Autophagy :

Unregulated catabolic process

Degradation of damaged proteins

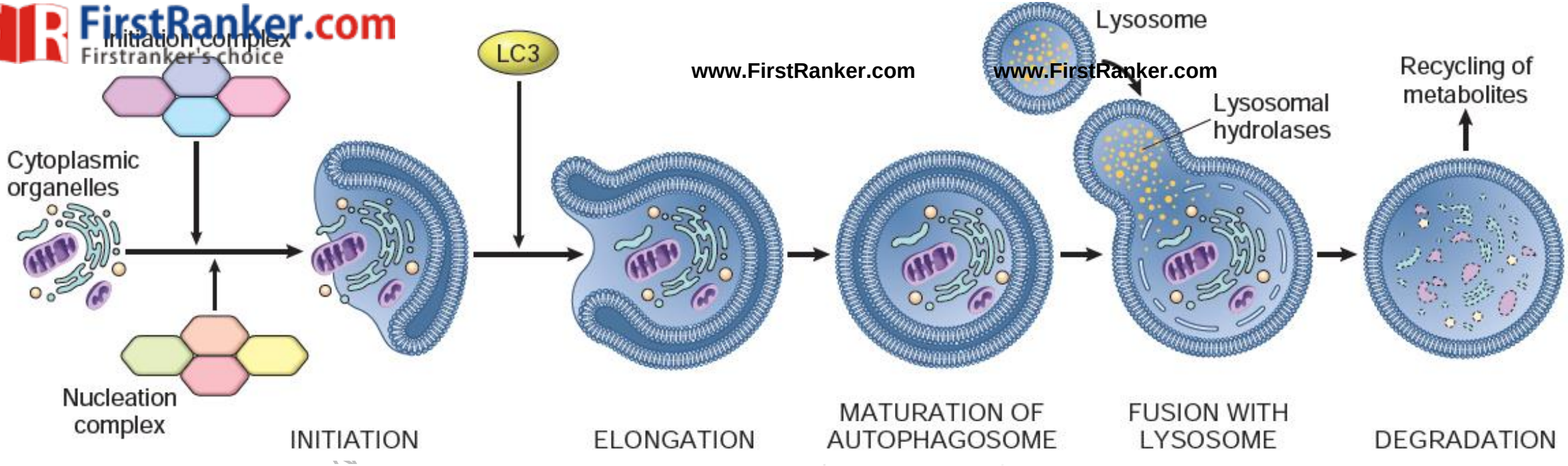
Degradation of damaged proteins and organelles

Anabolic process

Chaperone-mediated autophagy (direct translocation across the lysosomal membrane by chaperone proteins)

Microautophagy (inward invagination of lysosomal membrane for delivery)

Macroautophagy: major form : Involves sequestration and transportation of portions of cytosol in a double membrane bound autophagic vacuole (autophagosome)



- Formation of an isolation membrane, also called phagophore, and its nucleation; the isolation membrane is believed to be derived from the ER
- Elongation of the vesicle
- Maturation of the autophagosome, its fusion with lysosomes, and eventual degradation of the contents

Cancer

Neurodegenerative disorders: Alzhenmers and Huntingtons dis

Infections: mycobacteria, *Shigella* and HSV-1.

IBD

Pyrogenic mediators are all except?

IL 1

IL 6

TGF ß

Ciliary Neurotropic factor

Not a cause for endometrial cancer

Infertility

OCP

Tamoxifen

Patient with Reticulocyte elevated and features of hepatitis with reduced hb . C/o abnormal behavior and movements. MRI showed dense deposits in basal ganglia. Likely diagnosis ?

Autoimmune hepatitis

Wilsons

Thalassemia

Wilson's Disease

- Autosomal recessive[Q]
- Age: 6-40 years (average: 12 years)[Q]
- Mutation of the *ATP7B* gene (Chr 13)[Q] leads to:
- Impaired copper excretion into bile[Q]
- Failure to incorporate copper into ceruloplasmin.[Q]

Therapy:[Q] Copper chelation therapy (with D-penicillamine or Trientine)[Q] or zinc-based therapy[Q] (which blocks uptake of copper in the gut).

Stains

After one month of wound healing, type 3 is replaced with type 1 in the ratio?

1:6

2:5

1:3

8:3

Type of necrosis seen in autopsy of post MI patient?

