ANNEX 2

Medical issues and sexual violence

This part of the guidelines provides background medical information that is relevant to the care of victims of sexual violence. The topics covered include genito-anal anatomy and conditions affecting the female genitalia (e.g. pathological conditions, childbirth, female genital mutilation, etc.). It is stressed that the material included here is intended to serve as an introduction to these subject areas; for further information, users are referred to more comprehensive texts, such as those listed in the attached bibliography.

Genital structure and function

Health workers who are required to perform genito-anal examinations on individuals who have experienced sexual violence must have a good understanding of normal anatomy. A working knowledge of the main pathological conditions affecting the genitalia is also essential. Initial and ongoing training and peer review are vital to developing and maintaining skills in this field.

Children

Specialized training is required in order to conduct genito-anal examinations, to identify normal and abnormal anatomic variants, and to describe findings appropriately in individuals under 18 years of age.

The female genitalia

The anatomy of the genitalia in pre-pubertal female children differs from that of fully developed females. In infants (i.e. under 2 years of age), when maternal estrogen is present, the hymen may be thick, somewhat convoluted and waxy in appearance. The waxy appearance is typically seen in neonates and in children who are being breastfed. Once this estrogen source disappears, the hymen becomes very thin and vascular.

In pre-pubescent females, the genitalia have the following characteristics:

- The labia majora are flat and the labia minora thin relative to those of the adult.
- The clitoris is usually hidden by the labia majora.
- The labia minora extend only part way down from the anterior commissure (i.e. the site at which the labia majora meet anteriorly) and do not reach the midpoint posteriorly. The area where the labia majora meet posteriorly is the posterior commissure. This is also referred to as the posterior fourchette although properly defined, the posterior fourchette is the area where the labia minora meet posteriorly. The posterior commissure, therefore, is present

in both pre-pubescent and fully developed females, while the posterior fourchette is only present in the latter.

- The hymenal orifice edge is usually regular, smooth and translucent, and very sensitive to touch.
- Mucous membranes of the vagina are thin, pink and atrophic.
- These tissues have little resistance to trauma and infection.

In later childhood, the following changes become evident:

- The external genitalia begin to show signs of early estrogen.
- The mons pubis thickens.
- The labia majora fill out, the labia minora become more rounded and extend towards the posterior fourchette.
- The hymen thickens and the opening increases in size, although this is not readily apparent as the thickened hymen covers it more completely.
- The vagina elongates and vaginal mucosa thickens.

The shape of the hymen in pre-pubescent girls is variable and can be described as:

— *imperforate*: no hymenal opening present (very rare);
— *crescentic*: posterior rim of hymen with attachment at approximately 11 and 1 o'clock positions, i.e. a half moon shape;
— *annular*: tissue that surrounds the opening at 360°, i.e. a circular shape;
— *sleeve-like*: an annular shape but with a vertically displaced orifice;
— *septate*: two or three large openings in the hymenal membrane;
— *cribiform*: small multiple openings in the hymenal membrane;
— *fimbriated*: redundant tissue that folds over itself similar to excess ribbon around an opening.

The shape of the hymenal orifice can be described further by the appearance of clefts, bumps, notches, tags, or the presence of thickening or thinning at the edge of the orifice.

