

Fourth year

Case 1

A 9 year old girl has presented with history of progressive pallor for the last 6 months. General physical examination reveals marked pallor while abdominal examination is unremarkable.

Full blood counts show

Hb 7.5 g/d

TLC $8 \times 10^9/l$, Platelet count $300 \times 10^9/l$

MCV 60 fl,

MCH 17pg, MCHC 18 g/dl

1. What is the most likely diagnosis?
2. What investigations you will carry out to confirm the diagnosis?

Case 2

A 24 years old girl presented with generalized bleeding tendency, and jaundice. Laboratory investigations, PCV 6.2g/dl, TBCC $2.100 \times 10^9/L$, plat $18 \times 10^9/L$, SGPT 78 IU/L. SGOT 93 IU/L, TSB 4.3 mg/dl. Blood film show normochromic anemia with neutropenia with no malignant cells.

- a. What is the most likely diagnosis?
- b. How to confirm your diagnosis.
- c. What is the most likely primary cause?

Case 3

A 29 years old male present with pallor, easy fatigability and irritability with loss of concentration and early graining. Physical examination: mild jaundice, spots of hemorrhage on lower limbs, no organomealy. Laboratory Investigations; Hb 4.8g/dl, TWBCC $3.100 \times 10^9/L$, platelets $41 \times 10^9/L$, MCV 102fl, MCH 30pg, MCHC 33g/dl.

- a. What is the expected cause of his problem?
- b. What investigations you recommended to confirm your diagnosis.
- c. How can you follow your patient?

Case 4

A 35-year-old nulliparous woman complains that her breasts are swollen and nodular upon palpation, a mammogram discloses foci of calcification in both breasts, and a breast biopsy reveals cystic duct dilation and ductal epithelial hyperplasia without atypia.

- 1-What is the appropriate diagnosis?
- 2- What other histopathological finding could present in this case.
- 3- Is there any risk for development of carcinoma, what is its degree?

Case 5

Upon self-examination, a 53-year-old woman discovers a lump in her left breast, physical examination reveals a palpable lump about 3 cm in diameter in the outer quadrant of the left breast, hard in consistency, fixed to the surrounding tissue, with 2 palpable lymph nodes are found in the axilla.

- 1- What is the most likely diagnosis?
- 2- What are the investigations you recommend for diagnosis and for types of treatment she needs?
- 3- Which is the most important prognostic factor for this patient?

Case 6

A 20-year-old woman asks for your advice regarding her risk of developing breast cancer, her mother, maternal aunt, and maternal grandmother all developed breast cancer, she would like to know if she has a genetic predisposition.

- 1- Which is the gene would most likely be involved?
- 2- Which other organs lifetime risk for cancer would also be increased in this patient.
- 3- Which is the percentage of breast cancers caused by inheritance of a susceptibility genes.

Case 7

2 years old male presented with anemia and splenomegaly, his investigations reveal HCT 16 %, MCV 60 FL, MCH 25 g/l, blood film reveal hypochromic microcytic RBC.

1. What is the differential diagnosis?
2. What is the underlying pathogenesis of splenomegaly?
3. How you can reach the definite diagnosis.

Case 8

5 yrs. old male presented with thalassemia major since infancy, presented now with increased blood requirement and very high serum ferritin level.

1. Is this presentation indications for splenectomy?
2. What is the complications of splenectomy?
3. What are the hematological changes after splenectomy?

Case 9

3 yrs. old male presented with pallor and fever, examination reveal anemia and huge splenomegaly, investigations are Hb 7 g/dl, MCV 80 FL, WBC count $3 \times 10^9/L$, Platelets count $60 \times 10^9/L$.

1. What is your differential diagnosis?
2. How you can reach the definite diagnosis ?

Case 10

60 year old man, a heavy smoker presents for advice to stop smoking. On physical examination he is thin and has ruddy complexion he has a productive cough and barrel shaped chest. He sits leaning forward with his lips pursed to facilitate his breathing.

- 1-What is the diagnosis?
- 2-What are the histopathological findings in the lung?

