PIPADOR REVISION

# MRCOG Part 1 Revision Notes

## *Bladder Pathology*

PATHOLOGY • LECTURE 320

VISUAL EXAMINATION REVISION NOTES

*2026 Edition*

320

MRCOG PART 1 REVISION NOTES | PATHOLOGY

# Bladder Pathology

*Normal bladder, inflammation and dysfunction, bladder injury and fistula, and bladder tumours*

| Urothelial | Smoking | Detrusor overactivity | VVF |
|---|---|---|---|
| ≈ 90% of bladder cancer | ≈ 50% of bladder cancers | Urodynamic basis of OAB | Obstructed labour (global) |

**■ KEY FACTS: Learning objectives**

- Describe normal bladder histology and the pathology of bladder inflammation and dysfunction.
- Describe bladder injury and fistula relevant to obstetric and gynaecological practice.
- Describe bladder tumours: risk factors, pathology, presentation and management.

## 320.1 Normal bladder

- The bladder is lined by **urothelium** (transitional epithelium) with umbrella cells and a protective glycosaminoglycan (GAG) layer, over lamina propria and the **detrusor** smooth muscle ($M_3$ — contraction; $\beta_3$ — relaxation).
- The trigone is embryologically distinct (mesonephric).
- Oestrogen receptors in the trigone and urethra explain postmenopausal urinary symptoms.

