PRAKTIKUM GIT-HEPATOBILIER, DAN ENDOKRINE

BLOK PENCERNAAN DAN ENDOKRINE 2

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I. Tingkat Kompetensi Keterampilan

Berdasarkan standar kompetensi dokter yang ditetapkan oleh KKI tahun 2012, maka tingkat kompetensi pada sistem GIT-hepatobilier dan Thyroid adalah sebagai berikut:

Daftar Penyakit	Tingkat Kompetensi
GIT-Hepatobilier	
gastritis	4A
ulcus	3A
Diverticulum meckel	2
Appendicitis acute	3B
Abses appendiks	3B
Hepatitis A	4A
Hepatitis B	3A
Hepatitis C	2
Abses hepar amoeba	3A
Perlemakan hepar	3A
Sirosis hepar	2
Kolesistitis	3B
Koledocholitiasis	2
Pancreatitis	2
Diverticulosis	3A
Kolitis	3A
Chron disease	1
Kolitis ulseratif	1
Penyakit Hirschprung	2
Hemoroid grade 1-2	4A
Tumor esofagus	2
Tumor Gaster	2
Neoplasma hepar	2
Cholangiocarcinoma	2
Karsinoma Pancreas	2
Polip/Adenoma	2

Karsinoma kolon	**2**
Limfoma (Malt Lymphoma)	**2**
GIST	**2**
THYROID	
Goiter	**3A**
Tiroiditis	**2**
Adenoma Thyroid	**2**
Karsinoma thyroid	**2**

(Sumber : SDKI, 2012)

II. Tujuan Belajar

1. Mahasiswa mampu memahami jenis-jenis penyakit pada sistem GIT-hepatobilier dan Thyroid
2. Mahasiswa mampu menjelaskan gambaran makroskopis dan mikroskopis penyakit pada sistem GIT-hepatobilier dan Thyroid
3. Mahasiswa mampu menjelaskan patogenesis penyakit sistem GIT-hepatobilier dan Thyroid

III. *Prerequisite knowledge*

Sebelum memahami konsep neoplasma pada sistem genetalia pria dan traktus urinarius, mahasiswa harus:

1. Memahami anatomi sistem GIT-hepatobilier dan Thyroid
2. Memahami histologis sistem GIT-hepatobilier dan Thyroid
3. Memahami fisiologis sistem GIT-hepatobilier dan Thyroid

IV. Kegiatan Pembelajaran

Pembelajaran dilakukan dalam tahapan sebagai berikut:

Tahapan pembelajaran	Lama	Metode	Pelaksana/ Penanggung Jawab
Pre tes dan Pengantar	35 menit	Soal dan PTT	Dosen
Demo dan Mandiri	2x50 menit	Identifikasi makroskopis dan mikroskopis	Dosen
Review	15 menit	Identifikasi makroskopis dan mikroskopis	Dosen

V. Sumber belajar

GASTRITIS AKUT

Definition / general

- Includes acute hemorrhage and acute erosive gastritis
- Acute mucosal inflammatory process, usually transient (normal stomach has only rare inflammatory cells)
- Associated with heavy use of NSAIDs (non-steroidal anti-inflammatory drugs, including aspirin), excessive alcohol use, heavy smoking, cancer chemotherapy, bile reflux, uremia, systemic infections (Salmonella), severe stress (trauma, burns, surgery), ischemia and shock, acid / alkali ingestion as part of suicide attempts, gastric irradiation or freezing, mechanical trauma (nasogastric tube), distal gastrectomy
- Symptoms: none; or pain, nausea and vomiting
- May be accompanied by local hemorrhage or mucosal sloughing
- Severe erosive disease may cause acute GI bleed, acute gastric ulcer
- Major cause of massive hematemesis in alcoholics
- Occurs in 25% of those who take daily aspirin for rheumatoid arthritis
- 20% develop overt bleeding; fatal in up to 5%
- Treatment: proton pump inhibitors reduce severity of mucosal damage and facilitate healing

Etiology

- Mucosal damage due to increased acid secretion with back diffusion into mucosa, decreased bicarbonate buffer, reduced blood flow, disruption of mucous layer

Microscopic (histologic) description

- Mild: modest edema of lamina propria, vascular congestion, intact epithelium, scattered neutrophils, and hemorrhage in mucosa, erosions with more severe disease
- Moderate / severe: loss of superficial epithelium above muscularis mucosa, accompanied by hemorrhage and variable acute inflammatory infiltrate and extrusion of a fibrinopurulent exudate into the lumen, nearby epithelium may show regenerative changes
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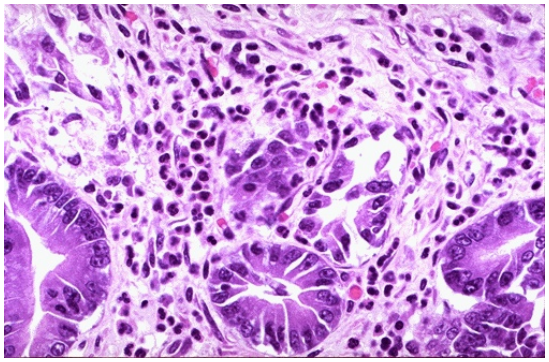
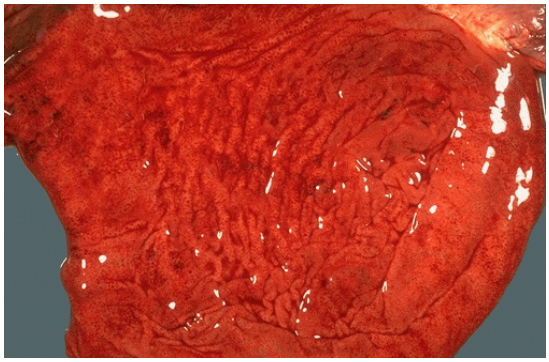




GASTRITIS KRONIS

Definition / general

- Chronic mucosal inflammatory changes leading to mucosal atrophy and epithelial metaplasia, usually without erosions
- Most cases are type B or non-autoimmune gastritis

