



PIPADOR REVISION

MRCOG Part 1 Revision Notes

Perineal Pouches

ANATOMY • LECTURE 19

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG Part 1 Revision Notes

Lecture 19: Perineum — Superficial and Deep Pouches

Anatomy • Visual revision edition

COLOUR CODE USED THROUGHOUT THESE NOTES

LEVATOR ANI	DEEP POUCH	PERINEAL MEMBRANE	SUPERFICIAL POUCH	COLLES' FASCIA
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LEARNING OBJECTIVES — tick off as you go

- ☐ Define the perineal membrane and its location.
- ☐ Identify the contents of the superficial perineal pouch.
- ☐ Identify the contents of the deep perineal pouch.
- ☐ Recognise Colles' fascia and Buck's fascia.
- ☐ Describe the ischioanal fossa and pudendal canal.
- ☐ Apply to perineal trauma, urethral injury, pudendal block and ischioanal abscess.

1 The Layers of the Urogenital Triangle

IN ONE LINE: Everything in the UG triangle is organised around one sheet — the **PERINEAL MEMBRANE**. Deep pouch above it, superficial pouch below it.

Coronal section through the female urogenital triangle (schematic)

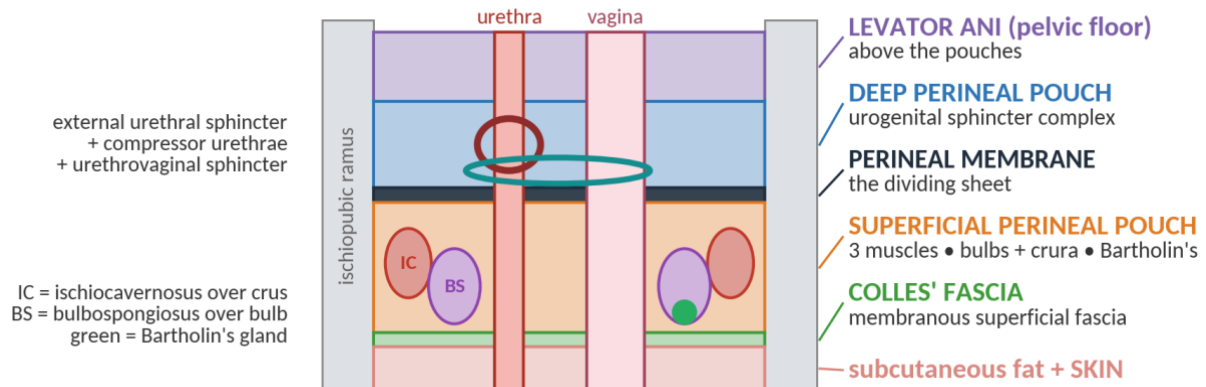


Figure 1. Six layers from pelvic floor to skin.

MNEMONIC / MEMORY HOOK

From the top: 'Lovely Deep Membranes Sit Close to Skin' — Levator ani • Deep pouch • Membrane • Superficial pouch • Colles' fascia • Skin.

The perineal membrane

ANATOMY

- Strong triangular fibrous sheet across the UG triangle
- Front: just behind the symphysis (gap for the **deep dorsal vein** of clitoris/penis)
- Sides: **ischiopubic rami** • Back: inter-tuberous line, perineal body in the midline
- Pierced by: **urethra, vagina**, Bartholin's ducts, vessels, nerves

FUNCTION + TERMINOLOGY

- Anchors the external genitalia (crura, bulbs) and UG-triangle muscles
- Separates the two pouches; supports the pelvic viscera
- Old 'urogenital diaphragm' = membrane + deep transverse perineal + 'superior fascia'
- Modern view: no robust superior fascia — the deep pouch is simply the space above the membrane holding the sphincter complex

2 The Superficial Perineal Pouch

Between the **perineal membrane** (deep) and **Colles' fascia** (superficial); closed behind where the two fuse at the perineal body.

