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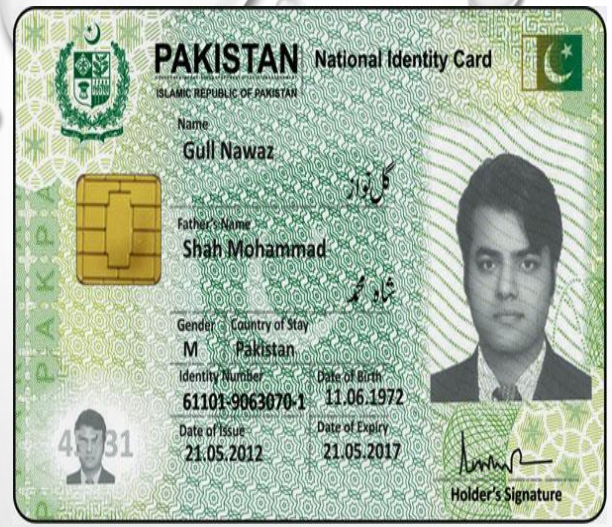
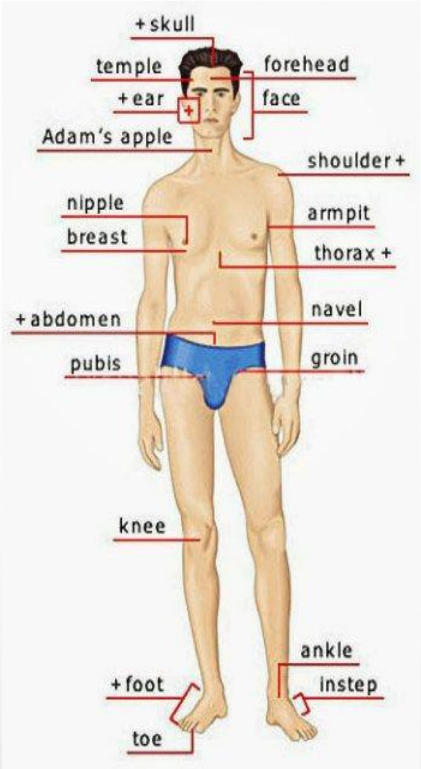

PAKISTAN National Identity Card
ISLAMIC REPUBLIC OF PAKISTAN
Name
Gull Nawaz
گل نواز
Father's Name
Shah Mohammad
شاہ محمد
Gender
M
Country of Stay
Pakistan
Identity Number
61101-9063070-1
Date of Birth
11.06.1972
Date of Issue
21.05.2012
Date of Expiry
21.05.2017
Holder's Signature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forehead
+ ear
face
Adam's apple
shoulder +
nipple
armpit
breast
thorax +
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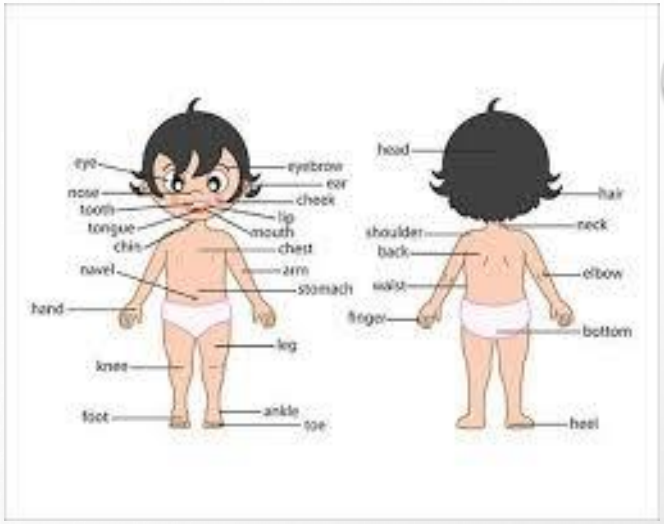
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back
elbow
waist
bottom
heel


HISTORY OF FORENSIC SCIENCE
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LEARNING OBJECTIVES

- Define and describe personal identity.
- Describe medico legal significance of personal identity.
- Describe methods of identification.
- Enlist the parameters for establishing identity.
- Describe the determination of race.
- Describe parameters of sex determination.
- Describe the medicolegal importance of sex.

PERSONAL IDENTIFICATION

Personal identity means establishment of individuality of a person, It is based on certain physical characteristics unique to that individual. It may be;

- **COMPLETE IDENTIFICATION**
- **PARTIAL IDENTIFICATION**

COMPLETE IDENTIFICATION

It means the absolute fixation of individuality of a person.

- Introduction of national identity card bearing facial photograph, a permanent identity mark and signature or thumb impression of the holder has standardized method of identification.

PARTIAL IDENTIFICATION

It means ascertainment of only some facts(race, sex, age, stature, etc) about the identity while, others remain still unknown. Some identity or incomplete identity is established.

MEDICO LEGAL IMPORTANCE

- **IDENTIFICATION IN THE LIVING**
- **In civil courts**, identification is required in cases such as
- Insurance,
- Pension, and inheritance claims,
- MARRIAGE,
- Disputed sex and
- Missing persons.

- **In criminal courts**,identification is required in cases such as
- absconding soldiers and
- criminals; persons accused of
- assault,
- rape,
- murder, etc;
- impersonation and
- interchange of newborn babies in maternity hospitals.

IDENTIFICATION IN THE DEAD

In the dead, identification is required;

- In cases of fire, explosion, and accidents.
- When an unknown dead body is found on the road, in the fields, railway compartment, or in water, and
- In cases of decomposed bodies or skeletal remains.

CORPUS DELICTI

The term corpus delicti means the body of the offence (essence of crime and not the physical body of the victim) and in a case of homicide, it includes

1. Positive identification of the body, and
2. Proof of its death by a criminal act of the accused.

DETERMINATION OF PERSONAL IDENTITY

- Forensic medicine plays an important role in the determination of personal identity. Basic principle of such an investigation is that every case should be dealt carefully on its own merits.

METHODS OF IDENTIFICATION

- Determination of personal identity can be attempted by three methods. these are:
- Third party method
- Subjective method
- Objective method

THIRD PARTY METHOD

- It is the most commonly used method.
- There are essentially two parties, i.e an examinee and a medical examiner.
- A relative or friend accompanying the examinee is the third party of the case.

- Personal identity of the examinee is verified by his relative or friend and his name, CNIC number and relationship with the examinee are entered in the medical certificate to establish personal identity of examinee.

SUBJECTIVE METHOD

- This method becomes applicable in the absence of third party.
- The only choice for the medical examiner is to collect morphological data of the examinee.
- Compilation of such data is a technical job more suited to the medical personnel rather than police.
- It should be done at the time of medicolegal examination, as part of descriptive protocol.

- Basic information collected during this examination, comprises of description of physical characters of body of the examinee and his belongings, especially facial features, other specific characteristics like height and weight, webbed fingers and personal belongings.

- In fresh cases, this information may be very extensive whereas in others(in advanced stage of decomposition or mutilated, with parts missing, it may be limited.
- Human beings though appear similar in shapes of body, yet some of their parts are individual specific such as face, hands and feet.

PERSONAL IDENTITY PARAMETERS

- **WHOLE BODY** Age, sex, stature and weight
- **BODY PARTS** Face having specific shape of eyes, nose,

lips, chin,cheeks,teeth,color of iris,

hands and feet bearing specific fingerprints on finger pulps and tracings on rest of them

ANATOMICAL :

- Primary------ present at birth
- Secondary that appear later----sex characters and other degenerative changes like cataract/ arcus senilis in eyes.

- **PHYSIOLOGICAL** Gait ,tone of voice and manner of speech
- **PATHOLOGICAL** Diseases----eczema and calcified fibroid, scars
- **GENETICS** Blood groups and other morphological characters like barr body

OBJECTIVE METHOD

- It is the utilization of morphological and belongings data.
- This data is analyzed by the investigating agencies to isolate an individual-specific identity clue or character, which leads to personal identity.
- The exercise is based on the theory that a character having intimate association to a person, be it may in the body of a person or his belongings, is sufficient to establish his identity.

- The fattest or the tallest boy in a class does not require additional characteristics, even facial for his recognition. such information is publicized in press, radio or television.
- This method is useful in cases of decomposed bodies and mutilated remains. These materials lack facial identity and so an essential part of subjective identification data is unavailable.

- For this purpose,the remains are sorted to separate **biological** and **non-biological** materials

- **BIOLOGICAL MATERIAL** INCLUDE;

  1)Tissues resisting putrefaction

  2)Tissues not resisting putrefaction

- Hairs, nails and bones do not putrefy.. these tissues are subjected to thorough wash to make them fit for physical inspection, microscopy and radiology for identification of characteristics for matching.

Non-biological materials of interest are; clothes and other belongings.

These are subject to inspection to note style of dress, identity marks of tailoring and laundry, biological stains or traces on these clothes that are not subjected to decomposition process, are extremely valuable to identify the source of origin.

RACE

- Race and racial characteristics are mainly discussed under the specialty of forensic anthropology.
- Increase in mass disasters often utilizes race and racial characteristics in establishing the identity of victims.

