CARDIOVASCULAR

#IVC filters are placed in pts with DVT who have contraindications against anticoagulation therapies

# In people with normal sinus rhythm, always SA node is the pacemaker

# right dominant circulation.. posterior descending branch supplying diaphragmatic part of heart is

Derived from right coronary artery

#aortic dissections associated with severe hypertension. two types

Stanford type A dissection seen in ascending aorta,so flap seen near sinotubular junction

Stanford type B dissection flap seen in descending aorta,flap seen near opening of left subclavian artery

# Subclavian Steal Syndrome: occlusion /stenosis of subclavian artery near opening of vertebral artery causes haemodynamic changes

Reversal of blood flow retrograde from anterograde.

Symptoms are like arm ischemia,vertebrobasilar insufficiency so dizziness,vertigo

ENDOCRINE

#Prolactin regulated by inhibitory effects of hypothalamic dopaminergic pathways

But secreted by thyrotropin releasing hormone

#most pts with hashimoto’s thyroiditis produce thyroid peroxidase autoantibodies, because thyroid peroxidase is normally present in thyroid so antibody against it suggests autoimmune cause

BREAST

# invasive breast carcinoma seen as immobile small mass usually in upper outer quadrant of breast.

Retraction can be seen as malignant invasion of suspensory ligaments

BIOCHEMISTRY

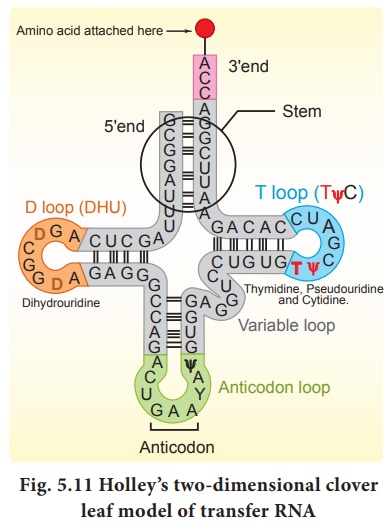
Basic structure of a t RNA cloverleaf model

Here

T loop near the Three ‘ end (T and Three ,to remember)

T loop has modified base sequences

D loop has dihydrouridine



Types of blotting techniques:

#if the probe used is s single stranded DNA or RNA then

If substance detected is RNA then its Northern

If DNA detected then Southern

# if probe used is antibody then test is western and detects protein

# if probe is double stranded DNA then test is southwestern and detects DNA binding protein

# proteins destined to go to lysosomes are modified (in the golgi apparatus)by having their mannose residues phosphorylated……defect in this results in Inclusion cell Disease

BEHAVIOURAL SCIENCE

Certain drugs and its identifying symptoms:

# PCP: a hallucinogen effects up till 8 hrs ,nystagmus, ataxia, amnesia, violent behaviour

Can cause sedation also..its a N methyl D aspartate(NMDA) receptor antagonist

#LSD hallucinogen, tachycardia, high BP

# cocaine: stimulant, agitation, chest pain, seizures, pupil dilation

# heroin: opioid, depressed mental status, resp depression, constricted pupils, constipation(trainspotting LOL)

# methamphetamine: violent behaviour, rapid jerky movements, tooth decay

# marijuana: increased appetite, slow reflexes, dry mouth , conjunctiva reddened

#if a normal healthy young patient comes to emergency dept with complains of unexplained

Chest pains…panic disorder should be considered.

Medical conditions that can look like panic attacks are:Arrhythmia,Hyperparathyroidism,Hyperthyroidism,Pheochromocytoma,COPD,vestibular lesions,

Seizures

# in bulimia nervosa vomiting can be seen as: hypokalemia, metabolic acidosis, dental erosion

Hypotension and tachycardia seen, enlarged parotid glands can sometimes be seen as

Increase in salivary amylase

#Pica:a behavioural disorder seen in pregnant women commonly where they consume mostly foods of no Nutritive value like ice.

#stress after traumatic events are called Acute stress disorder till one month after which they are

Called post traumatic stress disorder

# glue sniffer’s rash:rash around nose and mouth appear in person after taking inhalant..effects of inhalant don’t last long around 45 mins lethargy euphoria loss of consciousness

MICROBIOLOGY

# listeria monocytogenes is gram positive with TUMBLING MOTILITY at room temp

Its immotile at body temp. it can multiply at very cold temp so whenever infected due to refrigerated food cans suspect listeriosis

Its an intracellular pathogen which is removed by cell mediated immunity. Another characteristic feature might be that it makes a very narrow line of beta hemolysis on blood agar.

May present with fever,diarrhoea,vomiting

Listeria virulence factor main is listeriolysin which causes pore in phagosome of host so lysosomal destruction is interrupted…and it travels through actin mediated transcellular path avoiding most antibodies.

#streptococcus pneumoniae :the major factor promoting its virulence is its polysaccharide capsule

# Clostridium septicum can cause spontaneous gas gangrene which presents as abrupt pain, hemorrhagic bullae , tissue crepitus) risk factors are: colonic malignancy, inflammatory bowel disease, immunosuppression

# Clostridium difficile infection chances increase after recent use of antibiotic presents as diarrhoea

# clostridium botulinum inhibits synaptic transmission of motor neurons

# Corynebacterium inhinits elongation factor causing pseudomembrane formation

#Zika virus in pregnant woman can result in child with microcephaly with thin cerebral cortices, ventriculomegaly and subcortical calcifications…it targets neuronal progenitor cells of fetus

#CMV infection in fetus results in hearing loss, jaundice , chorioretinitis, periventricular calcifications

#Herpes and varicella also in fetus causes cutaneous lesions, hypoplasia of limbs

#parvovirus B 19 in fetus can cause hydrops fetalis by targeting erythroid progenitor cells. If caused in children it presents with typical slapped cheek rash and reticular truncal rash.