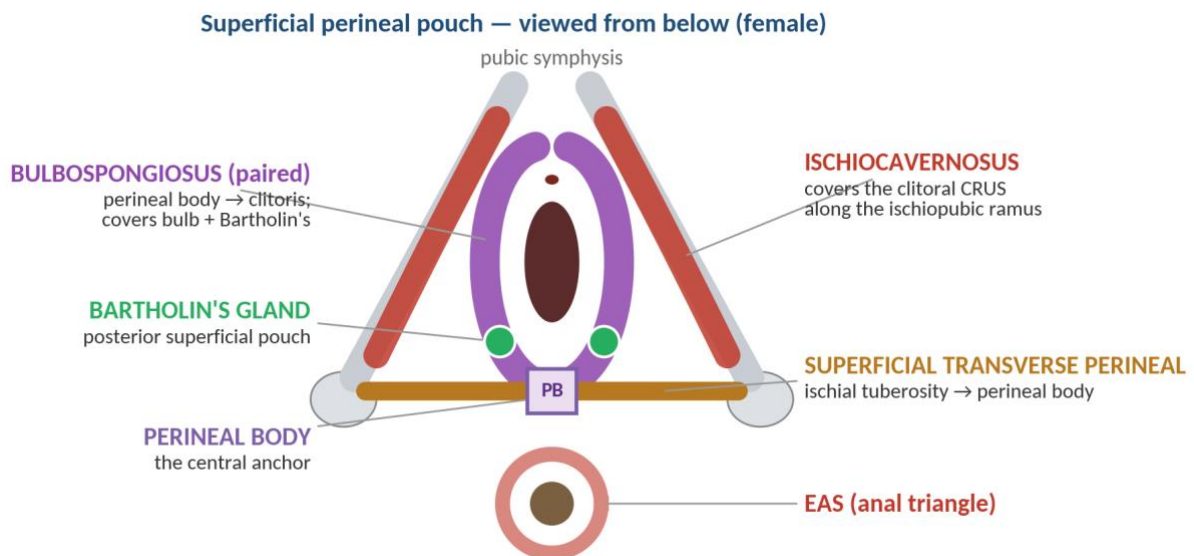


Figure 2. The three superficial muscles and their erectile tissue.

Structure (female)	Course	Function
Ischiocavernosus (×2)	Ischial tuberosity/ramus → over the crus, onto the ramus and crus	Compresses the crus — clitoral erection
Bulbospongiosus (×2)	Perineal body → around the bulb → clitoris	Compresses the bulbs; constricts the introitus; orgasm
Superficial transverse perineal	Ischial tuberosity → perineal body	Stabilises the perineal body
Vestibular bulbs (×2)	Erectile tissue beside the introitus, under bulbospongiosus	Homologue of the bulb of the penis
Crura of clitoris (×2)	On the ischiopubic rami, under ischioavernosus	Erectile tissue
Bartholin's glands	Posterior superficial pouch, 4 and 8 o'clock	Lubrication

Structure (female)	Course	Function
Perineal nerve + artery	Branches of pudendal nerve and internal pudendal artery	Muscles; posterior labia

MNEMONIC / MEMORY HOOK

'I Bet Some' — **I**schiocavernosus, **B**ulbospongiosus, **S**uperficial transverse perineal: the three superficial muscles.

3 The Deep Perineal Pouch

Above the perineal membrane, below levator ani, between the ischiopubic rami.