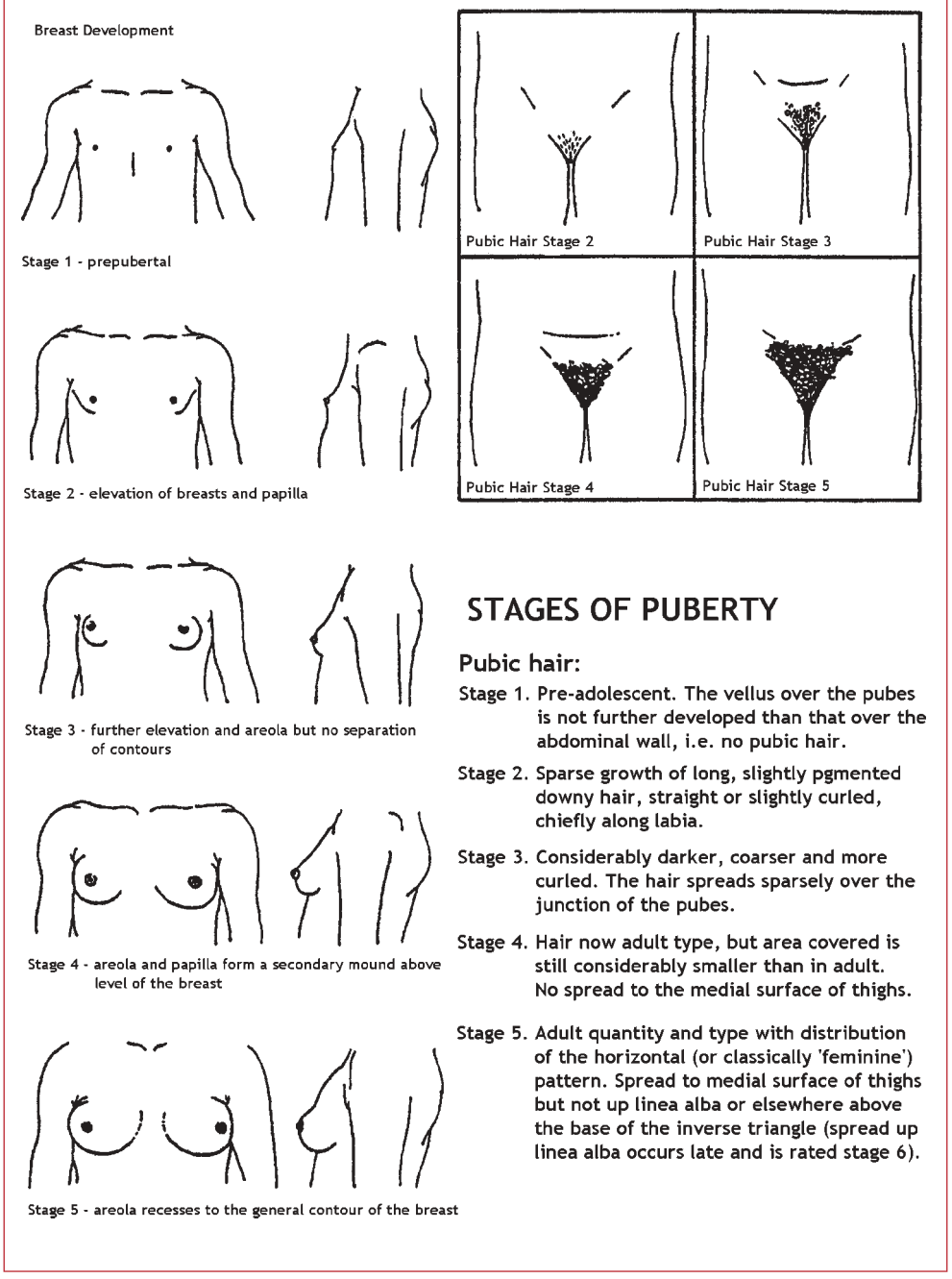
Puberty begins in females aged between 8 and 13 years and takes several years to complete. Onset will vary depending on the child's general health and nutritional status, socioeconomic factors and genetic factors. The physical stages occur in an orderly sequence (see Fig. 1), with the external genitalia gradually assuming an adult appearance as follows:

— the labia minora reach down all the way posteriorly and meet to form the posterior fourchette;
— the mons pubis begins to be covered by pubic hair;
— the hymen thickens, develops folds and has increased elasticity and decreased pain sensitivity;
— mucous production begins;
— the vagina lengthens to 10–12 cm and mucosa is thick and moist.

The male genitalia

The testes are normally descended into the scrotum at birth, and in pre-pubertal boys are typically less than 2.2 cm in diameter. In boys, puberty begins between 9.5 and 13.5 years of age, and at this time:

Figure 1 **Stages of puberty in the female**



Source: adapted from The Adelaide Children's Hospital, 1989.

— the testes enlarge;
— the scrotum skin becomes thin and reddened;
— the mons pubis begins to be covered by pubic hair.

The phallus enlarges gradually from birth through to adolescence, when a further slight increase in size is observed.

Anal anatomy (both sexes)

There is considerable variation between individuals in the appearance of the anus, including:

— degree of pigmentation;
— symmetry of the structures;
— rugal patterns;
— tone of the anal sphincter;
— prominence and distribution of the vascular structures.

Anal anatomy does not change with puberty, except for the appearance of pubic-like hair that can surround the external anal tissues.

Adult women

The main anatomical features of the genitalia in the adult female are illustrated in Fig. 2. These features vary in appearance from one woman to another (*37*); in particular, there is:

— marked variation in the amount and distribution of pubic hair;
— variation in the size, pigmentation and shape of the labia;
— variation in the size and visibility of the clitoris;
— variation in the location of the urethral orifice and the vaginal orifice.

The hymen is a collar or semi-collar of tissue surrounding the vaginal orifice; it is not a closed door sealing the vaginal orifice (*32*). It too has many normal configurations. In sexually active women, particularly after childbirth, the hymen is often reduced to a ring of tissue remnants called carunculae.

