



—BELMATT—
HEALTHCARE TRAINING

Men's Health

Jeshni Amblum-Almer

Learning Outcomes

Aims

This session aims to explore some presentations around men's health seen in general practice

Learning Outcomes:

- Have a brief understanding of male anatomy and the reproductive system.
- Explore some of the presentations around prostate health and testicular issues.
- Have an overview of screening methods and management strategies.
- Recognise red flags and importance of safety netting.

Video - Anatomy and Physiology of the male reproductive system

[https://www.osmosis.org/learn/Anatomy and physiology of the male reproductive system](https://www.osmosis.org/learn/Anatomy_and_physiology_of_the_male_reproductive_system)

[https://www.osmosis.org/learn/Puberty and Tanner staging?from=/np/foundational-sciences/physiology/reproductive-system/male-reproductive-system](https://www.osmosis.org/learn/Puberty_and_Tanner_staging?from=/np/foundational-sciences/physiology/reproductive-system/male-reproductive-system)

Case Study

- 13yr old boy presents with sudden onset severe testicular pain. He has vomited twice.
- No fever. P 110
- Mum states there is mild redness and warmth around the testicle and pain is worse when testicle is lifted.
- Child was playing football at school when suddenly pain started.

Testicular Torsion

Based on history and physical examination findings, you can categorise testicular torsion as an acute or intermittent condition

Testicular torsion occurs when the spermatic cord becomes twisted, which impairs blood flow to and from the ipsilateral testis.



Several factors can increase a patient's susceptibility to testicular torsion, such as an abnormal fixation of the testicle within the scrotum, as well as rapid growth, increased vascularity, inflammation, and trauma.

This condition is a surgical emergency that must be addressed quickly in order to prevent permanent ischemic damage to the testicle.

Symptoms

- Sudden onset of severe unilateral scrotal or testicular pain.
- Awakens the patient in the middle of the night or early morning.
- Nausea and vomiting associated with the pain.

Physical exam will reveal scrotal erythema, induration, or oedema. Affected testicle may appear to “ride higher” in the scrotum, or it could have a transverse orientation.

Negative Prehn sign , pain not relieved by elevating the scrotum.

You might also notice an absent cremasteric reflex on the affected side, which can be elicited by stroking your patient’s inner thigh. Usually, this stimulates the cremaster muscle to contract and pull the testicle upward, but the reflex is often absent on the affected side when torsion is present. These findings are highly suggestive of acute testicular torsion!

Treatment

- Needs treatment within 6hrs for positive outcomes
- Typically, when a torsion takes place, the surface of the testicle has rotated towards the midline of the body. Non-surgical correction can sometimes be accomplished by manually rotating the testicle in the opposite direction (i.e., outward, towards the thigh); if this is initially unsuccessful, a forced manual rotation in the other direction may correct the problem
- Surgical emergency.
- Repeat doppler will be needed to confirm restoration.

Case Study

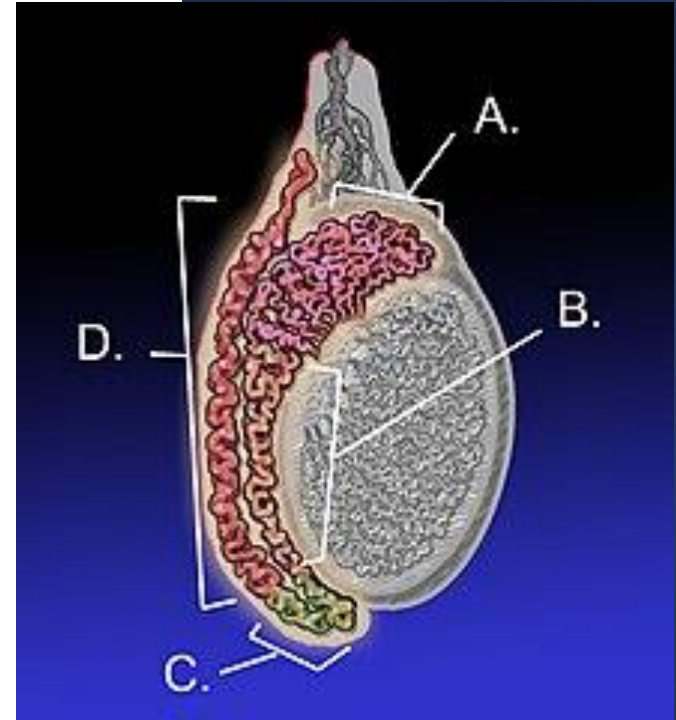
Presenting Complaint: 20yr old male presented to the general practice clinic with a three-day history of scrotal pain on the left side, which had gradually increased in intensity. He also reported a low-grade fever and a feeling of heaviness in the affected testicle. States he has burning with urination and frequency.

States he has recently had a smelly urethral discharge and dysuria and has been feeling hot.

PMH: Behcets Disease

Clinical Examination

- Upon examination, the patient appeared uncomfortable. Physical examination revealed:
- Swelling and redness of the left scrotum
- Tenderness localized to the left epididymis
- Positive Prehn's sign (relief of pain when the scrotum is lifted)
- No inguinal lymphadenopathy or abdominal pain was noted
- The patient denied any recent urinary symptoms or urethral discharge. He reported being in a monogamous relationship and denied any history of sexually transmitted infections.



Diagnostic Workup

Urine Analysis: Showed no signs of urinary infection (no leukocytes or nitrites)



Ultrasound of the Scrotum: Confirmed an enlarged left epididymis with increased blood flow, suggestive of epididymitis; no evidence of testicular torsion or tumours



STD Panel: Chlamydia and gonorrhea testing was conducted due to the patient's age and to rule out sexually transmitted causes.