PRIMARY RACES

According to the anthropological sciences, there are three primary races in the world;

1. CAUCASIANS
2. MONGOLS
3. NEGROES

PARAMETERS OF RACE DETERMINATION

Race determination usually depends on the following;

1. Morphological characteristics/traits

2. Osteometric parameters

MORPHOLOGICAL CHARACTERISTICS

Table 11.20A: Differences in morphologic feature/traits of three primary races of world population

Traits	*Caucasian*	*Mongoloid*	*Negroid*
Population (Original)	Europeans	Chinese	Africans
Skin	Thin and fair	Pale and yellow	Tought and black
Iris	Blue/gray	Black	Black
Hairs (Scalp)	Thin, straight or wavy, with fair/light brown/ reddish colour	Straight or wavy with black colour	Curley and wooly with black colour
Face		Flattened	Small and compressed
Lips			Big and full
Extremities			
• Upper		Small	Longer forearms than arms
• Lower		Small	Longer legs than the thighs
Teeth		Lower 1st premolars may have 3 cusps and both permanent and temporary molars will have 3 roots	Obliquely placed (proclenated) with outward projection
Skull:			
• Shape	Round	Square	Narrow and oblong
• Size	Mesaticephalic (intermediate)	Brachycephalic (small)	Dolicocephalic (large)
• Cephalic index	75-80	80-85	70-75
• Forehead	Raised	Inclined	Small and compressed
• Orbits		High and roundish	Low and wide
• Nasal aperture	Narrow		Broad and wider

OSTEOMETRIC INDICES

Table 11.20C: Deriving various osteometric indices

Various indices	
Cephalic Index	$= \frac{\text{Max. Breadth of skull}}{\text{Max Antero-Posterior length}} \times 100$
Brachial Index	$= \frac{\text{Length of Radius}}{\text{Length of Humerus}} \times 100$
Crural Index	$= \frac{\text{Length of Tibia}}{\text{Length of Femur}} \times 100$
Humero-femoral Index	$= \frac{\text{Length of Humerus}}{\text{Length of Femur}} \times 100$
Inter-membral Index	$= \frac{\text{Length of Humerus + Length of Radius}}{\text{Length of Femur + Length of Tibia}} \times 100$

CEPHALIC INDEX (CI)

It is defined as the ratio between the maximum transverse breadth and maximum anteroposterior length of the skull multiplied by 100.

- **BREADTH:** Greatest diameter across the skull above the mastoid process.
- **LENGTH:** Is measured between the glabella and the external occipital process.

The measurements should be done by calipers and not by measuring tape.

CEPHALIC INDICES OF VARIOUS RACES

. **DOLICHO-CEPHALIC**

(LONG HEADED)

(ARYANS, ABORIGINES, BLACKS)

- CEPHALIC INDEX: BETWEEN 70 AND 74.9

2. **MESATI-CEPHALIC**

(MEDIUM LONG HEADED)

(EUROPEAN AND CHINESE)

- CEPHALIC INDEX: BETWEEN 75 AND 79.9

3. **BRACHY-CEPHALIC**

(ROUND HEADED)

(MONGOLIAN RACE)

- CEPHALIC INDEX: 80 AND ABOVE

HEIGHT INDEX (HI)

It is obtained by multiplying the height of the skull(tip of mastoid process to the bregma) by 100 and dividing it by the length of the skull. the height index of various races are as follows;

1. **BLACKS:** 72
2. **EUROPEANS:** 71
3. **MONGOLS:** 75

NASAL INDEX (NI)

It is obtained by multiplying the width of nasal aperture by 100 and dividing it by the height of the nasal aperture. the nasal index of various races are as follows;

1. **BLACKS:** 55
2. **EUROPEANS:** 46
3. **MONGOLS:** 50

OTHER PARAMETERS FOR DETERMINATION OF RACE

- **CLOTHES:** Traditional indian (dhoti and sari) and pakistani(shalwar & kameez ,dupatta and burQa)dresses are different from traditional western dress(suit and skirt)
- **COMPLEXION:** The skin is dark in negroes(in USA, the term used is black),brown in Indians, and fair in Europeans. Decomposition readily produces changes in external appearance.this is therefore of limited value.

- **HAIR:** The hair of Indians are black, long, and fine; of chinese and japanese black, and thick; of blacks wooly, short, curly(and arranged in tight spirals);and of Europeans fair, light brown, or blonde, and of any length.
- **EYES:** Indians have a dark or brown iris, Europeans have a blue or grey iris. variation in color, however, is common.
- **LIPS:** Blacks have thick lips which are slightly everted.

DETERMINATION OF SEX

- Present day trend to establish precise diagnosis about sex of an individual consists of three types of investigations;
- Anatomical
- Chromosomal
- Psychological assessment.

EVIDENCE OF SEX DETERMINATION

The evidence sex is divided into;

- The most certain
- The highly probable, and
- The presumptive

- In normal cases in the living the most certain evidence of sex depends on the position of ovaries in the female and test is in in the male .
- The highly probable evidence of sex includes the possession of sexual structures the female and male distribution of hair appropriate physical development vagina in female and penis in male.
- The presumptive evidence of sex includes the outward appearance of the individual, the features and general contours of the face , the clothes, the figure, the habits, the voice, etc.

PARAMETERS OF SEX DETERMINATION

- Sex of a person is equally important as the age factor in determining the identity of an individual.sex of a person alive or dead can be determined by
- Physical examination
- Secondary sexual characteristics
- Microscopic study of sex chromatin
- Gonadal biopsy
- Hormonal study
- Bones
- Other methods

PHYSICAL EXAMINATION

- This includes traits establishing sex identity of an individual .this constitutes anatomical sex component that determines sex and comprise of;
- External appearance
- External genitalia in male and female;
- Internal genital tract in the female

Table 11.16: Traits establishing sexual identity

Traits	*Male*	*Female*
Testes	Present, functioning	Absent
Penis	Present	Absent
Ovary	Absent	Present
Uterus	Absent	Present
Vagina	Absent	Present
Shoulder	Broader than hips	Narrower than hips
Gluteal region	Flat	Full and rounded
Adam's apple	Prominent	Less prominent
Breasts	Absent	Grows at puberty
Pubic hairs	Thick and extends to umbilicus only	Thin and covers up only the mons pubis