- Associated with chronic *Helicobacter pylori* infection, toxins (alcohol, tobacco), reflux of bilious duodenal secretions (post-antrectomy or other), obstruction (bezoars, atony), radiation
- Incidence increases with age; in Europe / Japan, affects 50% at age 60+
- Histology does not correlate well with symptoms

- **Superficial chronic gastritis**:
  - Inflammation confined largely to mucosa occupied by gastric pits

Microscopic (histologic) description

- Plasma cells, lymphocytes, occasional lymphoid follicles
- May have eosinophils and neutrophils also
- May have reduced cytoplasmic mucin, reactive epithelial changes (nuclear and nucleolar enlargement)
- May have subnuclear vacuolation in antral glands or pits (PAS negative), probably represents degenerative response to cell injury

- **Intestinal metaplasia**: affects antral and body / fundic mucosa, with partial replacement by metaplastic goblet cells of intestinal morphology, absorptive cells and Paneth cells; extensive if involves 25% of biopsy tissue
- Immunophenotypically distinct from intestinal metaplasia of GE junction or Barrett's esophagus
- Complete intestinal metaplasia: mucosal pattern resembles small bowel epithelium with goblet and absorptive cells, villi and crypts; sialomucins predominate
- Incomplete intestinal metaplasia: no absorptive cells, columnar cells resemble gastric foveolar cells; neutral mucins and sulfomucins are present

ULKUS GASTER/DUODENUM

Definisi:

Defek pada mukosa lambung atau duodenum yang dapat meluas sampai lapisan muskularis mukosa

Epidemiologi:

US ➔ Mengenai sekitar 3 juta jiwa, dengan 5000 kematian setiap tahunnya.

Tingkat kejadian ulkus gaster: ulkus duodenum = 1:4

Etiologi:

Utama:

- Infeksi *Helicobacter pylori* ➔ 85% pada *duodenal ulcer*, 20% pada *gastric ulcer*
- Penggunaan obat NSAIDs jangka panjang

Lainnya: gastritis kronis ➔ *imbalace* dari faktor defensif dan destruktif

Faktor resiko:

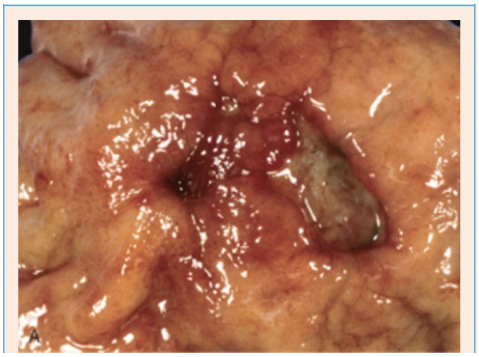
- Gastritis kronis
- Penggunaan obat NSAIDs jangka panjang
- Penggunaan obat golongan steroid dosis tinggi
- Perokok
- *Alcoholic cirrhosis*
- Penyakit paru obstruktif kronik (PPOK)
- Gagal ginjal kronis
- *Hyperparathyroidism*
- *Psycologic stress*

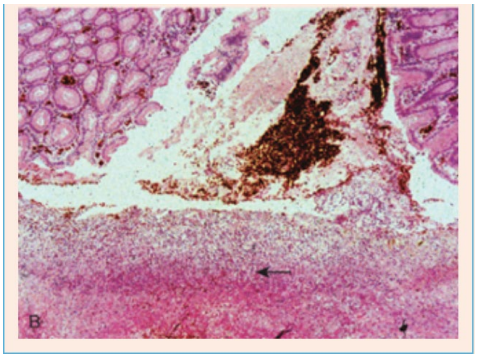
Manifestasi klinis:

- Rasa terbakar di regio epigastrium
- Rasa nyeri di regio epigastrium dirasakan 1-3 jam setelah makan
- Nyeri memburuk terutama ketika malam hari
- Nausea dan *vomiting*
- *Bloating, belching*

Gambaran makroskopis:

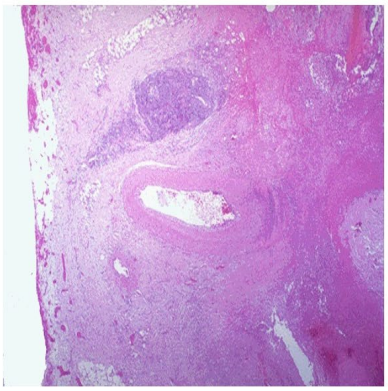
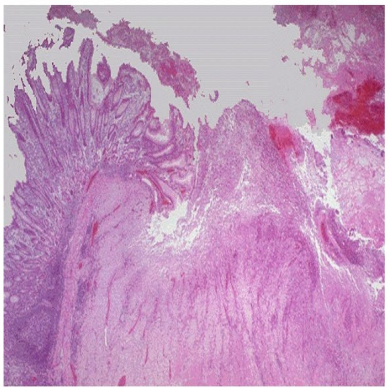
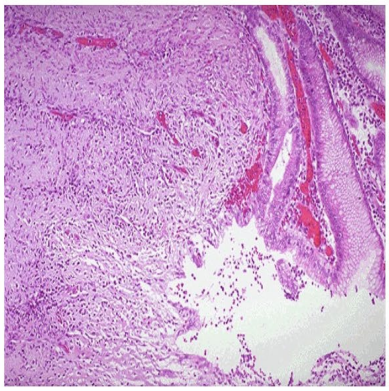
- Ulkus soliter (80%)
- Ulkus berbentuk bulat sampai oval
- Lesi berdiameter <0,3 cm cenderung dangkal
- Lesi berdiameter >0,6 cm cenderung dalam
- Defek ➔ tepi tegak, lurus, tajam
- Dasar ulkus ➔ licin dan bersih





Gambaran mikroskopis:

- Terdiri dari jaringan granulasi yang kaya akan pembuluh darah

APPENDISITIS AKUT

Definisi:

Merupakan inflamasi akut dari appendix yang tidak berhubungan dengan adanya penyakit inflamatori lainnya

Epidemiologi:

- US ➔ 300.000 kasus baru setiap tahunnya
- Pria:wanita = 1,4:1
- Dapat muncul di usia berapapun ➔ lebih banyak pada usia anak-anak dan remaja sampai dengan 25 tahun

