Year 2 MBChB
Clinical Skills Session
Female genitalia examination

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Learning objectives.

To revise bimanual vaginal examination including an understanding of the common abnormalities and examination of appropriate lymph nodes.

Theory and background.

A female genitalia examination involves the inspection of the female external genitalia (vulva) followed by palpation of the vagina, the fornices, the cervical os, the uterus and the adnexae. Adnexae is the collective name given to the ovary and fallopian tube.

The fallopian tube is the most commonly used noun to apply to that part of the female anatomy. However, you may also hear the name “salpinges” (plural) or uterine tube.

As in all examinations, effective communication with your patient is the basis of a safe and efficient examination. Therefore, make sure you communicate with your patient appropriately as you proceed.

Be familiar with the female genitalia and its structures, which are divided between external and internal structures.

Vulva or external genitalia; the visual external female genitalia consists of the following structures;

- Mons pubis – fatty pad overlying the pubic symphysis (also anterior border of the vulva).
- Clitoris – analogous to the penis in the male.
- Prepuce – hood like structure that covers the clitoris.
- Urethral opening through which urine is excreted.
- The labia minora & majora.
- Intromitus or vestibule – opening to the vaginal canal.
- Bartholin’s glands – lubrication.
- Skene’s glands – analogous to the prostate in males.
- The perineum and the rectum. The rectum forms the posterior border of the vulva.

Internal genitalia

The internal genitalia extends from the vulva to the vagina and to the uterine cervix. Anteriorly the hymen may be present. This is a membrane that is present in the anterior orifice of the vagina. It is perforated to allow menstruation and may be ruptured following intercourse or trauma.

Vagina;

- The vagina is composed of rugae like folds which permit the expansion and contraction of the vaginal canal. The tissues are composed of connective, membranous and erectile tissue. The vascular supply is from the vaginal artery. Lymphatic drainage is via the superficial and deep inguinal nodes and iliac nodes.

Cervix

- The cervix is the inferior part of the uterus. Externally it protrudes into the vaginal canal and has a “dome” like appearance. (When observed via a speculum) Around the base of the “dome” or cervix
are the fornices, (plural) with the right fornix, anterior fornix, left fornix & posterior fornix.

- The cervix itself is a cylindrical tube that at its distal end has the endocervical canal that communicates to the external opening of the cervix, called the cervical Os. Blood supply; uterine artery.

**Uterus**

- An inverted pear shaped organ that is the main reproductive organ in females. It lies posteriorly to the bladder and like the bladder is a pelvic organ.
- The uterus can be divided into 2 sections which are the cervix (see above) and the body of the uterus. The superior part of the uterus is referred to as the fundus and here it has a thick muscular layer, used for helping to expel the foetus in childbirth as well as protecting it during pregnancy.
- It has two tubes that arise superiorly and bilaterally off the body of the uterus and these are the uterine tubes or fallopian tubes.
- Blood supply is off the uterine arteries with lymphatic drainage being a complex network of nodes.

**Fallopian tubes**

- As mentioned above they arise superiorly and bilaterally off the body of the uterus and at their distal end can be found the fimbriae and the ovaries.
- Their primary function is to facilitate the passage of sperm towards the egg and then to allow the transport of the fertilised egg to the uterus for implantation.
- Blood supply is off the uterine and ovarian arteries with lymphatic drainage off the iliac and para aortic nodes.

**Ovaries**

The ovaries are small olive sized organs approximately 3 – 5 cm in length of which there are two bilaterally. Their function is the housing and release of ova or eggs of which they have stored between 1.5 – 2 million ova of which only 300 will ever have the potential for fertilisation. Blood supply is via the ovarian artery. Lymphatic drainage is via the para aortic nodes.

**Indications for a female genital examination**

Patient history is a strong determining factor in dictating whether the examination is performed or not. Indications for conducting a female genital examination can follow from the patient noticing changes they have picked up on self-examination or attending a health check-up. These changes can include;

- Trauma
- Prolapse – the vaginal canal through lax muscles “falls” out of their normal position.
- Bleeding outside of menstruation
- Heavy menstruation – potential hypo thyroid condition.
- Sparse menstruation – potential hyper thyroid condition.
- Discharge – infective.
- Pain e.g. on urination
- Pain on intercourse – dyspareunia – endometriosis, urinary tract infection or psychological.

This list is not exhaustive.
Patient safety.

**Patient Safety**

- Introduce yourself
- Check the patient’s identity
- (including allergies)
- Explain what you want to do
- Gain informed consent from the patient
- Consider an appropriate chaperone
- Adequate exposure maintaining dignity
- Position the patient appropriately
- Wear Personal Protective Equipment as required.
- Ask the patient to empty their bladder prior to the examination as you will be pressing over the bladder and this could cause discomfort if the bladder is full. Urinalysis may be performed if clinically relevant.
- Wash your hands before and after you touch the patient

**Procedure**

The examination should take place in a well-lit and warm environment, with a wall or floor mounted direct light source to ensure adequate visualisation of the vulva and may be necessary when performing a speculum examination.

Ask the patient to empty their bladder prior to the examination as you will be pressing over the bladder and this could cause discomfort if the bladder is full. Urinalysis may be performed if clinically relevant.

Following your introduction, explain to the patient that they will need to remove their clothing from the waist down, and when they are ready to lay supine on the examination couch and cover over with the sheet provided.

