



PIPADOR REVISION

MRCOG Part 1 Revision Notes

The Pelvic Lymph Nodes

ANATOMY • LECTURE 5

VISUAL EXAMINATION REVISION NOTES

2026 Edition

MRCOG Part 1 Revision Notes

Lecture 5: The Pelvic Lymph Nodes

Anatomy • Visual revision edition

COLOUR CODE USED THROUGHOUT THESE NOTES

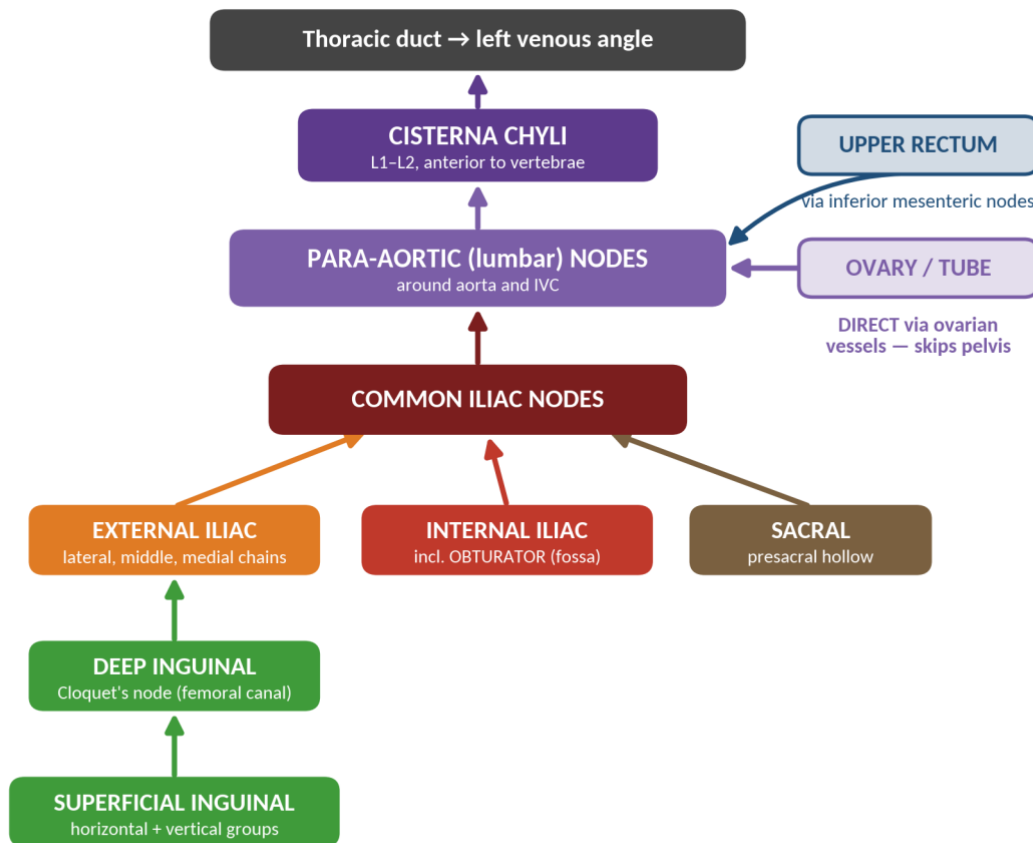
PARA-AORTIC	COMMON ILIAC	EXTERNAL ILIAC	INTERNAL ILIAC	OBTURATOR	SACRAL	INGUINAL
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LEARNING OBJECTIVES — tick off as you go

- ☐ Identify the main pelvic lymph node groups and their location.
- ☐ Describe the lymphatic drainage of each pelvic organ.
- ☐ Recognise drainage patterns of cervix, body of uterus and ovaries.
- ☐ Apply to staging of gynaecological cancers.
- ☐ Outline lymphadenectomy boundaries.
- ☐ Recognise lymphoedema as a complication.

1 Overview — The Lymphatic Highway

IN ONE LINE: Pelvic nodes follow the blood vessels and all roads lead to the para-aortic nodes and cisterna chyli.



All pelvic lymph ultimately reaches the para-aortic nodes and the cisterna chyli.

Figure 1. How lymph climbs out of the pelvis — and the two routes that skip the pelvic nodes.

