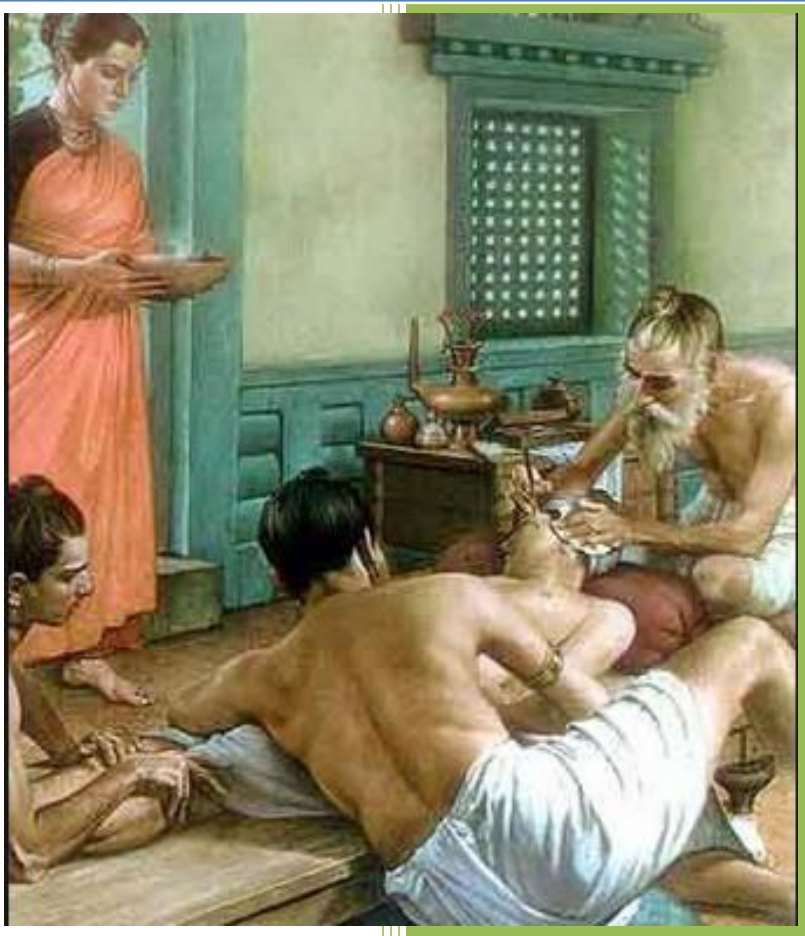
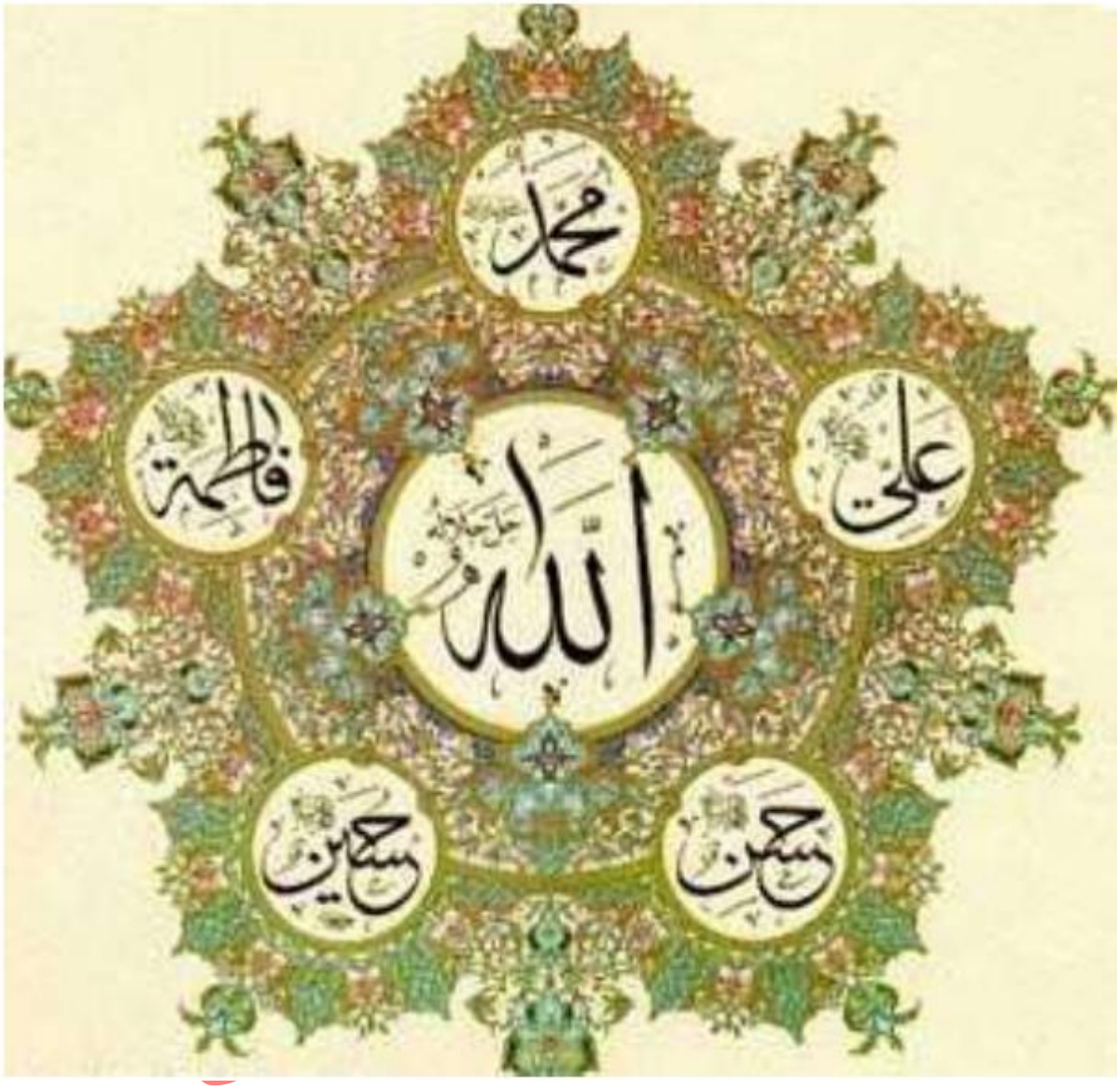
NUGGETS