Epididymitis

- Inflammation of the epididymis which is a curved structure at the back of the testicle
- Epididymitis in young, sexually active males often raises the suspicion of an STD-related cause, particularly chlamydia or gonorrhea, necessitating appropriate antibiotic coverage.
- However, the diagnosis should also consider other causes like urinary tract pathogens, particularly in older or sexually inactive males.
- Scrotal ultrasound plays a critical role in distinguishing epididymitis from other scrotal conditions like torsion, which is a surgical emergency.

Treatment

- **Antibiotics:** The patient was prescribed a combination of doxycycline and ceftriaxone to cover potential sexually transmitted pathogens, pending STD results.
- **Pain Management:** NSAIDs were prescribed for pain relief and to reduce inflammation.
- **Supportive Care:** The patient was advised to rest, apply ice packs to the scrotal area, and wear supportive underwear to alleviate discomfort.

Follow-up and Counseling

- The patient was advised to return for a follow-up in one week or earlier if symptoms worsened. During the follow-up:
- Review of the antibiotic regimen based on culture and sensitivity results from the STD panel.
- Assessment of symptom resolution to ensure the effectiveness of treatment.
- The patient was also counselled on safe sexual practices and the importance of partner notification and treatment in cases of confirmed sexually transmitted infections.

- A 33-year-old man presents to the surgery after feeling a lump on his right testicle. The patient denies any associated pain. He has no significant past medical history. Vitals are within normal limits. Physical examination reveals a mobile, soft, round mass superior and posterior to the right testis. The nodule transilluminates when a penlight is held behind it.

Spermatocele

- Cystic structure caused by obstruction of the epididymal ducts
- Do not typically cause symptoms
- Similar to hydroceles, they transilluminate
- Palpated as a soft, round mass in the posterior and superior aspect of the testis/

Case Study

23 yr old male comes to surgery complaining of 3 week history of scrotal fullness and dull achy pain when standing for prolonged periods that is relieved with lying flat. There are no acute episodes of sudden pain. He has no significant past medical history. Vitals are within normal limits. Physical examination reveals a left-sided scrotal mass that feels like a “bag of worms” and decompresses with recumbency. The right scrotum is unremarkable. The scrotum does not transilluminate.



Varicocele

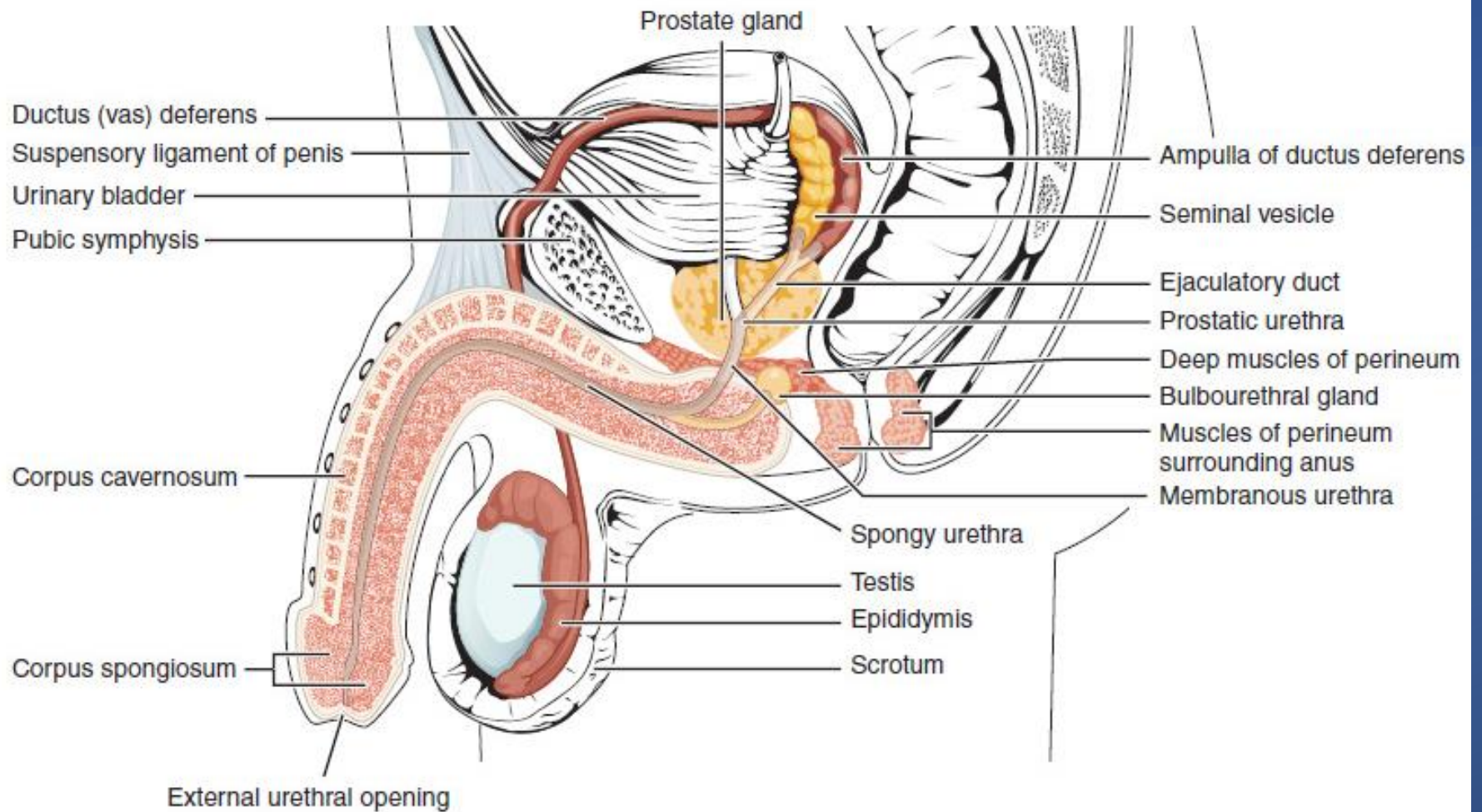
- Most common cause of male infertility
- Impaired venous drainage/
- Left testicular vein drains into left renal vein at a right angle – nutcracker effect when compressed between the aorta and superior mesenteric artery.

