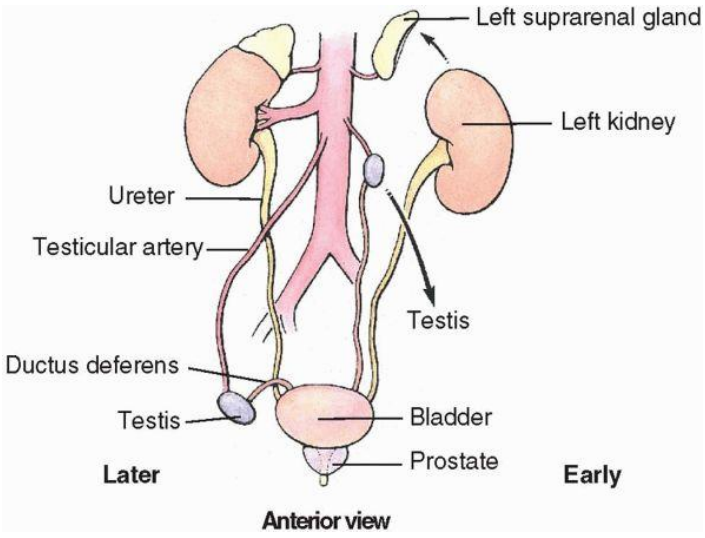
Male internal genital organs

Ductus deferens

- Ductus/ vas deferens is continuation of the duct of the epididymis
- Features
    - Primary component of the spermatic cord
    - Thick muscular walls and small lumen
- Course
    - Begins at tail of epididymis
    - Ascends posterior to testis, medial to epididymis
    - Penetrates anterior abdominal wall via the inguinal canal
    - Crosses internal iliac vessels to enter pelvis
    - Passes over lateral walls of pelvis, external to peritoneum
    - Ends by joining the duct of the seminal gland (ejaculatory duct)
- Lies in contact with the peritoneum when passing over it
- Crosses the ureter near the posterolateral angle of the bladder, before joining the duct of the seminal gland; enlarges at this point to form the ampulla of the ductus deferens

Arterial supply and venous drainage

- Artery of the ductus deferens arises from the superior (sometimes inferior) vesical artery; terminates by anastomosing with the testicular artery
- Veins from the ductus drain into the testicular vein



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Male external genitalia

- Includes the distal urethra, scrotum and penis

Distal male urethra

- Urethra divided into four parts; intramural (preprostatic), prostatic, intermediate and spongy

Intermediate urethra

- Starts at apex of prostate, traverses deep perineal pouch, surrounded by external urethral sphincter, penetrates perineal membrane, ending as it enters bulb of the penis
- Bulbourethral glands located posterolaterally

Spongy urethra

- Begins at bulb of penis, ends at male external urethral orifice
- Lumen expanded in the bulb of the penis (intrabulbar fossa) and in the glans penis (navicular fossa)
- Ducts of the bulbo-urethra glands located open into here on either side
- Ducts of mucous secreting urethral glands also open into here

