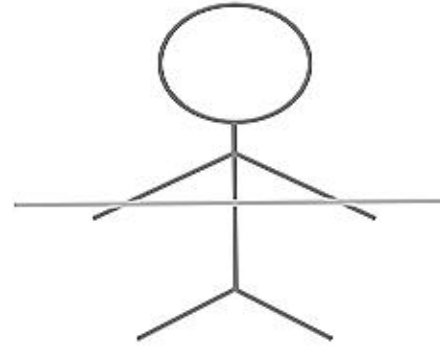


Q1 A female presents with Liver metastasis. On IHC, there was seen CK20 positive and CK7 negative. Most likely the site of primary is:

- (A) CA-Ovary
- (B) CA-Colorectum
- (C) CA-Pancreas
- (D) CA-Breast



Ans: (B) CA-Colorectum

Do not get confused between CK and CD markers

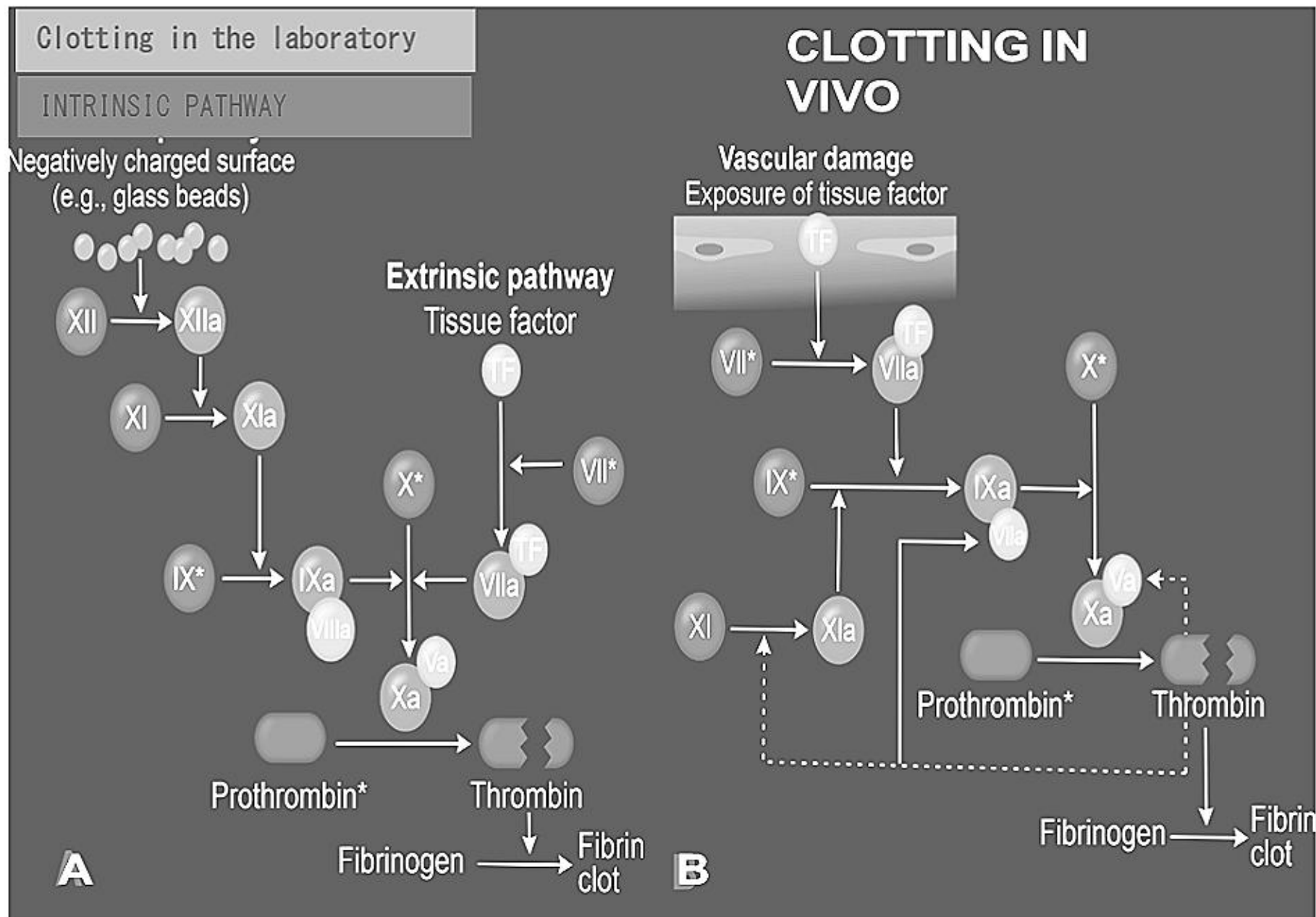
CK 7 +ve CK20 +ve	Pancreas, biliary tract, stomach (Peri-diaphragmatic)
CK7 -ve CK 20 -ve	Liver, kidney, prostate
CK7 + CK20 -ve	Thyroid, Lung, breast (Above the diaphragm)
CK7 -ve CK20 +ve	Colorectal CA (Below the diaphragm), Merkel cell carcinoma