Case 11

46 year old woman presents with fever , hemoptysis , weight loss, and night sweat she has never smoked chest radiograph reveals apical lesions with cavitation in the left lung purified protein derivative test is placed and 48 h later on 18 mm wheal develops, sputum culture reveals numerous acid fast organisms

- 1-What is the diagnosis?
- 2-what are the histopathological findings in the lung?

Case 12

42-year-old man has been seen by his physician for a 5-year history of “heartburn.” He has been intermittently taking ranitidine, a histamine-2receptor blocking agent, with some relief. An upper endoscopic examination that was performed recently revealed some reddish discoloration and friability of the lower esophageal region. A biopsy of the lower esophagus was performed, and the microscopic examination revealed columnar cells containing goblet cells.

- a. What is the most likely diagnosis?
- b. What is a long-term complication of this process?
- c. What is the most likely mechanism of this process?

Case 13

A 25-year-old woman has had recurrent episodes of diarrhea, crampy abdominal pain, and slight fever over the last 2 years. At first the episodes, which usually last 2 weeks, were several months apart, but recently they have occurred more frequently. Other symptoms have included red skin lesions with mild joint pain. Colonoscopy reveals several sharply delineated areas with thickening of the bowel wall and mucosal ulceration. Areas adjacent to these lesions appear normal. Biopsies of the affected areas show full-thickness inflammation of the bowel wall and several noncaseating granulomas.

What is the most likely diagnosis?

Describe the characteristic histopathological features.

What are the common complications of this disease?

Case 14

A 52-year-old man presents with fatigue for several months and has noticed recently that the waist bands of his pants are tight in spite of a 8-kg weight loss. He has not had diarrhea, nausea, vomiting, or other gastrointestinal symptoms. He underwent a blood transfusion with several units in 2002 after an automobile accident. Physical examination reveals generalized jaundice, a firm nodular liver edge just below the right costal margin, and a mildly protuberant abdomen with a fluid wave.

Initial laboratory studies show the following:

	Patient's Value	Reference Range
Alanine aminotransferase (ALT):	80 U/L	8–20 U/L
Alkaline phosphatase:	60 U/L	20–70 U/L
Aspartate aminotransferase (AST):	50 U/L	8–20 U/L
Albumin:	2.0 g/dL	3.5–5.5 g/dL
Bilirubin, serum, total:	5 mg/dL	0.1–1.0 g/dL
Bilirubin, serum, direct:	4.2 mg/dL	0.0–0.3 mg/dL
Prothrombin time (PT):	28 s	11–15 s
Partial thromboplastin time (PTT):	50 s	28–40 s

What is the most likely diagnosis?

What are the possible etiologies of this disorder?

What other tests would be appropriate?

What are the possible complications?

Case 15

A 72-year-old man consults his GP because he has been troubled by problems passing urine for the last few months. In particular, the patient has had problems in starting to urinate. This is mirrored by a protracted end to each episode of micturition. When he thinks he has finished urinating he finds that he tends to dribble for more than a few seconds and confides that, on a couple of occasions, this has nearly led to embarrassing incidents when he was using public toilets. On being asked by the GP, he indicates that his urinary stream is not as strong as it

was when he was younger and that urination takes longer than it used to. Other than the problems with the dribbling, the patient has not had any episodes of urinary incontinence. There have been no alterations in his bowel habit or problems with faecal continence.

1. What is the most likely diagnosis?
2. What are the histopathological findings that could present in this case?
2. What is the pathogenesis?

Case 16

A 16-year-old boy presents with a 2-week history of pain in his right leg. He says that he has been taking aspirin to relieve the pain. An X-ray of the leg shows a 1-cm sharply demarcated, radiolucent lesion in the diaphysis of the tibia surrounded by dense, sclerotic bone. The lesion is surgically removed, and the gross specimen is shown in the image. Microscopically, the tumor shows irregular trabeculae of woven bone surrounded by osteoblasts, osteoclasts, and fibrovascular marrow.

1. What is the most likely diagnosis?
2. What are the histopathological findings that could present in this case?
2. What is the pathogenesis?