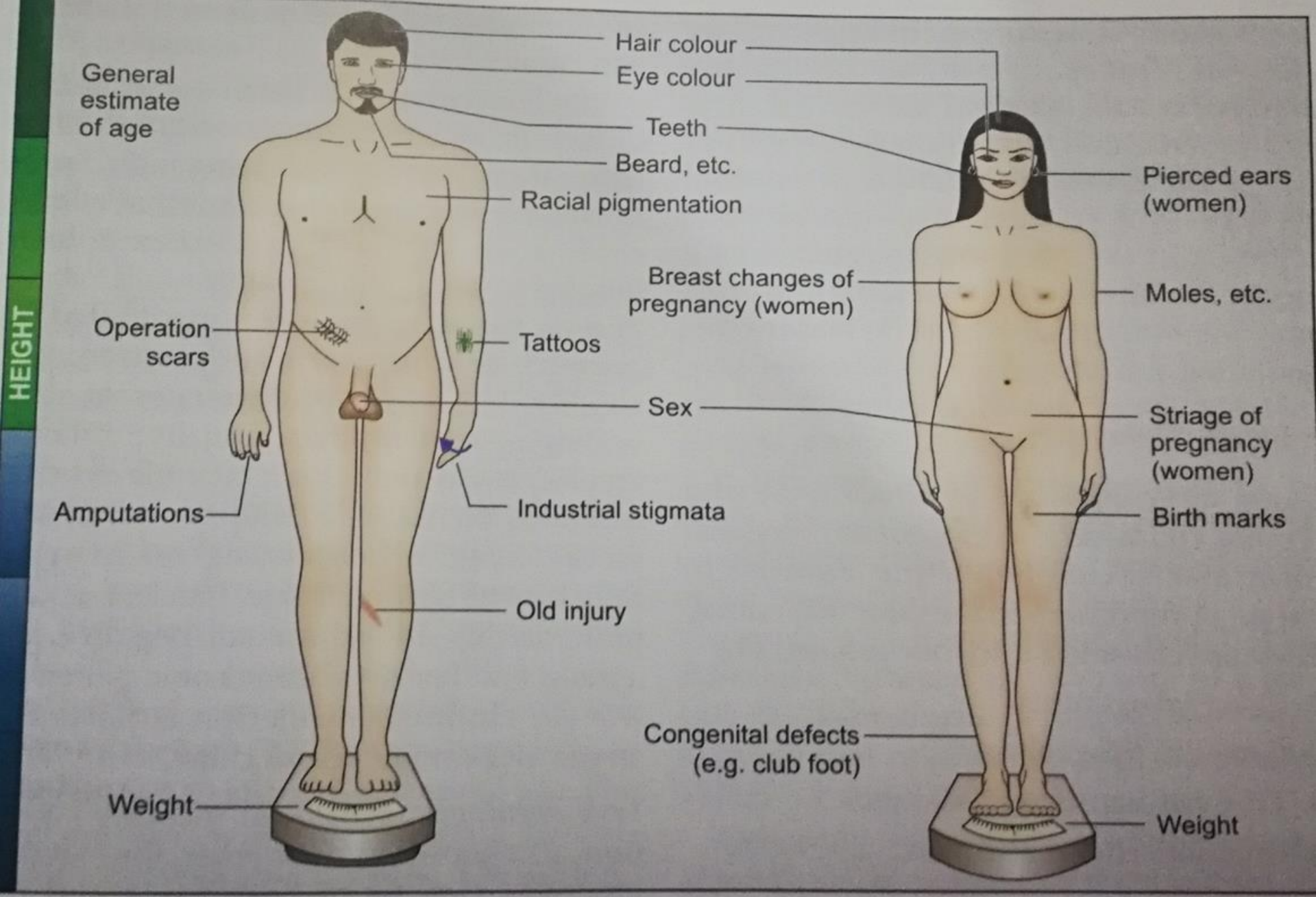


Fig. 3.1: External features useful for establishing identity

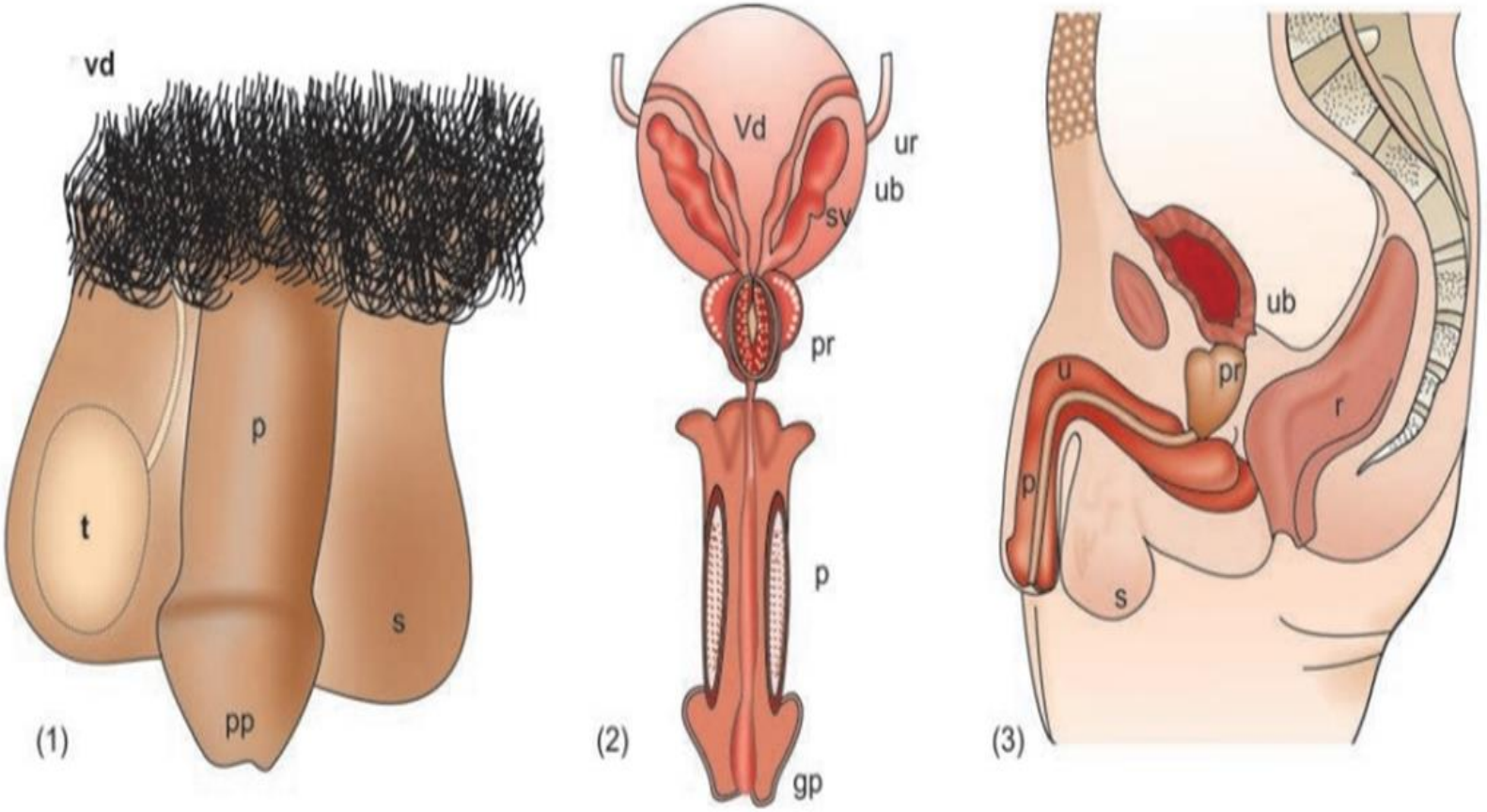


Fig. 11.20A: *Male external and internal genitalia:* (1) Male external genitalia viewed from the front: p—penis, pp—prepuce, s—scrotum, t—testis, vd—vas deferens, (2) Male internal genitalia viewed from the front: gp—glans penis, pr—prostate, sv—seminal vesicle, u—urethra, ub—urinary bladder, ur—ureter, vd—vas deferens, and (3) Midsagittal section of the male pelvis showing external and internal genitalia: p—penis, pr—prostate gland, r—rectum, s—scrotum, u—urethra, uv—urinary bladder

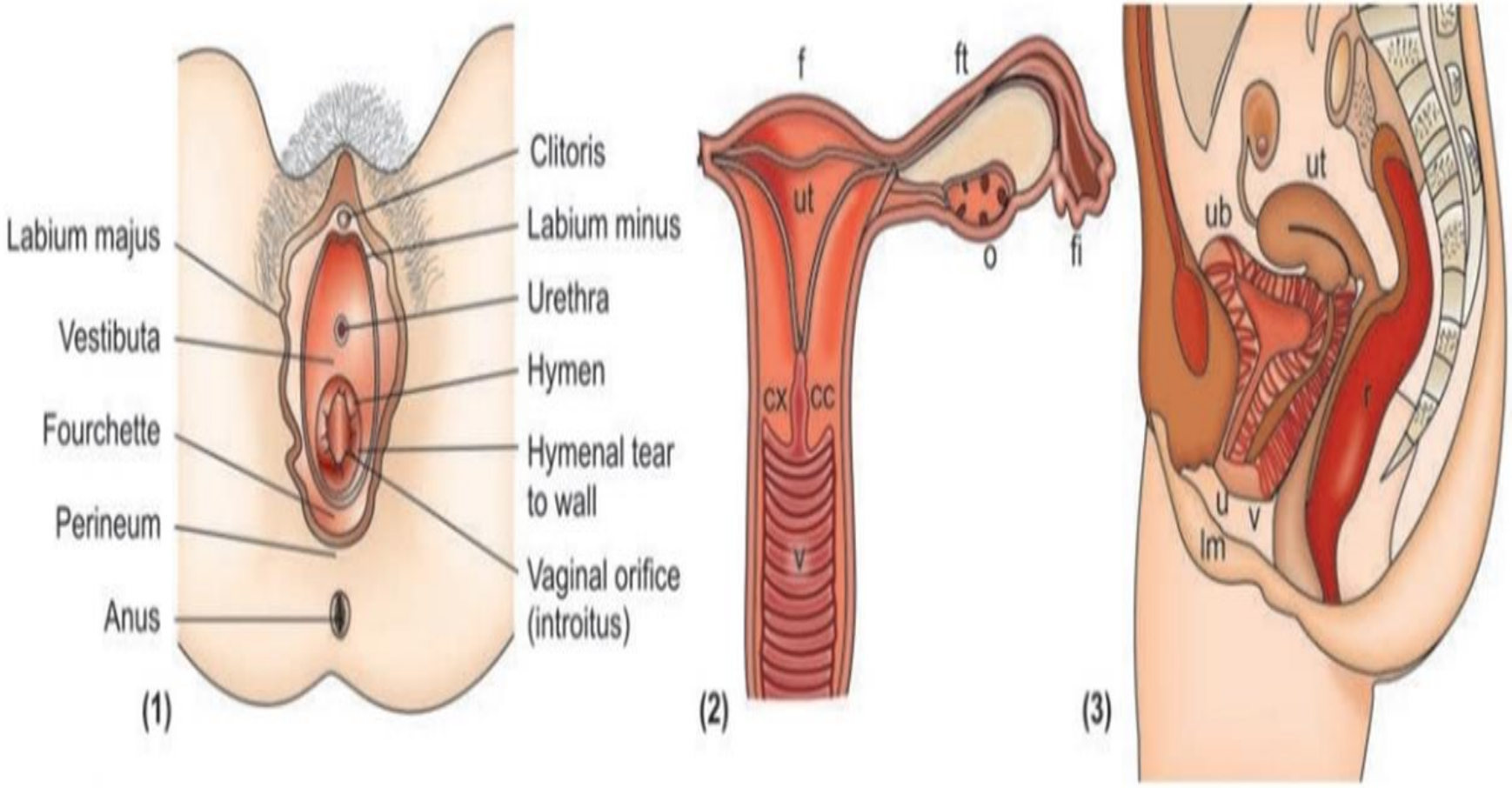


Fig. 11.20B: *Female external and internal genitalia:* (1) Female external genitalia: c—clitoris, h—hymen, l—labia minora, lm—labia majora, u—urethral meatus, v—vaginal opening, (2) Female internal genitalia viewed from the front: cc—cervical canal, cx—cervix, f—fundus, fi—fimbriae, ft—fallopian tube, o—ovary, v—vagina, and (3) mid-sagittal section of the female pelvis showing external and internal genitalia: lm—labia majora, o—ovary, r—rectum, u—urethral meatus, ub—urinary bladder, ut—uterus, v—vagina

SEX CHROMATIN

- A chromosome that determines whether an individual is a male or a female is called sex chromosome.This constitutes chromosomal sex/nuclear sex component(nuclear sexing).

- The sex chromosomes in human beings are designated as x and y chromosome.
- In humans the sex chromosomes comprise of just one pair of the total 23 pairs of chromosomes.The other 22 pairs of chromosomes are called autosomes.

- The individual having two x-chromosomes(xx)is female.
- The individual having one x and one y-chromosome(xy)is male.
- The x-chromosome resembles a large autosomal chromosome with a long and a short arm.
- The y-chromosome has one long arm and a very short second arm.
- This change into maleness or femaleness takes place at the time of meiosis,when the cell divides to produce gamete.

BARR BODY

- The x-chromosome in a female is seen in the form of chromatin condensation towards the nuclear membrane microscopically in the nucleus of a cell. this condensed chromatin has shown to consist of deoxyribose nucleic acid,1 micron in size and is present in approximately 75 per cent of female cells.it is called as sex chromatin or barr body.

- From a normal female, sex chromatin appears as a small planoconvex mass, lying near nuclear membrane microscopically. thus,the buccal smear must exhibit minimum of 20 to 30 per cent barr bodies, as against 0 to 4 per cent barr bodies detected in a normal male.