## 320.2 Bladder pathology

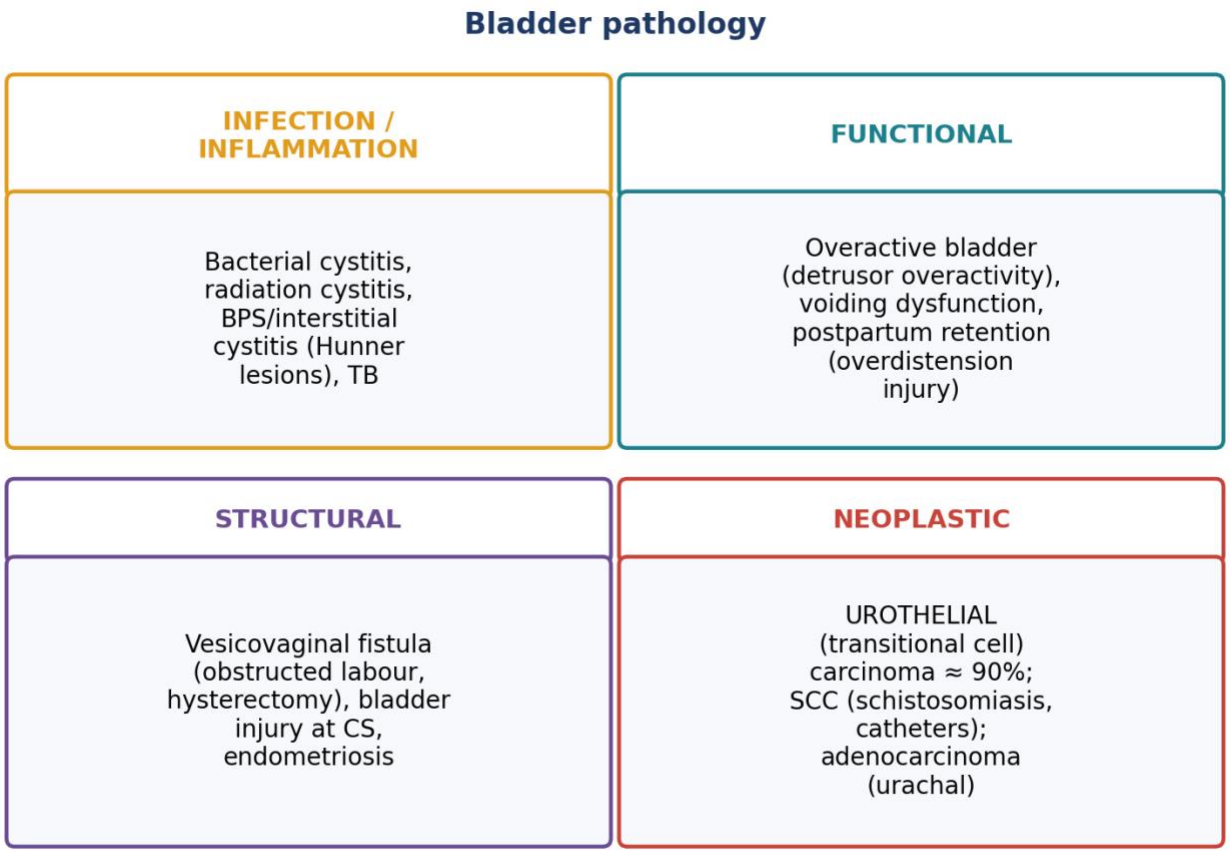



*Figure 320.1 — Bladder pathology*

| Condition | Key points |
|---|---|
| **Bacterial cystitis** | E. coli; haemorrhagic cystitis; recurrent UTI (Lecture 303) |
| **Bladder pain syndrome / interstitial cystitis** | • Chronic pain with filling, frequency<br>• GAG layer defect, mast cells, neurogenic inflammation<br>• **Hunner lesions** on cystoscopy<br>• Overlap with endometriosis/CPP |
| **Radiation cystitis** | After pelvic radiotherapy (cervical cancer) — haematuria, contracted bladder |
| **Overactive bladder** | • Urgency ± incontinence, frequency, nocturia<br>• Detrusor overactivity<br>• Antimuscarinics, mirabegron, botulinum toxin |
| **Postpartum retention** | • Epidural, instrumental birth, perineal trauma — overdistension can cause permanent detrusor damage<br>• Monitor first void (≤ 6 h) |
| **Bladder injury** | • At CS (especially repeat CS, adhesions) and hysterectomy — recognise and repair<br>• Catheter 7–14 days |
| **Vesicovaginal fistula** | • Prolonged obstructed labour (pressure necrosis — low-resource settings) or post-hysterectomy<br>• Continuous leakage<br>• Dye test<br>• Surgical repair |
| **Endometriosis** | Detrusor nodules — cyclical haematuria |

## 320.3 Bladder tumours

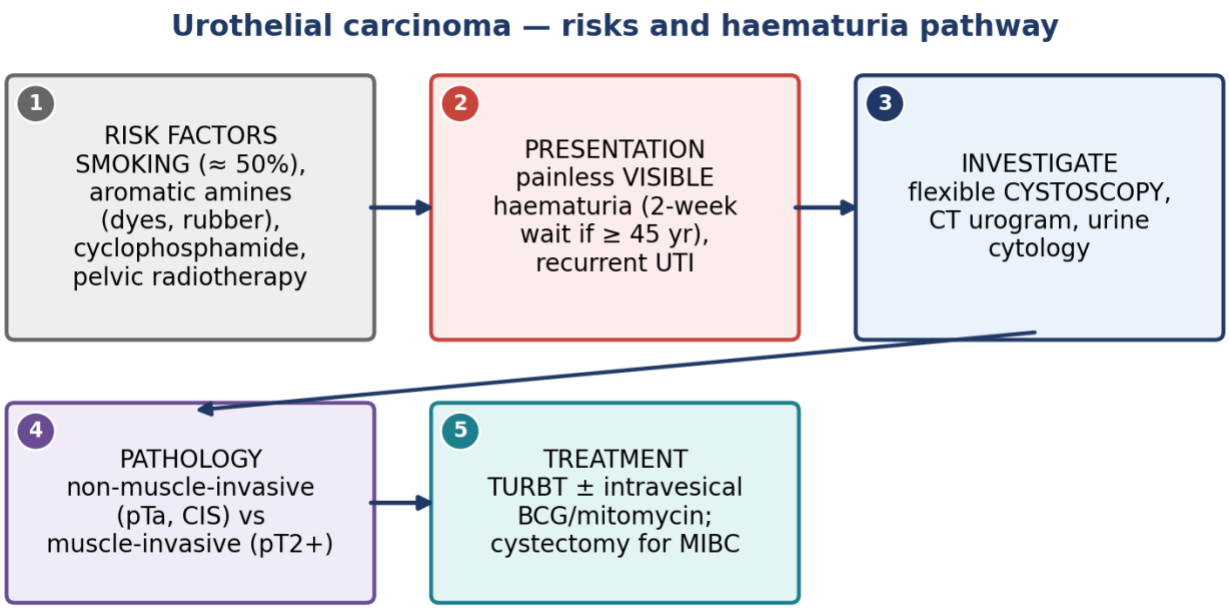



*Figure 320.2 — Urothelial carcinoma*

- **Urothelial carcinoma**: papillary (usually low-grade, recurrent, non-invasive) vs flat **carcinoma in situ** (high-grade, high progression risk)
  - Field change throughout the urothelium (ureters, renal pelvis).
- **Squamous cell carcinoma**: chronic irritation — **schistosomiasis** (S. haematobium), long-term catheters, stones.
- **Adenocarcinoma**: urachal remnant (dome).
- Visible haematuria in women ≥ 45 (or non-visible ≥ 60 with dysuria/raised WCC) → urgent urology referral (NICE NG12).

## 320.4 Must-know summary

**■ EXAM TIP**

- Urothelium + GAG layer; detrusor $M_3$ (contract) / $\beta_3$ (relax).
- BPS/IC (Hunner lesions), OAB (detrusor overactivity), postpartum retention (overdistension).
- Bladder injury at CS; VVF after obstructed labour or hysterectomy.
- Urothelial carcinoma ≈ 90% (smoking, aromatic amines, cyclophosphamide); SCC with schistosomiasis; painless haematuria → cystoscopy.

**■ MNEMONIC / MEMORY AID**

**Bladder cancer risks — 'Smoking, Schistosoma, Stones/catheters, Chemicals (amines), Cyclophosphamide'.**