

Overview of PSC

Making the Diagnosis

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Overview

- **Definition**
- **Epidemiology**
- **Diagnosis**
- **Modes of presentation**
- **Associated diseases**

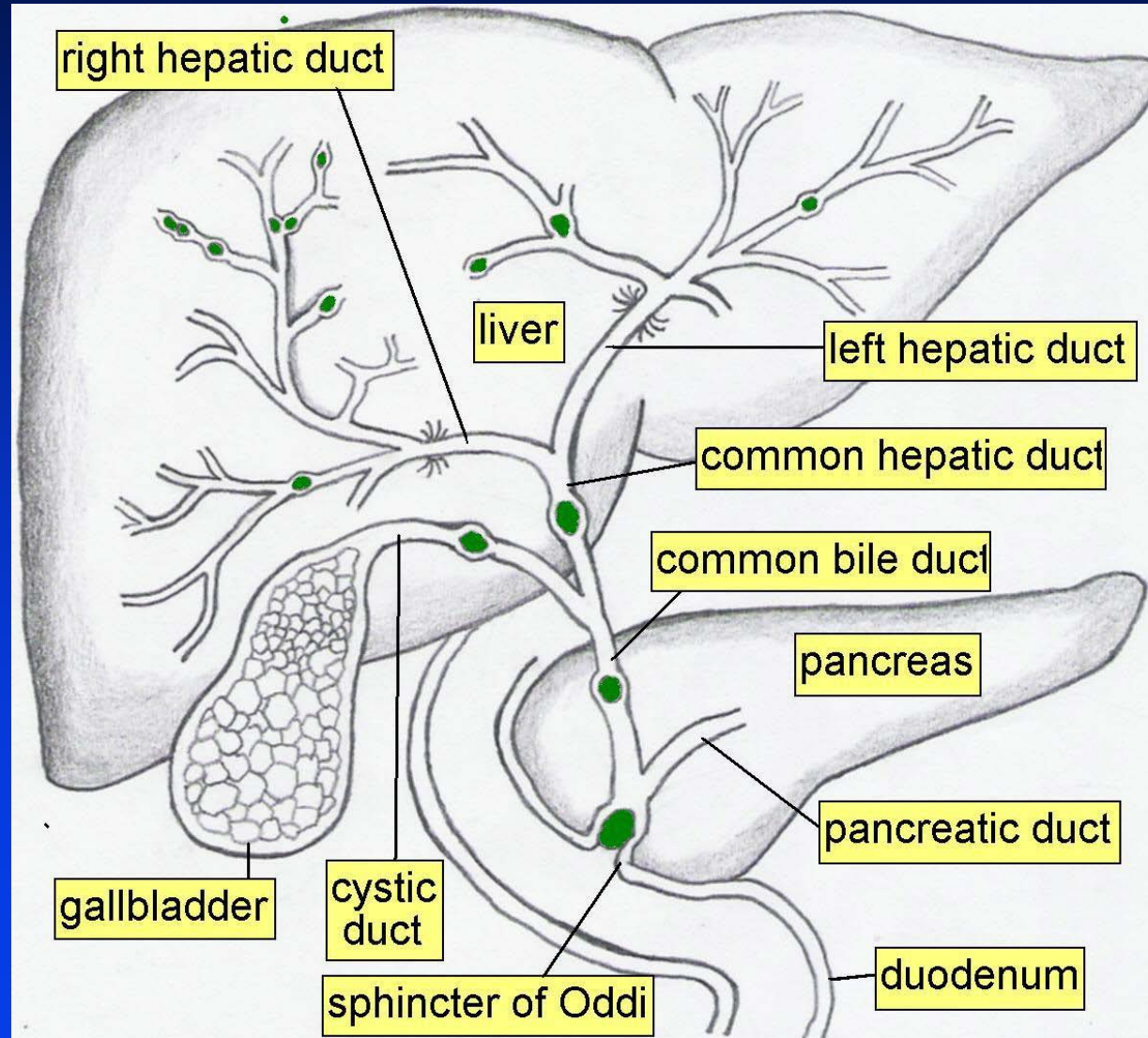
Definition

A Disease of the Bile Ducts

- A chronic cholestatic syndrome (bile stasis)
- Unknown cause
- Diffuse scarring (fibrosis) and inflammation of the intra- and/or extra-hepatic bile ducts
- Progressive (unpredictably), ultimately advancing to biliary cirrhosis
- Strongly associated with inflammatory bowel disease
- First described by Delbert in 1924

