Blood pathology 2

BLEEDING DISORDERS

B) Acquired bleeding disorders

LEC 9

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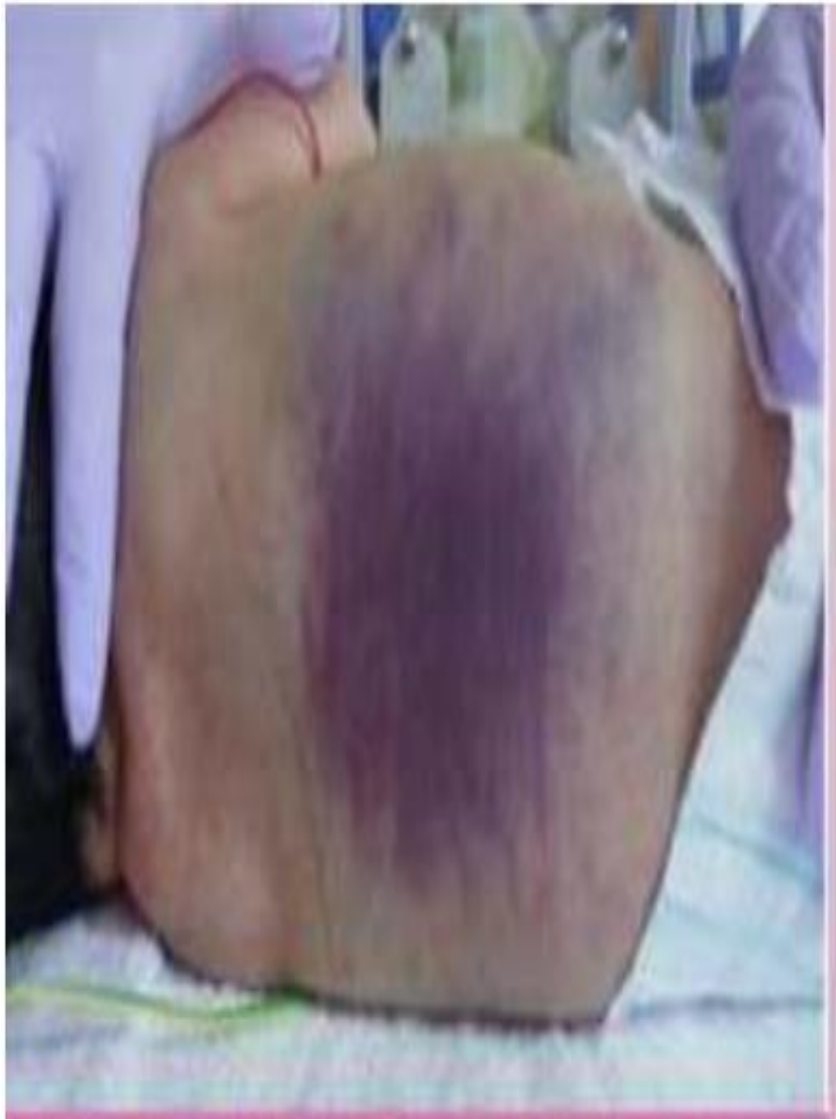
- **B) Acquired bleeding disorders**

- They are more common than the inherited disorders, and unlike, inherited disorders, **multiple clotting factor deficiencies** are usual.

- **VITAMIN K DEFICIENCY**

- Fat-soluble vitamin K is obtained from green vegetables and bacterial synthesis in the gut. **Deficiency** may present in the newborn (hemorrhagic disease of the newborn) or in later life.

- Deficiency of vitamin K is caused by an inadequate diet , malabsorption or inhibition of vitamin K by drugs such as warfarin , which acts as **vitamin K antagonists.**