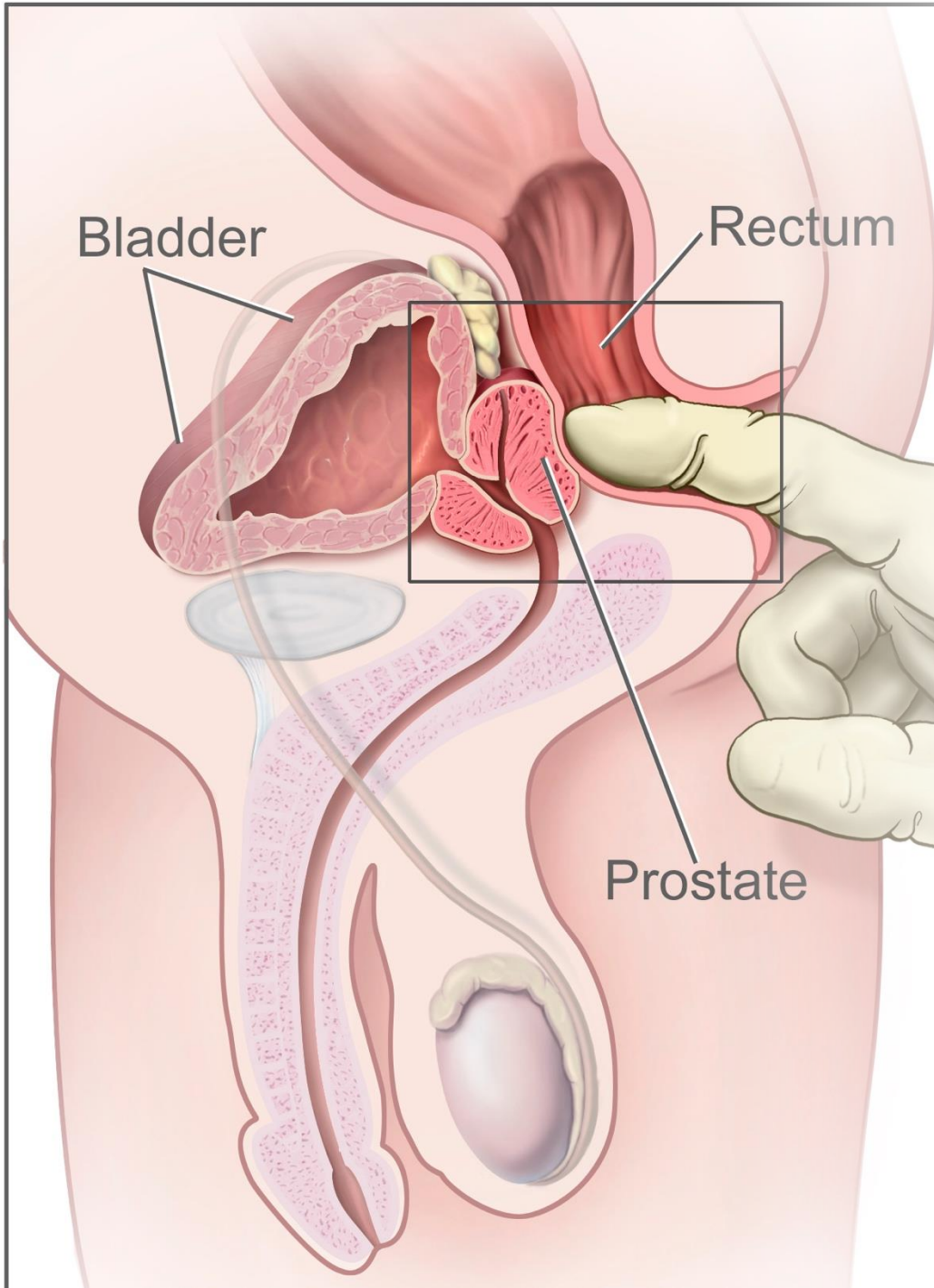
Case Study

- A 62-year-old male presents with nocturia, frequency, and urgency of urination. These symptoms have gradually worsened over two years.

Prostate Health

- The prostate is a small gland whose job is to secrete an alkaline milky liquid that joins the sperm and the semen.
- To do that, it sits under the bladder and in front of the rectum. That's important because when we do digital rectal exam, we're able to palpate the posterior of the prostate.
- The urethra goes through the prostate before reaching the penis. And that part of the urethra is called the prostatic urethra





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Statistics

- **Prostate Cancer:** Prostate cancer is the most diagnosed cancer in UK men. It accounts for 26% of all new cancer cases in males. In 2019, there were around 52,300 new prostate cancer cases in the UK, translating to approximately 143 cases diagnosed each day.
- **Benign Prostatic Hyperplasia (BPH):** Although specific UK-wide statistics on BPH prevalence are less frequently reported, it is estimated that the condition affects about one in five men in their 50s, increasing to about two-thirds of men aged 70 and older.