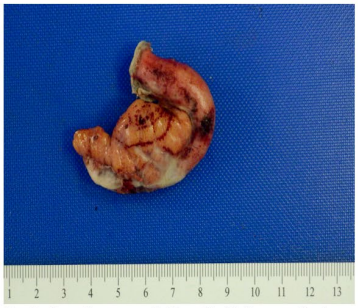
Etiologi:

- Etiologi yang pasti ➔ belum diketahui
- Disebabkan obstruksi dari lumen appendix oleh karena appendicolith atau karena adanya massa/tumor

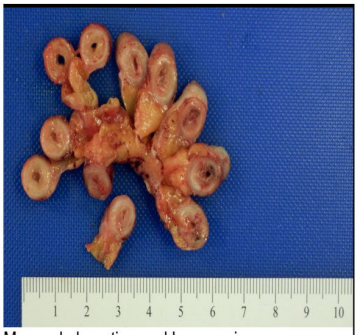
Manifestasi klinis:

- *Periumbilical pain* yang terlokalisir pada kuadran kanan bawah
- Nausea dan *vomiting*
- *Low-grade fever*
- *McBurney sign* (+)
- *Rovsing's sign* (+)
- Malaise

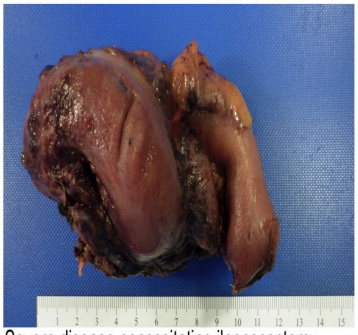
Gambaran makroskopis:



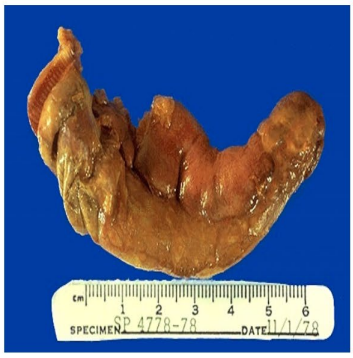
Typical acute appendicitis with fibrinopurulent exudate on the surface

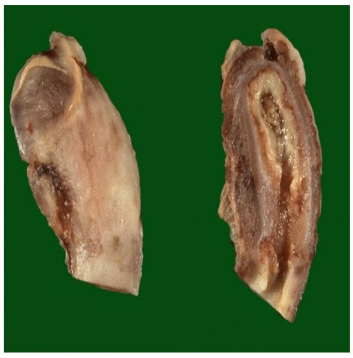


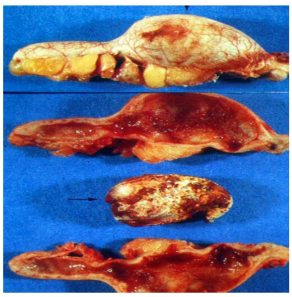
Mucosal ulceration and hyperemia



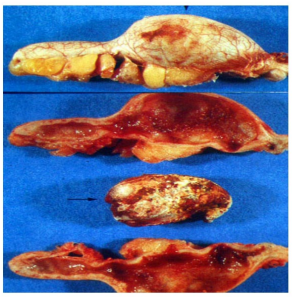
Severe disease necessitating ileocecectomy







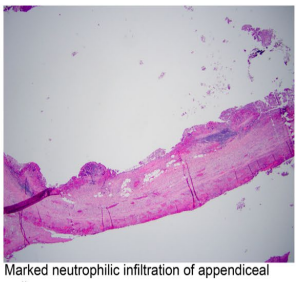
Fecalith

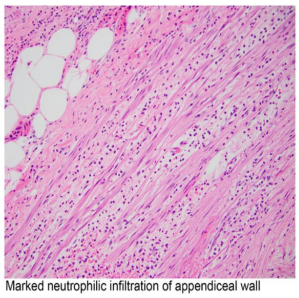


Fecalith

Gambaran mikroskopis:

- Proliferasi dari neutrofil pada lapisan muskularis mukosa
- *Acute mucosal inflammation*
- Infiltrasi neutrofil di dalam lumen
- Dapat terjadi nekrosis dari dinding appendix dengan adnaya *mucosal sloughing*
- *Process may be divided into:*
    - *Acute focal*
    - *Acute suppurative*
    - *Gangrenous*
    - *Perforative*
- Dapat terbentuk jaringan granulasi atau *cicatricial fibrosis* pada beberapa kasus
- Jarang ➔ Respon limfohisiosit yang mengandung *foamy histiocytes* pada *xanthogranulomatous appendicitis*


Marked neutrophilic infiltration of appendiceal wall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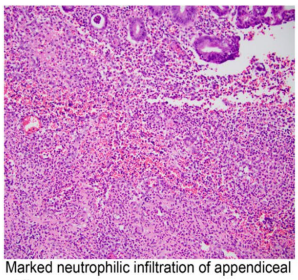
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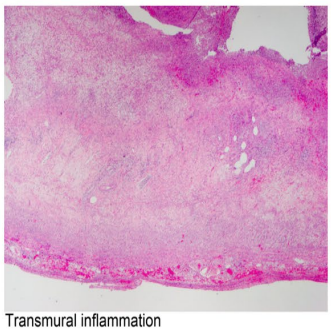
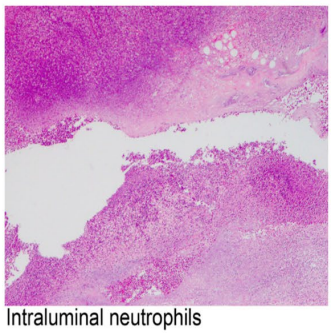
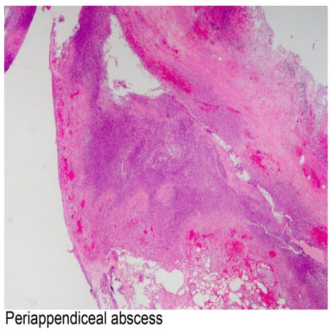
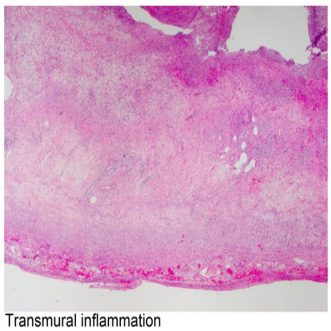
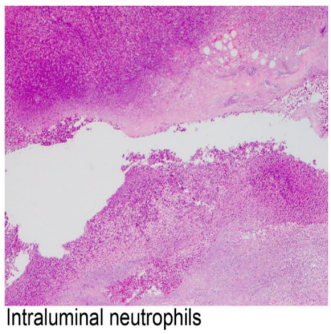
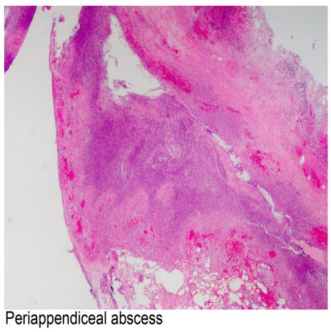

