



Reproductive Block



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A 17-year-old boy is awakened from his sleep by sudden, sharp scrotal pain. In the emergency department, the patient says he feels nauseous. He reports that the pain is mainly on the left side. On physical examination, he is afebrile, and there is evidence of swelling and reddening of the scrotum. He has a negative cremasteric reflex on the left. No transillumination* of the scrotum is present.

1. What is the diagnosis?

Testicular Torsion ⇒ Occurs when the spermatic cord¹ twists, cutting off the testicle's blood supply, causing ischemia.

2. Define cremasteric reflex ,why is it absent in his case and its arch?

Evaluation of testicular pain ⇒ Examiner pinches upper medial thigh causes cremasteric muscle contraction NORMALLY.

cremasteric reflex arch ⇒ Genitofemoral nerve(GFN),(L1,2)

Sensory(afferent):femoral branch of(GFN) & Ilioinguinal N.

Motor(efferent):genital branch of(GFN).

Figure 3. Cremasteric Reflex



3. How the testes descends?

	INTERNAL DESCENT OF TESTIS	EXTERNAL DESCENT OF TESTIS
Definition	from posterior Abdominal wall to deep inguinal ring.	from deep inguinal ring through inguinal canal to scrotum.
Time	During 12th week	Begins in 7th month and takes 2 to 3 days. The <u>Left</u> testes takes <u>Longer</u> time..
Causes	Due to relative movement resulting from elongation of cranial part of abdomen away from its caudal part (future pelvic cavity).	<ol style="list-style-type: none"> 1. Controlled by androgens. 2. Guided by gubernaculum. 3. Facilitated by processus vaginalis. 4. Helped by increased intra-abdominal pressure due to growth of abdominal viscera.
Note:		<p>G pulls his friend T to the cave.. G=Gubernaculum T=Testis Cave= inguinal canal</p>

4. Mention other congenital anomalies can happen in males?

non--obliterated portion of stalk of processus vaginalis can lead to:

Hydrocele of testis 	Hydrocele of spermatic cord 	Congenital inguinal hernia
		A.Incomplete B.Complete

¹ cord-like structure in males formed by the vas deferens and surrounding tissue (blood vessels and nerves) that runs from the deep inguinal ring down to each testicle

*Transillumination indicates water in the scrotum=hydrocele

A 64-year-old man goes to his provider's office complaining of difficulty urinating. He says he has trouble initiating his stream of urine. After it begins, the flow is hard to maintain, and afterward his bladder still feels full. He often has to rush to the bathroom to make it in time, and the need to urinate awakens him several times each night.

1. What is the Diagnosis?

“ Benign Prostatic Hyperplasia (BPH) ”

2. Identify the location of prostate gland and mention its relations ?

- Located at the neck of bladder , Houses prostatic urethra.

Anterior	superior	posterior	inferior	lateral
Symphysis pubis (SP)	Neck of urinary bladder.	Rectum (PR Examination)	Urogenital diaphragm, (UGD).	Medial margins of levator ani muscles ²

3. Mention some causes of the enlarged prostate ?

Benign	Malignant
<p>Common after middle age.</p> <p>An enlarged prostate projects into the urinary bladder and distorts the prostatic urethra.</p> <p>The middle lobe often enlarges the most and obstructs the internal urethral orifice, this leads to nocturia, dysuria and urgency.</p>	<p>The malignant cells metastasize through lymph and veins.</p> <ul style="list-style-type: none"> - Lymphatic metastasis to Internal iliac & Sacral lymph nodes, Later to distant nodes - Venous metastasis to Bone & Brain through (IVVP)³

4. What is The pathogenesis of BPH ?

it is related to the action of excessive **androgen-dependent** growth of stromal and glandular elements in which it will form nodules that compress the prostatic urethra causing urethral obstruction .

5. What are the complications that might happen because of urethral obstruction in case of BPH ?

Urinary retention, incontinence, recurrent UTI, acute or chronic renal failure.

² (levator prostate) see levator ani anatomy in the 2nd week file

³ Internal vertebral venous plexus

6. What is diagnostic test in this case ?

Per-rectal examination.

7. How can we treat patients with " Benign Prostatic Hyperplasia (BPH) " ?

- Mild cases of BPH may be treated with α -blockers and 5- α -reductase inhibitors
- Moderate to severe require transurethral resection of the prostate (TURP)

*Alpha blockers work by relaxing the smooth muscle tissue in your prostate and at the opening to your bladder. So, it is easier for your urine to flow.

*The 5-alpha reductase inhibitors work by interfering with the effect of specific male hormones (androgens) on your prostate. This may slow the growth of your prostate and can even reduce its size, which may help improve BPH symptoms.

8. What other indications for antiandrogen ?

- **for men** with prostate cancer, benign prostatic hyperplasia, hypersexuality, and male contraception
- **For women**, prescribed for severe cases of acne, amenorrhea, seborrhea, hirsutism, androgenic alopecia, hidradenitis suppurativa, and hyperandrogenism

*Note: also, for Trans Women= male-to-female transsexual.

A 12 months years old child, his mother noticed a mass in his scrotum for the past 10 months. On physical examination, the left testis is three times the size of the right testis and is firm on palpation. An ultrasound scan shows a 6-cm solid mass within the body of the left testis. Laboratory studies include an elevated serum α -fetoprotein level.

1. Compare between the subtypes of germ cell tumors?

Note: testicular tumor are either;

- A. Germ cell tumors 95%: Usually **Malignant** either **pure** 40% or **mixed** 60 %.
- B. Sex cord stromal tumors: Usually **Benign**.

