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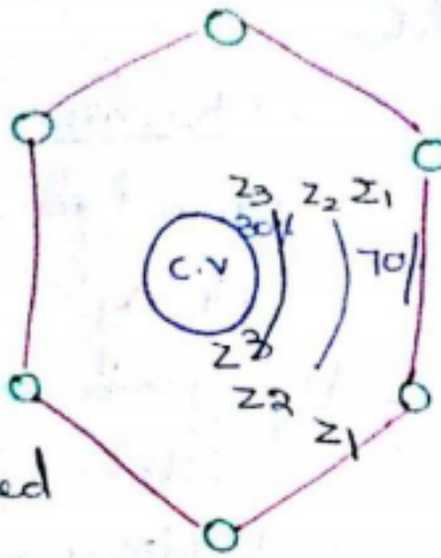


Z3 - pericentral
Z2 - midzonal (yellow)
Z1 - periportal

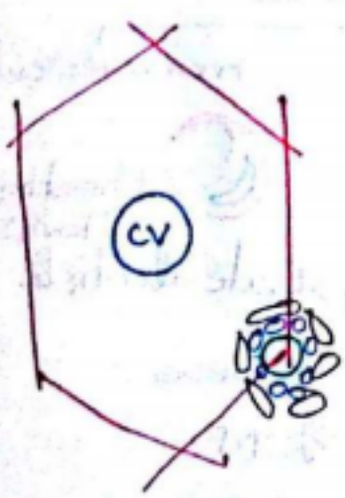
Toxin-induced injury → Zone-1

Infarction - Red infarct > white infarct

Chronic passive congestion → Nutmeg liver.

Pericentral congestion
↓
necrosis
↓
dead cell.
Dark Red.
due to RBC congestion.

Periportal
Viable Hepatocyte
yellow tan.



Limiting plate
Single layer of cells around portal triad.

Chronic active
Limiting plate damage by lymphocytes

Chronic Persistent
Limiting plate intact.

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Toxic Hepatitis

Necrosis

Autoimmune Hepatitis

Acute

→ Ballooning.

→ Bridging necrosis

→ Councilmann Bodies.

Chronic

ground glass.

HbsAg

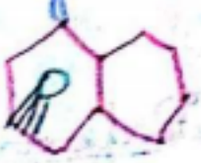
Hydzyanin cells / Shikata cells.

Bridging necrosis → (all other in chronic) fibrosis

<<

Bridging necrosis

only centro-Portal



→ Fatty change, Piecemeal necrosis

↓

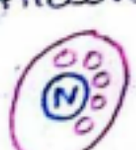
[m/c intracellular accumulation] in human body.

foam → TGL

Steatosis

microvesicular

macrovesicular



Phosphorus Toxicity

- early alcoholic

Reye's Syndrome

ICC

Lysosomal lipase deficiency

Valproic acid / Tetracycline

→ Late alcoholic.

→ Obese

→ DM

→ TPN

→ Jejunoileal bypass surgery - malnutrition

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Autoimmune Hepatitis - Female.

S ↑IgG. - all other markers (-).

→ Responds well to Immunosuppressants.

I

↓

ab.

ANA - m/sensitive

→ SMA - most specific.

I

Anti-LKM

Liver kidney muscle.

I - Hep-C.

II - Drugs.

III - Hep-D.

III

Soluble liver Ag Ab.

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1) Precerebellar necrosis

2) Hepatic Rosette.

3) emperipolesis.

Hep-C characteristic Histopath: Liver Biopsy

1) Councilmann bodies.

2) @ Portal Tract - lymphoid aggregate (III - LN Tissue)

Hep-B Serology -

i) earliest marker - HbsAg

Best epidemiological - HbsAg

ii) Best Acute infection - IgM TAntibody HBc.

Best for window period.

iii) Infectivity - HBeAg

qualitative marker for viral Replication.

quantitative - HBV DNA > HBV DNA polymerase.

HbeAg → antiHbeAb : Seroconversion.

Super Carrier

HbsAg ↑ ; HbeAg ↑

HBV-DNA ↑.

Simple Carrier.

HbsAg ↑

HbeAg (-)

HBV-DNA (N) | - mild elevation

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↑ Bcl-Loss mutant → ↑ Risk of Cirrhosis / HCC.

Liver Tumor

m/c liver tumor - Metastasis (↑ from colorectal)

m/c Benign tumor - Cavernous Hemangioma.

→ ↑ malignancy (adult) → HCC (Hepatoma)

→ ↑ malignancy - Pediatric → Hepatoblastoma.

