

Liver cirrhosis

Liver cirrhosis is the transformation of the lobular structure of the liver into a nodular one (hepatocytes disappear, replaced by fibrous tissue, the remaining parenchyma regenerates + forms nodules) as a result of chronic liver diseases.

Etiology

- chronic hepatitis C, B, B + D – **posthepatic cirrhosis**,
- alcoholic liver damage – **alcoholic cirrhosis**,
- long-term obstruction of the bile ducts – **biliary cirrhosis**,
 - *primary* – autoimmune disease (antibodies against the interlobular bile ducts are formed),
 - *secondary* – as a result of prolonged obstruction of the bile ducts by a tumor or stone,
 - primary sclerosing cholangitis – autoimmune disease of intrahepatic and extrahepatic bile ducts,
- toxic liver damage (paracetamol, amatoxin...) – toxic cirrhosis,
- metabolic diseases (Wilson's disease, α 1-antitrypsin deficiency, hemochromatosis, porphyria, CF and others),
- long-term venostasis – cirrhosis due to venous congestion,
- unclear etiology - cryptogenic cirrhosis (in 10-15%).

The consequence of liver cirrhosis (and the basis of complications) are:

- impairment of the synthetic function of the liver (especially proteosynthesis) due to the destruction of hepatocytes – liver insufficiency,
- portal hypertension.

Complications of liver cirrhosis ^[1]

- portal hypertension – congestion in the vena portae basin, consequences:
 - esophageal varices – massive bleeding (hematemesis, melena)
 - ascites – fluid and sodium retention by the kidneys (hyperaldosteronism – degradation disorder in the liver), hypoproteinemia is less important
 - splenomegaly – platelet sequestration in the spleen – thrombocytopenia
 - reduced resistance to infection (restricted liver blood flow shuts down liver RES) – pneumonia, SBP
- **bleeding** (hemorrhagic diathesis) – insufficient synthesis of coagulation factors, hypersplenism with thrombocytopenia
- icterus - not always expressed
- **spider nevi** (naevus araneus, enlargement of the terminal sections of skin arterioles) - especially on the hands, forearms, forehead and front of the chest
- liver failure
- renal failure (hepatorenal syndrome)
- hepatocellular carcinoma
- hyperestrism – a disorder of the breakdown of estrogen by the liver, an excess leads to atrophy of the testes and gynecomastia in men, and to disorders of the menstrual cycle and atrophy of the ovaries in women
- encephalopathy



Micronodular liver cirrhosis

Clinical picture

Liver cirrhosis can be asymptomatic for a long time and is diagnosed randomly (preventive examinations, abdominal surgery, etc.).

Compensated cirrhosis (latent, subclinical)

- very similar to chronic hepatitis
- **subjectively**, patients complain of non-specific symptoms: dyspepsia – feelings of fullness after eating, stool changes; in women, menstrual disorders, hypomenorrhea or amenorrhea
- **objectively**: hepatosplenomegaly, slowly increasing portal hypertension, skin symptoms – spider nevi, signs of bleeding, slight perimaleolar swelling, nocturia, sudden hematemesis

Decompensated cirrhosis (advanced)