Symptoms and Diagnosis

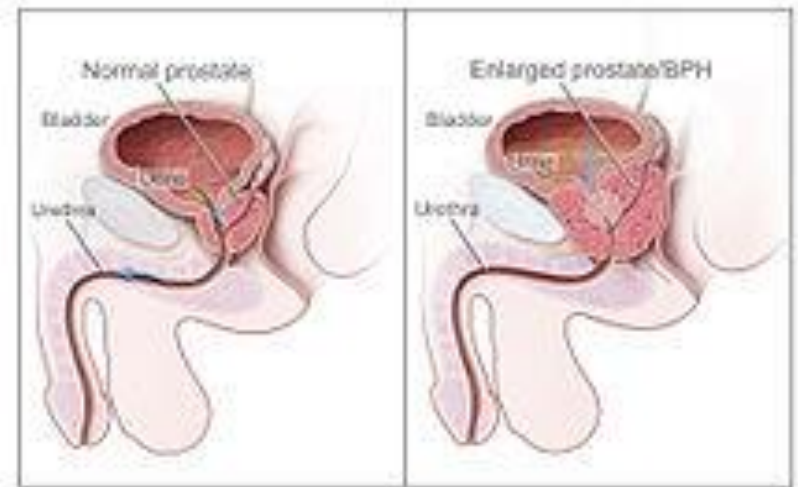
- Symptoms of prostate problems can vary depending on the condition but typically include:
- **General Symptoms:**
 - Frequent urination, especially at night
 - Difficulty starting urination or emptying the bladder
 - Weak or interrupted urine flow
 - Urgency to urinate
 - Blood in urine or semen
- **Prostate Cancer Symptoms:** Early prostate cancer usually causes no symptoms and is often detected through screening.
- **BPH Symptoms:** BPH generally leads to more pronounced urinary symptoms due to the enlarged prostate pressing on the urethra.
- **Prostatitis**

Case Study

- You are on a home visit and to a 73yr old male who presents with severe lower abdominal pain for past 4hrs. He has no passed urine for the past 24 hours. States he has had problems for the past 6months with difficulty initiating urination. Gets up at night frequently to pass urine.
- No weight loss, dysuria, or urinary urgency. No known allergies. Apyrexial and vital signs normal.
- Patient has a palpable bladder.. Urinary catheter is placed with immediate collection of 700 mL of urine and relief of the patient's symptoms.
- What is the likely cause if his symptoms?

Benign Prostatic Hyperplasia (BPH)

- This is hyperplasia of both the stroma and the glands of the prostate.
- 50% of men will develop BPH by age of 60.
- Not associated with any increased risk for developing prostate cancer. Rather, as the prostate gland enlarges, small hyperplastic nodules can form within urethra and compress the prostatic urethra – making it more difficult for urine to pass through, leading to a weak and inconsistent stream of urine, called dribbling.
- Since the prostate sits just below the bladder, when it's enlarged, it can cause bladder outflow obstruction.
- Strain when urinating to overcome the obstruction, dysuria or hesitancy
- Urine builds up in the bladder causing it to dilate, creating a constant sense of incomplete bladder emptying and overflow incontinence.
- In response, the smooth muscle walls of the bladder will contract harder, and this leads to bladder hypertrophy where the walls thicken and become irritable. This increases the frequency of urination at night, which is called nocturia.



Treatment

- Decrease fluid intake before bedtimes
- Moderate caffeine and alcohol intake
- Voiding position
- Physical Activity
- Medication
- Self catheterisation
- Surgery

Treatment

- Finasteride for 6-12 months focuses on relieving the obstruction and allowing the urine to flow normally. Side effects include decreased libido and erectile dysfunction.
- Terazosin and tamsulosin can bind to α_1 receptors on the smooth muscles in the neck of the bladder, the prostate, and urethra, causing them to relax and allowing urine to pass. Side effects include orthostatic hypotension and dizziness
- Oxybutynin, anti-muscarinic I for those with irritable bladder symptoms. Avoided in individuals with increased post-void residual volume, which is the volume of urine retained in the bladder after a voluntary void. This is because relaxing the bladder can increase the urinary retention even more
- Tadalafil can be also used, especially in individuals with concurrent erectile dysfunction.
- Surgical procedures like ablation or transurethral resection of the prostate, or TURP, can be done to remove part or all of the prostate.

BPH MEDICATIONS

	MECHANISM of ACTION	SIDE EFFECTS	NOTES
α-1 RECEPTOR ANTAGONISTS * TERAZOSIN * DOXAZOSIN * TAMSULOSIN	Relax smooth muscles in the bladder neck, prostate and urethra	• Orthostatic hypotension • Ejaculatory dysfunction • Headache, dizziness	• First-line for BPH • Should be avoided with phosphodiesterase-5 inhibitor (sildenafil, vardenafil) due to risk of hypotension
5-α-REDUCTASE INHIBITORS * FINASTERIDE * DUTASTERIDE	Inhibits conversion of testosterone to dihydrotestosterone, reduce the size of prostate gland	• Decrease libido • Erectile dysfunction • Depression	• 6-12 months of treatment is required for symptomatic improvement
ANTICHOLINERGIC AGENTS * TOLTERODINE * OXYBUTYNIN	Relax smooth muscles of the bladder	• Dry mouth • Blurred vision • Tachycardia • Drowsiness	• Reserved for patients with predominant irritative symptoms

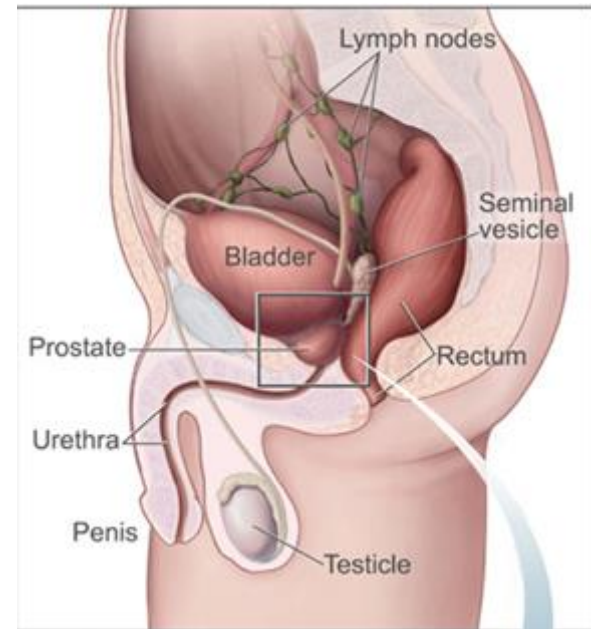
BPH = Benign prostatic hyperplasia

Case Study

- **Age:** 68yr old male of caribbean descent
- **Medical History:** Hypertension managed with medication; no previous history of cancer in the family.
- **Presenting Complaint:** Difficulty urinating, increased frequency of urination, especially at night, and occasional blood in urine.
- **Initial Consultation and Diagnosis**
 - The patient visited his general practitioner after several weeks of urinary symptoms. Concerned about the potential for prostate issues given his age, the GP referred him to a urologist.
 - The urologist conducted a physical examination, including a digital rectal examination (DRE), which revealed a firm prostate.