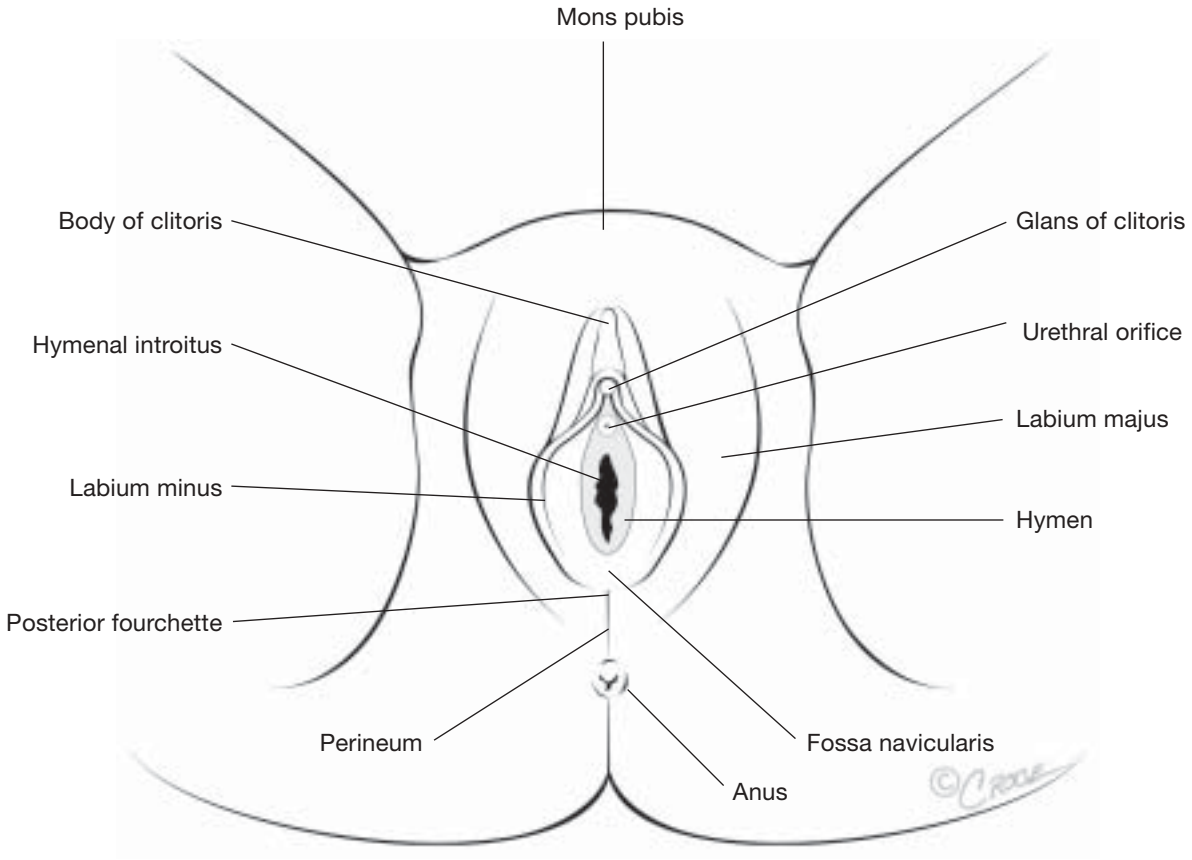
The uterus is usually anteverted. However, in 15% of non-pregnant women it sits in a retroverted position, which can make the location of the cervix on speculum and bimanual examination more difficult.

When describing genito-anal structures, it is important to aim for consistency and clarity in the terminology used, not only among health care professionals but also within the medico-legal system (*38–40*). Anatomical terms that are commonly misused by health care professionals when describing certain structures of the female genital area, both child and adult, are explained in Box 1.

Pregnancy

Sexual violence against pregnant women is not uncommon. According to population studies from various countries, between 6% and 15% of ever-

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



BOX 1

Female genital anatomy and recommended terminology

- The **vaginal vestibule** is the space in front of the hymenal membrane that is enclosed by the labia minora. This is sometimes incorrectly referred to as the introitus.
- Reference to the hymenal opening should be made using the term "**hymenal orifice**" and not "introitus" in order to avoid confusion.
- The **fossa navicularis** is the concave area between the posterior attachment of the hymen to the vaginal wall and the posterior fourchette (or commissure).
- The **posterior fourchette** is the point where the labia minora meet posteriorly and fuse together. It is only present after puberty, though this term is often applied, albeit incorrectly, to pre-pubescent girls.
- The **posterior commissure** is the point where the labia majora meet and fuse together, both before and after puberty.

partnered women have been sexually and/or physically abused during pregnancy (*41*).

Pregnancy causes marked physiological and anatomical changes in women; these will need to be taken into account when performing an examination of a pregnant woman who has been sexually victimized.

