
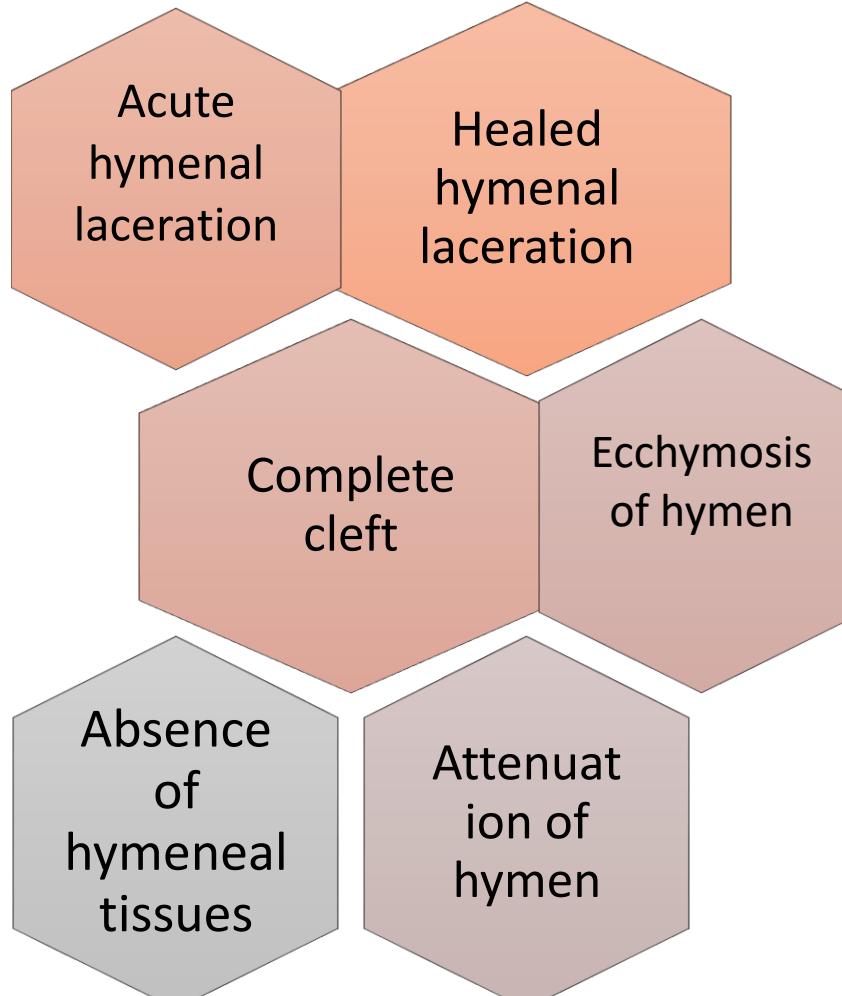
# Findings that are diagnostic of penetrating trauma



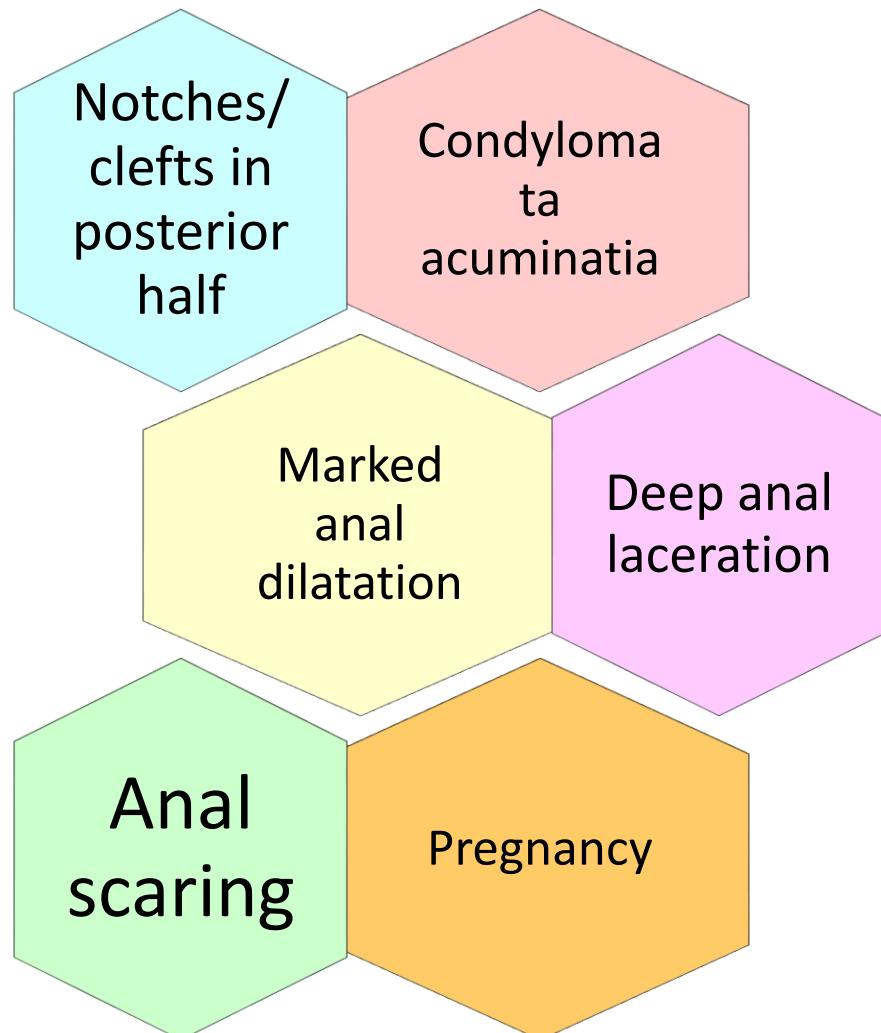
**FIGURE 9**  
Case 3: A 9-year-old assaulted 3 days before. Deep V-shaped laceration is present at the 6:30 position. Fresh-cut edges of the wound are still visible. The patient was examined with the supine, labial traction method.