Diagnostic Methods:

- **Prostate-Specific Antigen (PSA) Test:** A blood test measuring the level of PSA, a protein produced by prostate tissue. Elevated levels can indicate prostate cancer or other prostate conditions.
- **Digital Rectal Exam (DRE):** A physical examination where a doctor feels the prostate through the rectum to check for abnormalities.



This shows the prostate and nearby organs.



This shows the inside of the prostate, urethra, rectum, and bladder.

Prostatic Adenocarcinoma

- Most common cancer and the second most common cause of cancer death in males. Risk factors include age older than 50 and if the person is of African descent.
- Prostate adenocarcinoma most commonly occurs in the posterior peripheral zone of the prostate. It is actually far away from the urethra. As a result, these tumours can grow quite large before they cause problems with urination.
- Over time, if the cancer does compress or invade the urethra or bladder, it can cause difficulty urinating, bleeding, and pain with urination and ejaculation. If the cancer becomes metastatic, it most commonly spreads to the bones of the axial skeleton, like the vertebrae or pelvis, resulting in hip or lower back pain.
- The key symptom here to differentiate it from benign causes of back pain is that it gets worse at night and not relieved by rest or position change.

Treatment Options

- Treatment for prostate issues varies based on the severity and nature of the condition:
- **Watchful Waiting or Active Surveillance:** Often chosen for older men with less aggressive prostate cancer, as the risks and side effects of treatment may outweigh the benefits.
- **Medications:**
 - For BPH: Alpha blockers (e.g. tamsulosin) to relax bladder neck muscles and muscle fibers in the prostate, making urination easier; 5-alpha-reductase inhibitors (e.g., finasteride) to shrink the prostate.
 - For Prostate Cancer: Hormonal therapy to reduce androgen levels that cancer cells rely on to grow.
- **Surgery:**
 - For BPH: Procedures like Transurethral Resection of the Prostate (TURP) to remove parts of the prostate that are blocking urine flow.
 - For Prostate Cancer: Radical prostatectomy to remove the prostate gland and some surrounding tissue.

Gleason Score

- The Gleason score, used in evaluating the prognosis of prostatic adenocarcinoma, assesses the aggressiveness of the cancer cells and ranges from 6 (least aggressive) to 10 (most aggressive).

Grade 1: The tissue looks very much like normal prostate tissue.

Grades 2-4: Tissue that looks increasingly abnormal.

Grade 5: The tissue looks very abnormal and the most aggressive.

Grade Group 1: Gleason 6 (or less)

Grade Group 2: Gleason 3+4=7

Grade Group 3: Gleason 4+3=7

Grade Group 4: Gleason 8

Grade Group 5: Gleason 9-10

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Risk Factors for Prostate Cancer

- Age is the biggest risk factor for prostate cancer. The older you are, the more likely you may get prostate cancer. Other factors that raise your risk for prostate cancer are:
- Having a close relative, such as a parent or sibling, with prostate cancer. This is very true if they were diagnosed before age 60.
- Having changes (mutations or variants) in certain genes passed down from a parent. These genes include [BRCA1 or BRCA2 genes](#), *HOXB13*, and *ATM*. Our Your race. Prostate cancer affects the Black community at a higher rate than any other race

PSA Levels

- PSA levels are measured as a number of nanograms (units) in each milliliter of fluid tested. This is written as ng/mL.
- **PSA level 2.5 ng/mL or lower:** This is a normal PSA level for those under age 60, but in some cases, prostate cancer may still be present.
- **PSA level between 2.5 and 4 ng/mL:** This is a normal PSA level for most people.
- **PSA level between 4 and 10 ng/mL:** This indicates that prostate cancer might be present. At this level, there is about a 25% chance that you have prostate cancer.
- **PSA level 10 ng/mL or above:** There is a 50 percent chance that prostate cancer is present. The higher the PSA rises above 10 ng/mL, the greater the chance that you have prostate cancer.

Prognosis and Follow Up

- **Prognosis and Follow-Up**

- Post-treatment, the patient would require regular monitoring through PSA levels and possibly imaging studies to ensure there is no recurrence. The prognosis generally depends on the stage at diagnosis, Gleason score, and initial PSA levels, along with the success of the surgical intervention.
- Early detection and treatment of prostate cancer are critical for a favorable outcome. Men over the age of 50, or those with a family history of prostate cancer, are advised to have regular check-ups that include PSA testing and possibly a digital rectal examination, depending on individual risk factors

Prostatitis

- prostate disorder is prostatitis or inflammation of the prostate.
- Can be either acute or chronic.
- Acute prostatitis is usually due to bacteria.
- In young adults, that's most commonly *Chlamydia trachomatis* and *Neisseria gonorrhoea*
- In older individuals, it's usually *Escherichia coli*, followed by *Pseudomonas*.
- Acute prostatitis classically presents as dysuria with fever and chills. A particularly high-yield fact for your test is that on a digital rectal exam, the prostate will be warm, tender and boggy

Case Study

50 yr old male comes to the surgery complaining of frequency, dysuria and chills since yesterday.