SURGERY FOR STEP-2



By: Shaheryar Ali Jafri

DEDICATED TO.....



CARDIOVASCULAR SURGERY

1) Claudication of Arm/coldness/numbness + Posterior neurological signs (bluured vision; vertigo) when patient does exercise = **SUBCLAVIAN STEAL SYNDROME**……. Causes: Atherosclerosis of subclavian artery, cervical rib, thoracic outlet syndrome, Takayasu arteritis…….. Next best step: ANGIOGRAPHY……Rx: By pass Carotid subclavian, Endartrectomy, Percutaneous balloon angioplasty….. Note: Angiography will demonstrate retrograde blood flow through vertebral artery.

2) A Pulsatile mass in abdomen = Abdominal aortic aneurysm = Dx: Ultrasound /Duplex has got high degree of sensitivity and specificity for diagnosis and screening…..
i) If <5cm mass on USG--→Do serial USG every 6 months……
ii) If >5cm and asymptomatic = Elective repair
iii) If tender = Urgent surgery on next day
iv) If Ruptured = hypotension, left flank/back pain, pulsatile mass) = EMERGENCY SURGERY by laparotomy

Complications: Ruptures…… (Rupture triad: Hypotension left flank/back pain, Pulsatile abdominal mass)…….. If rupture…….. Immediate laparotomy without any vigorous resuscitation b/c resuscitation se fluid deny se aur zyaada panga hoga bleeding hoge……. agar rupture hogya ha aur pt emergency me ha = USG se conforirm kro… but agr stable ha = CT kro…. But laparotomy must kro aur fluid bilkul mat do.

Note:
i) Most common aneurysm = Popliteal artery aneurysm
ii) Second most common = Femoral artery aneurysm
iii) Complications of AAA surgery:

Anterior cord syndrome (also happens in burst fracture)	Due to Ischemia of Artery of Ademkwikz supplying the anterior segment of spinal cord	Bilateral spastic paraplegia, loss of pain and temperature whereas proprioception is preserved
Acute mesenteric ischemia	Due to ischemia of Inferior mesenteric artery mostly affecting sigmoid colon	Bloody diarrhea, Abdominal distention, tenderness in LLQ with rebound.. CT shows thickening of colon in rectosigmoid region…. Rx: emergency surgical resection

2.1) Sudden tearing pain in b.w scapulae + Difference in blood pressure in both arms = **AORTIC DISSECTION**…. Best initial test= Chest x-ray……. Inv of choice = Spiral CT with iv contrast…… Most accurate test= Angiography…..