Q2 Which clotting factor will not affect clotting in vivo?

- (A) 9
- (B) 12
- (C) 7
- (D) 5

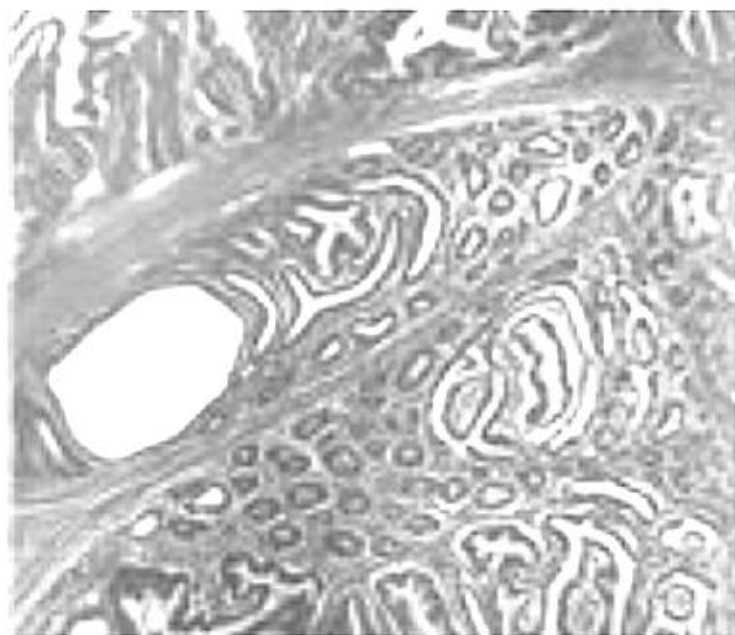
Ans: (B) 12

Clotting in vivo means Extrinsic pathway. So simply have a look at the clotting pathway and we know that factor XII is not involved in vivo and is usually asymptomatic.. so the best option is factor 12



- Q3 Which of the following is incorrect regarding Peutz jeghers syndrome?
- (A) Arborising pattern of muscle
 - (B) Loss of heterozygosity of STK11 gene
 - (C) Multiple GI polyps seen
 - (D) Autosomal recessive

Ans: (D) Autosomal recessive



Juvenile polyposis:

Age < 5 years

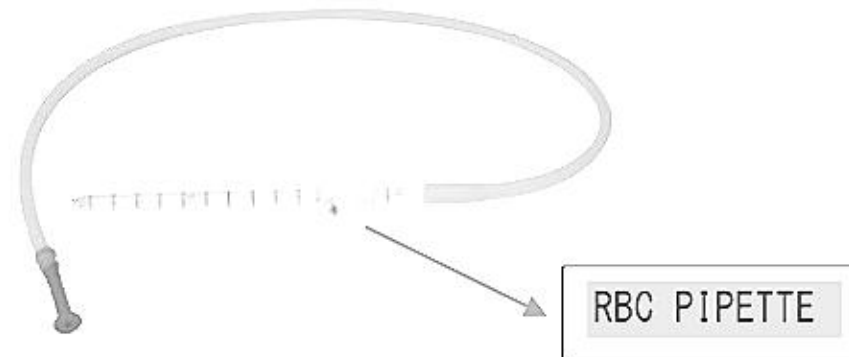
Peutz Jeghers syndrome:

Age: 10-12 years

MC Site: Rectum Smad-4 signalling	STK -11 (AD) Most common site: Small Intestine Multiple hamartomatous polyp with mucocutaneous hyperpigmentation in buccal mucosa Characteristic Christmas tree appearance due to arborizing network of Lamina propria, smooth muscles
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Q4 Rees and Ecker Diluting Fluid is used in?

- (A) RBC pipette
- (B) WBC pipette
- (C) Hb
- (D) Westergren Tube



Diluting fluids fluids:

Rees and Ecker fluid: Platelets and RBC
 Hayems fluid: RBC
 Dacie fluid: RBC
 Turks fluid: WBC

Ans: (A) RBC pipette

Q5 Which section demonstrates lipid in H&E?

- (A) Formalin fixed
- (B) Paraffin fixed
- (C) Frozen section
- (D) PAS stain

Ans: (C) Frozen section

Explanation: Lipid is best demonstrated by frozen section. Lipid can be washed off during formalin fixed section.

Q6 A patient has (11;14) translocation. What markers can be positive (Multiple answers correct)?

- (A) CD10
- (B) CD200
- (C) SOX-11
- (D) Cyclin-D1

Ans: (C), (D)

CLL/SLL	CD5+ CD23+
Mantle cell lymphoma	CD5+ CD23- Cyclin D1 positive t(11;14) SOX-11
Follicular lymphoma	BCL-2 t(14;18)
Diffuse Large B cell Lymphoma	CD20, BCL-6
Burkitts Lymphoma	BCL-6 Positive BCL-2 absent t(8;14)
Marginal zone lymphoma	BCL-10, MALT-1 T(11;18)

Q7 Match the following:

Column A	Column B
A. Silicosis	1. Basal lobes are involved
B. Caplan syndrome	2. Malignant Pleural effusion without mediastinal shift
C. Asbestosis	3. Initially demonstrated in coal workers
D. Mesothelioma	4. Crazy pavement appearance

Ans:

Column A	Column B
A. Silicosis	4. Crazy pavement appearance
B. Caplan syndrome	3. Initially demonstrated in coal workers
C. Asbestosis	1. Basal lobes are involved
D. Mesothelioma	2. Malignant Pleural effusion without mediastinal shift

Q8 Which of the following will have least chances of dry tap on bone marrow aspiration?

- (A) Hairy cell leukemia
- (B) Follicular lymphoma
- (C) AML M7
- (D) Myelofibrosis

Ans: (B) Follicular lymphoma

Description: Causes of dry tap:

1. Hairy cell leukemia
2. AML-M7
3. Aplastic Anemia
4. Myelofibrosis

Q9 MPGN seen in?

- (A) HIV
- (B) SLE
- (C) Hepatitis B
- (D) CLL

Ans: All, (A), (B), (C) & (D)

Causes of MPGN:

Infections : Hep B, C, HIV, Malaria, Schistosomiasis

Immunological disorders: SLE, RA, Inherited complement deficiency

Malignancies: CLL

Most important association with HIV: FSGS (Collapsing variant)

Q10 A 23-year-female with easy fatigability and pallor in given image. What is your likely diagnosis?

- (A) Aplastic anemia
- (B) Vitamin B12 deficiency
- (C) Iron deficiency anemia
- (D) Folic acid deficiency



Ans: (B) Vitamin B12 deficiency

Some questions can be solved with rule out option. Vitamin B12 deficiency is associated with hyperpigmentation of knuckles out of the given options. Iron deficiency associated with spoon shaped nails (koilonychia)

Q11 Most common tumour in the retroperitoneal region?