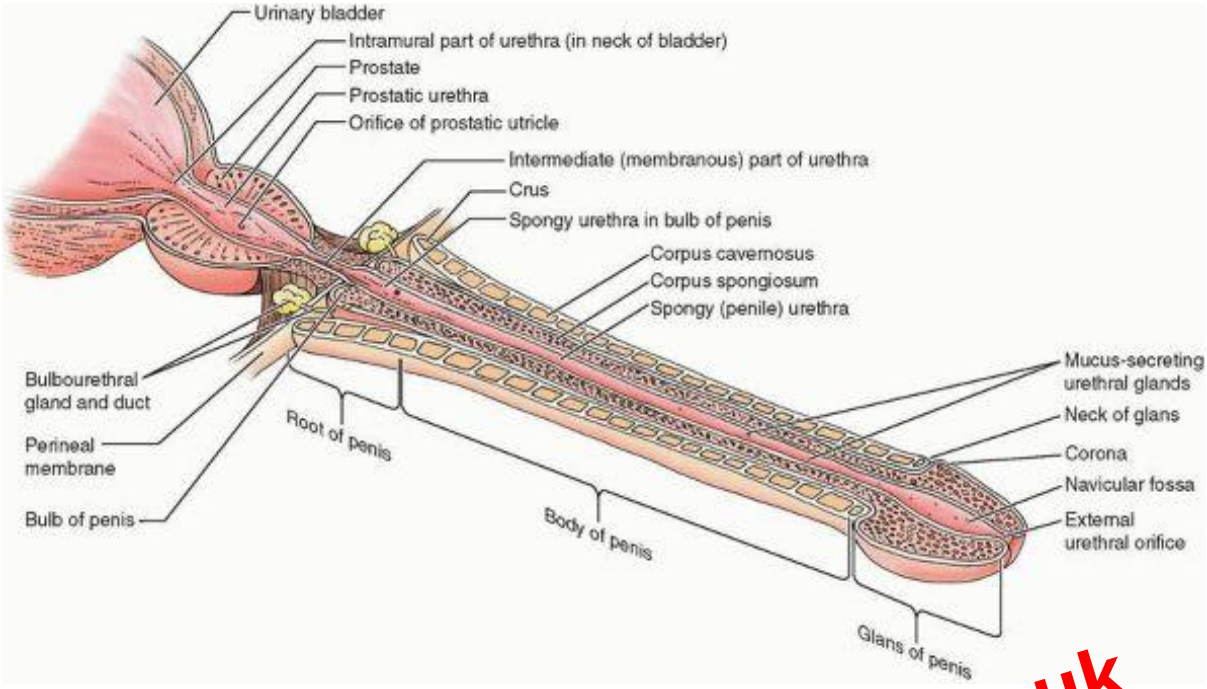
Arterial supply, venous drainage and lymphatic drainage

- Supply to intermediate and spongy parts via branches of the dorsal artery of the penis
- Veins accompany the arteries with similar names
- Lymphatic drainage from intermediate part drain into internal iliac lymph nodes, drainage from spongy urethra to deep inguinal nodes (plus some to external iliac)

Innervation

- Intermediate part same as for prostatic part – ANS via prostatic nerve plexus, arising from inferior hypogastric plexus
- SNS via lumbar levels of lumbar splanchnic nerves
- PNS via sacral levels of pelvic splanchnic nerves
- Visceral afferents follow PNS fibres

- Somatic innervation of the spongy part via the dorsal nerve of the penis (branch of the pudendal nerve)



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Scrotum

- Cutaneous fibromuscular sac, holds testes and associated structures
- Bilateral embryonic formation indicated by midline scrotal raphe
- Also penile raphe and perineal raphe
- Prolongation of the dartos fascia produces the internal septum of the scrotum

Arterial supply, venous drainage and lymphatic drainage

- Anterior scrotal arteries (branches of the external pudendal) supply anterior aspect, posterior scrotal arteries (branches of the internal pudendal) supply posterior aspect
- Also receives some supply from branches of the cremasteric (branch of inferior epigastric)
- Scrotal veins accompany arteries, same names, mostly drain to the external pudendal veins
- Lymphatic vessels drain to the superficial inguinal lymph nodes