2 The Node Groups

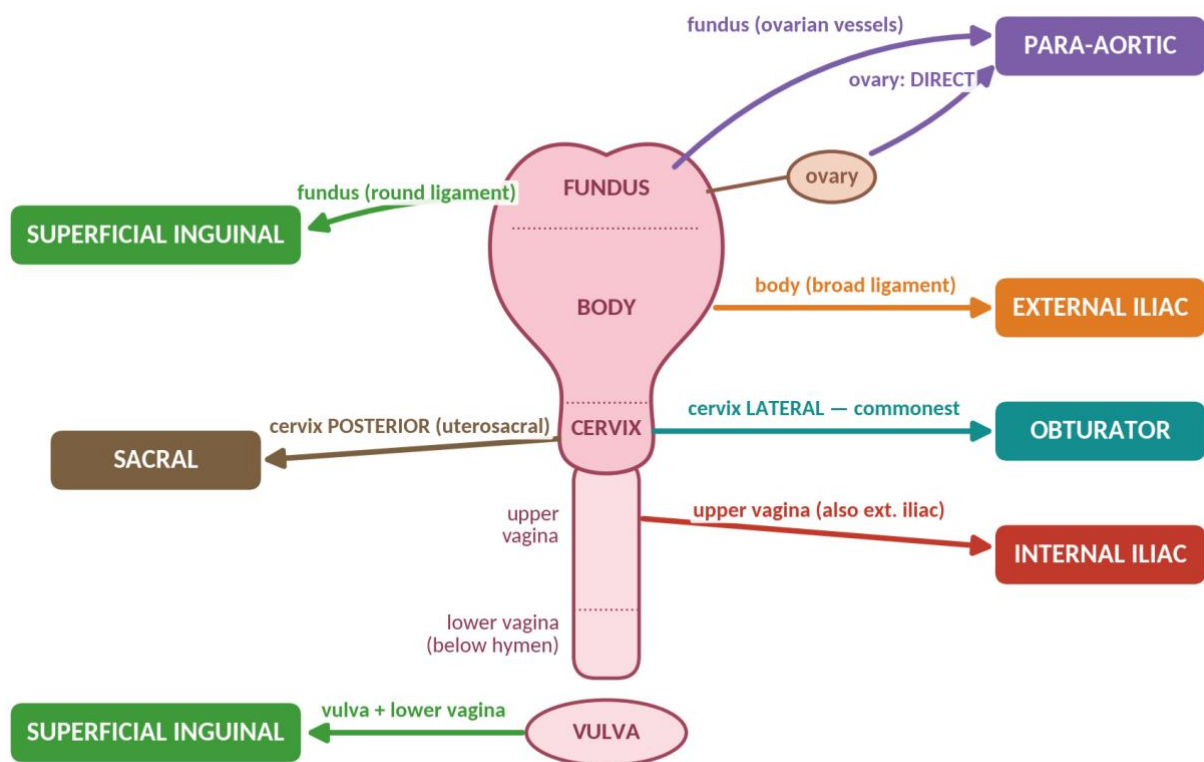
Group	Where	Drains
External iliac	Along external iliac vessels — lateral, middle, medial chains	Bladder, cervix, upper vagina, lower abdominal wall; lower limb via deep inguinal nodes
Internal iliac	Along internal iliac vessels	Bladder, lower uterus, upper vagina, cervix, lower rectum, pelvic walls, buttock
Obturator	Obturator fossa, with obturator nerve and vessels	Cervix (first echelon), bladder, anal canal, hip joint — commonest site of cervical cancer spread
Common iliac	Along common iliac vessels	Efferents from external and internal iliac → para-aortic
Sacral (presacral)	Hollow of the sacrum	Posterior pelvic wall, posterior cervix, lower rectum, prostate
Para-aortic (lumbar)	Around aorta and IVC	Pelvic groups (via common iliac); ovaries directly; fundus via ovarian vessels
Superficial inguinal	Below inguinal ligament; horizontal + vertical (saphenous) groups	Vulva, lower vagina, perineum, abdominal wall below umbilicus, buttock, superficial leg; small part of fundus

Group	Where	Drains
Deep inguinal	Medial to femoral vein in the femoral canal; Cloquet's node is the uppermost	Superficial inguinal nodes and deep leg → external iliac

EXAM HOOK

Texts differ on where the **obturator nodes** belong — some group them with the internal iliac chain, others with the medial external iliac chain. Learn them as their own group: the **first echelon for the cervix**.

3 Drainage Organ by Organ



Schematic, not to scale. Cervix ANTERIOR pathway (vesicovaginal vessels) → external iliac.

Figure 2. One organ map, colour-coded by destination.

3.1 Uterus

Part	Drainage
Fundus	Along ovarian vessels → para-aortic; along round ligament → superficial inguinal (small)
Body	Along broad ligament → external iliac (mainly)
Cervix	External iliac, internal iliac (especially obturator) and sacral

Endometrial cancer spreads like the uterine body, and can reach para-aortic nodes via the ovarian vessels.