Germ Cell Tumors						
Types	Seminomatous Germ Cell Tumors		Non-Seminomatous Germ Cell Tumors			
Sub-types	seminoma	Spermatocytic Seminoma	Embryonal carcinoma	Chorio-carcinoma	Yolk sac	Teratoma
Diagnosis	+ for PLAP , OCT4 stain and c-kit (CD117).	-	+ for (CK) and CD30	↑hCG	↑αfetoprotein	
Prognosis	GOOD	Excellent Slow growing, no metastasis	Early Lymphatic+ hematogenous metastasis	Highly malignant	GOOD in children.	
Treatment	Radiation therapy		Chemotherapy			

2. So, What is the Diagnosis ?

Yolk sac tumor (Endodermal sinus tumor) → Most common testicular tumor in infants.

3. What are the possible forms of yolk sac tumor ?

1. Pure form in young children (pure YST of the adult testis is rare)
2. Mixed with other NSGCTs⁴, mainly embryonal carcinoma, in adults.

4. Name the microscopic feature of Yolk sac tumor?

Schiller-Duval bodies → resemble a glomerulus

5. Name the tumor that is usually combined with yolk sac tumor?

Embryonal tumor

⁴ Non seminoma germ cells tumor

A 30-year-old man visits his physician because he has noticed increasing enlargement and a feeling of heaviness in his scrotum for the past year. On physical examination, the right testis is twice its normal size, and it is firm and slightly tender. An ultrasound examination shows a 3.5-cm solid mass in the right testis. Abdominal CT scan shows enlargement of the para-aortic lymph nodes. Multiple lung nodules are seen on a chest radiograph. Laboratory findings include markedly increased serum levels of chorionic¹ gonadotropin and α -fetoprotein.

1. What is the diagnosis?

mixed Germ cell testicular tumor Chorionic carcinoma+Yolk sac tumor.

2. What are the common types of testicular cancer that are present together usually? "The common combinations are"

- A. Teratoma + embryonal carcinoma +/- yolk sac tumor
- B. Seminoma + embryonal carcinoma

3. Compare between Germ cells tumors, but this time according to their incidence and morphology?

Germ cell Tumor	Incidence	Morphology	
		Gross	Microscopic
Seminoma	30's	- Bulky - No necrosis - No hemorrhage	- Sheets of uniform cells with cleared cytoplasm - Cells are large
Spermatocytic Seminoma	>65 yrs	Same as seminoma ,But with <u>less</u> lymphocytic infiltration and metastasis	
Embryonal Carcinoma	20-30 yrs	-Foci of hemorrhage & necrosis -Smaller than seminoma	-
Yolk Sac Tumor (Endodermal sinus tumor)	Pure < 3 yrs Mixed: adults	Non-encapsulated, homogenous, yellow white, mucinous	-Endodermal sinuses called Schiller-Duval bodies -Hyaline-pink globules
Chorio-carcinoma	-	-Small sized lesions -Prominent hemorrhage and necrosis	Made up of malignant (placental) trophoblastic tissue.
Teratoma	All ages	Heterogenous appearance with solid and cystic areas	Composed of bizarrely distributed collection of different type of cells ⁵

⁵ (neuronal tissue, muscles bundle, cartilage..)

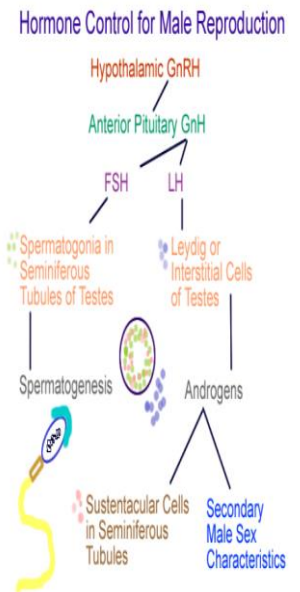
A 66-year-old man presents to clinic for follow-up on his hypertension. At the end of the visit, he mentions that he has recently had trouble maintaining an erection. He wants to know what the treatment options are for treating this condition in order to maintain a sexual relationship with his wife.

1. What are the treatment options for treating this condition ?

Centrally	Peripherally
Androgens Apomorphine	<ul style="list-style-type: none"> • PDE5 Inhibitors⁶ • Prostaglandin Analogues <ul style="list-style-type: none"> • Papaverine • Phentolamine

2. Describe the Androgens and Hypothalamic-pituitary gonadal axis

LH & testosterone	FSH
<ul style="list-style-type: none"> • LH target leydig cells and cause the release of Testosterone. • Testosterone cause both Virilizing effects and help in activation of sertoli cells. and it has an effect in enlargement of prostate gland till the age of 20 • If the levels of Testosterone increased that will lead to -ve feedback and will inhibit mainly LH secretion and also GnRH 	<p>FSH target sertoil cells and will lead to spermatogenesis.</p> <ul style="list-style-type: none"> • if there is increased amount of sperms\FSH this will cause a -ve feedback causing sertoil cells to secrete inhibin which will inhibit mainly FSH secretion and also GnRH.



Note: releasing hormones⁷ transported to the anterior pituitary gland via the Hypothalamic-hypophyseal portal system.

3. List are the stages of male sexual act .

1-Penile erection	caused by parasympathetic impulses that pass from the sacral portion of the spinal cord through the pelvic nerves to the penis
2-Lubrication	Parasympathetic impulses cause the urethral glands & bulbourethral glands to secrete mucous
3-Emission & ejaculation	Function of the sympathetic nerves. Emission begins by contraction of the vas deferens & ampulla to cause expulsion of the sperm in the internal urethra. Contraction of the prostate & seminal vesicles to expel their fluid in the urethra. All these fluid mix in the internal urethra with the mucous secreted by the bulbourethral glands to form the semen. This process at this point is called emission

⁶ The 1st line of treatment

⁷ Formed in the hypothalamus