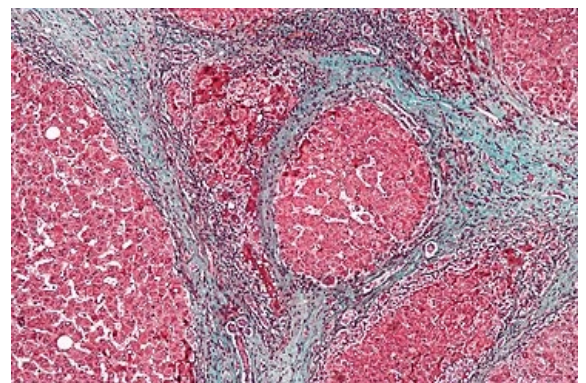
- varied symptomatology
- *symptoms of parenchymal liver disorder* (metabolic decompensation) – icterus, hemorrhagic diatheses, hypoalbuminemia with fluid retention with ascites and edema
- symptoms from developed portal hypertension (vascular decompensation) – ascites, esophageal varices, portosystemic encephalopathy
- **subjectively** – insurmountable fatigue, weakness, exhaustion, loss of appetite, weight loss, abdominal enlargement, swelling; in women, menstrual disorders to amenorrhea, in men, a decrease in libido and potency, gynecomastia, often arthralgia and back pain
- **objectively** – the patient is tired, emaciated (large abdomen, thin limbs), slowed reactions (encephalopathy), subfebrile, hypothermia or isothermia, skin is pale, often icteric, numerous spider nevi, lips and tongue are red (lacquered), hands have palmar erythema, Dupuytren's contracture, white nails, clubbed fingers, hemorrhagic diatheses (petechiae, haematomas, bleeding from the gums, nose, gynecological), chest hair loss in men (Chvostk's habitus), gynecomastia

Physical Finding:

- *aspects*: bulging of the right hypochondrium, icterus, spider nevi, palmar erythema, etc.
- *palpation*: splenomegaly, may be hepatomegaly
- *percussion*: may be hepatomegaly, evidence of ascites (glacial sign)

Diagnostic

- **medical history and physical examination**
- **laboratory examination**
 - increase in AST and ALT
 - hyperbilirubinemia
 - thrombocytopenia,
 - leukopenia (hypersplenism)
 - hypoalbuminemia,
 - hypergammaglobulinemia, ↑ sedimentation of erythrocytes
 - prolongation of prothrombin time
 - decompensation of cirrhosis is manifested by an increase in ammonia and a decrease in uremia
 - in biliary cirrhosis obstructive enzymes (ALP, GMT)
 - hepatitis serology
 - autoantibodies in autoimmune cirrhosis
 - AFP in the transition to carcinom



Microscopic image of liver cirrhosis

- **imaging methods** (US or CT of the liver, endoscopy to detect varices)
- **liver biopsy**

Treatment

1. **influencing the underlying disease** – abstinence in alcoholics, treatment of hepatitis, penicillamine in Wilson's disease
2. **supportive measures** – regimen measures (alcohol abstinence, omission of hepatotoxic drugs), administration of vitamins A, D, E, K, hepatoprotectors, corticoids are given for autoimmune hepatitis (nowhere else)
3. **liver transplant**
4. **treatment of complications:**
 - bleeding from esophageal varices (endoscopic sclerotization or ligation + terlipressin (Remestyp), in case of TIPS failure or surgery, after bleeding GIT and ATB lavage, preventive administration of non-selective β -blockers and nitrates)
 - hepatic encephalopathy (restriction of protein intake, lactulose, ATB, administration of branched-chain amino acids)
 - ascites (restriction of fluid and salt intake, diuretics (spironolactone + furosemide), puncture, TIPS, shunt)
 - hepatorenal syndrome (Remestyp in combination with i.v. albumin)
 - hepatocellular carcinoma (surgical resection or radiofrequency ablation, palliative chemoembolization)

Prognosis

The Child-Pugh score is used to predict liver cirrhosis.

A score used to assess the prognosis of a patient with chronic liver failure. MediaWiki:Lékařská kalkulačka/Child-Pugh

Links

related articles

- Pseudolobular cirrhosis (preparation)

Reference

1. Prof. MUDr. Marie Brodanová, DrSc., MUDr. Tomáš Vaňásek, PhD., odborná společnost hepatologická, Česká lékařská společnost Jana Evangelisty Purkyně, <<http://www.cls.cz/dokumenty2/resitele/t231.rtf>>

External links

- Cirhóza (<https://www.youtube.com/watch?v=5szNmKtyBW4>) – video on YouTube.com explaining the pathophysiology and complications of cirrhosis

References

- KLENER, Pavel. *Vnitřní lékařství*. třetí vydání. Praha : nakladatelství Galen, 2006. s. 642 – 644. ISBN 80-7262-430-X.