3.2 Cervix — clinically critical

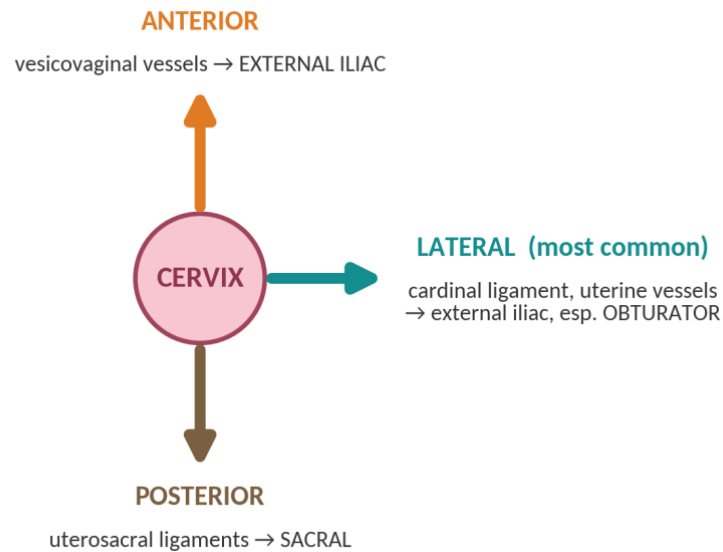


Figure 3. Three routes out of the cervix.

MNEMONIC / MEMORY HOOK

Cervix L-P-A: Lateral → obturator (commonest) • Posterior → sacral • Anterior → external iliac

3.3 Vagina

Part	Drainage
Upper vagina	Along uterine arteries → external and internal iliac (like the cervix)
Middle vagina	Internal iliac
Lower vagina (below hymen)	Superficial inguinal (with the vulva)

3.4 Ovaries and tubes

IN ONE LINE: Along the ovarian vessels in the suspensory ligament, **DIRECTLY** to the para-aortic nodes at L1–L2.

RIGHT OVARY	LEFT OVARY
Precaval and aortocaval nodes	Para-aortic and pre-aortic nodes around the left renal vein

- So ovarian cancer can have **para-aortic metastases with clear pelvic nodes**.
- Minor routes: via uterine vessels → external iliac; via round ligament → superficial inguinal.

MNEMONIC / MEMORY HOOK

'The ovary remembers where it was born': it develops high on the posterior abdominal wall and descends, dragging its vessels and lymphatics with it — so it drains back up to L1–L2.

3.5 Vulva

1 Superficial inguinal ipsilateral, predominantly	2 Deep inguinal Cloquet's node	3 External iliac
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- **Clitoris** → deep inguinal and external iliac directly. **Midline / anterior vulva** may drain to **both** groins.
- Basis of **inguinofemoral lymphadenectomy** in vulval cancer.

3.6 – 3.7 Bladder and urethra

BLADDER

- Mainly **external iliac**
- Some internal iliac, obturator, common iliac
- Neck and trigone → internal iliac

URETHRA

- Female: internal iliac and obturator; **distal** → **superficial inguinal**
- Male: prostatic/membranous → internal iliac; spongy → deep and superficial inguinal