**FIGURE 10**  
Case 3: Nineteen days after assault. The V-shaped laceration has smoothed off, leaving a "keyhole-type" appearance. Mounds on either side of the orifice formed by 2 intravaginal longitudinal ridge attachments. The patient was examined with the supine, labial traction method.



# Findings that are consistent with abuse



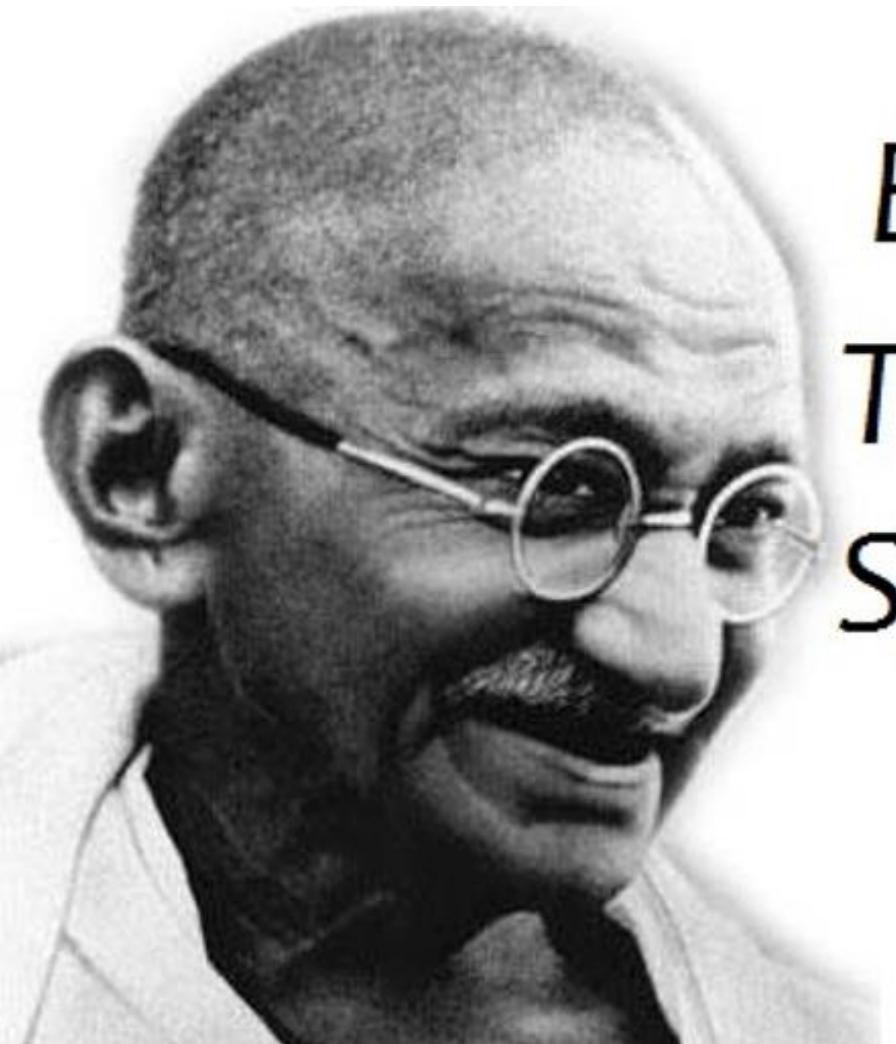
# Summary

- ❑ Examination general/ systemic/ injuries/ ano-genital
- ❑ Head to toe examination for injuries
- ❑ Recording of injuries
- ❑ Ano- genital examination techniques may vary:
  - ❑ Child
  - ❑ Adolescent
  - ❑ adult
- ❑ Genital injury interpretation is difficult unless with experience



# Develop an attitude of





Be The Change  
That You Want to  
See In The World.



Kelaniya  
Medicine



Thank  
you