# coxsackie virus causes hand foot mouth disease

# rubella has forrcheimer spots on soft palate

# measles has kopliks spot on buccal mucosa

#strep pyogenes causes sandpaper texture rash in skin folds

# Hepatitis C virus: it’s a strain which keeps changing the genomic structure of its proteins resulting in development of new strains quasispecies within the body after infection, it can mutate so quickly because the RNA dependent RNA polymerase has no proofreading qualitites so many errors occur.

# ***Non purulent*** cellulitis most commonly caused by beta hemolytic streptococci

***Purulent*** cellulitis caused mostly by staph aureus.

# if they say there are gram positive rods in blood probable organisms cud be: Corynebacterium, nocardia, listeria, clostridium.

# endotoxins and lipopolysaccharide produced by gram negative bacterias which cause complement activation, coagulation, fibrinolysis etc

MALE REPRODUCTIVE SYSTEM

# the testes drain into para aortic lymph nodes

But the scrotum drains into the superficial inguinal lymph nodes.

Testes during development were retroperitoneal and that’s why their arterial supply is also from abdominal aorta so lymph nodes are para aortic

ANATOMY

#LATISSIMUS DORSI

Origin at iliac crest and fibres move up to lower ribs…inserts at bicipital groove of humerus

Innervated by thoracodorsal nerve

Primary actions : adduction of arm,medial rotation of humerus,extension of humerus

# Femoral nerve neuropathy:

Manifests as quadriceps weakness, decreased patellar reflex, groin pain, loss of sensation in anterior, medial thigh and medial leg

# obturator nerve injury cause adduction problems

# peroneal nerve injury causes loss of sensation in dorsum of foot

# tibial nerve injury causes loss of sensation in sole of foot

# superior gluteal nerve injury causes abduction problems and can result in Trendelenburg gait which causes **contralateral** hip drop.

#direct inguinal hernia is mostly caused in older men due to weakening of transversalis fascia.

The contents protrude medial to the inferior epigastric vessels

#indirect inguinal hernia is usually due to patent processus vaginalis and protrude lateral to inferior

Epigastric vessels

# femoral hernia common in old woman below the inguinal ligament and caused by widening of femoral ring.

# the vagus nerve passes through the esophageal hiatus in the diaphragm

#phrenic nerve travels through the vena caval opening in the diaphragm

#branches of splenic artery: short gastric, left gastroepiploic, pancreatic

#stapedius muscle in ear cavity is innervated by stapedius nerve which is a branch of the facial nerve

# tensor tympani which connects to malleus is innervated by mandibular branch of trigeminal nerve

IMMUNOLOGY

# Transplant rejection reaction types

1. Hyperacute rejection: takes place within min to hours….is due to preformed antibodies of host against graft…fibrinoid necrosis,cyanosis
2. Acute rejection takes palce within 6 months..mostly cell mediated response of T cell sensitization against graft mhc antigens includes lymphocytic infiltration
3. Chronic rejection after 6 months mostly humoral response…from immunosuppression arterial thickening and lumen narrowing results
4. Acute transplant rejection reaction can be treated with simple glucocorticoids

# ankylosing spondylitis: pathogenesis altered gut biome mucosal barrier change

Causes increased production of ***IL 17*** which in turn causes additional production of tumor

necrosis factor alpha and prostaglandins..treatment includes giving NSAIDs and anti tnf and anti il 17 agents like etanercept,infliximab…

risk increased in ppl with HLA b 27 symptoms is joint back pain…pain in tendons

lab finding c reactive protein increased,ESR increased..

# Interleukin 2 fuctions: proliferation of helper t cells,cd 4+ and Cd 8+ cells,B lymphocytes, monocytes and natural killer cells…its activated when antigen binds to helper t cells

\*\*\* IL 2 enhances natural killer cells this is used to curb malignancy in metastatic melanoma and renal cell carcinoma

PATHOLOGY

# splenic pathologies

1. If congested then expect splenic sequestration crisis rapid Hb decrease and enlarged spleen
2. If cyst formation then its infection
3. If white pulp hyperplasia then lymphoid cells are increased which is probab;y during malignancy
4. If fibrosis and atrophy seen then many causes cud be there like inflammation,infarction and malignancy….infarction seen in sickle cell disease

# in sickle cell disease the erythrocyte turnover is high and so there is an increased demand for folic acid which cud result in megaloblastic anemia too.

Patients with sickle cell disease require a lot of blood transfusions which can cause iron overload which can result in severe liver injury also.

# Lung abscess can be caused due to lung aaspiration…aspiration can occur due to alcohol,seizures,drug abuse,stroke,dementia

Can also be caused by oral aspiration of bacteria,pneumonia,and infectious endocarditis

# mitral valve prolapse is a risk factor for developing subacute bacterial endocarditis

#peptostreptococcus and fusobacterium,prevotella are all normally existing oral bacteria

# urothelial cell cancer risk factors: old age,tobacco smoking, occupational exposure to rubber, dyes, and aromatic amine dyes…

\*\*\****cyclophosphamide therapy*** can cause **urothelial cell cancer this** therapy used for lymphoma, autoimmune disorder treatment

PHARMACOLOGY

# certain medications and what they do:

Bevacizumab :inhibits VEGF so decreses tumour angiogenesis

Alemtuzumab:anti CD52 and has direct cytotoxic effect on tumour cells

Interferon gamma increases expression of MHC improving antigen presenting

JUST EXTRA INFO

# in africa theres schistosoma haematobilium that can increase risk of urothelial cell cancer….