3.8 Rectum and anal canal

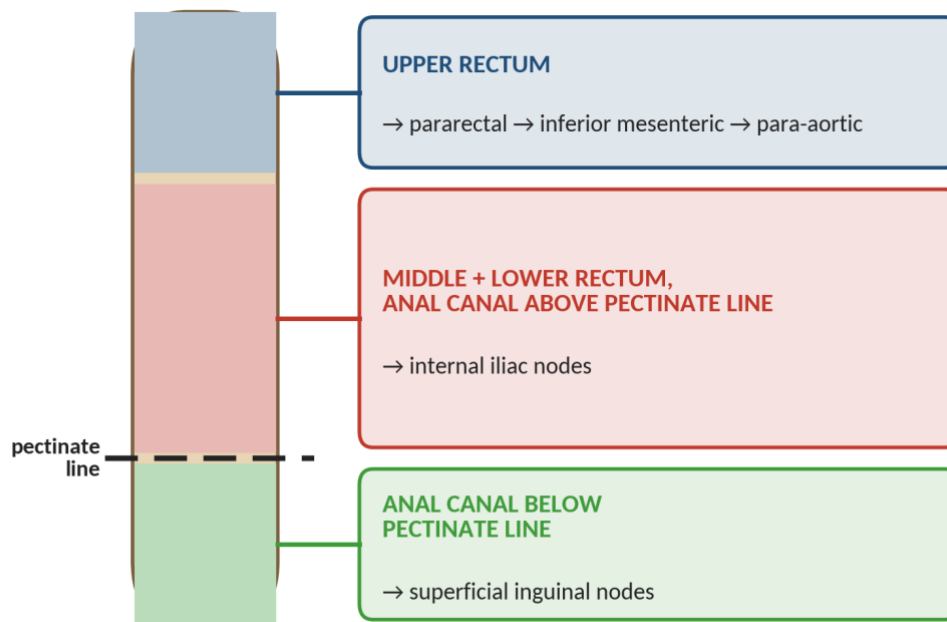


Figure 4. The pectinate line splits both embryology and lymph drainage.

MNEMONIC / MEMORY HOOK

Pectinate line: Above → Inside the pelvis (internal iliac) • Below → out to the groin (superficial inguinal)

4 Lymph Nodes in Gynaecological Cancer

CERVICAL

- **FIGO 2018** staging includes node status (clinical or imaging)
- Pelvic lymphadenectomy: obturator, external, internal, common iliac
- Para-aortic if pelvic nodes positive or advanced
- SLN emerging — typically obturator and external iliac

ENDOMETRIAL

- Risk-adapted lymphadenectomy
- **SLN biopsy increasingly standard** (indocyanine green)
- Spreads to pelvic and para-aortic nodes

OVARIAN

- Staging includes systematic lymphadenectomy in early stage
- Pelvic + para-aortic **up to the renal vessels**
- Para-aortic can be positive with clear pelvic nodes

VULVAL

- Inguinofemoral lymphadenectomy: **ipsilateral for lateral tumours** (roughly 1–2 cm or more from the midline, depending on guideline); **bilateral for midline** tumours
- **SLN** for tumours **<4 cm**, unifocal, clinically node-negative (**GROINSS-V**)

5 Sentinel Lymph Node Biopsy

IN ONE LINE: *The first node to receive drainage from the tumour — if it is negative, the rest are likely negative.*

Where it is used

VULVAL established	ENDOMETRIAL increasingly standard	CERVICAL developing
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Mapping agents

Technetium-99m sulphur colloid — radiotracer, gamma probe	Patent blue dye visual	Indocyanine green (ICG) near-infrared imaging
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Key performance measures: **detection rate, sensitivity, negative predictive value**. Main advantage: **less morbidity** than full lymphadenectomy.

6 Lymphadenectomy Boundaries

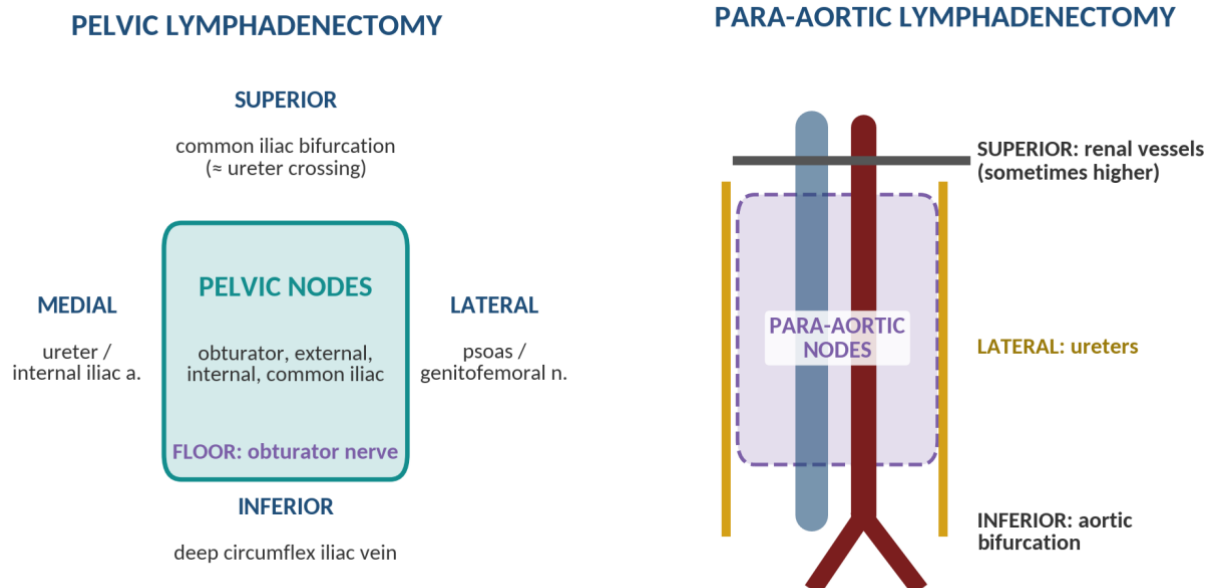


Figure 5. The surgical 'box' for each dissection.