Transmural inflammation


Intraluminal neutrophils


Periappendiceal abscess


Transmural inflammation


Intraluminal neutrophils


Periappendiceal abscess

HEPATITIS AKUT

Definition / general

- Active hepatocellular damage and necrosis, usually with a lobular inflammatory response, less than 6 months duration
- Clinically defined as significant elevation (at least 2x upper normal reference range) of serum ALT or AST in a patient with no previous history of liver disease
- Mechanisms of acute hepatitis include direct toxin induced necrosis (i.e. acetominophen) or immune mediated damage (i.e. viral hepatitis)
- Associated with disease ranging from subclinical to self limited symptomatic to fulminant hepatic failure
- Usually is self limited with recovery within 1 - 2 months from onset of symptoms but in "prolonged resolving" cases, lasts > 6 months and regresses slowly thereafter

Etiology

- **Viral hepatitis:**
- **Other causes:**
    - Acetaminophen overdose
    - Excessive alcohol
    - Idiosyncratic reaction to medicine

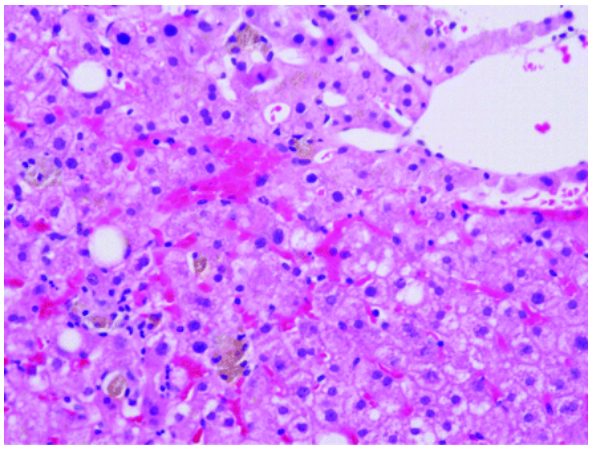
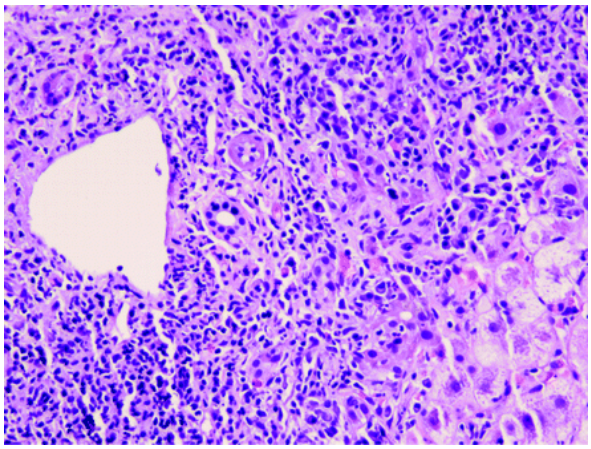
- Autoimmune disease
- Metabolic disorders
- Circulatory disorders

Clinical features

- Most patients are asymptomatic or subclinical and remain undiagnosed
- In more severe cases, fatigue, abdominal pain, nausea and vomiting, muscle aches or jaundice may be present
- Liver transaminases ALT and AST are classically elevated 20 - 100x
- Careful review of drug / toxin history is often helpful
- Serologic tests for hepatitis A, B or C infection and autoimmune hepatitis should be performed routinely

Microscopic (histologic) description

- Usually not biopsied
- Biopsies may be indicated if clinical suspicion of:
  - Second independent hepatic insult (i.e. an underlying chronic liver disease)
  - Unusual infectious process in immunocompromised patients
- For all forms of acute hepatitis, histology is characterized by "lobular disarray," which includes:
  - Ballooning degeneration
  - Spotty necrosis
  - Predominantly sinusoidal and lobular mononuclear cell infiltrate (with occasional neutrophils and eosinophils)
  - Kupffer cell hyperplasia
  - Scattered apoptotic bodies
  - Canalicular cholestasis
  - Hepatocellular regeneration
- Prolonged resolving:
  - Necrosis subsides and phagocytic activity predominates during regression
  - Mild portal inflammation is present and clumps of Kupffer cells are often seen
  - Ductular reaction is seen in severe cases
  - Cholestasis may persist after inflammation and necrosis have subsided
  - There are no dense bundles of collagen and elastic fibers

HEPATITIS KRONIS

Definition / general

- Liver fibrosis occurring as a result of hepatocyte based injury and inflammation, most commonly due to viral or autoimmune hepatitis or alcoholic or non-alcoholic fatty liver disease

Pathophysiology

- Hepatocytes are injured by viral infection, drugs, deregulated inflammatory cells or abnormal accumulation of metabolites, leading to activation of hepatic stellate cells, which produce increased extracellular matrix resulting in fibrosis