The anatomical changes that take place during pregnancy depend on the gestation of the fetus and are summarized below:

- *First trimester* (i.e. up to 13 weeks gestation). The uterus is enlarging, but still protected from abdominal blows within the pelvis. The uterus is generally not palpable above the symphysis pubis until 12 weeks gestation. There is increased vascularity of the vaginal tract and increased physiological discharge.
- *Second trimester* (i.e. 13 weeks to 27 weeks). The uterus is palpable up to the umbilicus by 20 weeks. The fetus and placenta are therefore vulnerable to abdominal trauma.
- *Third trimester* (i.e. 28 weeks to 40 weeks or term). The cervix comes into the vaginal axis so that direct forceful contact with the cervix can cause bleeding and even the onset of labour. The fetus is vulnerable to abdominal trauma, which can cause placental abruption and fetal death. Vulval varicosities may form and there is a marked increase in physiological mucus.

After delivery, further physiological changes mean that estrogen levels in the body are low but prolactin levels are high, especially in those women who are breastfeeding. This has the effect of reducing vaginal lubrication and distension. The walls of the vagina can become thinned and the pink rugal (folded) pattern can be lost (*37*).

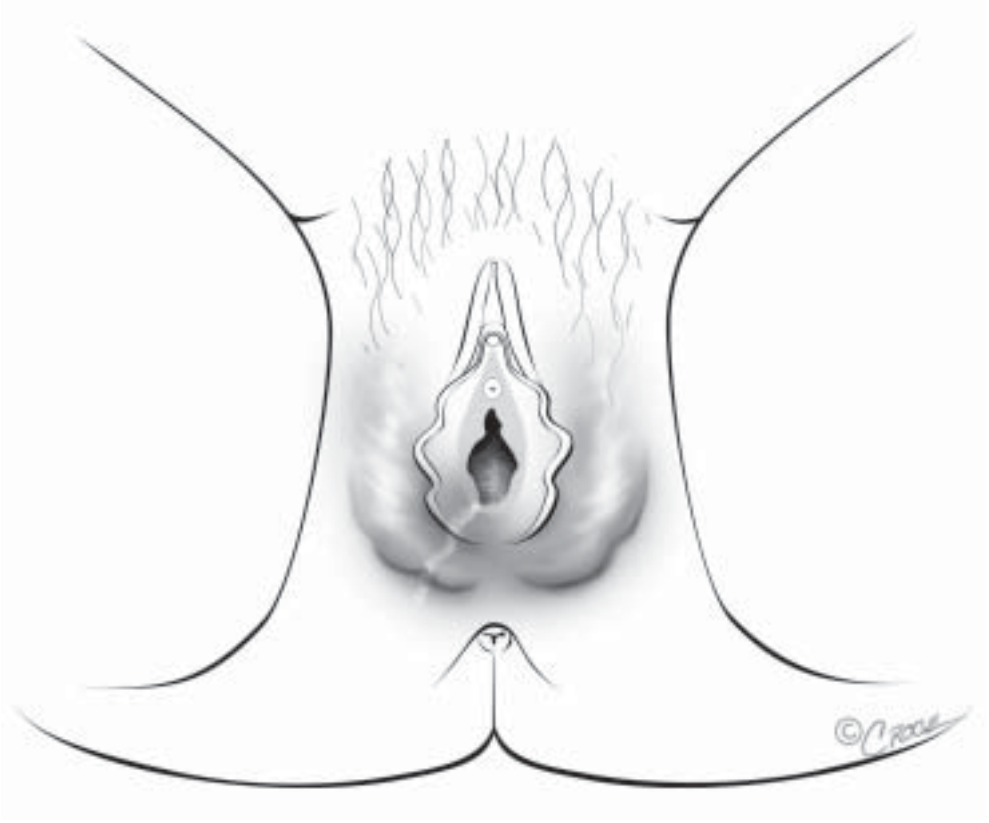
Vaginal delivery can sometimes cause trauma to the genital area, especially in the event of interventions (i.e. forceps deliveries, episiotomies). This will leave characteristic patterns of scarring, such as healed perineal lacerations (Fig. 3) and episiotomy scars (see also section 3.2.4 Traumatic injuries).

Postmenopausal women

Menopause is the time in a woman's life when estrogen levels drop and menstruation ceases. Anatomical changes taking place at this time include (see Fig. 3):

— a thinning of the hair over the mons pubis and labia majora;
— a decrease in subcutaneous fatty tissue;
— the inner surfaces of the labia minora become pale and dry;
— the vaginal orifice may become smaller (very small speculums may need to be used);
— the vaginal orifice may gape and rectocoeles, cystocoeles or frank uterine prolapses may be seen;
— the vaginal walls become smooth, thin, shiny and less elastic;
— less mucus is produced.

Figure 3 **External genitalia of postmenopausal elderly female showing a healed perineal laceration from childbirth**



The decrease in lubrication and the increased fragility of the tissues in the elderly woman increases the possibility of genital injury in sexual assault (*42*).