Vitamin K Deficiency in infants

Vitamin K deficiency in adults

- **Diagnosis**

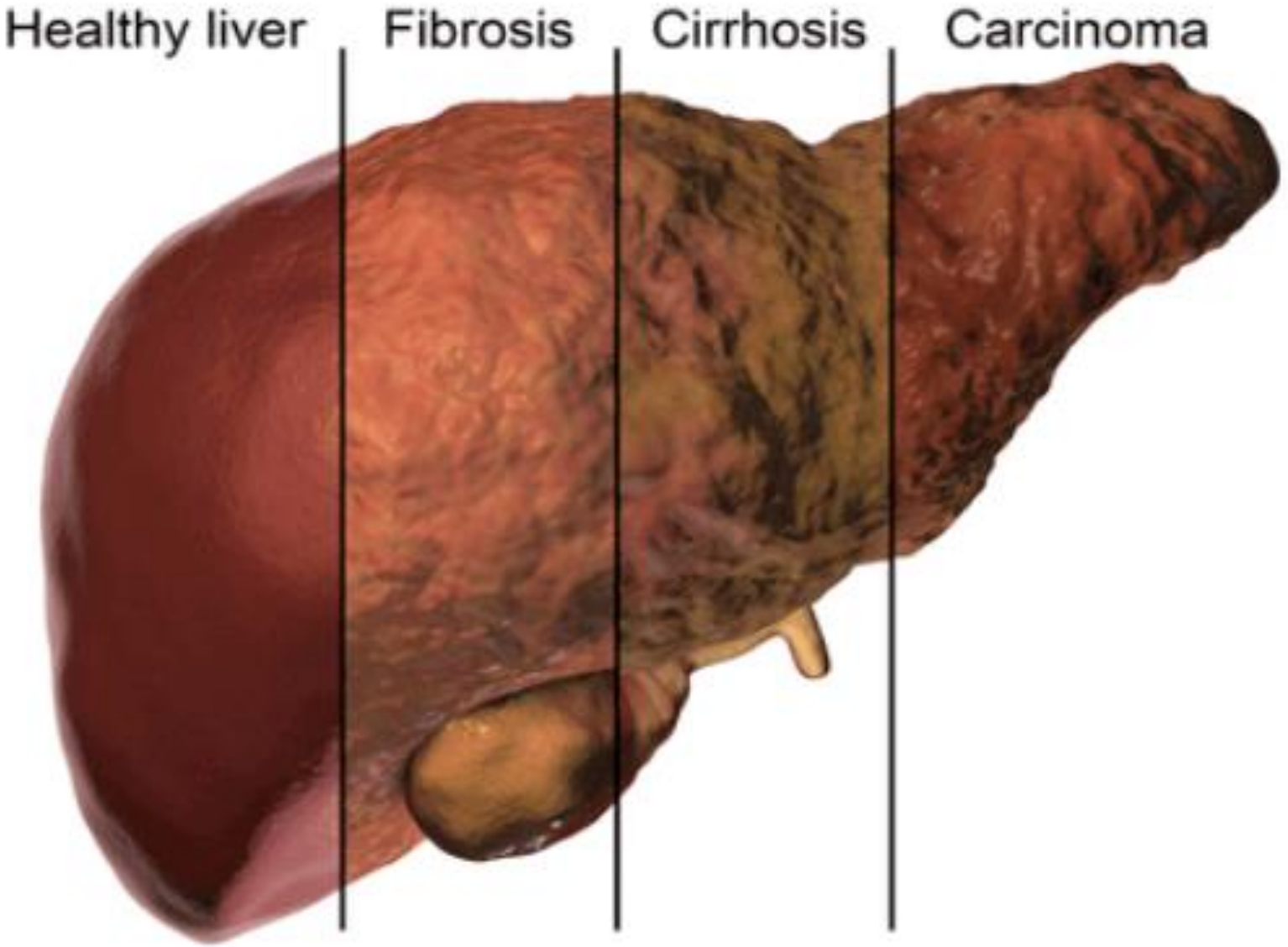
- The PT and aPTT are both **abnormal**. The platelet count and fibrinogen are normal with absent **fibrin degradation products**.

- **Vitamin K deficiency in children and adults**

- Deficiency resulting from obstructive jaundice, pancreatic or small bowel disease occasionally causes a bleeding in children or adults.

- Diagnosis: both PT and aPTT are prolonged. There are low plasma levels of factors II, VII, IX, and X.

- **LIVER DISEASE**
- Multiple hemostatic abnormalities contribute to a bleeding:
- 1- Biliary obstruction results in impaired absorption of vitamin K and therefore decreased synthesis of factors II , VII , IX , and X by liver cells.
- 2- With **severe hepatocellular disease** , there are often reduced levels of factor V and fibrinogen
- 3- Functional abnormality of fibrinogen (dysfibrinogenemia) is found in many patients.
- 4- Decreased **thrombopoietin production** from the liver contributes to thrombocytopenia.
- 5- Hypersplenism results in thrombocytopenia.


Healthy liver
Fibrosis
Cirrhosis
Carcinoma

- **DISSEMINATED INTRAVASCULAR COAGULATION (DIC)**

- Inappropriate, widespread deposition of fibrin within blood vessels with consumption of coagulation factors and platelets occurs as a results of many disorders which release clotting material into the circulation or cause widespread endothelial damage or platelet aggregation.

- **Clinical features**

- These are dominated by bleeding, particularly from vein puncture sites or recent wounds. There may be **general bleeding** in the gastrointestinal tract

- **Laboratory findings**
- In many acute syndromes the blood may fail to clot because of **sever fibrinogen deficiency**.
- **Tests of haemostasis:**
- 1- The platelet count is low
- 2- Fibrinogen concentration is low
- 3- The thrombin time is prolonged
- 4- High levels of fibrin degredation products such as D-dimers are found in serum and urine.

- 5. The PT and aPTT are prolonged in the acute syndromes
- Blood film examination in many patients there is a hemolytic anemia (microangiopathic) and the red cells show fragmentation because of damage caused when passing through **fibrin strands** in small vessels.


A.D.A.M.


Q . What are some common conditions that can lead to excessive bleeding?

- **Answer:**

1- Hemophilia (Factor VIII or IX deficiency)

2- Vitamin K deficiency

3- Liver disease

4- Thrombocytopenia

5- Von Willebrand disease

Thank You For Listening