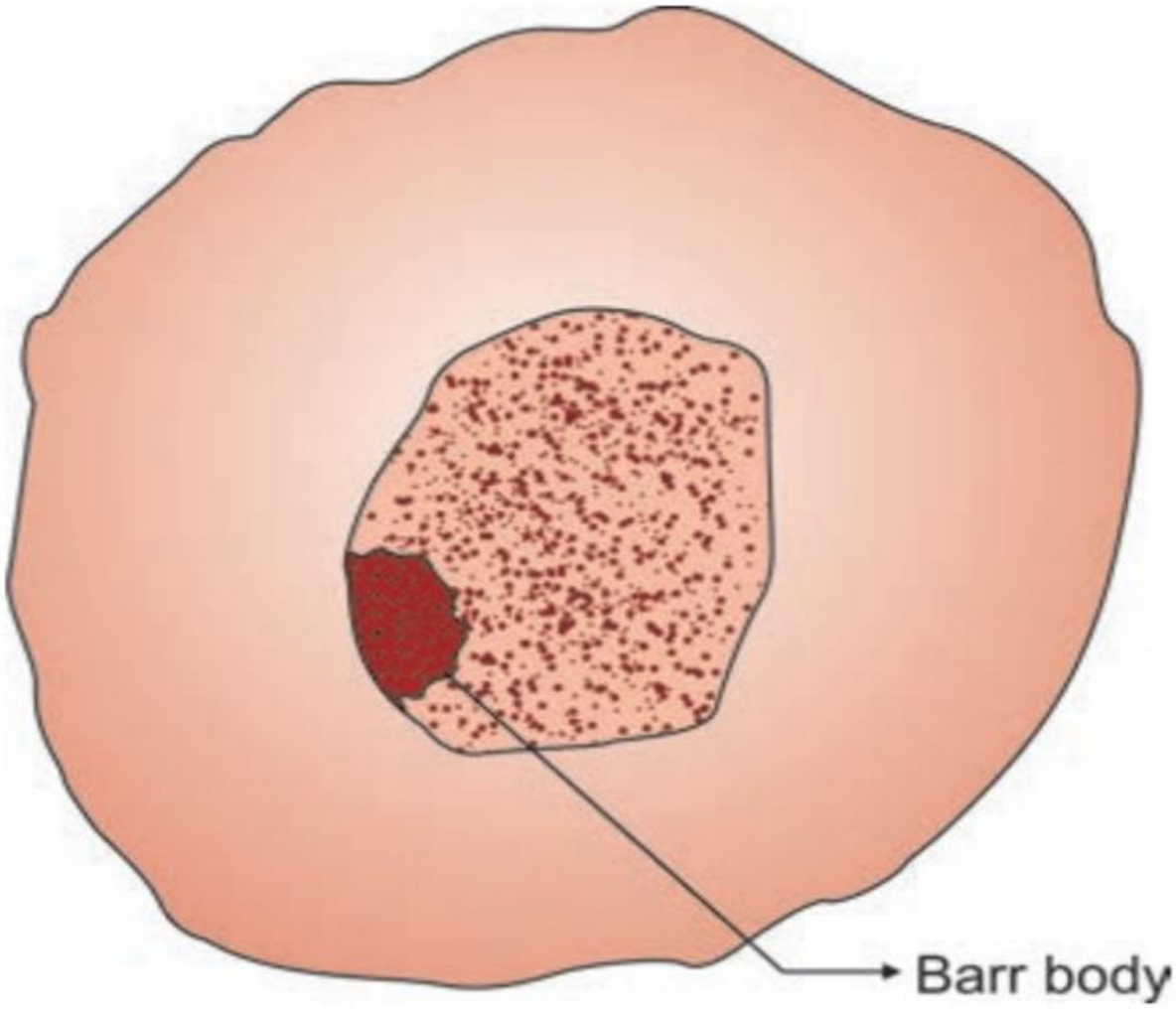


Fig. 11.21A: Barr body in buccal smear

DAVIDSON BODY

- Neutrophilic leukocytes in a normal female often presents a similar and distinctive type of nuclear appendage attached to one of the nuclear lobe,resembling a drumstick.this is known as davidson body.
- To diagnose sex as a female by this,the peripheral blood smear examined must show minimum 3 per cent counts

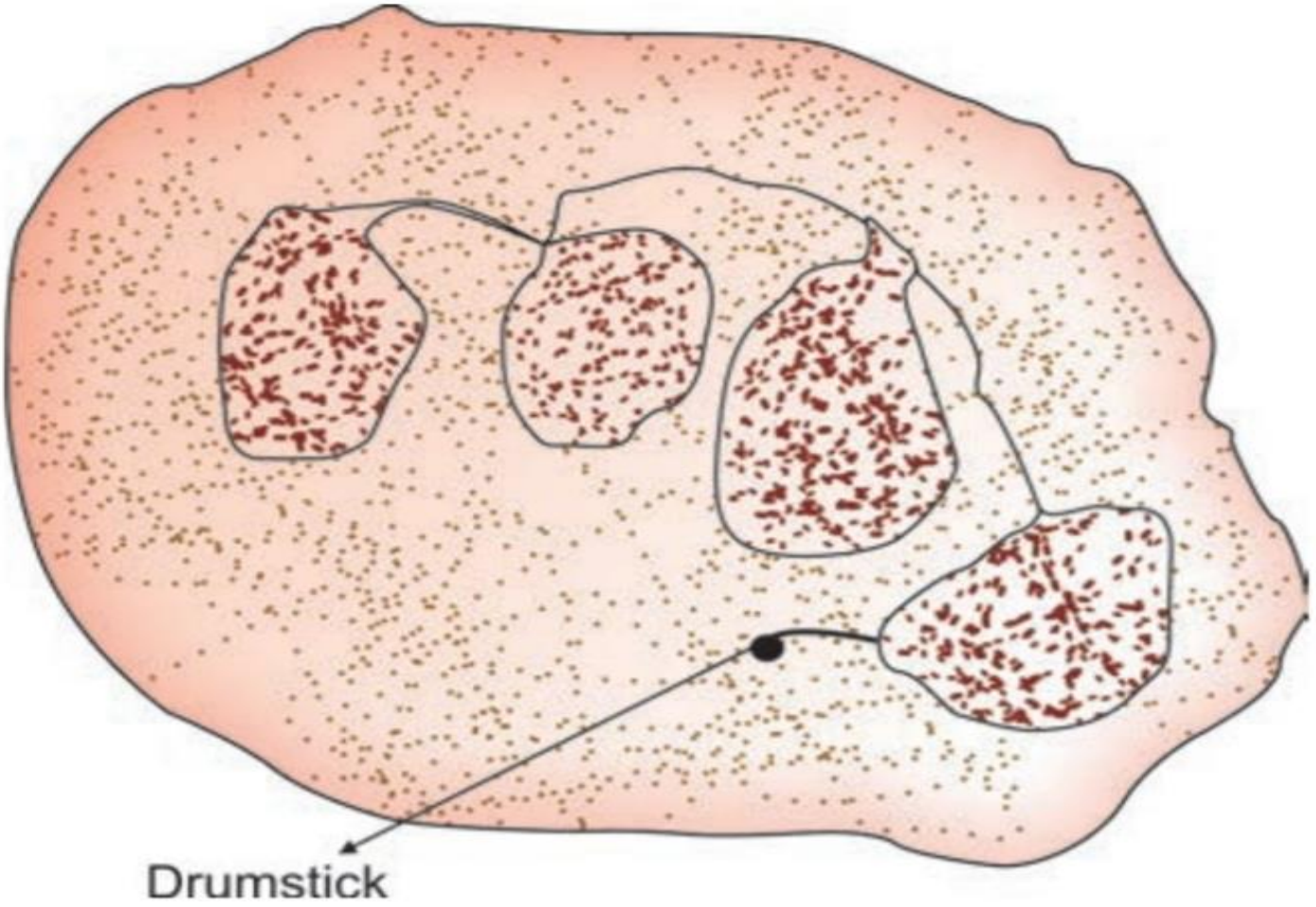


Fig 11.22: Davidson body in peripheral smear

GONADAL BIOPSY

- It is the confirmatory method of determining sexual identity histologically.this constitutes gonadal sex component in determining sex.in all disputed sexual identity cases,gonadal biopsy is suggested.

SKELETAL EXAMINATION

- Skeletal remains or bones are also helpful in establishing sexual identity .Sexing the skeleton, which is intact and entire, is certainly easier as compared to only a part of the skeleton that is available.
- Sex cannot be determined from a skeleton with a full amount of certainty in individuals who have not reached puberty as the sexual characteristics do not begin to manifest by then.

DIFFERENCES B/W MALE & FEMALE SKELETON (GENERAL DIFFERENCES)

MALE	FEMALES
1) skeleton comparatively bigger and stouter,weight approx.4.5 kg.	skeleton comparatively smaller and slender,weight approx.3 kg
2) muscular ridges,depressions,processes more prominent.	less prominent
3) shafts of long bones relatively rough and articular surfaces and ends larger	shafts of long bones relatively smooth and articular surfaces and ends smaller.

PELVIS

• bony framework massive	• less massive
• inlet: deep and narrow,	• shallow and wide,oblique
• smaller	• roomier
• ilium: less expanded,walls not splayed,high,vertical	• more expanded,walls splayed,
• anterior superior iliac spines not widely separated	• lower,divergent laterally • widely separated
• subpubic arch: narrow,v-shaped,angle not more than 70 degrees,less distance b/w ischia	• wide,u-shaped,angle more than 90 degrees,more distance b/w ischia
• ischial tuberosities: inverted	• everted

6) obturator foramina: ovoid, large	triangular,small
7) greater sciatic notch: narrow,deep and less than a right angle	wide,shallow,almost at right angle or even more
8) preauricular sulcus: narrow,shallow and without marked edges,nt visible	broad and deep in parous women,well developed
9) acetabula: wider and deeper,large,laterlly directed	narrower and shallower,small,anterolateral
10) sacrum: long,narrow,five or more segments,well marked promontory	wide,short,five segments,promontary less marked
11) the curve of the sacrum is more or less equal over entire length	straight in first three segments,cuved at the centre of third vertebra

13) articular surface of sacrum extends to 2 ½-3 vertebral bodies	extends to 2-2 ½ vertebral bodies
14) symphyses is higher	lower
15) ischiopubic rami---everted slightly	everted strongly
16) pelvic brim---heart shaped	circular or elliptical