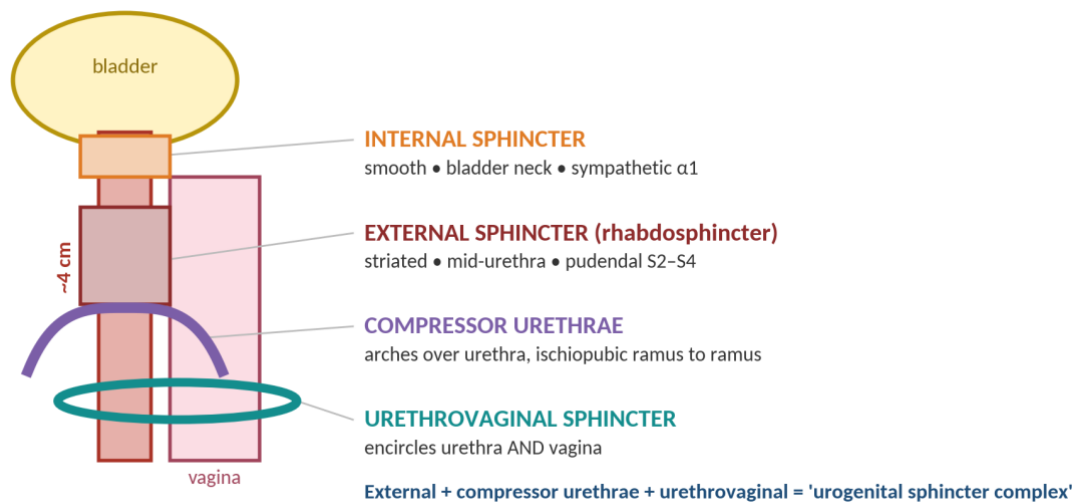


Figure 3. The female urogenital sphincter complex (from Lecture 15).

	FEMALE	MALE
Sphincter muscles	External urethral sphincter + compressor urethrae + urethrovaginal sphincter (sphincter complex)	External urethral sphincter
Deep transverse perineal	Variable / indistinct	Present — ischial ramus → perineal body
Glands	None	Bulbourethral (Cowper's) — ducts pierce the membrane into the bulbar urethra
Passing through	Urethra and vagina	Membranous urethra (torn in pelvic fracture)
Nerves + vessels	Dorsal nerve of clitoris; internal pudendal branches	Dorsal nerve of penis; internal pudendal branches

EXAM HOOK

Bartholin's glands are in the **SUPERFICIAL** pouch; their male homologue, **Cowper's glands**, are in the **DEEP** pouch. A favourite trap.

4 Erectile Tissue — Homologies

MALE	FEMALE
Bulb of penis (proximal corpus spongiosum)	Vestibular bulbs (paired)
Crura of penis (proximal corpora cavernosa)	Crura of clitoris
Glans penis	Glans clitoris
Bulbospongiosus — single, midline	Bulbospongiosus — paired, around the bulbs
Ischiocavernosus over the crura	Ischiocavernosus over the crura

5 Pudendal Canal and Ischioanal Fossa

- **Pudendal nerve (S2–S4)**: out through the greater sciatic foramen below piriformis → round the **ischial spine / sacrospinous ligament** → in through the lesser foramen → **Alcock's canal** (in the obturator internus fascia) with the internal pudendal vessels.
- Branches: **inferior rectal** (EAS, perianal skin) • **perineal** (superficial pouch muscles, labial branches) • **dorsal nerve of the clitoris** (through the deep pouch).

Ischioanal (ischioanal) fossa — coronal section

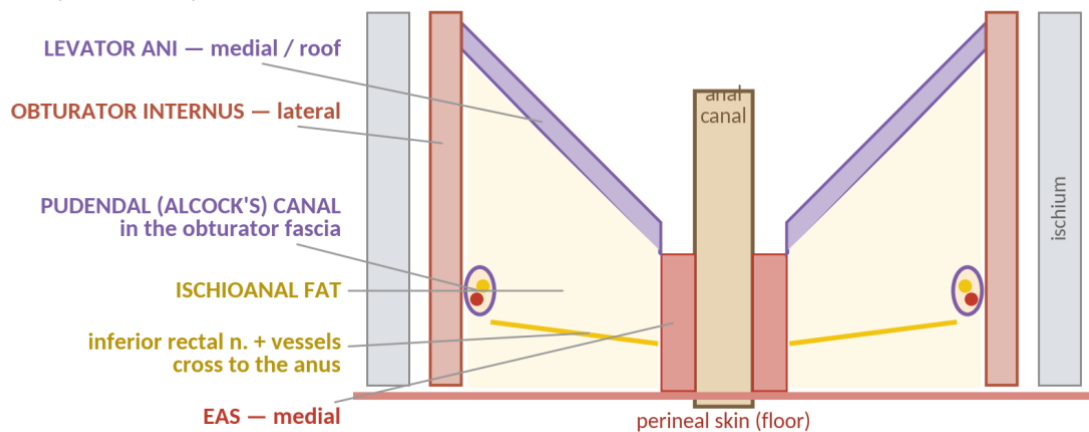


Figure 4. The ischioanal fossa and Alcock's canal.