Definition

A Disease of the Bile Ducts

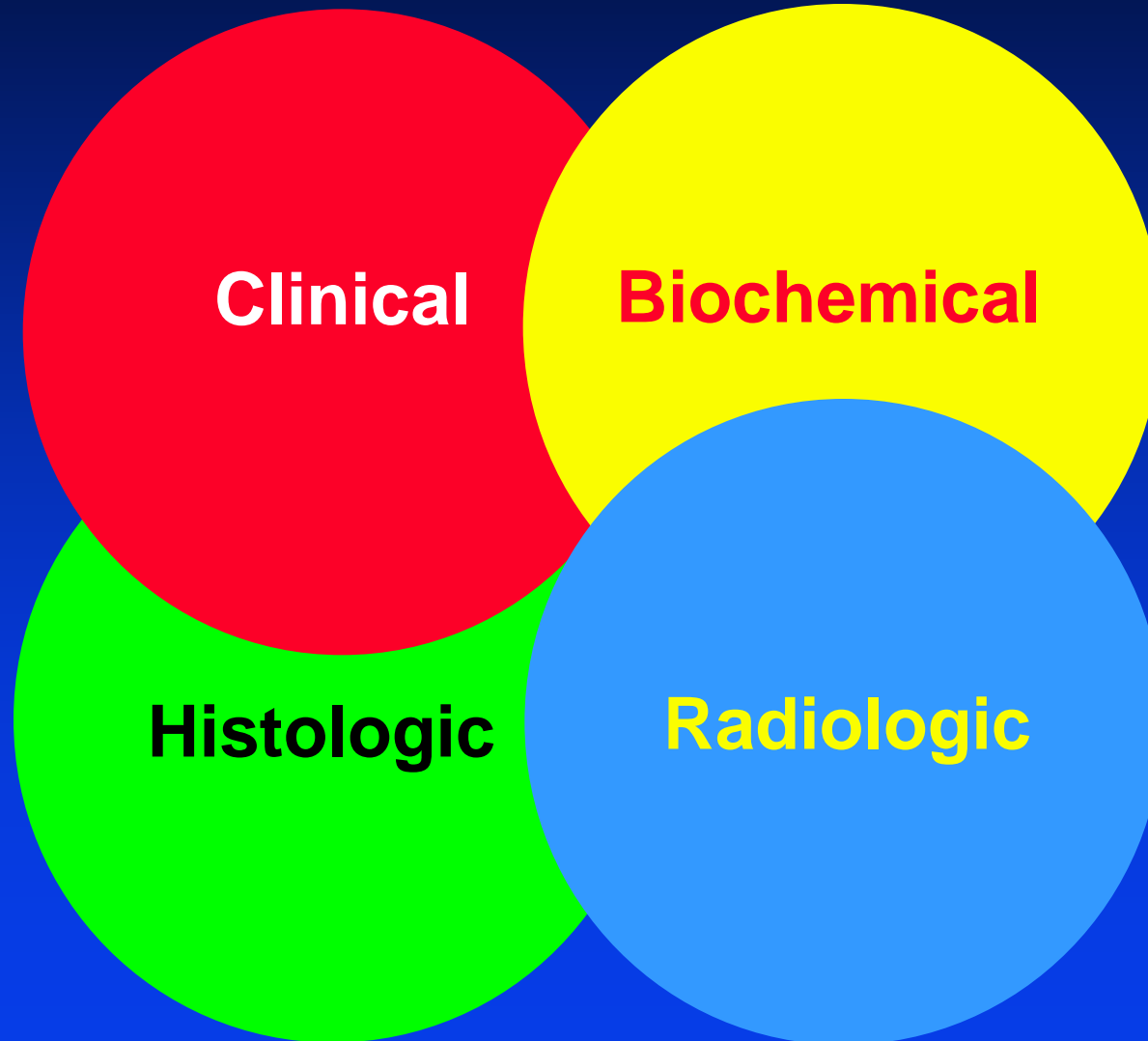


Who gets PSC?

- One of the most common adult chronic cholestatic diseases
- A common indication for liver transplant
- ↑ Frequency of diagnosis (awareness and technology)
- More common in US Caucasians and Northern Europe
- Incidence 0.9-1.3/100,000; prevalence 8-14/100,000
- 67% male; mean age at diagnosis 40
- 70-80% have or develop IBD
- Only 4% of IBD patients have PSC

Diagnosis

How is the diagnosis made?