When the patient is ready ask them to draw their heels towards their bottom (Flexing the knees) keep their ankles together and let their knees fall to the sides (Abducting the hips / thighs). Only expose as much of the patient as necessary to maintain their dignity.

**Equipment required**

- Couch, with sheet and covering blanket
- Hand washing facilities
- Gloves/ Apron
- Light source
- Clean Tray
- Tissues
- Clinical waste bin
- Water based lubricant (small amount should be put on a piece of tissue to prevent contaminating lubricant tube once examination begins).
**Inspection of the external genitalia**
Inspect the vulva from the anterior to the posterior borders, noting any abnormalities such as scars, rashes, or any evidence of trauma. Part the labia majora, warning your patient you are about to do so. Inspect the prepuce, clitoris, the urethra and the vaginal opening (Introitus). You are looking for any abnormalities such as discharge or abnormal “lumps”.

If the history suggests concerns over incontinence or prolapse:
- Ask the patient to strain down and observe for any bulging or prolapse.
- Ask the patient to cough and observe for any leakage of urine.

**Internal examination**
Gently introduce your lubricated gloved index finger, allowing the patient time to relax before introducing your middle finger. Pass your fingers downwards and backwards in line with the vagina.

The cervix will be felt as a semi-hard dome with a dimple or slit in the middle. (the external os) The normal cervix is mobile and movement does not cause pain. Assess the fornices surrounding the cervix.

A nulliparous os is described as a dimple and this is found in females who have not had a pregnancy or have not had a vaginal delivery.

A multiparous os is described as a small slit and is found in females who have had a vaginal delivery.

**Bi-manual examination**
Inform the patient that you are about to apply pressure over their abdomen.
Place your internal fingers in the posterior fornix and apply upward pressure on the cervix and uterus.
Your other hand is placed on the abdomen just below the umbilicus; you need to use the lateral surface of your index finger to push downwards. This pressure is continued as you move the abdominal hand towards the pubic symphysis to locate the fundus of the uterus. The fundus or superior border of the body of the uterus is non-palpable in health. It becomes palpable at approximately 12 weeks of pregnancy or if it is enlarged.
If the fundus is located, estimate the uterine size by estimating the distance between the two examining hands.

The uterus if palpated should be assessed for size, shape, mobility and consistency as well as for any masses or irregularities.
**Palpating the adnexae**

The adnexae as mentioned above is the collective name given to the fallopian tube and the ovary. The fallopian tubes are impalpable in health and generally the ovaries are not palpable unless the patient is very slim or the ovaries themselves are significantly enlarged. Healthy ovaries are 2-3cms in length and are a firm ovoid shape.

To palpate for the adnexae, place the fingers of your abdominal hand over the iliac fossa whilst readjusting the internal fingers into the corresponding lateral fornix. Using the finger pulps internally to face the abdominal fingers and gently but firmly bring the fingers of either hand together by pressing the abdominal hand inward and downward, and the internal fingers upward and laterally. Feel for the ovaries as the interposed tissues slip between your fingers. Repeat the examination on the other side.

As the adnexal structures slide between your interposed fingers it should be a relatively painless movement, although there may be tenderness as the ovaries themselves are palpated. If you palpate the adnexal structures, then describe what you palpated;

- Size
- Shape
- Consistency
- Mobility
- Tenderness

**Completing the examination**

Rotate your examining hand back to the midline before removing your fingers gently from the vagina, inspecting your fingers for signs of blood, mucus or pus. Offer the patient some tissues to wipe any excess lubricant etc. away. If the patient is unable to do this you can offer to do it for them. Remove your gloves from at least one hand before covering the patient up; this is to avoid contaminating any bedding or clothing. If you have not already done so, palpate for the lymph nodes, remembering to remove and dispose of the gloves used in the examination and then to don a new pair. When you have completed the examination, remove your gloves and apron, wash your hands and invite the patient to get dressed. Offer reassurance, document your findings, develop a management plan and communicate that to the patient.

**Lymphatic drainage**

Ensure that you palpate the associated lymph nodes as they can give you additional information alongside the patient’s history and the physical examination.
Inguinal lymph nodes (Deep & superficial)
  - Vagina
  - Clitoris

Pelvic or iliac nodes
  - Vagina
  - Uterus
  - Cervix
  - Fallopian tubes
  - Ovaries – lesser extent

Para aortic
  - Uterus
  - Fallopian tubes
  - Ovaries

With the exception of the deep and superficial inguinal lymph nodes, the iliac and para aortic nodes are impalpable due to their location.

It should be noted that the deep inguinal nodes may not be palpable as their palpability depends on such things as the magnitude of the infection & by the nature that they are deep lying.

You may wish to palpate the lymph nodes at the start of the examination before your gloves get contaminated. Or, you may choose to do this component once you’ve performed the bi-manual examination. It is advisable to don a new set of gloves if you palpate the nodes following the internal examination.

**Recording your findings**

Don’t forget when recording your findings in the patient’s case notes use a black ink pen.
Document the patient’s:
  - Date of birth.
  - Date of examination.
  - Your Signature & name printed.
  - Your position or role.

When documenting the size of any organ or mass. Not only describing the size, shape, position, its surface and position. It also helps to draw a diagram.