Case 17

An 18-year-old man presents with bone pain about his knee that he has had for 6 weeks. Radiologic studies reveal a lytic lesion of the distal end of the femur, which arises in the metaphysis, extends into the proximal diaphysis, and elevates the periosteum. Serum levels of alkaline phosphatase are markedly elevated.

1. What is the most likely diagnosis?
2. What are the histopathological findings that could present in this case?
2. What is the preferred organ of metastasis?

Case 18

A 24-year-old man on chronic corticosteroid therapy for severe asthma presents with a 6-month history of increasing hip pain.

1. What is the most likely diagnosis?
2. What are the histopathological findings that could present in this case?
2. What is the pathogenic mechanism of the disease in this case?

Case 19

A female neonate is noted at birth to have a gross deformity of her lower back. Examination of the subcutaneous lesion reveals disorganized neural tissue with entrapment of nerve roots.

1. What is the most likely diagnosis?
2. What are the causes of this disease?
2. What are the complications of this disease?

Case 20

A 15-year-old boy is rushed to the emergency room after suffering a tonic-clonic seizure 4 weeks after a spelunking expedition. The boy appears irritable and agitated, and his parents state that he has difficulty swallowing fluids. Lumbar puncture shows numerous lymphocytes. The patient becomes delirious, slips into a coma, and expires. At autopsy, the brain stem shows infiltrates of lymphocytes around small blood vessels and evidence of neuronophagia. Some neurons contain eosinophilic inclusions.

1. What is the most likely diagnosis?
2. What is the responsible pathogen?
2. What are the complications of this disease?

Case 21

A 68-year-old man presents with a 2-week history of tonic-clonic seizures that initially involve his left arm but have more recently progressed to involve his left leg. The seizures are accompanied by muscle weakness but no other neurologic signs. The cranial nerves are intact, and the Babinski sign is present. A CT scan reveals a mass in the left cerebral hemisphere. A left frontoparietal craniotomy is performed. Histologic examination of the brain biopsy showed astrocytes proliferation, atypia and necrosis.

1. What is the most likely diagnosis?
2. What are the grades of this disease?
2. Describe the histopathological features of grade I and II?

Case 22

A 60-year-old former lifeguard presents with several small, pearly nodules on the back of her neck. A biopsy of one of the nodules reveals buds of atypical, deeply-basophilic keratinocytes extending from the overlying epidermis into the papillary dermis with peripheral palisading.

1. What is the most likely diagnosis?
2. What is the prognosis?
2. What are the risk factors?

Case 23

40 years old male presented with single thyroid nodule , thyroid functions result in euthyroid state , CT-Scan study reveal cold nodule, the subtotal thyroidectomy was done C/S reveal small nodule round white in color, measure 2 cm.

1. What are the most important investigations needed to reach the diagnosis
2. Applicate the clinical criteria on this patient for the suspicious of malignancy
3. What the most important microscopical pictures help in the diagnosis
4. What are the differential diagnosis of this case?
5. Enumerate the pathological variant of this tumor.

Case 24

65 years old male presented with painless hematuria, and flank pain

1. Describe the planning for work up for this patients
2. What are the differential diagnosis?
3. Enumerate the microscopical features help in the diagnosis of this tumor
4. Enumerate four prognosis factors
5. Enumerate four predisposing factors

Case 25

38 years old female presented with weight loss, palpitation, fine tremor and anxiety on examination there are exophthalmos

1. What are the provisional diagnosis?
2. What are the most important biochemical tests we should do for this patient?
3. What are the possible other signs and symptoms may be present in this patient
4. Enumerate five microscopical features of this case
5. What are the immunological Abs play role in the pathogenesis?