Conditions affecting the female genitalia

There are a number of medical conditions that affect the female genitalia, and which may be present in patients seeking medical treatment for sexual violence. Medical conditions that health workers should be able to recognize and treat, or refer for treatment, include the following:

— infective conditions (i.e. sexually transmitted infections);
— neoplastic diseases (i.e. cancers);
— inflammatory conditions (e.g. lichen sclerosis).

The more common infective, neoplastic and inflammatory conditions are briefly described on the subsequent pages; some are also illustrated (see Figs 4–8). However, it is beyond the scope of this document to provide a comprehensive description of the symptoms and pathological features of all these types of diseases. Health workers are therefore referred to the relevant texts on the subject listed in the attached bibliography and strongly urged to develop their diagnostic and management skills in this field.

In addition to the medical conditions mentioned above, patients may present with visible signs of injury or trauma to the genito-anal area that may have

nothing to do with a sexual assault. Typically, these will be related to childbirth. The characteristics of injuries of this nature are also outlined below, together with a description of anatomical changes that are associated with the practice of female genital mutilation.

It is essential that health practitioners are aware of the various medical conditions that may reveal themselves on genito-anal examination and are able to differentiate between injury caused by recent sexual violence and injury caused by other past events (i.e. childbirth, female genital mutilation). Patients presenting with existing infective, neoplastic and inflammatory conditions should be treated or referred for treatment, as necessary.

Infective conditions

Sexually transmissible infections (STIs) are caused by pathogenic organisms acquired through sexual contact. STIs require treatment of the patient and his/her sexual contacts, carry important public health implications and are usually notifiable diseases.

STIs are often asymptomatic and will be detected only by close physical examination and laboratory testing. Health workers should be able to demonstrate a basic familiarity with the pathological features of each of the following STIs:

— genital herpes (see Fig. 4);
— human papillomavirus infections (see Fig. 5);
— gonorrhoea;
— *Chlamydia trachomatis*;
— trichomoniasis;
— syphilis (see Fig. 6);
— granuloma inguinale (donovanosis);
— chancroid;
— Lymphogranuloma venereum;
— pubic lice and scabies.

STIs and non-sexually transmitted infections commonly co-exist. There are a number of non-STI genital infections to be aware of, including candidiasis and bacterial vaginosis. It is also important to keep in mind that genital ulceration, while indicative of certain STIs, may also be indicative of pyogenic infections, drug eruptions, secondarily infected scabies or Behcet's disease.

Neoplastic diseases

Carcinomatous conditions of the vulva cause genital ulceration (Figs 7 and 8). If carcinomatous conditions are suspected, patients should be examined for spread to the local lymph nodes in the inguinal area.