Clinical features

- May lack symptoms until end stage (cirrhosis)
- Associated signs and symptoms include:
    - General: fatigue (most common), malaise, mild discomfort in the right upper quadrant, anorexia
    - Impaired biliary tract function: jaundice, pruritus
    - Portal hypertension: gastroesophageal varices, ascites, edema, splenomegaly
    - Impaired hepatocyte metabolism: spider angiomata, hepatic encephalopathy, easy bleeding / bruising

Diagnosis

- Biopsy is gold standard for determining grade and stage
- Clinical history and exam looking for associated signs and symptoms (see above)
- Laboratory testing (see below)
- Transient elastography (Fibroscan)

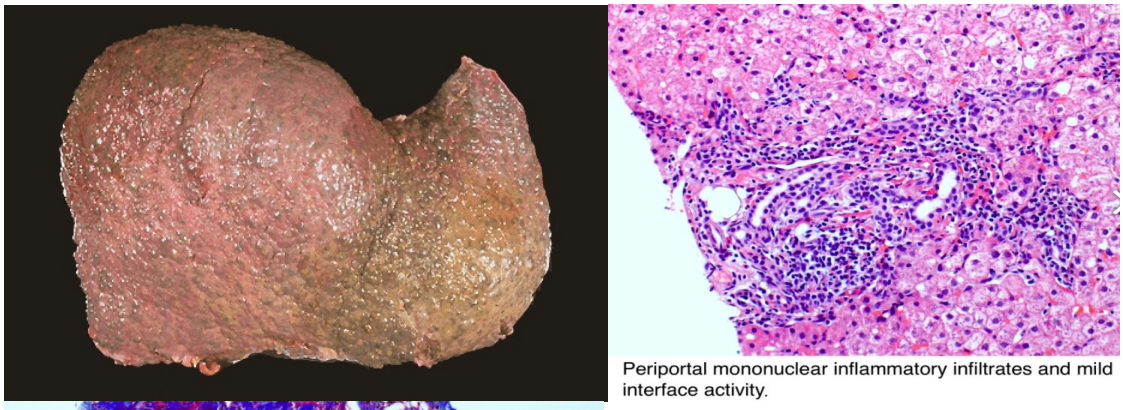
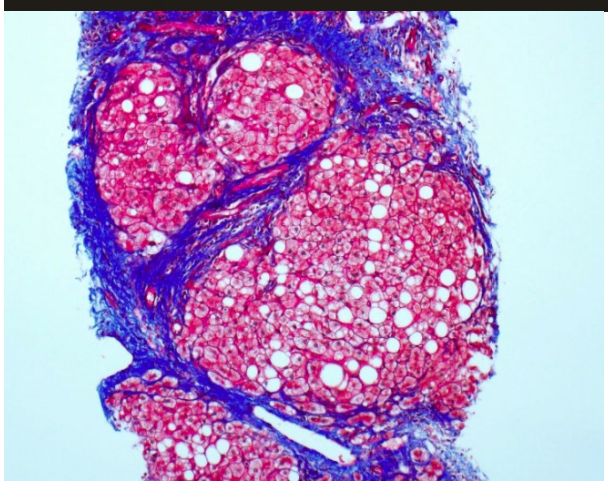
Gross description

- In cirrhosis, the liver is generally firm and demonstrates a micronodular or macronodular pattern
- Color ranges from beefy red (normal) to dark green (cholestasis) or yellow (steatosis)

Microscopic (histologic) description

- Fibrosis
    - Required for pathologic diagnosis of chronic hepatitis

    - Progressive fibrosis of limiting plate leads to enlargement of portal tracts and stellate periportal fibrous extension
    - May lead to portal - portal or portal - central fibrous bridging, culminating in cirrhosis, which is usually micronodular (nodules < 3 mm in diameter) or mixed micronodular and macronodular type
- Portal inflammation
    - Mononuclear infiltration of portal tracts (mostly CD4+ T lymphocytes with some plasma cells)
    - Lymphoid aggregates or follicles may be present (most common in hepatitis C infection)
- Interface hepatitis
    - Previously called “piecemeal necrosis”
    - Hepatocyte apoptosis and inflammation at the stromal-parenchymal interface (interface of portal tract and lobule)
    - Mononuclear infiltrate (mostly CD8+ T lymphocytes)
- Lobular hepatitis
    - Mononuclear infiltrate of the hepatic parenchyma (lobules)
    - Apoptotic / necrotic hepatocytes (Councilman bodies) in zones 2 and 3

- 
Periportal mononuclear inflammatory infiltrates and mild interface activity.
- 

FATTY CHANGE

Clinical features

- Rare, often incidental finding at autopsy or misinterpreted on imaging as neoplastic growth
- Ill defined, single or multiple