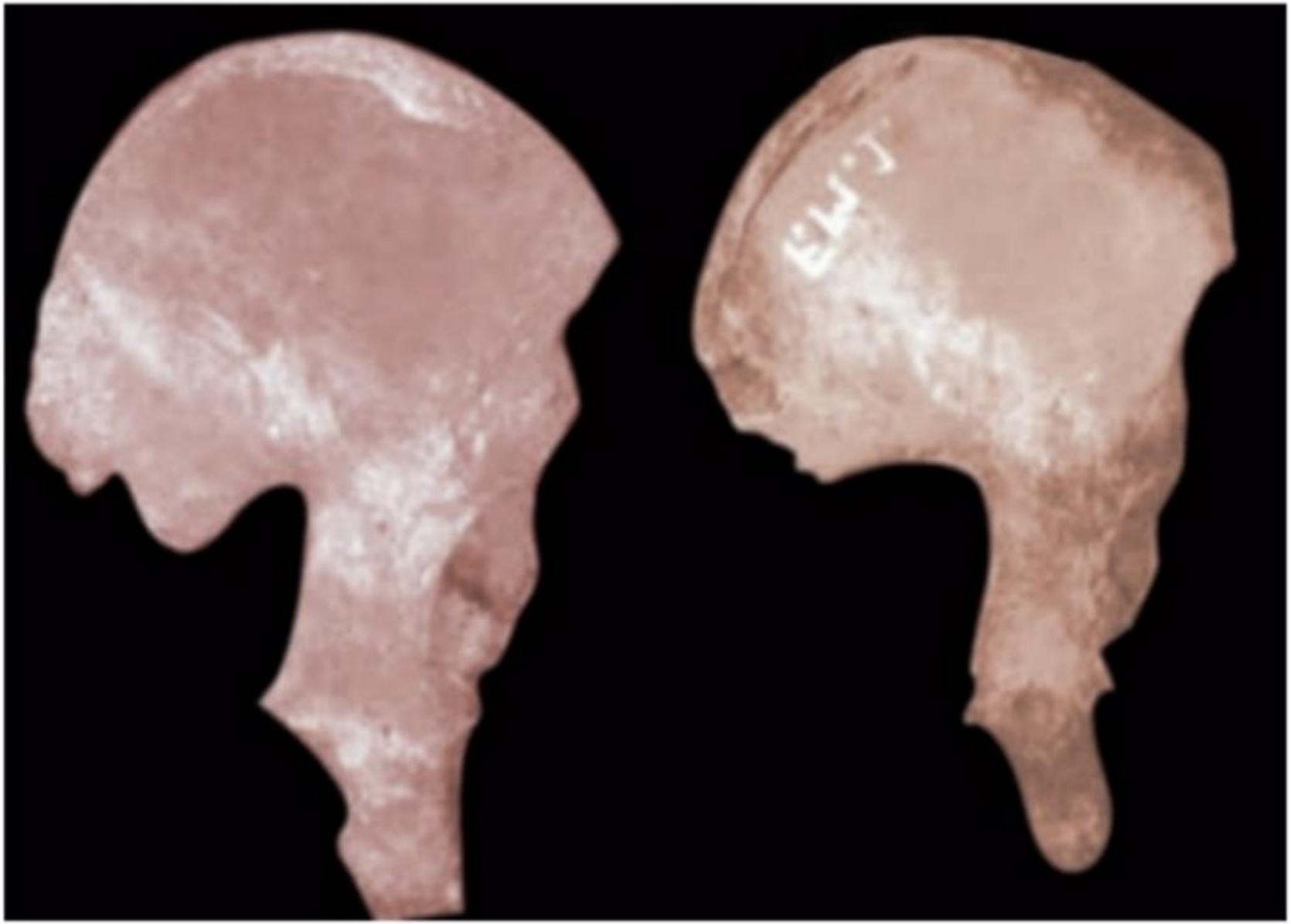
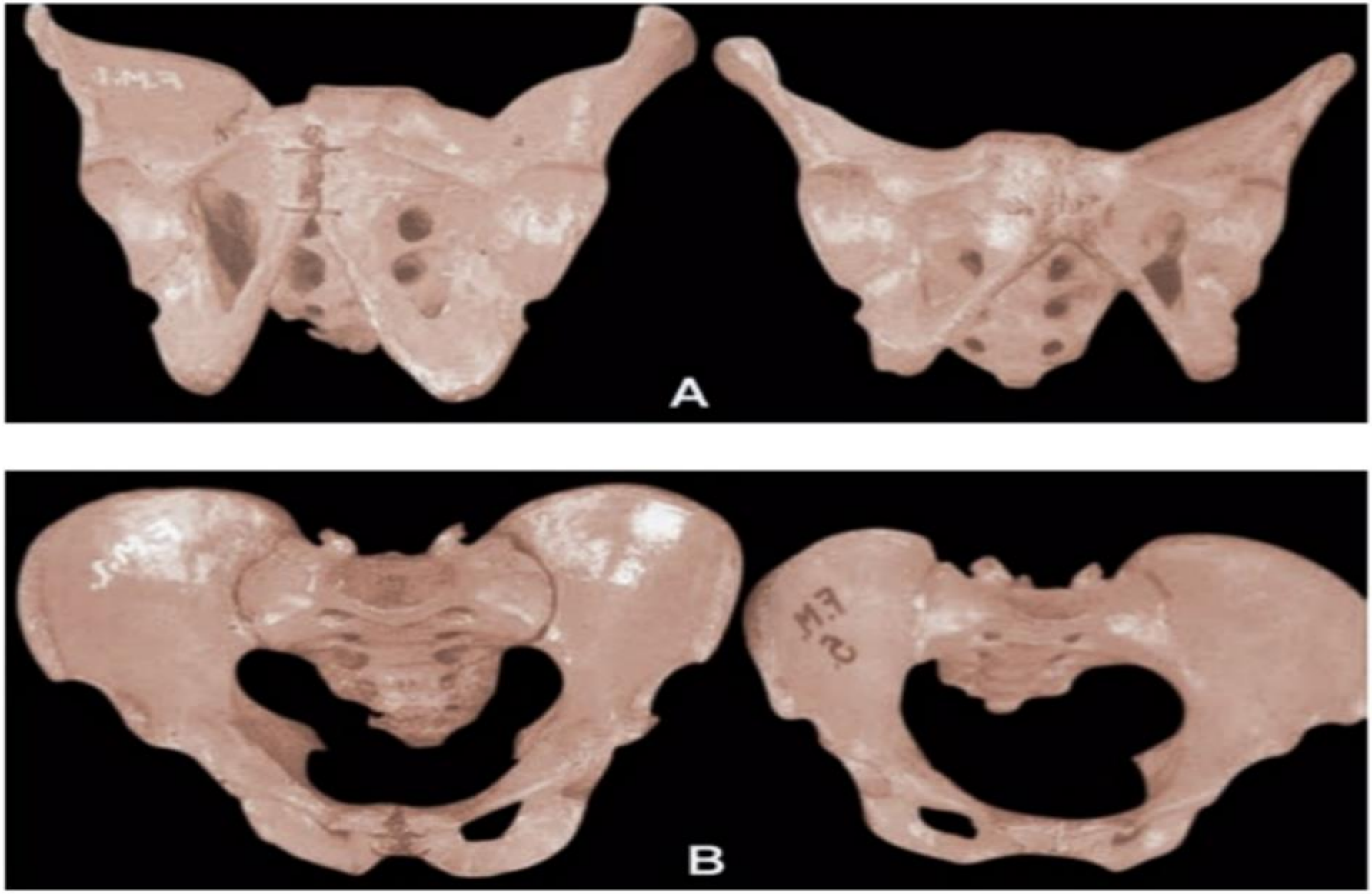


Fig. 11.28: Male and female innominate—posterior view



Figs 11.27A and B: Pelvis in male and female (innominate and sacrum): (A) Anterior view, (B) Superior view

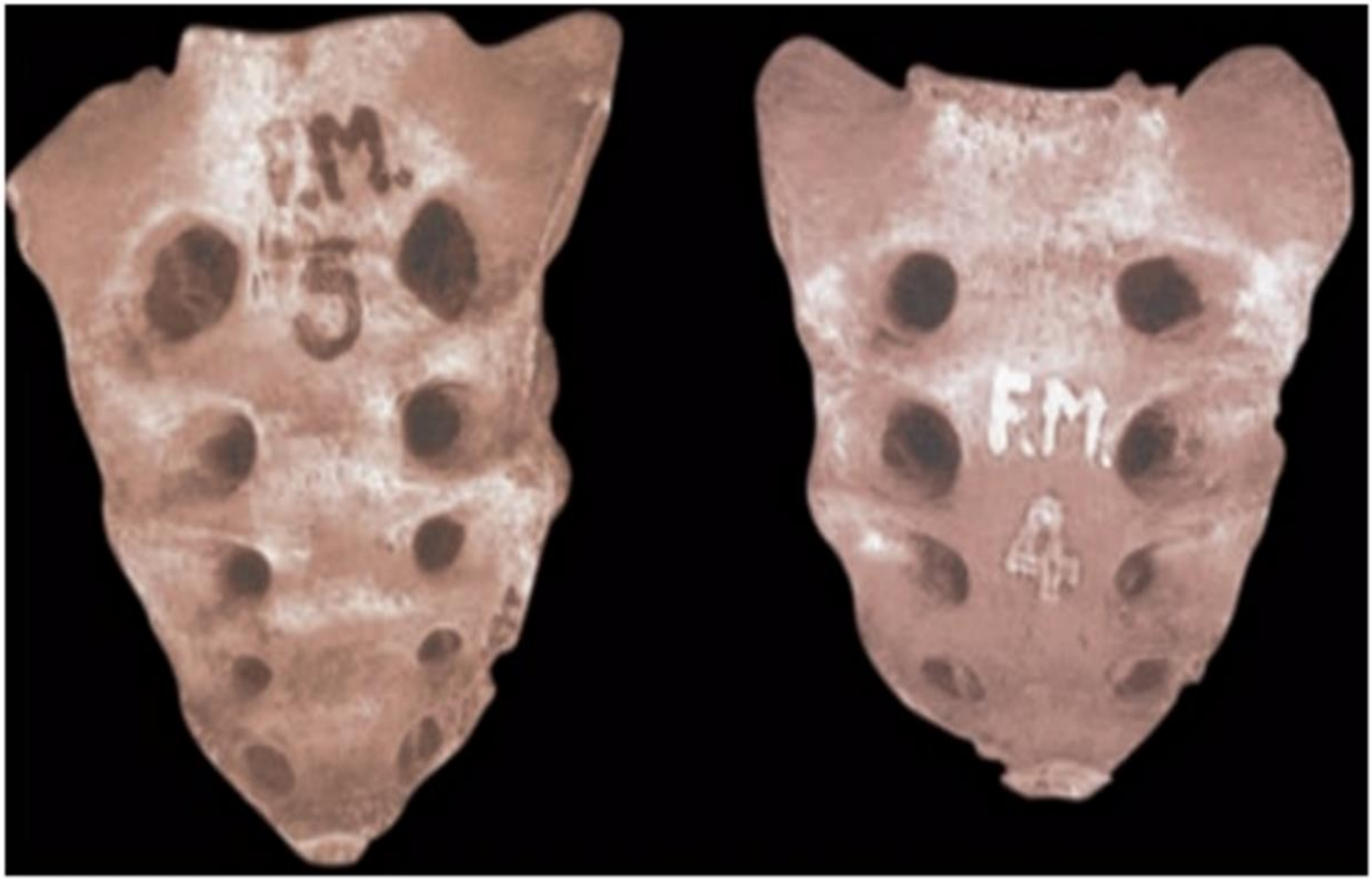


Fig. 11.29: Sacrum—anterior view; male and female

SKULL

	MALE	FEMALE
1)	bigger,heavier and more rugged	smaller,lighter and less rugged
		smoother
2)	cranial capacity almost 10% more	cranial capacity almost 10% less
3)	frontal sinuses less developed,thin bony outline	more developed,thick bony outline
4)	frontonasal angulation distinct	not well marked
5)	glabella,supraorbital ridges,zygomatic arch,mastoid process,occipital condyles	less pronounced