No pelvic pain, fatigue or joint pain. No history of sexual intercourse since he separated from spouse 3yrs ago.

PMH: High blood pressure – on amlodipine

FH – Father died of bladder cancer

Examination Findings : Temperature is 38.5°C, p100 and BP 130/70 mmHg.

Digital rectal examination reveals a warm, tender, and boggy prostate.

Urinalysis positive for leucocytes and nitrates

Urinary Tract Infections in Men

- Urinary tract infections (UTIs) in men, although less common than in women, can present significant health concerns. Due to the male urinary system's structure, particularly the longer urethra, men are generally less prone to UTIs than women, but when they occur, they can be more complicated.

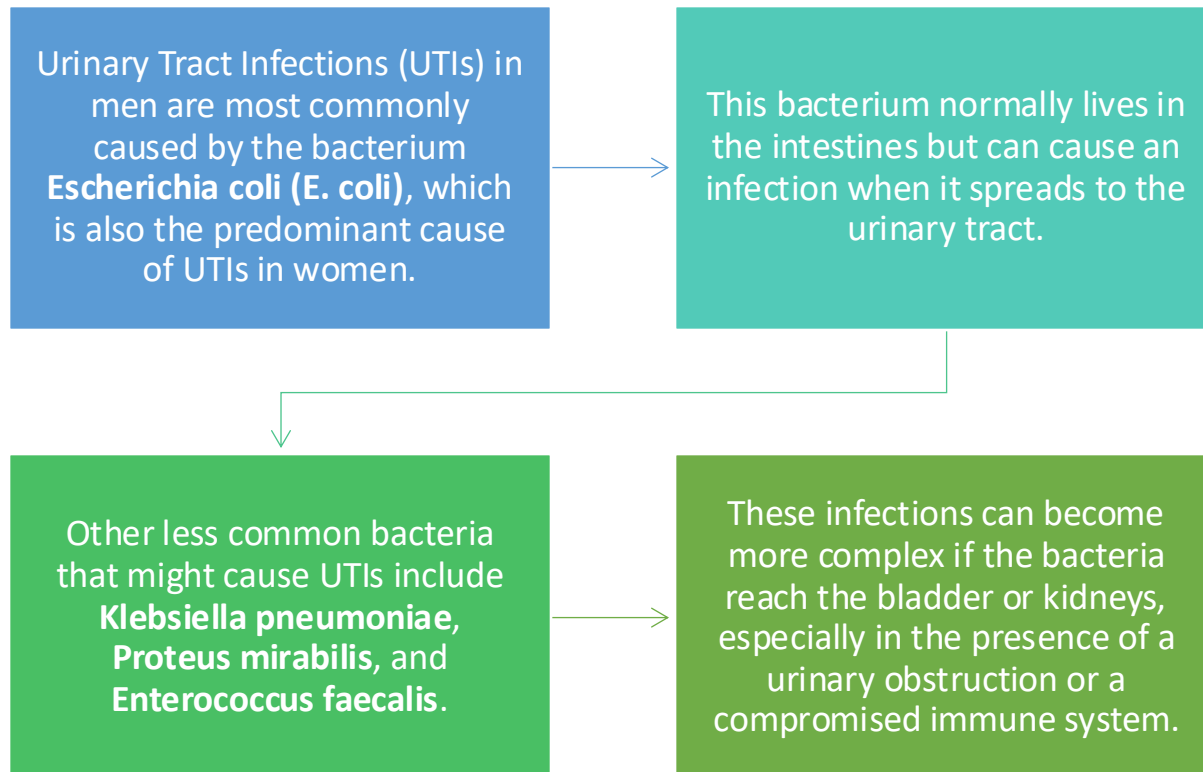
Prevalence

- UTIs in men are relatively rare compared to women, especially in younger and middle-aged men. The prevalence increases with age, particularly in men over 50, largely due to an increase in issues like prostate enlargement that can impede urinary flow. Men account for about 20% of all UTI cases, with the incidence increasing with age.

Causes

- The causes of UTIs in men are generally similar to those in women, involving bacteria such as **Escherichia coli** which ascend from the urethra to the bladder. However, in men, several additional factors contribute to the risk:
- **Enlarged prostate:** Impeding urine flow, which can cause urine to remain in the bladder, allowing bacteria to grow.
- **Catheter use:** Men with mobility issues or those who require a catheter for medical reasons are at higher risk.
- **Unprotected anal intercourse:** Can expose the urethra to bacteria.

Causative Organisms



Symptoms

- UTI symptoms in men can include:
- A persistent urge to urinate
- A burning sensation when urinating
- Passing frequent, small amounts of urine
- Cloudy, dark, bloody, or strange-smelling urine
- Fever or chills, indicating that the infection may have reached the kidneys

Complications

- Men are more likely than women to develop complications from UTIs, including:
- **Prostatitis:** Infection or inflammation of the prostate gland.
- **Kidney infection:** Bacteria can ascend to the kidneys, potentially leading to more serious health issues.

Treatment and Prevention

Treatment

- The treatment for UTIs in men typically involves:
- **Antibiotics:** The primary treatment for bacterial UTIs. The type and duration of antibiotic therapy may vary based on the severity of the infection and whether the infection is complicated.
- **Pain relievers:** To alleviate pain or discomfort during urination.
- **Increased fluid intake:** To help flush out bacteria from the system.
- Men with frequent infections or complicated UTIs might need further evaluation to determine the underlying cause, such as testing for prostate issues or kidney stones.

Prevention

- Preventive measures include:
- Good personal hygiene, especially around the genital area.
- Adequate hydration.
- Urinating after intercourse to flush out any potential bacteria.
- Avoiding the use of spermicide-coated condoms, which can increase bacterial growth.
- For men experiencing symptoms of a UTI or those with recurrent infections, it's important to seek medical evaluation to manage the condition effectively and prevent complications.