Figure 4 **Herpes simplex ulceration of the vulva**

Figure 5 **Widespread warts of the vulva, perineum and perianal area**

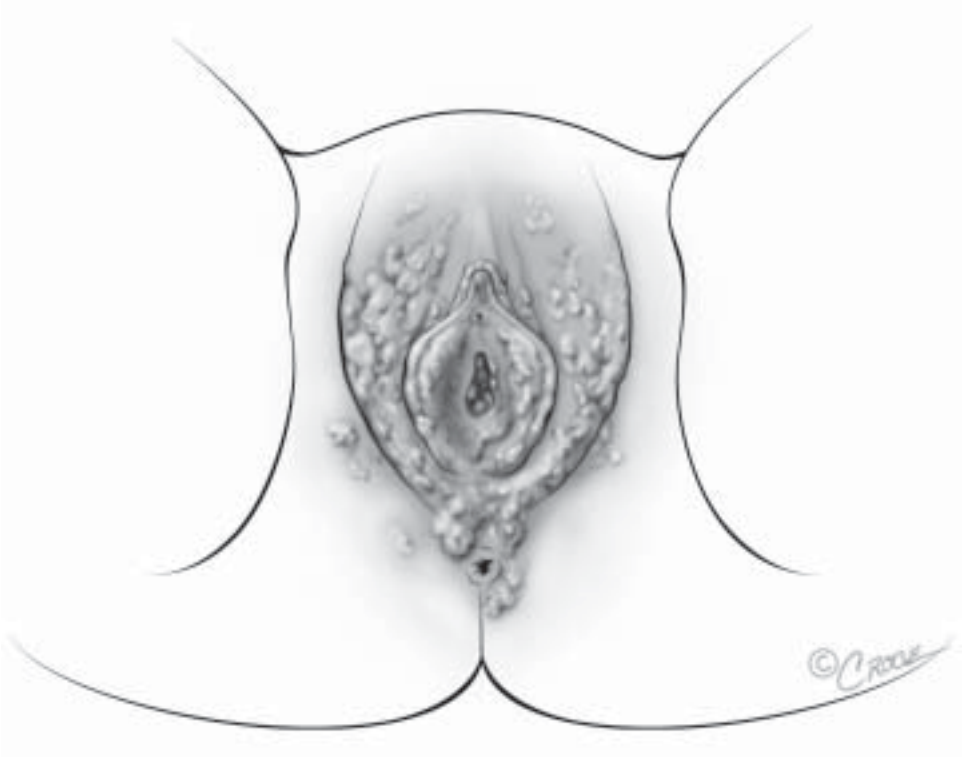


Figure 6 **Secondary syphilis of the vulva with characteristic condlyomata**

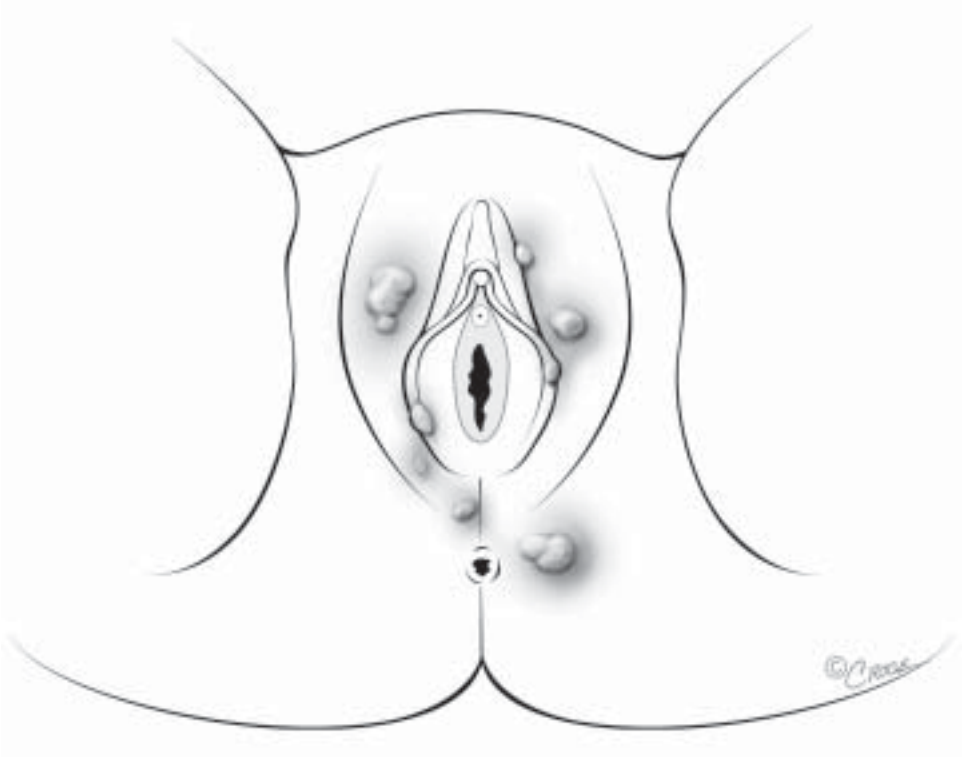


Figure 7 **Vulval intraepithelial neoplasia**

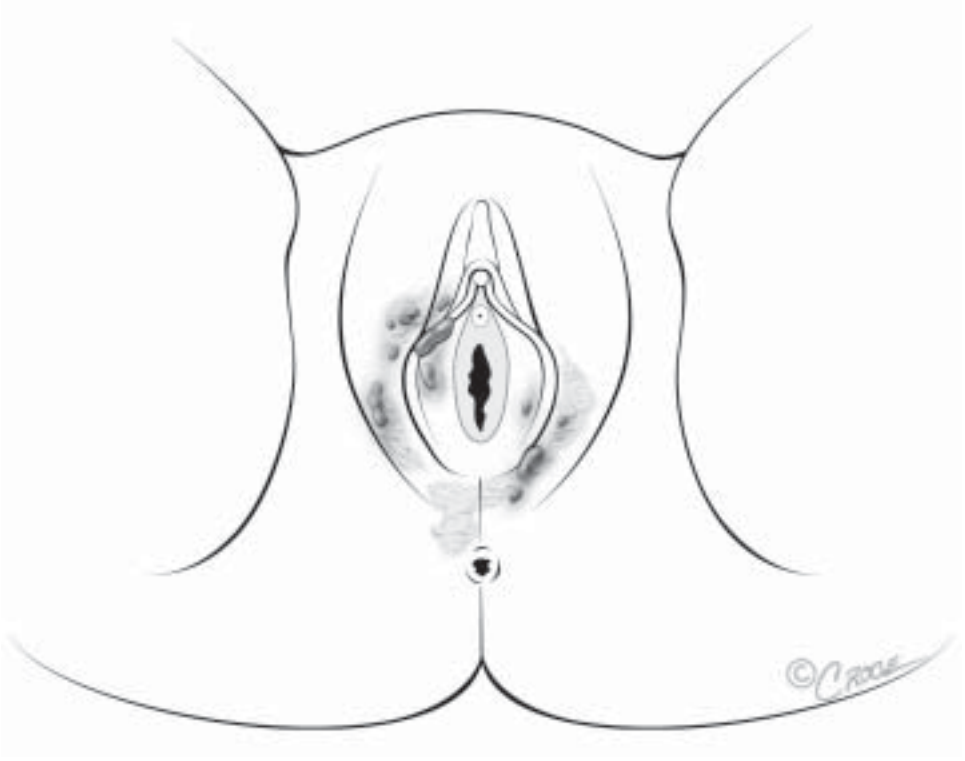
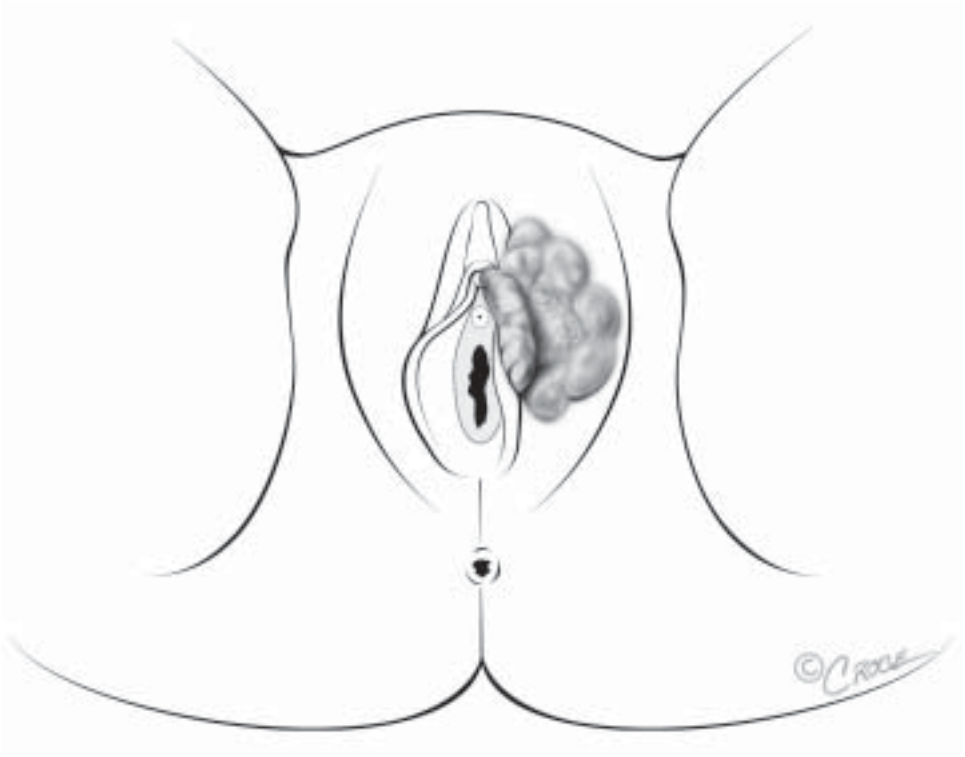


Figure 8 **Vulval invasive carcinoma**



Inflammatory diseases

Lichen sclerosis is the most common cause of dystrophic change of the vulva.

Traumatic injuries

Childbirth

Trauma to the genital tract may occur during childbirth. Uncontrolled delivery or interventions involving the use of instrumentation (e.g. in forceps deliveries, vacuum extractions) may cause injury to the perineum and anus, and/or to the clitoris and anterior structures.

An episiotomy is a medically performed incision of the perineum to allow delivery of the child. It is also done to assist with instrumental deliveries. The episiotomy is generally made lateral to the midline. If a midline tear occurs, it may extend to the anal sphincter and this may result in a recto-vaginal fistula.