- (A) Rhabdomyosarcoma
- (B) Neurofibrosarcoma
- (C) Liposarcoma
- (D) Synovial sarcoma

Ans: (C) Liposarcoma

Description

Most common retroperitoneal sarcoma: Liposarcoma

Most common retroperitoneal tumor: Lymphoma

Translocation associated with myxoid liposarcoma: t(12;16)

MDM2 positive

Q12 A child with h/o blood transfusion at 2, 6, 10 months, features of maxillary prominence. Definitive diagnosis is done by?

- (A) BMA
- (B) Hb Electrophoresis
- (C) Parental HPLC
- (D) Globin chain assay

Ans: (D) Globin chain assay

Normal alpha:beta globin chains = 1:1

In beta thalassemia, there is decreased beta chains thus ratio will increase.

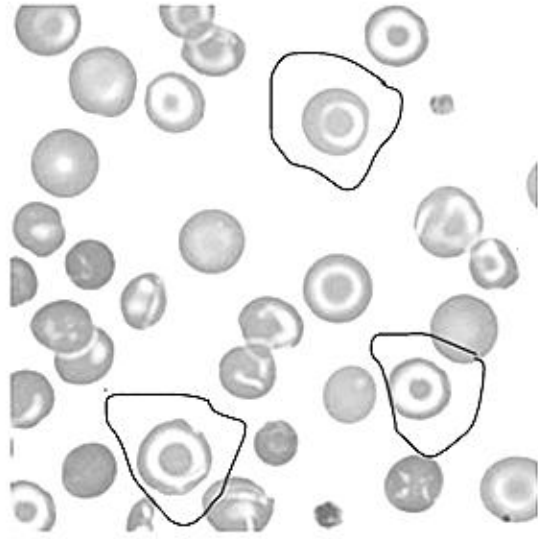
Hb electrophoresis is used for screening

Globin gene assay gives a definitive diagnosis

Q13 The cause of target cells:

- (A) Increased membrane
- (B) Loss of membrane
- (C) Denatured Hb
- (D) Fragmentation of rbc

Ans: (A) Increased membrane



Target cells are seen due to increased membrane (increased surface area to volume)

T for target cells; T for Thalassemia

Other causes: HbC disease

Sickle cell anemia

Q14 Most common finding of Lung Injury in COVID?

- (A) Pulmonary infarction
- (B) Diffuse Alveolar Damage
- (C) Endothelial Injury
- (D) Fibrin clots

Ans: (B) Diffuse Alveolar Damage

Most common finding in COVID: Diffuse alveolar damage

Most common cause of injury: Endothelial injury

Q15 All are true about NPHL except:

- (A) Has poor prognosis
- (B) EBV negative
- (C) CD 20 positive
- (D) CD 30 negative

Ans: (A) Has poor prognosis

HL	NPHL:
CD15+	CD20+
CD30+	CD45+
	EBV negative
	Best prognosis

Q16 A surgeon has to perform surgery in an emergency; which of the following tests is best to test all coagulation pathways and fibrinolysis?

- (A) aPTT
- (B) PT
- (C) BT
- (D) Thromboelastography

APTT: Tests Intrinsic pathway

PT: Tests Extrinsic pathway

BT: Tests platelets

TEG: tests intrinsic, extrinsic pathways and fibrinolysis

Q17 JAK2 mutation most common association with:

- (A) Polycythemia vera
- (B) Essential thrombocythemia
- (C) PMF
- (D) CML

Ans: (A) Polycythemia vera

Other mutations in ET, PMF: MPL, CALR

JAK2	Percentage of association
PCV	95%

ET	50%
PMF	50%

Q18 A female presented with Increased TSH with very low T4 . What can be the diagnosis ?

- (A) Grave' s disease
- (B) Hashimoto disease
- (C) Pituitary adenoma
- (D) Hypoparathyroidism

Ans: (B) Hashimoto disease

Explanation: Hashimotos disease shows increased TSH and very low T4
Graves disease shows increased T3,T4 and decreased TSH

Q19 About Telomerase, all are true except?