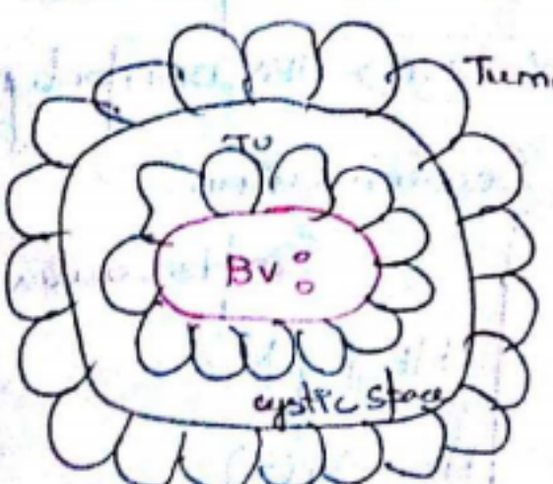
Spleen

m/c tumor → Hemangioma

m/c ↑ malignancy. Marginal zone B cell lymphoma.

m/c Cause of isolated Splenic mets: Ovarian tumor.

m/c ↑ for splenic mets - melanoma (m/c Cause)



Q. Schiller duval body (Glomeruloid)

Yolk Sac tumor

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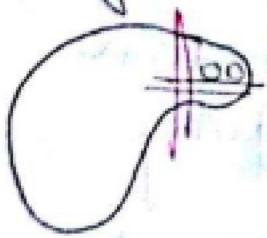
Call-Exner Bodies → Granulosa Cell Tumor
↑estrogen - endometrial Ca.

Reinke's Crystal - Hilus cell tumor

Rokitansky protuberance - Benign Cystic Teratoma

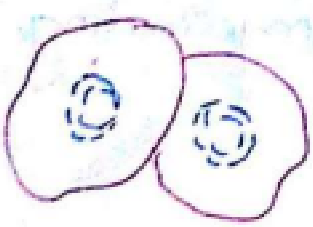


↓ Risk of malignancy - (1%) Squamous Cell Ca.

Nuclear features - dx:

Papillary Ca of thyroid

1) Optically clear nuclei (orphan annie eye) (without nuclear chromatin)
2) Nuclear grooving.
3) Pseudoinclusions (Cytoplasm dragged into nucleus)



Rimmed Vacuoles - Inclusion Body myositis
(Basophilic staining)

Target Fibres - Denervation atrophy (Motor neuron disease)

Basophilic Hue of Regenerating muscle fibre -
Duchenne muscular dystrophy

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Nemaline Rod myopathy

E-MT Z like Structures / Zetta Bodies

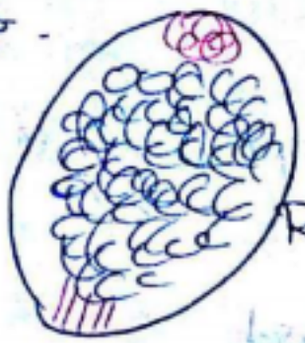
made up of α-actinin

→ Floppy infant, Rod like structures on special stain.

Intermittent muscular weakness - mitochondrial myopathy

muscle fibres.

Ragged



Red - Ragged myofibres

Red - damaged mitochondria

E.MT → Parking lot inclusions.

Mitochondrial myopathy.

Onion bulb neuropathy -

Segmental myelination & demyelination.

→ CIDP - Chronic inflammatory demyelinating polyradiculoneuropathy.

→ Charcot - Marie tooth disease.

Urine examination -

→ Em/c crystal - Calcium oxalate.

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… shape – Calcium oxalate monohydrate

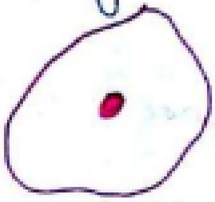
envelope – Calcium oxalate Dihydrate

Coffin shaped – Triple phosphate.

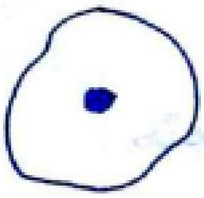
muddy Casts + Calcium Oxalate → ethylene glycol poisoning

PapSmear

↑ Superficial cells → estrogenic phase.



Intermediate cell → Progesterone phase.



Parabasal –    Basal – 

Trichomonas Vaginalis. Leptothrix thin filament
elongated nuclei   Bacill

when leptothrix (+) → Trichomonas usually +ve.

Candida – yeast + Hyphae.

Clue cells – Basophilic Border of Squamous cells

Actinomycetes – Cottom Ball, Sun Ray filaments [H/o–IUD]

cyto – Blue
Histo – pink.

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Translucent Vacuole like structure in Squamous cell

 → Chlamydial infection

Bullous pemphigoid → BP Ag 2.

Inflammation - clusters of mast cells
eosinophils

Through thorough Blisters, Ribbon Candy

Dermatitis Herpetiformis - Neutrophilic infiltrate
only in dermal TIP.
→ dermal IgA type immunofluorescence

ER/PR positivity

ER, PR - IHC → nuclear IHC positive
↓
Braun Idau - good prognosis.

Her 2-neu - membranous IHC.

Bad prognosis.

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