Fibrinoid Necrosis

Coagulative Necrosis

Caseous Necrosis

Liquefactive Necrosis

Ig expressed on surface of B cells

G

A

M

E

vation of B cells

T cell dependent activation

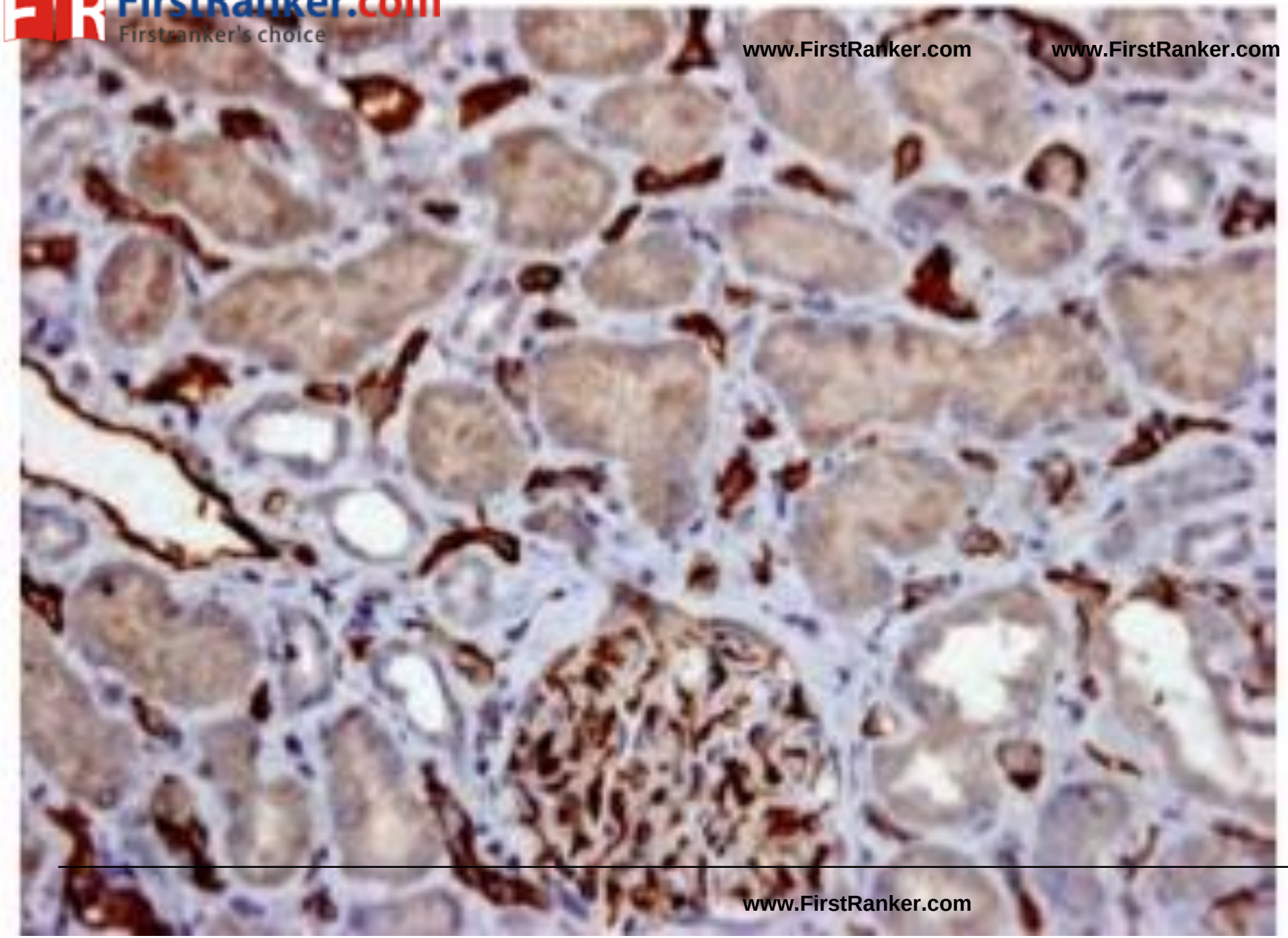
- First signal: Antigen binding to B-cell receptor
- Second signal: Costimulation by binding off CD40L of T cells with CD40 on B cells
- **Isotype switching** (production of different classes of antibodies: IgG, IgA, IgE) and **Affinity maturation** (high affinity for the antigen) are seen.

T cell independent response

- Weaker immune response
- No memory cells are generated
- Only IgM antibody is produced
- Immunity is short term

In kidney transplant, which is Fully reversible once established?