MNEMONIC / MEMORY HOOK

Pelvic dissection: **the obturator nerve is the floor** — find it and protect it.

Para-aortic approach: retroperitoneal or transperitoneal.

7 Complications and Lymphoedema

Lymphoedema especially groin dissection	Lymphocyst / lymphocele fluid collection	Nerve injury obturator, genitofemoral, femoral
Vascular injury iliac vessels	Ureteric injury	Longer surgery, more blood loss
Wound problems especially groin	VTE increased risk	Sexual dysfunction autonomic plexus injury

Lymphoedema

RISK

- **Commonest gynae-onc cause: groin dissection for vulval cancer**
- Extent of node dissection
- Adjuvant radiotherapy
- Wound complications
- Obesity

MANAGEMENT

- Compression garments
- Manual lymphatic drainage
- Skin care to prevent cellulitis
- Specialist lymphoedema service
- Lymphovenous anastomosis (selected cases)

8 Clinical Correlations

Imaging	Role
MRI	High resolution — size, morphology, structure
CT	Extent of disease, distant metastasis
PET-CT	Functional — sensitive for metabolically active nodes
Ultrasound	Groin nodes; limited for deep pelvic nodes
Lymphangiogram	Historical

EXAM HOOK

Suspicious node: short axis >10 mm, round, loss of fatty hilum. Inguinal nodes that are firm and fixed are suspicious → FNA / imaging. Biopsy under image guidance (USS for groin; CT/USS for pelvis).

9 MRCOG Exam Pearls — Last-Minute Page

Numbers to know

L1–L2 Cisterna chyli + ovarian drainage	3 External iliac chains	3 Cervical pathways	2018 FIGO cervix: nodes in staging
>10 mm Suspicious short axis	<4 cm Vulval SLN tumour size	1st Obturator = cervix first echelon	Renal v. Top of para-aortic dissection

HIGH-YIELD CHECKLIST

- ☐ Pelvic groups: external iliac, internal iliac, obturator, common iliac, sacral.
- ☐ Ovary drains DIRECTLY to para-aortic nodes via ovarian vessels — not pelvic nodes.
- ☐ Right ovary → precaval/aortocaval; left → para-aortic around left renal vein.
- ☐ Cervix: obturator (commonest), external iliac, internal iliac, sacral.
- ☐ Body of uterus → external iliac; fundus → para-aortic + a little to superficial inguinal.
- ☐ Vulva → superficial inguinal → deep inguinal (Cloquet's) → external iliac.
- ☐ Anal canal: above pectinate → internal iliac; below → superficial inguinal.
- ☐ Upper rectum → inferior mesenteric / para-aortic; lower rectum → internal iliac.
- ☐ Cisterna chyli at L1–L2: receives lumbar and intestinal trunks; gives rise to the thoracic duct.
- ☐ Pelvic dissection: common iliac bifurcation → deep circumflex iliac vein; psoas lateral; ureter medial; obturator nerve floor.
- ☐ SLN established in vulval cancer (GROINSS-V); increasingly used in endometrial.
- ☐ Lymphoedema = major complication of groin dissection.

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

Question	Answer
Where do the ovaries drain?	Directly to para-aortic nodes (L1–L2)
Commonest node group involved in cervical cancer?	Obturator
Main drainage of the uterine body?	External iliac nodes
How can the fundus reach the groin?	Via the round ligament → superficial inguinal
Anal canal below the pectinate line drains to...?	Superficial inguinal nodes
Order of vulval drainage?	Superficial inguinal → deep inguinal → external iliac
What is Cloquet's node?	The uppermost deep inguinal node, in the femoral canal
Floor of a pelvic lymphadenectomy?	Obturator nerve
Upper limit of para-aortic dissection?	Renal vessels
Vulval SLN criteria (GROINSS-V)?	<4 cm, unifocal, clinically node-negative
Three signs of a suspicious node on imaging?	>10 mm short axis, round, loss of fatty hilum

10 References

- Standring S, editor. Gray's Anatomy. 42nd ed. 2020.
- Moore KL et al. Clinically Oriented Anatomy. 8th ed. 2017.
- GROINSS-V studies. Van der Zee AG et al. J Clin Oncol. 2008.
- ESGO/ESTRO/ESP guidelines on cervical, endometrial, vulval and ovarian cancer.
- FIGO Cancer Report 2018.