6) orbit squarish,smaller , lower,rounded margins	roundish,larger,higher,sharp margins
7) facial bones more massive and not delicate in texture, large,more laterally prominent	less massive and delicate,small,more flat
8) parietal protuberance and frontal prominence----small	large
9) forehead---steep,less rounded	rounded and full
10) supraorbital ridge and mastoid process---medium to large	small to medium
11) occipital condyles---large	
12) occipital region----muscle attachments and protuberances prominent	small less prominent

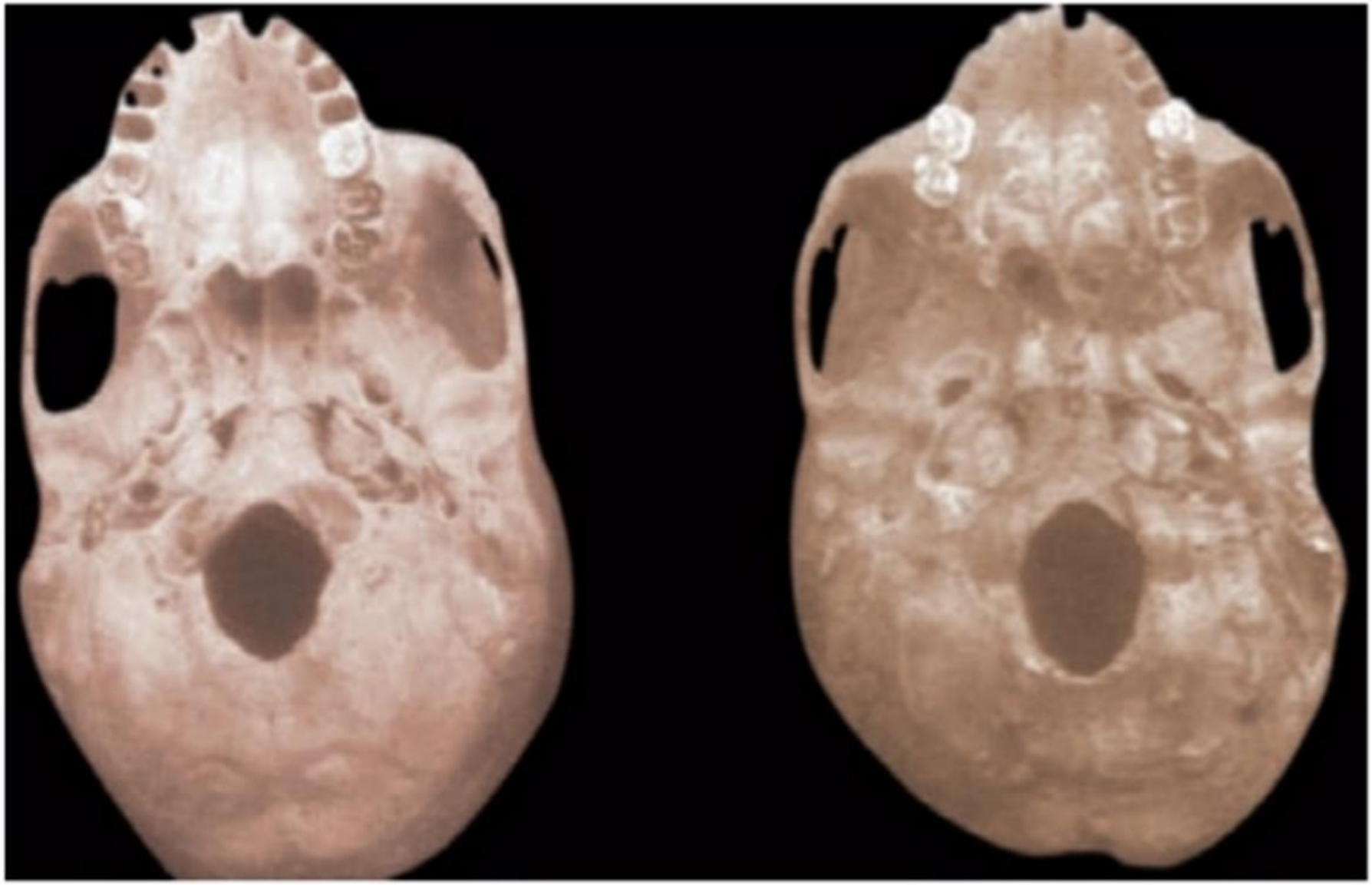
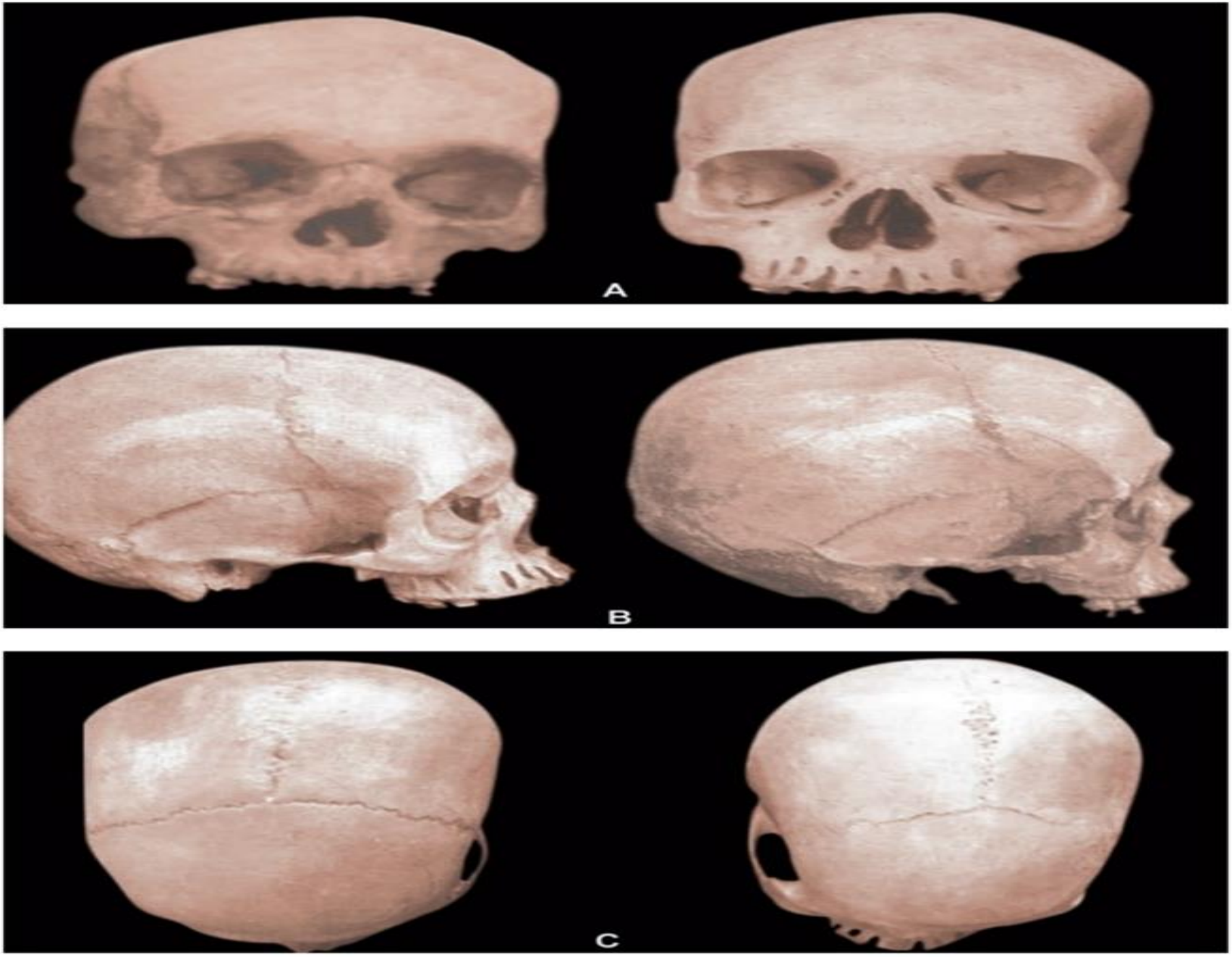


Fig. 11.26D: Male and female skull—inferior view



Figs 11.26A to C: *Male and female skull:* (A) Anterior view, (B) Lateral view, (C) Superior view

MANDIBLE

	MALE	FEMALE
1)	lower jaw more massive	less massive
2)	chin(symphysis menti)square	pointed or rounded
3)	symphyseal height more	less
4)	ramus more broad	less broad
5)	angle region everted	not everted