- (A) Reverse Transcriptase
- (B) DNA repair
- (C) Only in eukaryotes
- (D) Maintain chromosome length

Ans: (B) DNA repair

Explanation: Telomerase is an enzyme (Reverse transcriptase) helps in maintaining ends of chromosomes and thus maintain the chromosome length

Q20 Which of the following proteins HPV vaccine target?

- (A) E6, E7
- (B) E1, E2
- (C) L2
- (D) L1

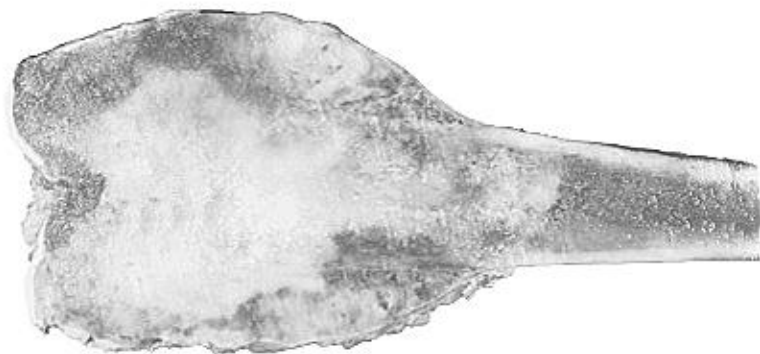
HPV vaccine targets L1 capsid protein. **Gardasil vaccine:** Each 0.5-mL dose contains approximately 20 mcg of HPV 6 L1 protein, 40 mcg of HPV 11 L1 protein, 40 mcg of HPV 16 L1 protein, and 20 mcg of HPV 18 L1 protein.

Pathogenesis: E6, E7

Q21 A pathological gross specimen of a bone tumor at lower end of femur in 10 year old child was given....

- (A) Osteosarcoma
- (B) GCT
- (C) Osteochondroma
- (D) Chondrosarcoma

Ans: (A) Osteosarcoma



Description: Grossly tumor (OSTEOBLASTIC) in distal femur invading cortex and surrounding soft tissue.

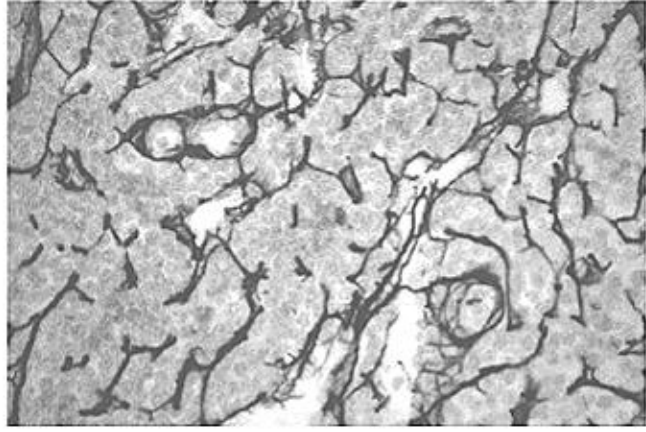
Q22 Reticular fibers are not seen in the structural framework of:

- (A) Thymus
- (B) Spleen
- (C) Bone marrow
- (D) Lymph node

Ans: (A) Thymus

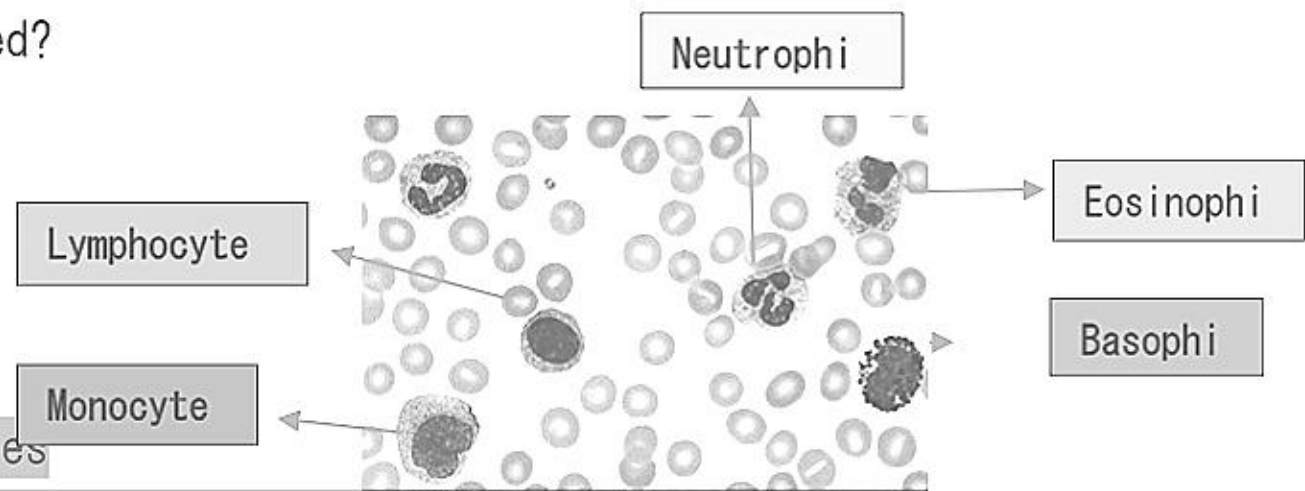
Reticular fibers:

1. Structural support
2. Present in Liver, Spleen, BM, Lymph node **not in the thymus**



Q23 Identify the cells marked?

- (A) Lymphocyte
- (B) Monocyte
- (C) Eosinophils
- (D) Basophils



Eosinophil: Orange red granules

Basophil: Basophilic granules covering up the cell

Monocyte: kidney shaped nucleus

Lymphocyte: condensed nucleus with scant cytoplasm

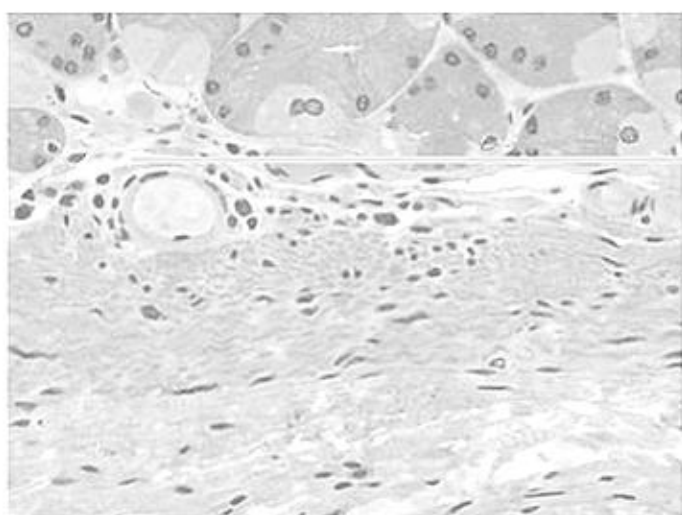
Q24 Loss of the marked cells can be associated with all except:

- (A) Carcinoid syndrome
- (B) Zollinger Ellison syndrome
- (C) B12 deficiency
- (D) Pernicious anemia

Ans: (B) Zollinger Ellison syndrome

Marked cells are parietal cells. P for parietal and P for pink

ZES is associated with overactivation of acid producing cells and not their absence.



Parietal

Q25 PBF shows pancytopenia. All of the following can be the cause except:

- (A) APML
- (B) Megaloblastic anemia
- (C) Hairy cell leukemia
- (D) MDS

Ans: (A) APML

Description: APML has presence of increased TLC in peripheral blood whereas others are associated with pancytopenia

APML: Acute promyelocytic leukemia

PML: RARA

Auer rods, maximum association with DIC



