Inflammatory diseases of the gallbladder and bile ducts

- Inflammation of the wall Gallbladder most often caused by - E.coli, Staphylococci, Streptococci, more rarely other intestinal bacteria, Salmonella], clostridia,
- routes of infection - bloodstream, lymphatic or ascending,
- Some cholecystitis can be caused by toxic congestion during congestion.

Acute cholecystitis

thumb|right|Cholecystitida (konkrementy)

Acute cholecystitis, e.i. acute inflammation of the gall bladder, belongs to the group of inflammatory NPB (AAE - Acute abdominal events?). It can occur as a primary inflammation, but more offten arises as an acute flare-up of chronic cholecystitis. Cholecystolithiasis is seen in patient history in 95% of cases. In that case a stone acts as a reservoir for the infection as well as an obstruction of the bile flow.

Pathological findings

In the course of the wall inflammation it comes to inflammatory exudation in the area below the liver - formation of effusion. Within hours surrounding organs (omentum, duodenum, transverse colon) stick to the wall of the gall bladder and **pericholecystic infiltrate** is formed. This way the inflammation becomes bounded. It can then either heal with the formation of adhesions, or proceed further even up to the gallbladder wall perforation forming pericholestatic abscess or GI fistula.

- Perforation into the free abdominal cavity → complicated diffuse biliary peritonitis or infradiaphragmatic abscess.
- Perforation into the liver → liver abscess.

Following the resorption of the inflammation the gall bladder stays full of colourless fluid, so-called *hydrops* is formed.

Risk factors

- Female gender, age above 40y.o.,
- genetic factors,
- multiple pregnancies,
- hormonal contraception,
- hormone substitution therapy,
- obesity, metabolic syndrome,
- rapid weight loss with development of cholecystolithiasis,
- hypercholesterolemia,
- severe burns and injuries,
- massive systematic infection,
- serious systemic disease,
- diabetes mellitus,
- tumor obstruction of the bile ducts.

The risk fators of acute cholecystitis can be summarized as **The 5-F rule**:

- fair: higher prevalence in caucasian population,
- fat: BMI >30,
- female: more frequently affects women,
- fertile: at least 1 or 2 children (pregnancies),
- forty: age ≥40.[1][2]

Clinical picture

- Pain in the right hypochondrium, the onset often resembles biliary colic, propagates under the scapula and towards the shoulder.
- Oscillating pains convert to a permanent one - worsens with movement, shivering and deep breathing.
- Fever, that rises with the progression of the inflammation; shivers.
- Nausea, vomiting.
- Shallow breathing.
- Tachycardia.
- Icterus in case of biliary passages obstruction.
- The patient looks for a restful position that spares the abdominal wall.

Diagnosis

Anamnesis

- cholelithiasis in anamnesis,
- pain onset after ingestion of certain foods, most frequently with high fat content.

Physical examination

- painful palpation,
- increased gall bladder size on palpation,
- Murphy sign,
- tachycardia,
- tachypnoe,
- fever,
- in case of more extensive inflammation défense musculaire,
- per rectum examination can be negative.

Auxilliary examinations

- Blood count: leucocytosis, elevated FW and CRP,
- Urinalysis: positive Ehrlich reaction, possibly bilirubin,
- RTG: can visualize contrast concrements in the gall bladder region,
  - in case of clostridial infection - gas in the gall bladder,
  - in case of biliodigestive fistula - gas in the biliary passages,
- USG – thickening of gall bladder wall, concrements,
- CT.

Complications

- Bile duct obstruction leading to Icterus,
- empyema,
- gangrene,
- perforation with possible progression to a generalized peritonitis,
- fistulas,
- gall bladder emphysema,
- small bowel obstruction with a massive concrement,
- biliary pancreatitis.

Differential diagnosis

- simple biliary colic,
- acute pancreatitis,
- laterocecal or subhepatic appendicitis,
- appendicitis in pregnancy,
- AMI,
- basal pneumonia,
- acute hepatitis,
- porphyria,
- gastric ulcer perforation.