Rx: i) Ascending aorta = Immediate surgery (median sternotomy)
ii) No ascending aorta = Blood pressure control with B-blocker, nitrates….. (do surgery if end organ failure, inadequate pain relief, rupture or signs of impending rupture, worsening chest pain)
Causes of aortic dissection:
i) Congenital: Marfan, EDS
ii) Acquired: Hypertension, Pregnancy

3) Pain in calf caused by walking; relieved by rest; not present on taking 1st step with daily constant claudication distance = INTERMITTENT CLAUDICATION= .. next best step: ABPI….best treatment is stop smoking and graded exercise program.. if not resolves... can be treated medically by CILOZTAZOL..... do not do surgery for it…
For peripheral vascular diseases= start with non-invasive investigation =Doppler and ABPI.
Note: when to do surgical management (grafting etc)… ? look at ABPI . if scenario says ABPI <0.5.. then look for surgical management in options and mark it. But if ABPI >0.5.. no matter how severe the condition of patient may be, never answer the surgical answer.

4) A baby makes noise when air going in (inspiration)= Tracheomalacia/ Laryngomalacia
A baby makes noise when air goes out (expiration) = Asthma
A baby makes noise during breathing as well as difficulty in swallowing = VASCULAR RING (….compressing both trachea and esophagus… but isolated tracheal compression may be there leading to WHEEZING… (symptoms are worse when supine and relieved by neck extension (just like laryngomalecia)…….Dx: Do barium swallow and bronchoscopy (shows segmental tracheal compression)……. Rx: Surgery by dividing the smaller of double aortic arch. (Kaplan surgery=173)

5) A baby makes noise when air goes in/insipiratory stroider; stroider worsens when baby cries or in supine position but relieves when PRONE with chin up (hyperextended neck)= LARYNGOMALACIA b/c of floppy nature of larynx….starts in first 2 weeks of life; increase upto 6 months….. and goes away almost by 18 months…….. Dx: Laryngoscopy showing Eiglottis rolling in from side to side…. Note: Instruct the mother to hold the child in an upright position for half an hour after feeding and never feed the baby when he is lying down…Rx: supportive…….. If severe = SUPRAGLOTTOPLASTY

UROLOGY

1) Flank pain & tenderness, fever, pus cells in urine, chills = Acute pyelonephritis
2) Flank pain, fever, pus cells in urine, flank mass = Pyonephrosis
3) Flank pain , fever, +- pus cells in urine, flank mass = Renal carbuncle
4) Flank pain, fever, NO puss cells in urine, flank mass = Perinephric abscess
5) Frequency, Painful urination, small cloudy and foul smelling urine = Cystitis
6) Frequency, Painful urination, dysuria, Low back pain, Tender prostate = Acute Prostatitis

PROSTATITIS (NBME BLOCK2: 1)

ACUTE	CHRONIC
>35 years = E.coli, pseudomonas <35 years = Neisseria, Chalamydia Fever, Hematuria, painful prostate on rectal exam >20 WBC / HPF… in 3rd and 4th sample of urine	Bacterial: Recurrent UTI in middle aged men, ↑PSA (V.IMP MCQ) Abacterial: Chlamydia,ureplasma No fever, hematuria, painful prostate, low backpain, perianal pain, suprapubic pain >10 WBC/HPF

ORTHOPEDICS

1) Obese Adolescent with Limp and pain in groin/knee/thigh; legs showing external rotation, mild antalgic gait, limited hip motion, as the hip is flexed; thigh goes into external rotation….. if sit with dangling, sole of foot points towards other foot=***Slipped capital femoral epiphysis*** (dislocation b/w epiphysis and metaphysis) = do x-ray = Earliest finding=Widening of physis with/without slippage (Ice-cream cone appearance) and do immediate emergency repair (Pinning)……. (External fixator/screws hip with pins to prevent the avascular necrosis of femoral head and chondrolysis