- **Acute**
- **Acute on chronic**
- **Chronic**
- **Hyperacute rejection**



Steatorrhoea with acanthocytes?

Celiac disease

Whipples disease

Tropical sprue

Abetalipoproteinemia

Infants

Failure to thrive, diarrhea, vomiting, and fat malabsorption.

P/S: Acanthocytes with associated hemolytic anemia, reticulocytosis, and raised bilirubin levels.

Malabsorption of fat-soluble vitamins such as Vit A, D, E, and K results in the majority of the clinical manifestations.

Vit K deficiency: Raised INR and an increased risk of bleeding.

Vit E deficiency: Neuromuscular symptoms such as ataxia, muscle weakness, dysarthria, etc. usually manifest during the first or second decades of life.

Molecular genetic testing may be required to identify and confirm mutations in the *MTTP* gene in these individuals.

Mendelian type of inheritance seen in which disease?

Downs with balanced translocation

Turner's with mosaicism

Huntington with trinucleotide repeats

Fragile X syndrome

Non-fluorescent is ?

Giemsa

Calcoflour

Auromine

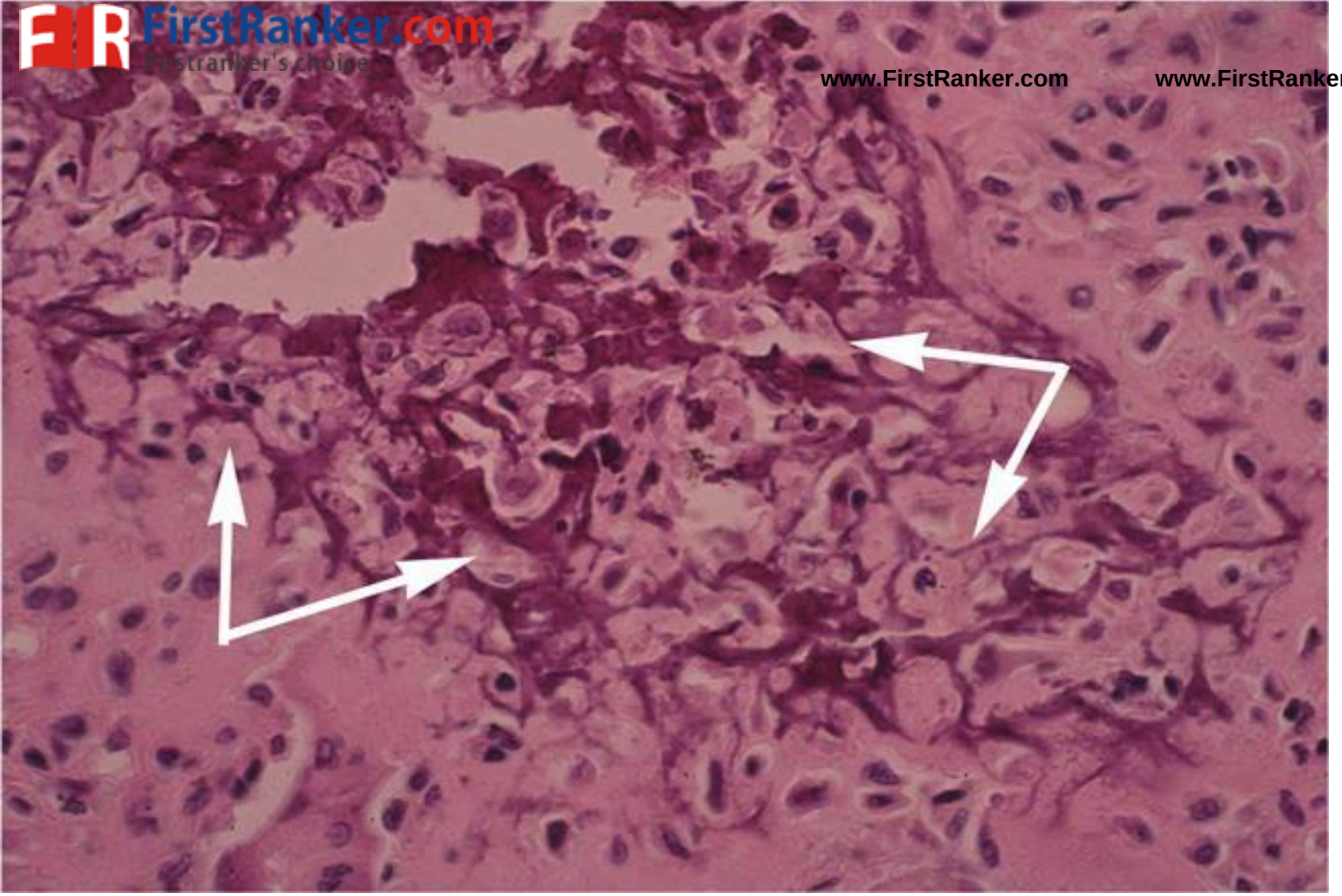
Acridine orange

26 yrs male with epiphysial bone tumor shows lytic lesion with chicken-wire calcification.