Therapy

- In the majority of cases **conservative** therapy is sufficient - rest, cold compresses, only liquids per os, close follow-up of the patient's condition, spasmolytics, parenteral feeding, ATB (questionable - can obscure the signs of the inflammation spread to the surrounding tissues).
- In case of progression or complications surgical treatment is indicated.
- **Surgical therapy:** we differentiate 4 types of indications – urgent, acute, suspended and planned cholecystectomy.

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Chronic cholecystitis

- It occurs either by gradual development or is the result of acute cholecystitis once or repeatedly,
- each attack of cholecystitis increases the risk of life-threatening complications.

Pathological finding

- Wall fibrosis with inflammatory exudation, the wall is thickened, stiffer, the mucosa is red, sometimes covered with ulcers, sometimes completely absent,
- retraction occurs with longer duration → a picture of a wrinkled gallbladder,
- in cystic obstruction → hydrops – bile discolors after absorption of bile pigments, calcium salts fall out and give the gallbladder a milky color,
- salts can also be deposited in the wall → „porcelain gallbladder“.

Etiology

- Microbial infections, chemical irritation and metabolic causes apply.

Clinical picture

- It corresponds to the difficulties arising from lithiasis,
- **biliary dyspepsia** – abdominal pressure, episodic local or diffuse abdominal pain, heartburn, anorexia, flatulence, nausea, steatorrhea,
- attacks of repeated biliary colic.

Diagnosis

Anamnesis

- Cholelithiasis,
- repeated attacks of biliary colic, past acute cholecystitis.
- dyspeptic problems

Physical examination

- It usually does not contribute to the diagnosis,
- in the case of an acute exacerbation, Murphy's sign may be positive.

Further examination

- Increased sedimentation and leukocytosis in gallbladder empyema,
- **the basic examination is USG**,
- X-ray – pathological finding on the gallbladder – loss of function, reduced concentration and evacuation ability.

Complication

- Mainly acute exacerbations, cholangitis with hepatic parenchyma, formation of biliodigestive fistulas, development of liver or subfrenic abscess, which may cause pancreatitis.

Therapy

- Conservative - pain control, anticholinergics, antispasmodics, infection prevention, adjustment of water and electrolyte balance, stomach decompression as needed, pancreatic enzyme replacement as needed, possibly. vitamins,
- causal treatment is only surgery → cholecystectomy,
- **Neither baths nor antibiotics stop the process on the gallbladder**.

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Primary sclerosing cholangitis

- It is autoimmune disease that affects men more than women.
- As a result of bile congestion during stenoses in the intrahepatic bile ducts, liver cirrhosis develops,
- The disease is a "predisposing factor" for bile duct tumors (especially cholangiocarcinoma, Klatskin's tumor).
- Associated with IBD and ulcerative colitis

Therapy

- surgical treatment is not possible (definitive treatment is liver transplantation).

Infectious cholangitis [edit part (https://www.wikilectures.eu/index.php?title=Infectious_cholangitis&action=edit)]

- **Sources of infection** – hematogenously via the liver parenchyma, from the diseased gallbladder, ascending through the papilla,
- most often accompanied by pathological conditions in the bile ducts – cholelithiasis, bile duct stenosis…,
- Sometimes complications of diagnostic manipulations in the bile pathways (ERCP),
- **agents** – *E.coli*, pseudomonas, aerobacter, enterococcus, streptococcus a stafylococcus,
- **patologically** – all formsof inflammation.

Clinical picture

- **The so called Charcot Triad:**
  1. septic fever with chills (intermitentní),
  2. obstructuve jaundice,
  3. pressure pain in the right abdomen,
- it is always a severe septic disease, it should be treated with broad-spectrum ATB - prevention of sepsis, they get directly into the bile ducts minimally,
- We must monitor the patient and, if the condition does not improve quickly, revise the bile ducts surgically, remove the obstruction in the outflow.

Diagnosis

- According to the image, especially when there is a history of stenosis or liathiases,
- we usually find an enlarged and painful liver, or and spleen,
- Leukocytosis, high sedimentation, liver tests,
- a persistent condition with occasional flare-up may result in chronic inflammation and later in biliary cirrhosis of the liver.

Therapy

- Diagnosis and elimination of the cause of bile stasis, ATB administration and bile duct drainage.

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