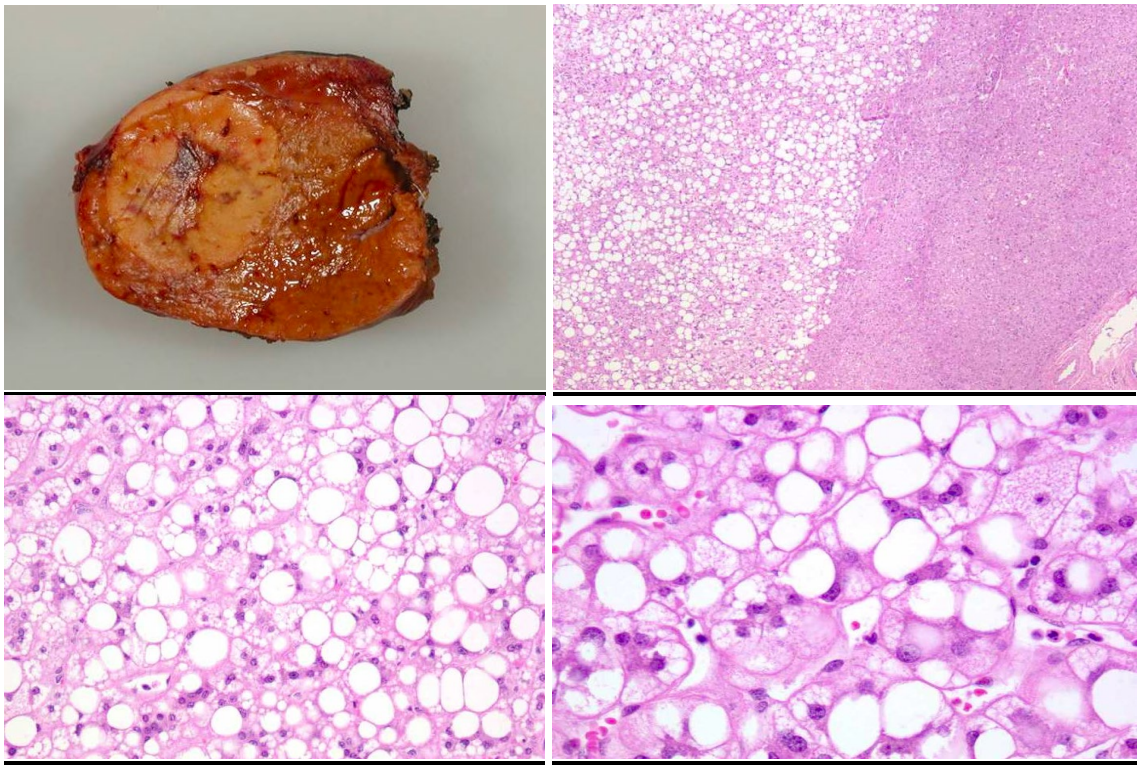
- Simulates lipomatous tumor or malignancy
- Associated with obesity, diabetes, alcohol abuse, dyslipidemia, malnutrition, steroids, chemotherapeutic agents, AIDS
- Hepatic enzymes may be normal or mildly abnormal
- Stable or regresses if underlying condition improves
- Unknown cause; may be due to focal tissue hypoxia or local effects of insulin
  Treatment directed against underlying disorder

Gross description

- Subcapsular, unencapsulate, yellow white foci, often multiple, up to 10 cm

Microscopic (histologic) description

- Diffuse or focal steatosis adjacent to unremarkable liver, no compression of perinodular liver tissue
- Prominent blood vessels within and at the margin of the nodule
- May have foreign body type granulomatous inflammation



CHOLECYSTITIS ACUTE

Definition / general

- Present in 5 - 10% of cholecystectomy specimens
- Either gallstone associated or not
- 10% perforate without treatment
- **Note:** diagnosis of dysplasia should be made cautiously if extensive ulceration or acute inflammation

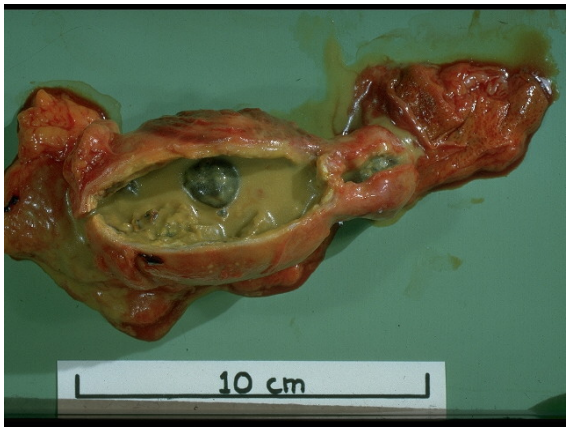
Gross description

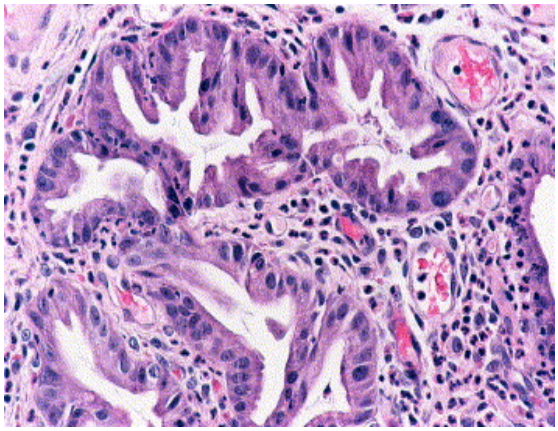
- Enlarged, distended gallbladder

- Congested vessels ("angry red color"), serosal and mucosal exudate, thickened wall with edema and hemorrhage
- Ulcers with blood clot, pus and bile

Microscopic (histologic) description

- Initially edema, congestion, hemorrhage, fibrin deposition in and around muscular layer
- Later mucosal and mural necrosis with neutrophils
- Variable reactive epithelial changes resembling dysplasia
- Finally myofibroblastic proliferation with chronic inflammatory infiltrate
- Also fresh thrombi within small veins





CHOLECYSTITIS KRONIS

Definition / general

- Chronic inflammation of the gallbladder, typically secondary to gallstones

Essential features

- The most common disease of the gallbladder, typically secondary to cholelithiasis
- Variety of histologic findings, including variable amounts of mononuclear cell predominant inflammation, mucosal changes including metaplasia, muscular hypertrophy and transmural fibrosis
- Rokitansky-Aschoff sinuses and ducts of Luschka should not be mistaken for invasive adenocarcinoma

Epidemiology

- Female predominance
- Associated with cholelithiasis in > 90% of cases

Pathophysiology

- Can be a sequela of recurrent acute cholecystitis
- Typically related to cholelithiasis, either through direct mucosal irritation or via intermittent mechanical obstruction with associated alteration of bile chemistry
- Altered mechanics of gallbladder emptying plays crucial role
- Up to 33% of patients have bile cultures positive for bacteria (e.g. *Escherichia coli*, enterococci, *Helicobacter pylori*, etc.), the significance of which is uncertain

Etiology

- cholelithiasis, though severity of disease poorly correlates with stone burden
- Risk factors correspond to those that increase risk of cholelithiasis: female sex, obesity, rapid weight loss, pregnancy, advanced age

Clinical features

- Does not always cause clinical symptoms
- Can present with dull right upper quadrant pain that radiates to mid back or right scapula
- Murphy sign: right upper abdominal pain with deep palpation
- Abdominal discomfort often related to fatty food ingestion
- Nausea, vomiting, bloating, flatulence