Note: i) in this disease, Epiphysis remains in the acetabulum whereas metaphysis moves anteriorly and superiorly)… Femoral head slips posteriorly and medially relative to femoral neck
ii) If the patient is <10th percentile of height= rule out HYPOTHYROIDISM with TSH. Also screen for LH, FSH deficency

2) >2-10 years child with Limp may be painless or pain in groin/knee/thigh; abnormal gait (antalgic gait= short steps) ; *decreased restriction of motion,* no history of trauma, *Limitation in internal rotation and abduction (v.imp mcq)* **= Legg-Perthes disease** = Do AP & lateral x-ray for diagnosis=shows small and dense, flat, compressed, femur head; XRAY PIC GIVEN IN UW (widening of joint space and collapse of femoral head) (LPD is idiopathic avascular necrosis of epiphysis of femur)…….Rx: Containment with orthoses or casting, bedrest, abduction stretching exercises……..In short observation and bracing is mainstray of treatment but if femoral head is not well contained within the acetabulum, surgery is indicated……. Purpose of treatment is k head acetabulum k ander he rhy.

Note: i) Femoral head is supplied by *MEDIAL CIRCUMFLEX FEMORAL ARTERY* and it is compromised leading to avascular necrosis (V.V.V.IMP MCQ)
ii) Limitation in internal rotation and abduction is diagnostic, so child will be having external rotation…….
iii) The leg which is having limp undergoes disuse atrophy and the other leg undergoes compensatory hypertrophy
iv) MRI or CT show findings of femoral head necrosis much earlier than X-RAY

3) d/d of pediatric limp: (STARTSS HOTT)
Septic joint, Tumor, Avascular necrosis, Rheumatoid, T.b, Sickle cell, SCFE, HSP, Osteomyelitis, Trauma, Toxic synovitis.

4) A young adolescent person with Tenderness at Tibial tuberosity aggravated by contraction of quadriceps with swelling and point tenderness, history of repetitive exercise eg basketball…..= ***OSGOOD-SCHLATTER DISEASE***…… Caused by Traction apophysitis of patellar ligament at

tibial tuberosity…X-RAY: Irregularity of tibial tubercle contour……Rx: Rest, restriction of activities, knee immobilization, isometric exercises…. Rest, ice, compression, elevation (v.v.v.imp mcq)…….. May need immobilization with cylindrical cast

Both meniscus and ligament injury may present with popping sensation but the difference is

Meniscus injuy	Ligament injury
Gradual development of swelling (12-24 hours)	Rapidly developing swelling due to heamarthrosis Rapid hemarthrosis is typical feature of ACL injury also there is joint instability in ACL tear

5) Pain and swelling on Knee after knee injury (twisting injury with knee fixed)+ Catching and locking + Positive McMurray sign (Popping sound/click/snap on passive flexion/extension of joint) + limitation in movement of knee= MENISCAL TEAR …….Do MRI or **Arthoscopy**(mcq) to confirm the diagnosis and evaluate extent of injury……. Rx: Surgical repair (Open or Arthoscopic) . Try to save as much of the meniscus as possible. If complete menisectomy is done, late degenerative arthritis will take place.
Note: Catching/Locking is due to impaired extension of knee…..

6) Medial meniscus is fused to Medial cruciate ligament = hence liable to injury both
Anterior cruciate ligament is more injured as compared to posterior……..
Sometimes these three commonly structures are injured simultaneously :
MCL+Meniscus+ACL = UNHAPPY TRIAD/ BLOWN KNEE

7) After knee injury (forceful hyperextension injury) swelling and pain+ Anterior drawer sign(knee pulled anteriorly when 90 flexed) + Lachman test (knee pulled anteriorly passively at 20)……. ANTERIOR CRUCIATE LIGAMENT TEAR…….. Rx: Immobilization and rehabilitation but Athelete require arthroscopic reconstruction (MTB-2 PAGE=397)

8) After knee injury (abduction injury) pain on medial side, Valgus stress test positive (pain on abduction but abduction zyada kraye ja skti ha coz MCL ka effect end)…… MEDIAL COLLERATERAL LIGAMENT INJURY…….Rx: If isolated=Hinged cast…….. if several other = surgery… Kaplan page=114…….
Twisting injury = meniscal tear
Hyperextension injury = ACL tear
Abduction injury = MCL tear