Antimicrobials

- 1. Trimethoprim/sulfamethoxazole (Bactrim, Septra):** This is often used for treating uncomplicated UTIs but resistance rates should be considered as they vary regionally.
- 2. Nitrofurantoin (Macrobid):** Effective for uncomplicated UTIs, although it is not suitable for treating kidney infections or in patients with reduced kidney function.
- 3. Ciprofloxacin or Levofloxacin:** These fluoroquinolones are powerful antibiotics used for more complicated UTIs or when other treatments are not effective. They are also used for kidney infections.
- 4. Amoxicillin/Clavulanate (Augmentin):** This combination is sometimes used when there is suspicion of a more complex infection possibly involving other organisms besides *E. coli*.
- 5. Doxycycline:** Occasionally used but not the first line of treatment.
- 6. Fosfomycin:** A single-dose antibiotic that can be used for uncomplicated UTIs and is useful in treating infections caused by bacteria resistant to other antibiotics.

Case Study

A 35-year-old man presents at his general practitioner's office complaining of redness, itching, and a burning sensation on the glans penis. He also mentions a recent foul-smelling discharge under the foreskin.

Clinical Presentation: The general practitioner observes swelling, redness, and patchy white discharge on the glans and under the foreskin. The patient reports these symptoms began a few days ago and have progressively worsened

Signs and Symptoms of Balanitis and Causes

- **Redness and Swelling:** Visible inflammation of the glans is a common symptom.
- **Itching or Burning Sensation:** These sensations are frequently reported and can be quite discomforting.
- **Discharge:** A white or yellowish discharge, often with an unpleasant smell, can occur under the foreskin.
- **Pain during Urination:** The inflammation can make urination painful.
- **Tight Foreskin:** In some cases, the foreskin becomes tight and difficult to retract, similar to phimosis.

Causes of Balanitis

- Balanitis can be caused by various factors:
- **Infection:** Yeast infections (Candida), bacterial infections, and sexually transmitted infections (STIs) like herpes or gonorrhea can lead to balanitis.
- **Poor Hygiene:** Inadequate cleaning can lead to the accumulation of smegma, which can irritate the skin and cause infection.
- **Irritants:** Chemicals found in soaps, lotions, or condoms can irritate the glans and induce inflammation.
- **Pre-existing Conditions:** Men with diabetes are at higher risk due to the glucose in their urine fostering bacterial growth.

Treatment for Balanitis

- Treatment depends on the underlying cause:

1. Infection Control

1. **Antifungals:** If a yeast infection is suspected, topical antifungal creams or oral medications are prescribed.
2. **Antibiotics:** For bacterial infections, topical or oral antibiotics may be necessary.
3. **Antivirals:** In cases of viral STIs, antiviral medications can be used.

2. Good Hygiene Practices

1. Patients are advised to wash the penis with lukewarm water, avoiding soap or using a mild, non-irritating type. Keeping the area dry and clean is crucial to prevent irritation and further infections.

3. Avoiding Irritants

1. Switching to hypoallergenic products for personal care can help reduce irritation and prevent recurrent episodes.

4. Managing Chronic Conditions

1. For diabetic patients, maintaining controlled blood sugar levels is essential to prevent recurrent infections.

Treatments

- **Antifungals:** If the balanitis is caused by a fungal infection (commonly *Candida*), topical antifungal creams such as clotrimazole or miconazole are usually effective. For more severe cases, oral antifungals like fluconazole may be prescribed.
- **Antibiotics:** Bacterial infections require topical antibiotics like mupirocin or fusidic acid. In cases where the infection is severe or the exact bacterium is not immediately known, broad-spectrum oral antibiotics may be used.
- **Antivirals:** If a viral infection (e.g., herpes simplex) is the cause, antiviral medications such as acyclovir or valacyclovir are recommended.

Case Study

- A 6-year-old boy is brought to a pediatrician by his parents, who have noticed that he seems to be experiencing discomfort when urinating. His mother mentions that he appears to be avoiding going to the bathroom and has cried a few times during urination
- **Clinical Presentation:** Upon examination, the pediatrician notes that the child's foreskin is tight and cannot be retracted over the glans of the penis. The tip of the foreskin appears slightly red and inflamed.

Signs and Symptoms of Phimosis

- **Inability to Retract Foreskin:** In children and young adults, the foreskin may be completely or partially unable to retract.
- **Pain:** This can occur during urination or when the foreskin is moved or touched.
- **Redness and Swelling:** Signs of inflammation or infection can be present at the tip of the foreskin.
- **Urinary Issues:** Difficulty urinating or a weak urinary stream might be present due to the foreskin obstructing the urinary passage.
- **Ballooning of the Foreskin:** During urination, the foreskin may balloon due to urine being trapped underneath.

Treatment for Phimosis

Treatment options vary depending on the severity of phimosis and the age of the patient:

1. Conservative Management

1. **Topical Steroids:** A course of topical corticosteroids may be prescribed to help soften the foreskin and facilitate its retraction. This treatment is effective in many cases, especially in young children.
2. **Gentle Retraction:** Gradual and gentle retraction over time, combined with proper hygiene practices, can be encouraged if there is no pain or resistance.

2. Surgical Options

1. **Preputioplasty:** This minor surgical procedure involves making a small incision in the foreskin to widen it, allowing it to retract more easily. It preserves the foreskin.
2. **Circumcision:** This is the complete removal of the foreskin. It is generally considered when other treatments fail or if there are recurrent infections, such as balanitis.

3. Hygiene

1. Teaching proper genital hygiene is crucial, especially for younger boys learning to care for themselves. It can prevent the build-up of debris and decrease the risk of infections.

4. Follow-Up Care

1. Regular follow-ups are important to ensure the treatment is effective and to adjust the treatment plan if needed. This is especially true if non-surgical methods are initially tried.