Osteoblastoma

GCT

Chondroblastoma



Which condition has high reticulocyte count ?

A)Aplastic anemia

B)Anemia of chronic disease

C) iron deficiency anaemia

D)hemolytic anemia

A 80 year old woman . Forgetfulness in daily activities. No seizures. Which of following is seen ?

Neurofibrillary tangles

Microscopy

- **Plaques**:ϙ Deposits of aggregated **Aβ peptides**ϙ in the **neuropil**
- **Tangles**:ϙ
  - Aggregates of the microtubule binding protein **tau**ϙ
  - Demonstrated by **silver (Bielschowsky) staining**ϙ
  - Found in **cortical neurons**ϙ
- **Hirano bodies:**ϙ Intracellular aggregates of actin.ϙ

Child with bilateral conjunctivitis. Fever since 5 days and skin peeling present. Diagnosis?

Kawasaki disease

HSP

IgA nephropathy

Leptospirosis

A child with hereditary renal disease, hematuria, proteinuria with keratoconus with hearing loss diagnosis

Alports syndrome

IgA Nephropathy

PSGN

Glomerular pathology indicated by

Dysmorphic RBC

Hyaline cast

Anti GQ 1b antibody not seen in:

- **Miller Fisher syndrome**
- **Birkerstaff brainstem encephalitis**
- **Guillain Barre syndrome**

Acute paresis of the ocular muscles.

Autoimmune disorder that causes eye muscle weakness.

This antibody interacts with the peripheral nerve ganglioside, Gq1b.

Call exner body seen in :

Granulosa cell tumour

Yolk sac tumor

Teratoma

Which eyelid tumor doesn't spread through lymphatic?

SCC

BCC

Sebaceous Ca

Malignant Melanoma

Kleihauer–Betke test positive baby has Hepatosplenomegaly. Diagnosis?

Chronic fetomateral hemorrhage

Erythroblastosis foetalis

Spherocytosis

ABO incompatibilty

A lady who had underwent radiotherapy few months back for breast cancer came with bleeding gums. There was low platelet low hb prolonged aptt, normal PT and past history of preterm gestation.

APLA

DIC

Radiation side effect

Hemophilia A

Complete hydatiform mole. karyotype?