ACL and Meniscus injury	Arthoscopic repair
MCL injury	If isolated (Hinged cast) If multiple (surgery)

SHOCK

	Hypovolemic	Cardiogenic	Obstructive	Distributive (Septic)
Cardiac output	Low	Low	Low	**Increased**
Vascular resistance	High	High	High	**Low (b/c toxins cause vasodilation) Also Low PCWP & left atrial pressure**
Mixed venous oxygen saturation (Mvo2)	Low	Low	Low	**Normal or High**
Base deficit	High	High	High	High
PCWP	Low	**High**		Decreased
LVEDP	Low	**High**		Low
Cardiac index	Decreased	**Very Decreased**		Increased

v.v.v.v.v.v.v.vimp mcq

Normal cardiac index = 2.8-4.2

BP = C.O x TPR

Note:

i) Neurogenic shock is also a type of distributive shock but in this, the MvO2 will be low b/c hypoperfused tissue extract oxygen. (Hypotension+Bradycardia). Whenever there is hypotension , there is always tachycardia, but neurogenic shock is special that it has *HYPOTENSION + BRADYCARDIA…* In exam whenever you see hypotension + bradycardia always think of these possibilities *(Neurogenic shock; Heart block, Right ventricular infarction)*

ii) MVO2 is the best indicator of tissue hypoxia. (eg. In hypovolemic shock, decreased blood flow through tissue leads to the increased extraction of oxygen hence MvO2 decreases……. In septic shock, as blood flow is increased, tissue can't extract oxygen so Mvo2 increases)

iii) In septic shock, Decreased LVEDP is due to Neutrophil transmission through pulmonary capillaries into alveoli which produce non-cardiogenic pulmonary edema

iv) IMP MCQ:

A 53 years old female is admitted to surgical emergency with hypotension. Her condition is considered very serious and invasive hemodynamic monitoring is established. Blood pressure measured by intra-arterial method is 72/46 mmHg. Her heart rate is 120/min, regular. Pulmonary Capillary Wedge Pressure(PCWP) estimated using Swanz-Ganz catheter is 6mmHg. Mixed venous oxygen

concentration (MVO2) is 16% (N=15.5%). Which of the following is the most likely cause of this patient's condition?

a) Cardiogenic shock
b) Neurogenic shock
c) Septic shock
d) Hypovolemic shock
e) Hemorrhagic shock
f) Right ventricular infarction
g) Pulmonary hypertension

	Biliary colic	Acute Cholecystitis	Acute ascending cholangitis
Pain	Colicky for 20 mins	Constant pain	Pain with chills
Fever	No	101	103
Jaundice	No	Yes/No	Yes
Signs of peritoneal irritation	No	May be	May be
LFTs	Normal	Normal but mild elevation of ALP and bilirubin	High ALP and bilirubin
WBC	Normal	Mild elevation	Very high WBC
		Charcot triad: Fever, Jaundice, RUQ pain	Raynald pentad: Fever, Jaundice , RUQ pain, Shock, Altered mental status
Next step	USG	NG suction, IV fluids and antibiotics and Dx with USG	I/V antibiotics+fluids and Emergency ERCP for decompression of CBD.... If fails..... Do PTC
Next step	Elective cholecystectomy	Cholecystectomy in same hospital admission	Cholecystectomy
Cause of pain	Transient cystic duct obstruction triggered by fatty meal... leading to distention of G.B and irritation of diaphragm	Continuous Cystic duct obstruction	CBD obstruction leading to ascending infection
		Do emergency cholecystectomy if peritonitis or Emphysematous cholecystitis	

Note: EVEN AFTER CHOLECYSTECTOMY there is persistent pain in the RUQ..... Thee causes may be there

i) Sphincter of oddi dysfunction (manometry showing high oddi pressure) = Rx with ERCP sphinctrotomy

ii) CBD stone = ERCP

iii) No stone, No oddi dynfuction = Functional = Rx with analgesia and reassure

Tip: Look at Fever and LFTs for quick dx and chose ans.

DIE LIKE HUSSAIN (A.S)

☺ STAY BLESSED ☺

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