Boundary	Structure
Medial	External anal sphincter + levator ani
Lateral	Obturator internus (fascia) — Alcock's canal here
Apex (roof)	Where levator ani meets obturator internus
Floor	Perineal skin
Front	Back edge of the perineal membrane (an anterior recess runs above it)
Back	Sacrotuberous ligament, gluteus maximus

- Contents: **fat** (lets the canal distend), inferior rectal vessels and nerve, perineal branch of the posterior femoral cutaneous nerve. The two fossae communicate **behind the anal canal** (horseshoe abscess).

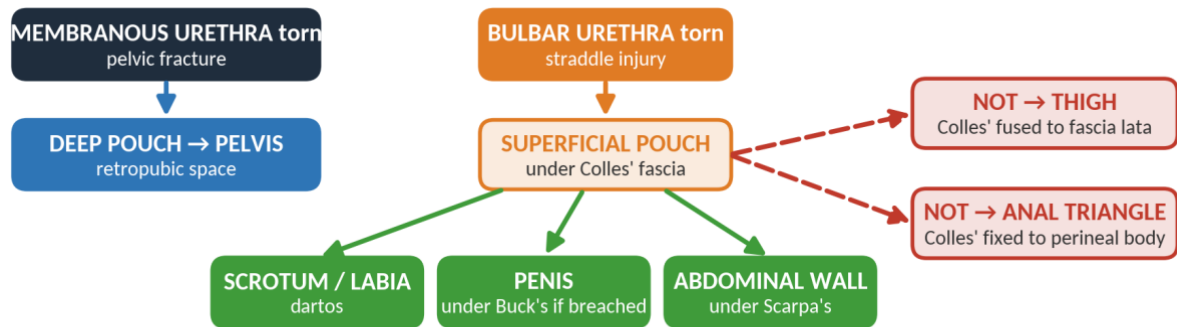
6 Colles', Buck's and Where Urine Goes

COLLES' FASCIA

- Membranous layer of perineal superficial fascia
- Continuous with **Scarpa's** (abdomen) and **dartos** (scrotum/labia)
- Fused to **fascia lata** at the side and to the **perineal body** behind

BUCK'S FASCIA (male)

- Deep fascia of the penis around all three erectile bodies
- Penile fracture with Buck's intact → haematoma confined to the shaft
- Buck's breached → spread under Colles' fascia



Suspected urethral injury → suprapubic catheter, not a blind urethral one.

Figure 5. Extravasation depends on which pouch the tear is in.

MNEMONIC / MEMORY HOOK

Colles' is a sealed bag: open to the front (scrotum, penis, abdominal wall), closed at the sides (fascia lata) and back (perineal body).

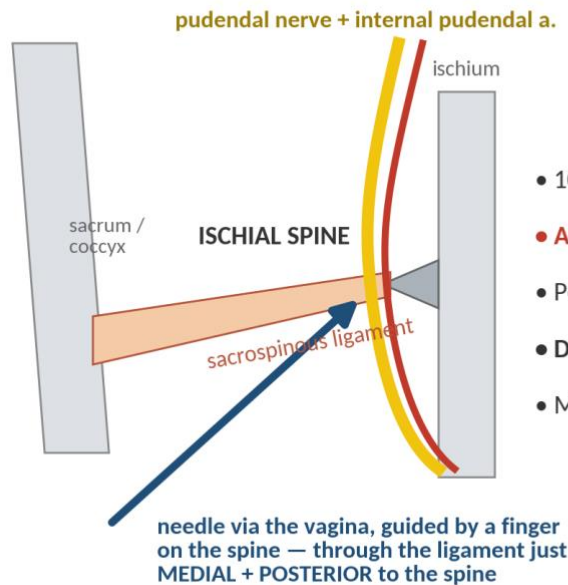
7 Vessels, Lymph and Nerves

System	Summary
Arteries	Internal pudendal — superficial pouch: perineal + posterior labial aa. • deep pouch: artery of the bulb, deep + dorsal aa. of clitoris • external pudendal (femoral) to the anterior labia
Veins	Internal pudendal → internal iliac • deep dorsal vein of clitoris passes between the pubic arch and the perineal membrane to the pelvic plexus
Lymph	Skin and superficial structures → superficial inguinal • deeper → deep inguinal and internal iliac
Nerves	Pudendal (S2–S4) to all perineal muscles • ilioinguinal (L1), genitofemoral (L1–L2), posterior femoral cutaneous (S1–S3), anococcygeal nerves • autonomic from the pelvic plexus

'Point and Shoot': Parasympathetic → erection (Point); Sympathetic → emission (Shoot); pudendal (somatic) → rhythmic ejaculation via bulbospongiosus.