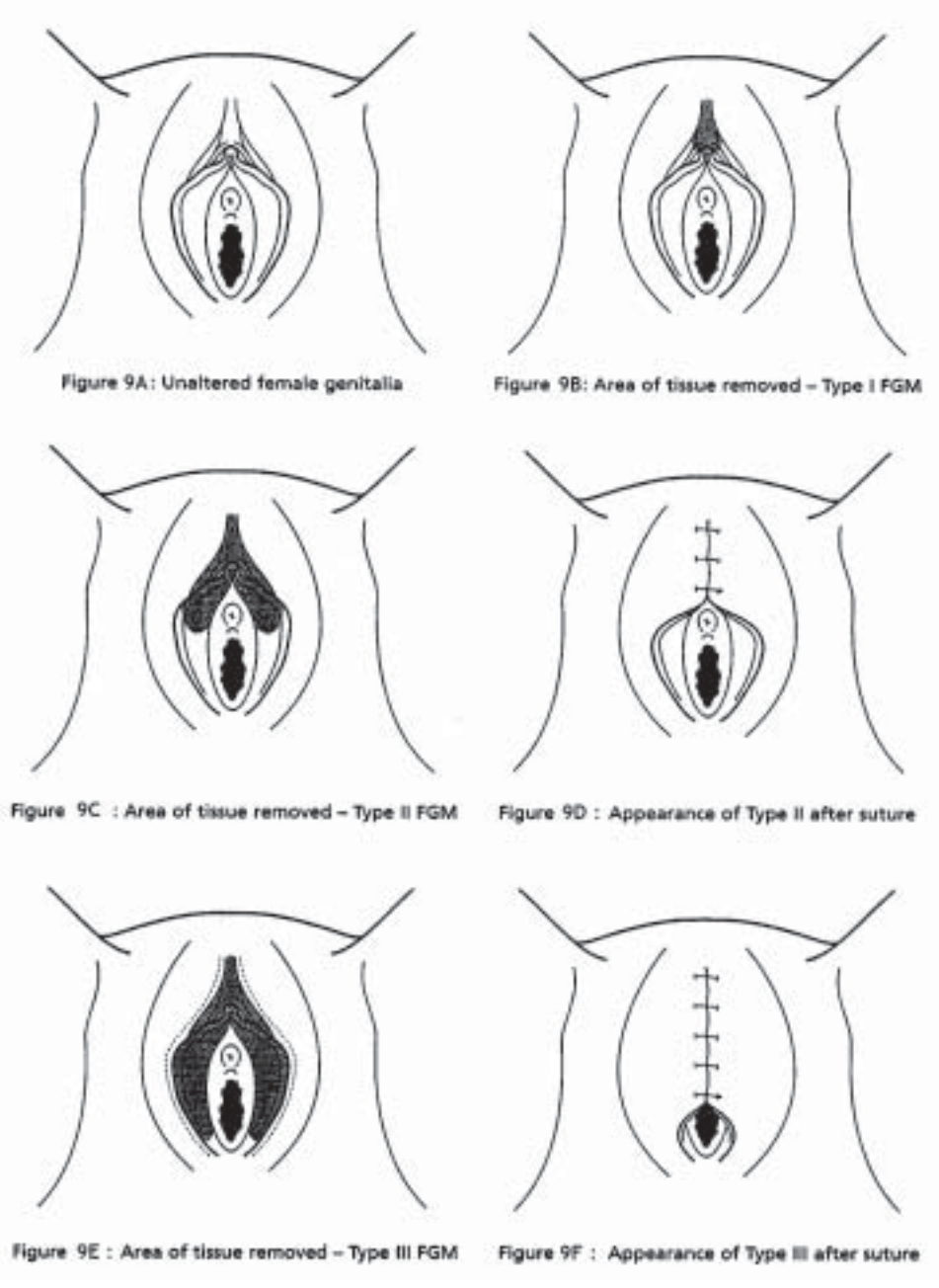
Female genital mutilation

Female genital cutting or mutilation, i.e. the partial or complete removal of female genitalia, will result in an altered genito-anal anatomy. As sexual assault patients may have had some degree of female genital cutting in their past, or the reversal of such procedures, health workers should have a reasonable knowledge of these practices.

WHO defines female genital mutilation (FGM) as, "all procedures involving partial or total removal of the female external genitalia or other injury to the

female genital organs whether for cultural or other non-therapeutic reasons" (*43*). Four distinct degrees or types of FGM are recognized; these are described in Box 2 and illustrated in Fig. 9.

Figure 9 **WHO classification of FGM**



Source: reference (*43*)

BOX 2

WHO classification of female genital mutilation

Type I **Excision of the prepuce, with or without excision of part or all of the clitoris (Fig. 9b)**
Other terms used to describe Type I FGM procedures include circumcision, ritualistic circumcision, sunna and clitoridectomy.

Type II **Excision of the clitoris with partial or total excision of the labia minora (Figs 9c and d)**
Other terms used to describe Type II FGM procedures include clitoridectomy, sunna, excision and circumcision.

Type III **Excision of part or all of the external genitalia and stitching/narrowing of the vaginal opening (Figs 9e and f)**
Other terms used to describe Type III FGM procedures include infibulation, Pharaonic circumcision and Somalian circumcision.

Type IV **Unclassified**
Unclassified or type IV forms of FGM include:

- pricking, piercing or incising of the clitoris and/or labia;
- stretching of the clitoris and/or labia;
- cauterization by burning of the clitoris and surrounding tissue;
- scraping of tissue surrounding the vaginal orifice (angurya cuts) or cutting of the vagina (gishiri cuts);
- introduction of corrosive substances or herbs into the vagina to cause bleeding or for the purpose of tightening or narrowing it;
- any other procedure which falls under the WHO definition of female genital mutilation given above.