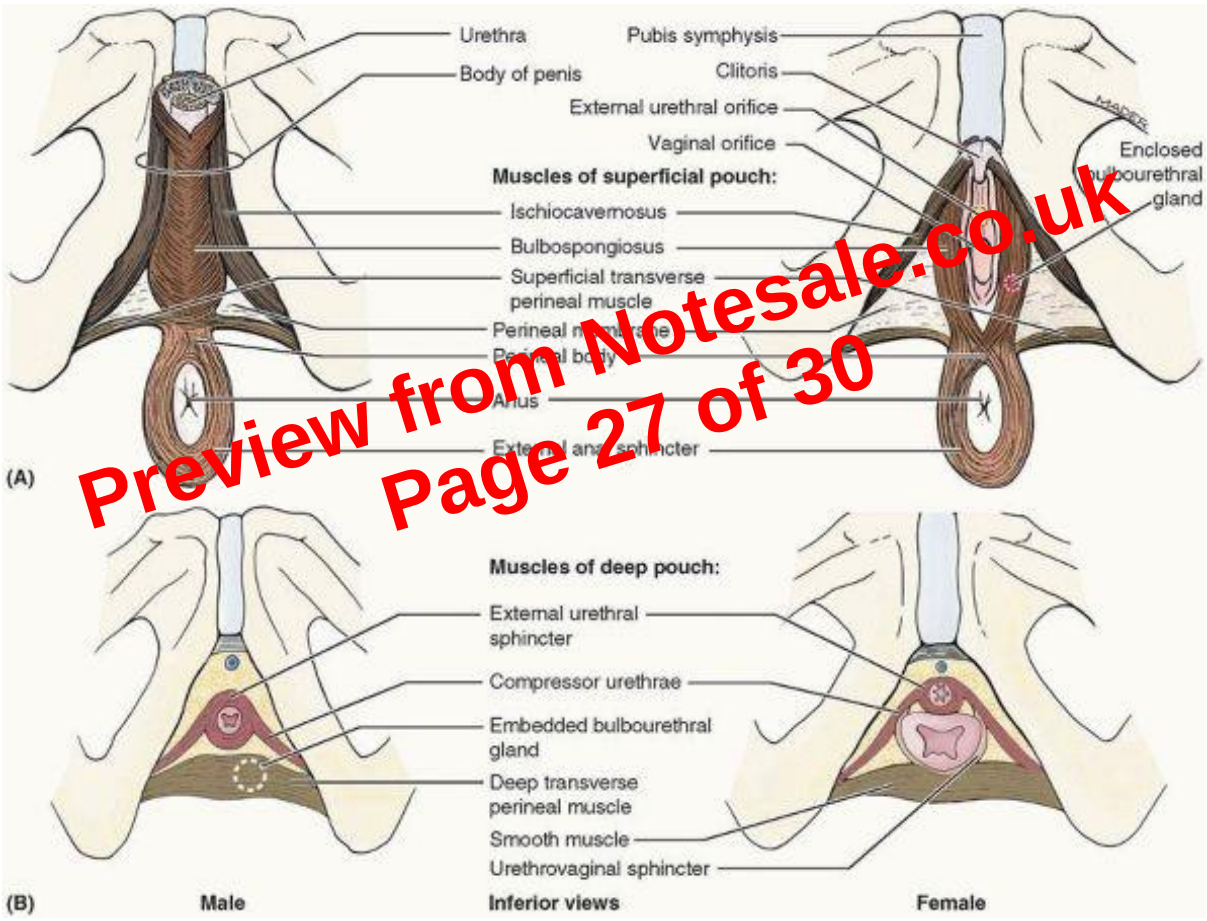
Nerve supply

- Anterior aspect via derivatives of the lumbar plexus; anterior scrotal nerves
    - Branch of ilio-inguinal
    - Genital branch of genitofemoral
- Posterior aspect via derivatives of the sacral plexus; posterior scrotal nerves
    - Superficial perineal branches of the pudendal nerve
    - Perineal branch of the posterior cutaneous nerve of the thigh
- SNS fibres assist in thermoregulation; contraction of smooth dartos muscle in response to cold or stimulating sweat glands and inhibiting contraction of dartos in heat

Penis

- Male copulatory organ and provides outlet for urine and semen
- Composed of root, body and glans
- Three cylindrical cavernous bodies of erectile tissue
    - Paired corpora cavernosa
        - Fused in the median plane, except in median plane where they separate to form the crura of the penis
        - Incompletely separated by the septum penis
    - Single corpus spongiosum – contains spongy urethra
- Cavernous bodies has an outer fibrous capsule called the tunica albuginea
- Superficial deep fascia of the penis (continuation of deep perineal fascia)
- In the anatomical position, the penis is erect
- Consists of skin, connective tissue, blood and lymphatic vessels, fascia, corpus cavernosa, corpus spongium and urethra
- Skin of penis is pigmented, connected to tunica albuginea by loose connective tissue
- Suspensory ligament of the penis arises from the pubic symphysis; passes inferior and splits before attaching at junction of penis root and body
    - Anchor erectile bodies to the pubic symphysis
- Fundiform ligament descends in the midline from the linea alba, anterior to pubic symphysis
    - Splits to surround the penis then blends with dartos fascia, forming scrotal septum

    - Fixes perineal body to the pelvic floor
    - Innervated by inferior anal nerve, branch of pudendal
- Deep transverse perineal
    - Supports and fixes perineal body/pelvic floor to support abdominopelvic viscera and resist increased intra-abdominal pressure
    - Innervated by deep branch of perineal nerve, branch of pudendal
- External urethral sphincter
    - Compresses urethra to maintain urinary continence (in females, also compresses vagina)
    - Innervated by the dorsal nerve of penis (or clitoris in women), branch of pudendal



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Erection, emission, ejaculation and remission