Diagnosis

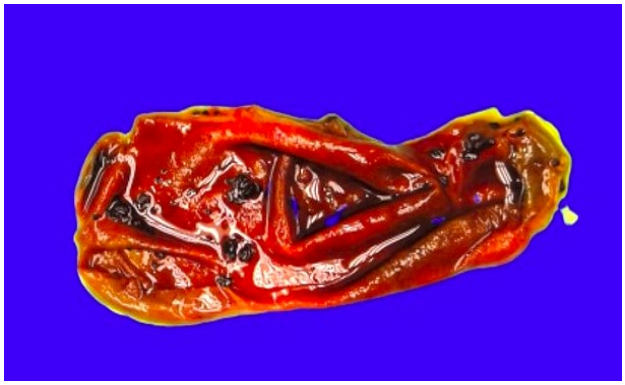
- Abdominal ultrasound
- Abdominal CT with contrast
- HIDA (hepatobiliary iminodiacetic acid) scan demonstrating a reduced ejection fraction (< 35%)

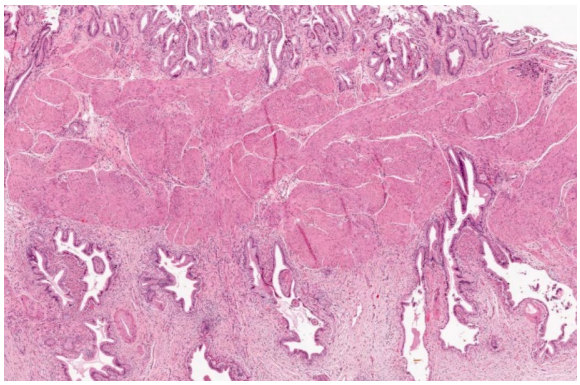
Gross description

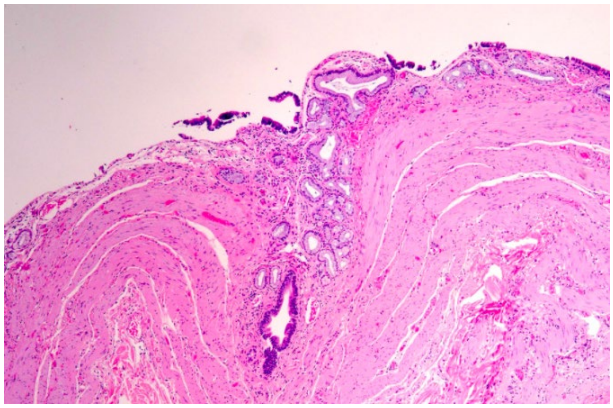
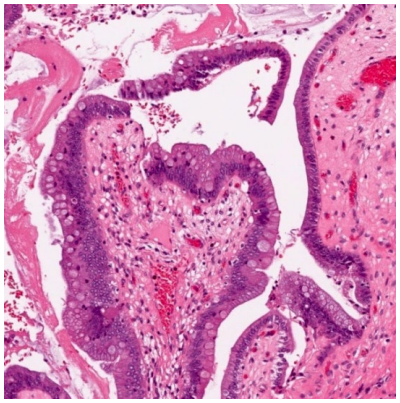
- Nearly normal to thickened gallbladder wall Gallbladder may appear shrunken due to marked fibrosis
- Severe cases show adhesions to adjacent organs
- Variable mucosal appearance: can be granular, ulcerated, polypoid

Microscopic (histologic) description

- Variable amounts of predominantly mononuclear inflammatory infiltrate in lamina propria, which may extend into the muscularis and pericholecystic tissues
- Inflammatory infiltrate predominantly consists of T lymphocytes, with some plasma cells, histiocytes and occasional eosinophils
- Inflammation typically rather minimal; occasional lymphoid follicles may be seen in lamina propria
- Hypertrophy of muscularis and variable degrees of mural fibrosis, elastosis, neural hyperplasia
- Accentuation of Rokitansky-Aschoff sinuses (pseudodiverticula)
- In rare instances, reactive / hyperplastic ducts of Luschka can be seen isolated to the gallbladder adventitia





Lymphocytic colitis

Definition / general

- Chronic nonulcerating colitis; subtype of microscopic colitis
- Common cause of chronic nonbloody diarrhea in older adults with normal or near normal colonoscopy and increased intraepithelial lymphocytes as the histologic hallmark

Essential features

- Cause of chronic watery diarrhea, often in older females
- Normal, edematous or mildly erythematous mucosa on endoscopy
- Colonic intraepithelial lymphocytosis (> 20 per 100 enterocytes) with diffuse increase in lamina propria inflammatory cells

Epidemiology

- Overall incidence 4.85 per 100,000 person years
- Older adults (50 - 70 years) but wide age range
- F > M
- No ethnic predilection
- 9 - 16% of patients undergoing colonoscopy for watery diarrhea

Clinical features

- Classic symptom is chronic nonbloody watery diarrhea
- Other symptoms include urgency, fecal incontinence, abdominal pain, weight loss
- Some asymptomatic
- Associated autoimmune disorders
    - Thyroiditis
    - Celiac disease
    - Diabetes mellitus
    - Psoriasis
    - Rheumatoid arthritis

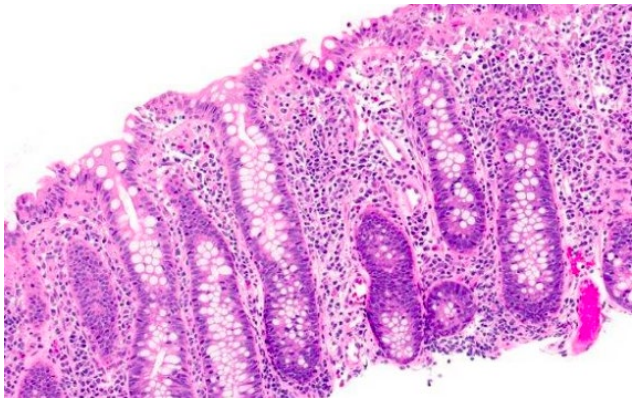
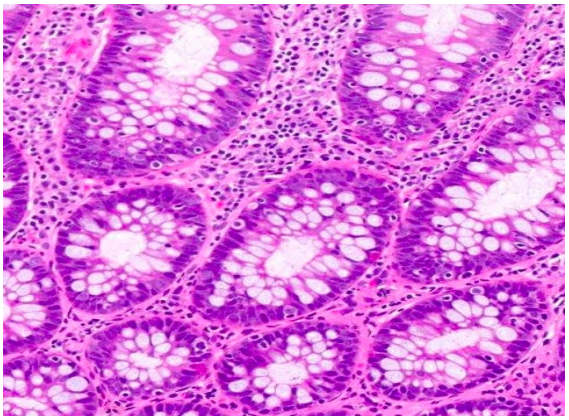
Gross description