Case 26

34 years old female presented with diffuse enlargement of thyroid with TSH level 12.5 Iu/ml n=(0.4-4.2 IU/ml), T3 = 0.82 nmol/l n=(0.99-2.3nmol/l) and T4 50 nmol/l n=(60-120nmol/l), weight gait and bready cardia

1. What are the provisional diagnosis?
2. Enumerate the causes of this clinical signs and symptoms
3. What are the others investigations need to reach the diagnosis?
4. Enumerate other disease may be associated with this disease
5. Describe four microscopical pictures occur in this disease

Case 27

9 year's old children suffering from hematuria, hypertension and oliguria

1. What are the professional diagnosis?
2. Enumerate the diseases cause this pictures
3. What are microscopical pictures?
4. What are the prognosis of this conditions?
5. Explain the pathogenesis of this syndrome

Case 28

Eight months old male brought to emergency room, he was in good health until 24 hours prior to admission, when parents noted fever, progressive lethargy, and dark red urine. Diet had consisted mainly of breast milk and formula, with some fruits and vegetables added recently, no known family history of anemia, jaundice, gallstones, or splenectomy.

Physical Exam

Lethargic, pale infant with jaundiced skin and scleral icterus.

Investigation: Complete blood count

RBC 1.28 x 10¹²/L
HGB 4.5 g/dL
HCT 11.4 %
MCV 89.1 fL
MCH 35.2 pg
MCHC 39.4 g/dL

WBC 12.8 x 10⁹/L
N seg 65 %
N myelo 1
L 31
M 3
E 0
B 0

NRBC/100 WBC 2

PLT 425 x 10⁹/L

Blood film

Normochromic normocytic with polychromasia, irregularly shaped spherocytes, RBC fragments. Many of the spherocytes have a "blister" of membrane on the edge of the cell. RBC fragments include helmet and "bite" cell forms.

WBC morphology:

Reactive neutrophils with toxic granulation

PLT

Within normal limits.

Questions

- 1-mention further laboratory investigation to reach the diagnosis?
- 2- How can you explain the dark color urine?
- 3- What are the causes of red cells morphology?
- 4-what is the diagnosis?
- 5-mention the predisposing factors?
- 6-name single test to confirm the diagnosis?
- 7-what sort of advices that can be given to the parents?

Case 29

A twenty five year old male, seen for treatment of superficial skin wounds resulting from a shotgun accident while grouse hunting. Family physician noted slight pallor, jaundice, and scleral icterus.

History of cholecystectomy five years prior to admission. At that time the patient was told he had Gilbert's syndrome. He stated he had always had low blood.

Physical Exam

Somewhat pale yellowish skin with scattered small surface wounds--mostly over the face, scalp and upper extremities, moderate scleral icterus. Spleen palpable 3 cm below the left costal margin

Investigation:

Complete blood count

RBC 3.93 x 10¹²/L
HGB 11.3 g/dL

HCT 33.1 %
MCV 84.1 fL
MCH 28.8 pg
MCHC 34.4 g/dL
RDW 18.7

WBC 5.0 x 10⁹/L
N 53 %
L 31
M 8
E 6
B 2

PLT 362 x 10⁹/L

Questions

- 1- If you do a blood film for this patient, what are the morphological findings of RBC?
- 2- Mention further investigation to reach the diagnosis?
- 3- what is the diagnosis?
- 4- mention the mode of inheritance of this disorder?

Case 30

A fifty three year old male, who is healthy and physically active, recently noted fatigue and groin soreness.

Physical Exam: Adenopathy: several small (~1 cm diameter) soft nodes in supraclavicular and axillary areas. Two larger (>2 cm diameter) firm inguinal nodes.

No other organomegaly. The rest of the exam was within normal limits.

Investigation: complete blood count

RBC 4.02 x 10¹²/L
HGB 13.6 g/dL
HCT 38.3 %
MCV 95.3 fL
MCH 33.8 pg
MCHC 35.5 g/dL
RDW 12.4

WBC 51.3 x 10⁹/L
N 10 %
L 89
M 1

PLT 156 x 10⁹/L

Morphologic Alterations

Results of the blood smear exam were:

RBC morphology:

Normocytic, normochromic

WBC morphology:

Most of the lymphocytes are small and mature appearing with clumped chromatin and a high nuclear to cytoplasmic ratio. Some cells are slightly larger with less clumped chromatin. There are increased numbers of damaged cells.

PLT morphology:

Within normal limits

Questions:

1-mention further investigations to reach the diagnosis?

2- What is the most likely diagnosis?