Case Study

45yr old male presents with erectile dysfunction and lack of sex drive. He has had decreased energy levels for the past 5years, Complains of lack of motivation and low sex drive. Last sexually active 8mnths ago. Recent weight gain and reluctant to exercise. Also has a history of high cholesterol and takes atorvastatin 10mg.

- Blood tests show haematocrit 49, Testosterone 195ng/dl, Free testosterone 48, cholesterol , LDL 36 PSA 3,3

Which of the following is the likely cause:

1. Low testosterone levels
2. Prostate problems
3. Clotting disorder
4. Prostate cancer

Testosterone

- Primarily a male hormone and is an androgen.
- During 1st 6 weeks of development, male and female reproductive tissue is identical.
- In week 7, SRY gene initiates development of testes.
- Fetal testicles secrete testosterone which guide development of male urogenital tract and external genitalia.

ANDROGENS	
SOURCE	Testosterone & dihydrotestosterone (DHT): testes (testosterone is converted to DHT by 5α-reductase) Androstenedione: adrenals Potency: DHT > testosterone > androstenedione
FUNCTION	Testosterone: • Differentiation of internal genitalia, such as epididymis, vas deferens, seminal vesicles (except prostate) • Growth spurt: penis, seminal vesicles, sperm, muscle, RBCs • Deepening of voice • Closing of epiphyseal plates (via estrogen converted from testosterone) • Libido DHT: • Early differentiation of penis, scrotum, prostate • Late phase prostate growth, balding, sebaceous gland activity

Case Study : Partial Androgen Deficiency

- Testosterone level below 3 ng/mL (300 ng/dL or 12 nmol/L) (Normal range 10-40 nmol/mL)
- Diminished sexual desire and erectile capacity
- Decrease in intellectual activity
- Fatigue
- Depression
- Decrease in lean body mass
- Skin alterations
- Decrease in body hair
- Decrease in bone mineral density that results in osteoporosis
- Increase in visceral fat, obesity

Laboratory Results	
Haematocrit	49
Testosterone	195 ng/dL, 200
Free testosterone	48 and 49
Cholesterol	140
LDL	36
PSA	3.3

Lab Tests

- Serum testosterone
- Measure serum testosterone between 7am and 11am, with a reliable method, on at least two occasions, preferably four weeks apart.
- Luteinising hormone (LH) and follicle-stimulating hormone (FSH) are required to distinguish between primary and secondary hypogonadism.
- An initial prolactin is required to exclude hyperprolactinaemia and full blood count (FBC) should be measured as anaemia is a frequent finding in hypogonadism.
- Fasting levels should be obtained where possible, as recommended by the European Association of Urology.

Tests for Low Testosterone

TESTS RELATED TO LOW TESTOSTERONE

Test Name	Test Sample	What It Measures
Testosterone and sex hormone binding globulin (SHBG)	Blood	The level of bound and/or free testosterone
Luteinizing hormone (LH)	Blood	A hormone involved in the signaling of testosterone production
Follicle-stimulating hormone (FSH)	Blood	A hormone-related to the production of sperm and proteins that bind to male hormones
Prolactin	N/A	A hormone that may be elevated if a tumor in the pituitary gland called prolactinoma is causing low testosterone

Formulation	Route of administration	Frequency of administration	Advantages	Disadvantages
Testosterone 1% and 2% (5% scrotal cream licensed in Australia and for import)	Transdermal gel	Once daily	– Fast onset – Provides uniform and normal serum levels for 24 hours – Short duration of action¹⁸ allows drug withdrawal in the event of side-effects	– Skin irritation at application site – Potential for interpersonal transfer – Adherence may be an issue long term
Testosterone undecanoate	Intramuscular injection	Every 10–14 weeks, adjusted to maintain trough testosterone >12nmol/L	– Steady state levels – Reduced frequency of administration improves compliance	– Possible injection site pain – Long duration of action delays drug withdrawal in the event of adverse side-effects
Testosterone enanthate/propionate	Intramuscular injection	Every 2–3 weeks	– Short duration of action allows drug withdrawal in the event of side-effects	– Levels fluctuate from high to low – Testosterone



Questions

CONTACT INFO



+44 207 692 8709



www.belmatt.co.uk



admin@belmatt.co.uk
info@belmatt.co.uk



Suite 570, 405 Kings Road
Chelsea
SW10 0BB

MCQs

MCQ1

76yr old male presents with a history of urinary incontinence at times, difficulty initiating and maintaining his urinary stream, enuresis and strains when passing urine.

- PMH: Type 2 diabetes and Low Back Pain
- Meds: Insulin and over the counter medication
- Examination: Apyrexial, P:92 RR20 and BP: 120/80
- Has suprapubic fullness on abdominal exam. Prostate exam and. Routine PSA done 2 weeks ago was 3ng/ml
- What is the likely diagnosis
 1. Prostatitis
 2. Prostate cancer
 3. Benign Prostatic Hyperplasia (BPH)
 4. Phimosis

MCQ 2

55yr old male presents with a history of erectile dysfunction for past 6 weeks.

PMH: HPT Heart disease, depression, type 2 diabetes

Meds: Amlodipine, metoprolol, aspirin, atorvastatin, metformin, citalopram

Social history: He smokes 2 pack of cigarettes a day

Examination: Alert and orientated, vital signs normal. Examination of external genitalia nad. Decreased vibratory sense over lower limbs. Nil else. What is the likely cause?

1. Guillain Barrre
2. Antidepressants
3. Organic causes such as diabetes and cardiovascular disease
4. Myasthenia Gravis

MCQ 3

- 45yr old male presents with erectile dysfunction and lack of sex drive. He has had decreased energy levels for the past 5years, Complains of lack of motivation and low sex drive. Last sexually active 8mnths ago. Recent weight gain and reluctant to exercise. Also has a history of high cholesterol and takes atorvastatin 10mg.