- Normal, edematous or mildly erythematous mucosa on endoscopy

Microscopic (histologic) description

- Increased intraepithelial lymphocytes

    - > 20 IELs per 100 epithelial cells, away from lymphoid aggregates
- Increased lamina propria inflammatory cells
    - Lymphocytes, plasma cells, eosinophils, occasional neutrophils
    - Predominantly upper half of the mucosa
    - Less prominent in left colon

Hemorrhoids

Definition / general

- Dilated / ectatic varices of anal and perianal venous plexuses (anal cushions) normally present in submucosa
- From Greek "haimorrhoides phlebes" - bleeding veins
- Due to possibility of encountering other findings (see below), careful histopathologic evaluation of hemorrhoids is obligatory

Epidemiology

- Most literature estimates are 4 - 5% of general population, but many authors believe these numbers grossly underestimate its prevalence
- Many sufferers do not seek medical attention
- No sexual predominance (except younger, pregnant patients)
- More common in whites vs. African Americans
- Peak age of diagnosis 45 - 65 years, rare under age 30 except in pregnancy

Pathophysiology

- Dilated venous plexuses arise from elevated pressure in the hemorrhoidal plexus
- Hemorrhoidal cushions are likely normal structures involved in continence, normally dependency will lead to stasis
- Elevated intraabdominal pressure leads to vascular dilation and if persistent, may lead to hemorrhoid formation
- Degradation of normal supporting structures in the hemorrhoidal plexus also plays a role; older patients appear to be more prone to this
- Direct arteriovenous communication with dilation occurs between terminal branches of rectal and hemorrhoidal arteries and veins of the hemorrhoidal plexuses

Sites

- Generally located at left lateral, right lateral and right posterior portions of the anal canal (4:00, 7:00, and 11:00 in lithotomy position)
- Hemorrhoids proximal to dentate line are known as internal hemorrhoids; distal to dentate line, hemorrhoids are known as external hemorrhoids
- Mixed hemorrhoids that cross the dentate line occur

Etiology

- Increased intraabdominal pressure from pregnancy, rectal carcinoma, uterine leiomyomata, other pelvic masses, increased straining at stool often related to low fiber diet, prolonged sitting at stool, persistent diarrhea, ascites
- There is controversy whether uncomplicated portal hypertension leads to hemorrhoids
- Prolapsed hemorrhoids are prone to thrombosis and ulceration with accompanying inflammation
- Thrombosed vessels undergo recanalization

Clinical features

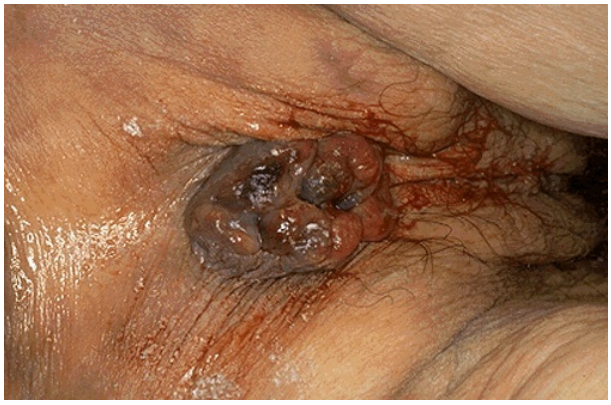
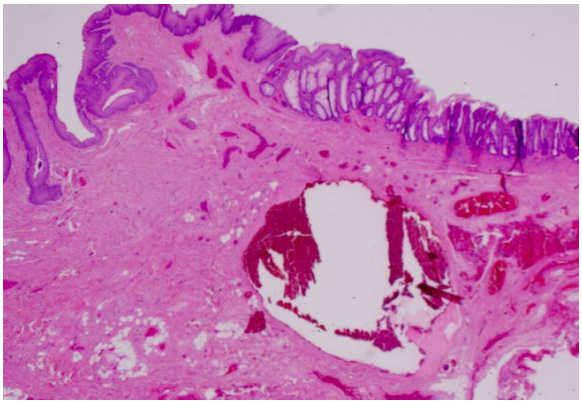
- Patients usually have painless bleeding, noticing blood in the toilet or on lavatory paper
- Patients may experience pain or discomfort, especially with thrombosis, strangulation or ulceration
- Anemia from hemorrhoids is unusual - patients should undergo hematologic evaluation
- There is controversy concerning the mechanisms involved in serious hemorrhoidal bleeding in cirrhotics: excessive bleeding may be solely from coagulopathy or portal hypertension may be an important cause
- Clinically four grades:
    - **First degree**, anal cushions that slide down past dentate line with straining at stool, that bleed with defecation
    - **Second**, anal cushions that prolapse with straining, but reduce spontaneously
    - **Third**, hemorrhoids that remain outside of the anal canal unless manually replaced
    - **Fourth**, hemorrhoids that cannot be reduced

Diagnosis

- Usually a clinical diagnosis; hypertrophied anal papillae may have similar appearance

Microscopic (histologic) description

- Dilated, thick walled, congested submucosal vessels and sinusoidal spaces, often with thrombosis; variable hemorrhage into connective tissue
- Dilated spaces may show exuberant vascular proliferation confined to vessel known as papillary endothelial hyperplasia
- Internal hemorrhoids are lined by rectal or transitional mucosa, external hemorrhoids have a squamous lining
- Surface may show ulceration

TUGAS :

1. Jelaskan deksripsi makroskopis dan mikroskopis dari goiter

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