STERNUM

- Body of sternum and relative size of manubrium differs in both sexes. body of sternum is more than twice the length of manubrium in males.
- Average index in males is 46.5 and in females 54.3.
- This index can be measured by:

$$\frac{\text{LENGTH OF MANUBRIUM} * 100}{\text{LENGTH OF THE BODY}}$$

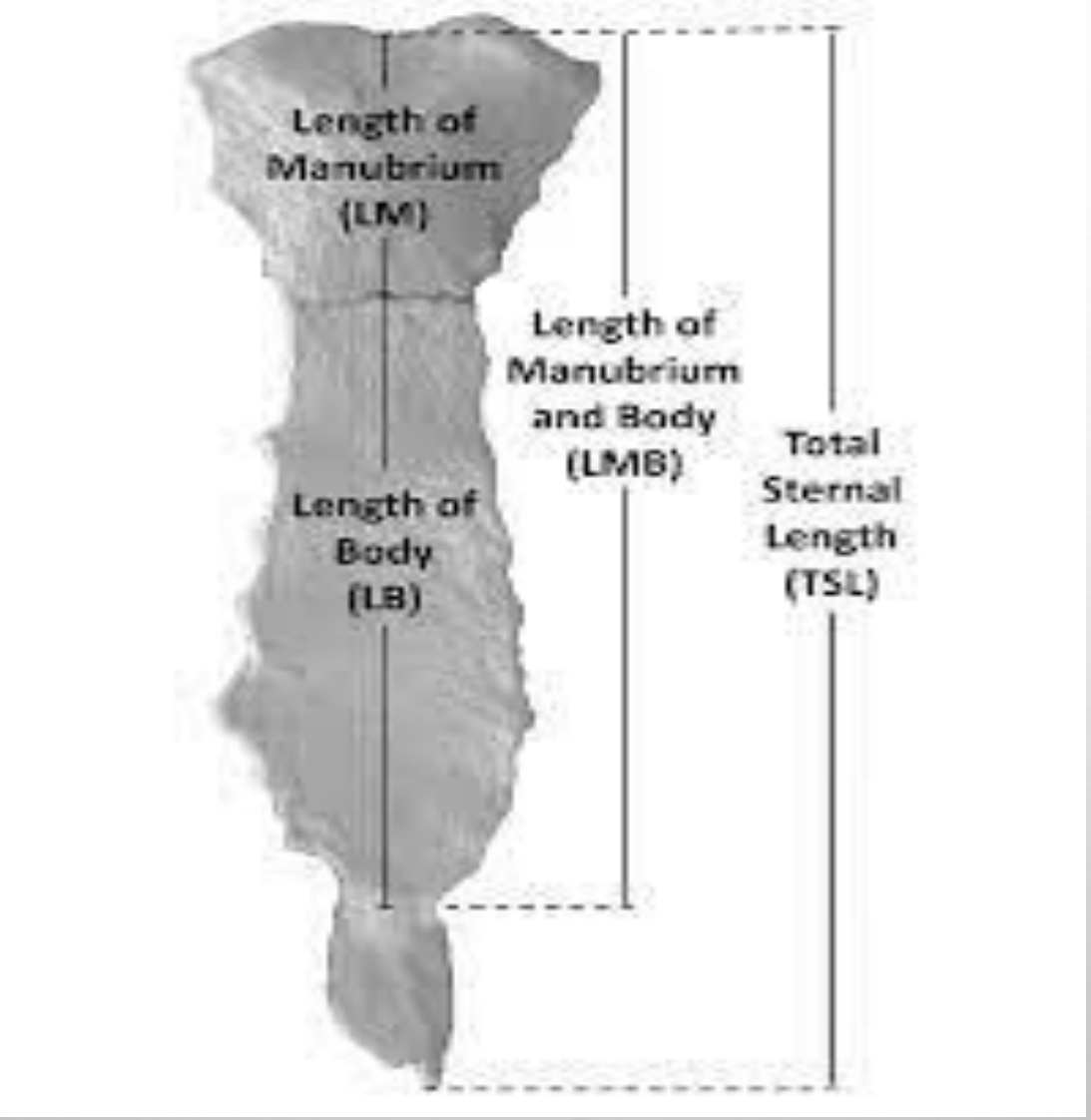

Length of Manubrium (LM)
Length of Body (LB)
Length of Manubrium and Body (LMB)
Total Sternal Length (TSL)

Table 11.17: Accuracy in determining sex identity by skeletal remains

Skeletal remains/bones	*Accuracy (%)**
Entire skeleton	100
Skull + pelvis	98
Pelvis + long bones	98
Skull + long bones	95
Pelvis alone	95
Skull alone	93
Long bones only	85

* Adopted from Krogman WM, in 'The human skeleton in Forensic medicine', Charles C Thomas, Illinois, USA, 1962[23]

VARIATIONS FROM NORMAL SEX

- Variations from normal sex are due to defective development of the single mass of cells from which the sex organs of both sexes are derived.they may result in;
- The presence of certain male and female structures in the same individual(intersex states),or
- Imperfect differentiation of external genitalia,i.e
- Small penis resembling a clitoris
- Enlarged clitoris resembling a penis
- Bifid scrotum resembling labia majora
- Fused labia majora resembling a scrotum

INTERSEX STATES

- These are conditions in which male and female characters ,eg,gonads,physical form,and sexual behaviour co-exist in varying proportions in the same individual.they are medico legally classified into four groups,i.e
- Gonadal agenesis
- Gonadal dysgenesis
- True hermaphroditism
- Pseudo hermaphroditism

GONADAL AGENESIS

- In this condition,the sexual organs(testes and ovaries have never developed.this abnormality is determined very early in fetal life.nuclear sex is negative(chromatin negative.

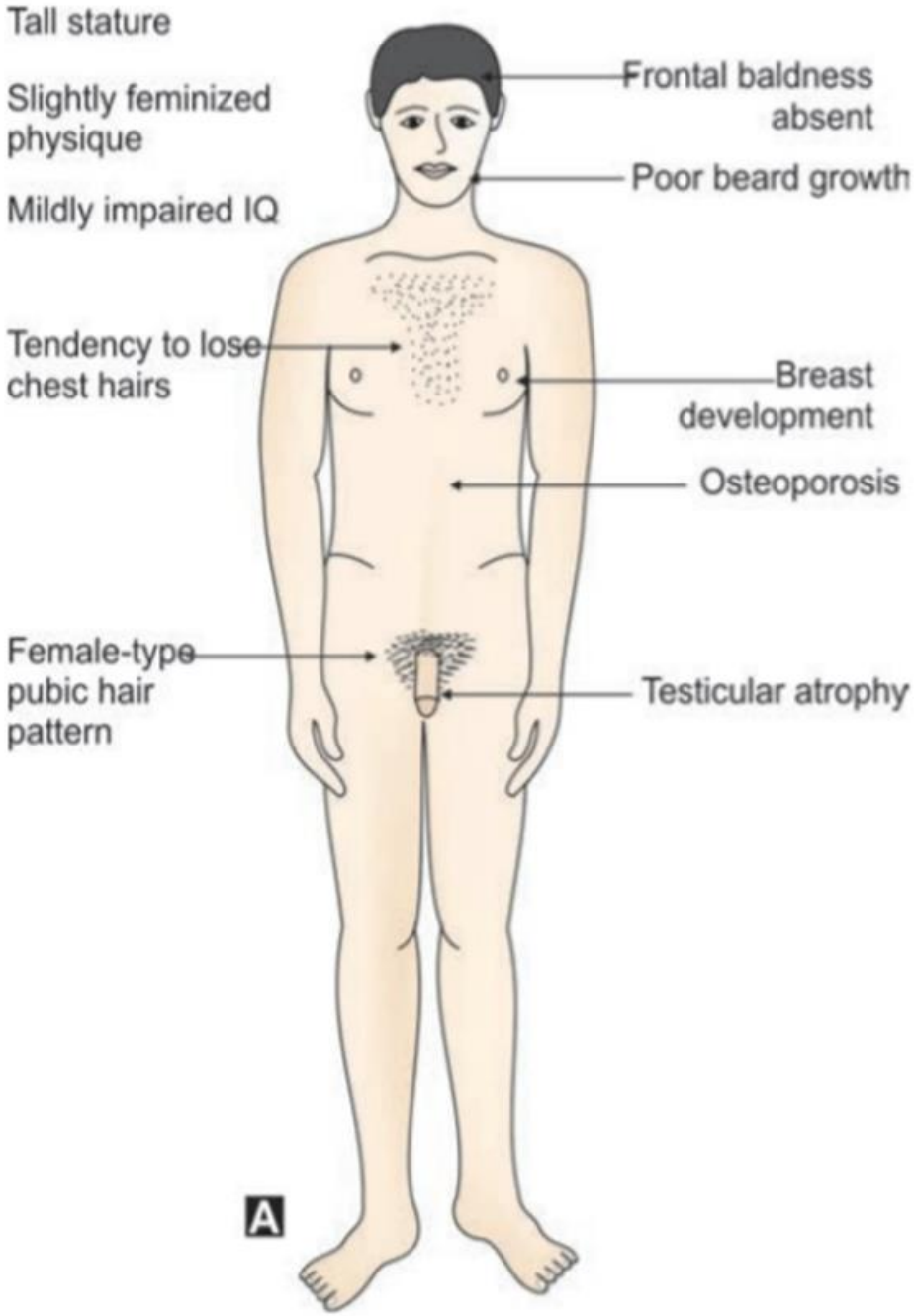
GONADAL DYSGENESIS

- In this condition ,the external sexual structures are present but the testes and ovaries fail to develop at puberty. Important examples of such conditions are;
- Klinefelter’s syndrome(in the male)
- Turner’s syndrome(in the female)

KLINEFELTER'S SYNDROME

- In the klinefelter's syndrome;
- Anatomically male
- Nuclear sex is female
- Sex chromosome pattern is xxy(47 chromosomes)(presence of y chromosome gives resemblance to the male and due to the extra x chromosome these individuals are chromatin positive like a female.)
- The boy grows and develops normally initially but puberty is delayed.

- characteristic features are;
- they resemble male externally,with smaller/normal size penis;testicles are small and firm in consistency and normally placed;gynaecomastia may develop
- signs of eunuchoidism such as long arms and legs,scanty pubic and axillary hair,and poor or no beard growth.
- sterility due to hyaline degeneration of somniferous tubules(thus cannot procreate).
- high pitched voice.