46,XX

69, XXY

69, XXX

GESTATIONAL TROPHOBLASTIC DISEASE: HYDATIDIFORM MOLE

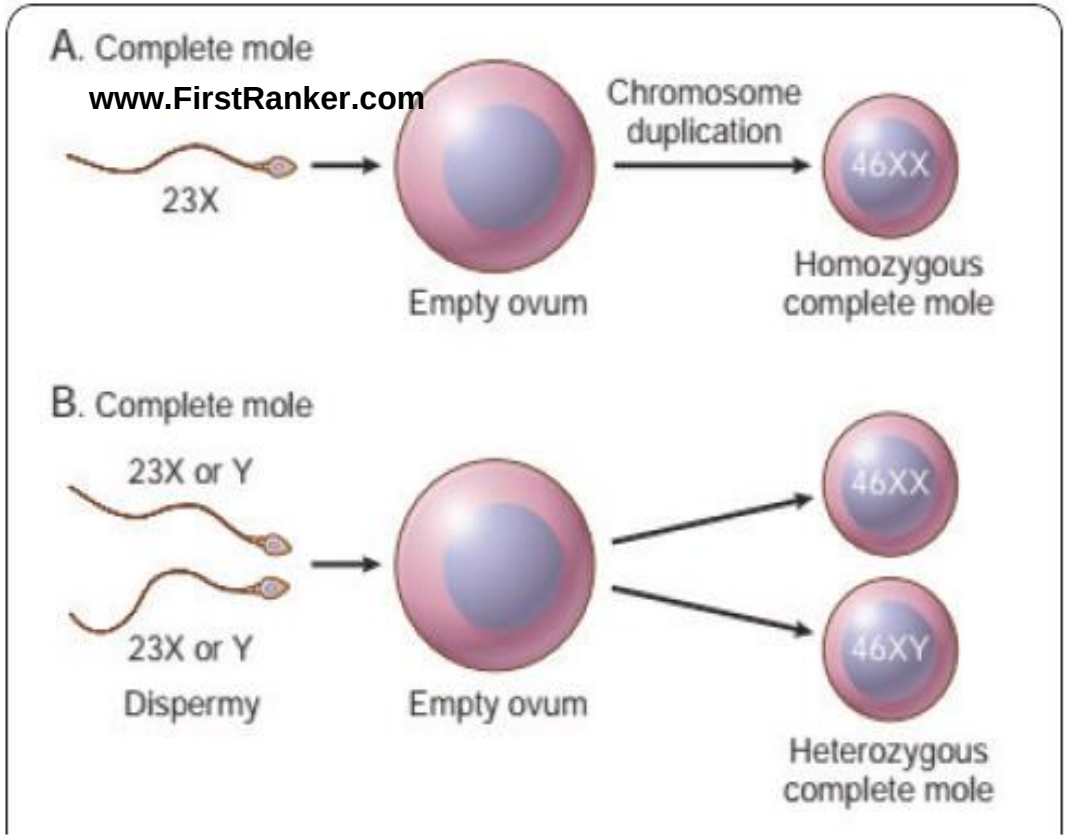
- Associated with an increased risk of persistent trophoblastic disease (invasive mole) or choriocarcinoma
- Characterized histologically by **cystic swelling of the chorionic villi**, accompanied by **trophoblastic proliferation**
- Diagnosed during early pregnancy (average 9 weeks) by pelvic sonogram
- Higher risk in teenagers and after 35 years age
- **HCG** is markedly elevated
- Two types: Complete and partial

MPLETE MOLE

- Results from fertilization of an egg that has lost its female chromosomes
- Genetic material is completely **paternally** derived
- Fetal tissues are not found
- Microscopically:

  Chorionic villi are enlarged with central cavitation (**cisterns**)

  Extensive trophoblastic proliferation



Sperm motility decreased in all except

Long drive

Running

Abstinence

Smoking

Running a minimum mean distance of 108 km/week for 12 months

In particular, **sperm motility** peaked after one day **abstinence** in men with infertility problems, but overall **sperm** quality began to decline after two days of **abstinence**.

Among men with normal **sperm**, overall **sperm** quality peaked after seven days of **abstinence** and **declined** after 10 days

Which of the following has least risk of cholangiocarcinoma

1. **Primary biliary cirrhosis**
2. **Primary Sclerosing Cholangitis**
3. **Chloronchis sinensis infestation**
4. **Choledochal cyst**

A patient with road traffic accident came in shock. . Multiple units transfused. False statement is

Such types of blood transfusion are related to metabloic complications.

Crystalloids can maintain hemodynamic stability

RBCs improve oxygen transport to tissue and increase hematocrit by 3%

Stored RBC has higher 2,3 DPG and shift to left

ANCA positive and Lupus antibodies positive female and purple rash on face.

SLE

APLA

Sjogrens

VNTR full-form?

Variable Number Tandem Repeats

VNTR is a location in a genome where a short nucleotide sequence is organized as a tandem repeat. These can be found on many chromosomes, and often show variations in length (number of repeats) among individuals.

RFLP genetic markers used in linkage analysis

Forensic crime investigations, via DNA fingerprinting and the CODIS database

Patient is in fever and shock. PT and PTTK both are elevated. FDP and D-dimer raised. Diagnosis?

DIC

Aplastic anemia

- Most **sensitive**ϙ test for DIC: **Elevated fibrin degraded products** (FDPs)ϙ
- Most specific:ϙ **D-dimer test**ϙ

Cancer cachexia is associated with ?

Increased oxygen utilisation

TNF alpha

Cancer cachexia is associated with:

- Equal loss of both fat and lean muscle
- Elevated basal metabolic rate
- Evidence of systemic inflammation (e.g., an increase in acute phase reactants)

Gene mutation associated with Pheochromocytoma and Renal cell carcinoma is:

VHL

Ataxia Telangiectasia

Bloom syndrome

AR

Short stature

Sun-sensitive, red rash that occurs primarily over the nose and cheeks

Mild immune deficiency with increased susceptibility to infections

Insulin resistance that resembles type 2 diabetes

Increased susceptibility to many types of cancer, especially leukemia, lymphoma and gastrointestinal tract tumors.

Male infertillity