8 Clinical Correlations

Transvaginal pudendal block (schematic)



- 10 mL local anaesthetic each side
- **ASPIRATE** — the artery is right there
- Perineal anaesthesia: repair, low forceps
- **Does NOT** relieve contraction pain
- Misses ilioinguinal/genitofemoral skin

Figure 6. Transvaginal pudendal nerve block.

PERINEAL TRAUMA IN BIRTH

- 2nd-degree tears and episiotomy cut **bulbospongiosus + superficial transverse perineal** (superficial pouch)
- Deeper tears reach levator ani and the deep pouch
- OASI extends into the anal sphincter ± rectum (Lecture 20)

PUDENDAL NEURALGIA

- Perineal pain in the pudendal territory, **worse sitting**
- Cycling, childbirth, sacrospinous fixation, trauma, entrapment
- **Nantes criteria**; blocks, decompression, neuromodulation

ISCHIOANAL ABSCESS

- Usually an infected anal gland tracking through the EAS
- Pain, swelling, fever
- **Incision and drainage** ± antibiotics; fistula often follows

FOURNIER'S GANGRENE

- Polymicrobial necrotising fasciitis of the perineum/genitalia
- Races along Colles', Scarpa's, dartos, Buck's
- **Emergency**: debridement, broad antibiotics, ITU

9 MRCOG Exam Pearls — Last-Minute Page

Numbers to know

2 Pouches	3 Superficial muscles	3 Female sphincter complex muscles	S2–S4 Pudendal nerve
10 mL LA each side — pudendal block	4 & 8 Bartholin's (superficial pouch)	2 Urethral injury levels	3 Pudendal branches

HIGH-YIELD CHECKLIST

- ☐ Perineal membrane: triangular sheet; pierced by urethra and vagina.
- ☐ Superficial pouch: between membrane and Colles' fascia. Deep pouch: above the membrane.
- ☐ Superficial (female): ischiocavernosus, bulbospongiosus (paired), superficial transverse perineal, bulbs, crura, Bartholin's.
- ☐ Deep (female): external urethral sphincter, compressor urethrae, urethrovaginal sphincter.
- ☐ Deep (male): external urethral sphincter, deep transverse perineal, Cowper's glands.
- ☐ Bartholin's in the SUPERFICIAL pouch; Cowper's in the DEEP pouch.
- ☐ Pudendal nerve (S2–S4) supplies all perineal muscles; Alcock's canal in obturator fascia.
- ☐ Colles' fascia: continuous with Scarpa's and dartos; fixed to fascia lata and perineal body.
- ☐ Bulbar tear → superficial pouch → scrotum, penis, abdominal wall. Membranous tear → deep pouch → pelvis.
- ☐ Ischioanal fossa: fat; abscess site; horseshoe spread behind the anus.
- ☐ Pudendal block through the sacrospinous ligament just medial/posterior to the ischial spine.

Quick-fire self-test — cover the right-hand column

Question	Answer
What separates the two pouches?	Perineal membrane
Superficial boundary of the superficial pouch?	Colles' fascia
Which pouch holds Bartholin's glands?	Superficial
Which pouch holds Cowper's glands?	Deep
Which muscle covers the clitoral crus?	Ischiocavernosus
Three muscles of the female sphincter complex?	External urethral sphincter, compressor urethrae, urethrovaginal sphincter
Where is Alcock's canal?	Obturator internus fascia, lateral wall of the ischioanal fossa
Why doesn't extravasated urine enter the thigh?	Colles' fascia is fused to the fascia lata
Urethral tear with a pelvic fracture — where does urine go?	Deep pouch → pelvis
Landmark for a transvaginal pudendal block?	Ischial spine
Does a pudendal block relieve contraction pain?	No

10 References

- Standring S, editor. Gray's Anatomy. 42nd ed. 2020.
- Moore KL et al. Clinically Oriented Anatomy. 8th ed. 2017.
- Drake RL et al. Gray's Anatomy for Students. 4th ed. 2019.