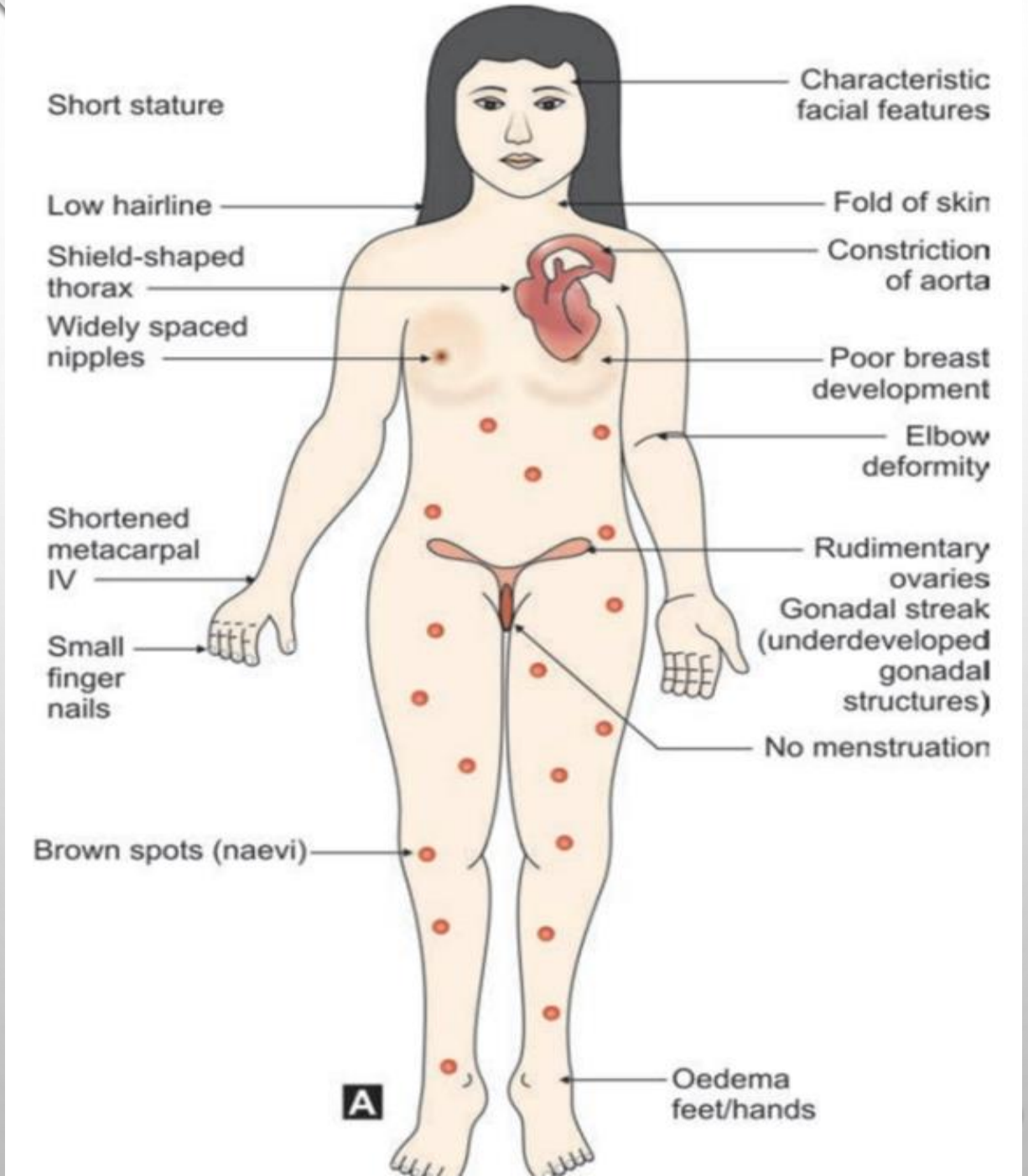

Tall stature
Slightly feminized physique
Mildly impaired IQ
Frontal baldness absent
Poor beard growth
Tendency to lose chest hairs
Breast development
Osteoporosis
Female-type pubic hair pattern
Testicular atrophy
A

TURNER'S SYNDROME

- In turner's syndrome;
- Anatomically female
- Nuclear sex is male
- Sex chromosome pattern is xo(45 chromosomes)(absence of y chromosome gives resmblance to the female,but individual will chromatin negative like a male,i.e.there will be no barr bodies or davidson bodies in the neutrophils.
- As they reach puberty,they fail to present with secondary sexual characteristics.

- Characteristic features are;
- Sexual infantilism is manifested by primary amenorrhoea and consequent sterility;lack of breast development with
- Widely spaced nipples,and hypoplastic areolae; scanty pubic hair; infantile external genitalia, uterus, and fallopian tubes; and streak ovaries(incapable of producing estradiol)containing no ovarian follicles but fibrous tissue.

- short stature.
- edema of hands and feet.
- wide carrying angle.
- broad chest.
- naturally sterile and cannot bear child.
- congenital anomalies;webbing of the neck,cubitus valgus,coarctation of aorta,red green color blindness,renal abnormalities,osteoporosis


Short stature
Low hairline
Shield-shaped thorax
Widely spaced nipples
Shortened metacarpal IV
Small finger nails
Brown spots (naevi)
Characteristic facial features
Fold of skin
Constriction of aorta
Poor breast development
Elbow deformity
Rudimentary ovaries
Gonadal streak (underdeveloped gonadal structures)
No menstruation
Oedema feet/hands
A

TRUE HERMAPHRODITISM

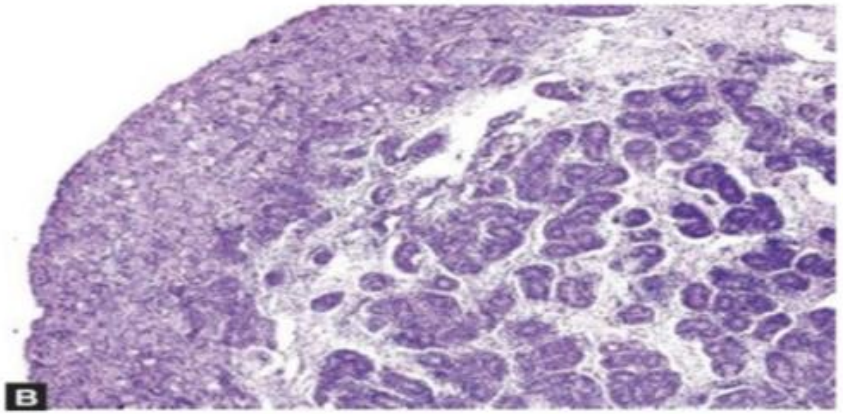
- In this rare condition,also known as double sex/bisexuality.
- Both ovary and testes(ovotestis)with external genitalia of both sexes exist in one individual.
- The nuclear sex is usually female but may be male.
- Hypospadias,cryptorchidism,and inguinal herniae are frequent findings in such cases.

PSEUDOHERMAPHRODITISM

- In this condition,there is lack of clear cut differentiation of external genitalia while the internal genitalia are only of one sex.
- They are classified as male or female according to the presence of testes(nuclear sex xy)or ovaries(nuclear sex xx),independent of anomalies of external genitalia.
- Female pseudohermaphrodite

  It has male external features but internally has female gonads.
- Male pseudohermaphrodite

  It has female external features but internally has male



Figs 11.33A and B: *Bilateral true hermaphrodite:* (A) Well developed phallus, bilateral ovotestes, with fish mouthed urethra below the phallus and vaginal opening in between scrotal sacs (B) Histopathology of ovotestes showing - ovarian component forming a crown around the testicle parenchyma

Figs 11.33C to F: (C and D) Unilateral true hermaphrodite with ambiguous external genitalia. (C) Well-developed phallus and right scrotal ovotestis and testes on left side. (D) Penoscrotal hypospadias. (E) Female pseudohermaphrodite with male external features with a hypertrophied clitoris and fused labia but has female gonads internally; (F) Male pseudohermaphrodite with female external features but has male gonads internally (*Source:* Shilpa Sharma and DK Gupta, Male genitoplasty for intersex disorders. Advances in Urology: Volume 2008 (2008). Article ID: 685897)

DIFFERENT COMBINATIONS TO SEX CHROMOSOMES

- XX
- XY
- XXY
- XXXY
- XXX
- XO
- XX-XY

- NORMAL FEMALE
- NORMAL MALE
- KLINEFELTER'S SYNDROME
- (FEMINIZED INFERTILE MALE)
- VARIANT KLINEFELTER'S SYNDROME
- (MOSAICISM)
- SUPER FEMALE OR TRIPLE-X
- SYNDROME
- TURNER SYNDROME
- TRUE HERMAPHRODITE

HORMONAL INTERSEX

- variation could be due to the hormones.
- In female pseudohermaphrodites; an excess of production of androgens by adrenal cortical hyperplasia can modify the external genitalia of a genetic female(hypertrophy of the phallus,fusion of labia majora and hirsutism;tumors of the ovary like arrhenoblastoma,can cause hirsutism,hypertrophy of clitoris,deepening of voice,masculine Sexual body contours and amenorrhoea).
- In male pseudohermaphrodites; the presence of estrogen in the male can cause gynecomastia.

PSYCHOLOGICAL SEX

- Transvestite is the one who is obsessed with the clothing of opposite sex, having a compulsion to cross dress.
- Transsexual has a dominant wish to identify with the opposite sex as completely as possible, discarding forever his or her own anatomical sex.

CONCEALED SEX

- Criminals may try to conceal their sex to avoid detection by police by changing dress and other means.
- In cases of individuals who are suffering from acquired or congenital sexual abnormalities, an attempt to conceal the sex may be made.
- Simple undressing and physical examination can help detect a doubtful case and reveal the true sex.

MEDICOLEGAL IMPORTANCE OF SEX IDENTITY

- Inheritance,marriage,divorce
- Liability for military service
- Sexual offences
- Participation in olympic game
- Concealed sex
- Intersex
- Psychological sex


جَزاكَ اللهُ خيْراً