Diagnosis

Clinical Findings

- **Abnormal liver enzymes leading to an abnormal cholangiogram**
- **Most patients report symptoms 1-2 years before diagnosis**
 - **Progressive fatigue**
 - **Worsening itching**
 - **Jaundice**

Diagnosis

Biochemical Findings

- Elevations in alkaline phosphatase
- Mild elevations in aminotransferases (AST/ALT)
- Elevated bilirubin may be present
- Perinuclear antineutrophil cytoplasmic antibodies (pANCA) positive in 80% (but not specific)

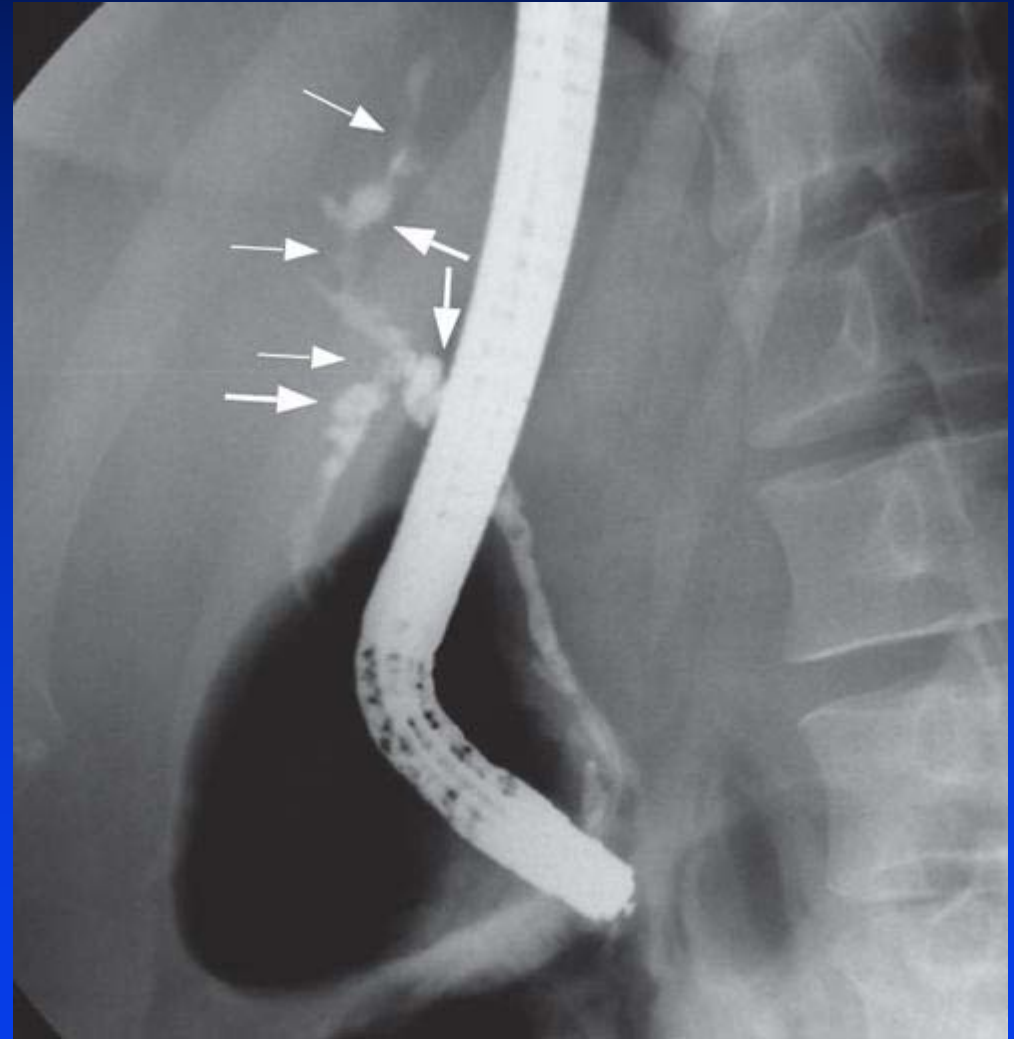
Diagnosis

Radiologic Findings

- **Multiple strictures of the biliary tree on cholangiography**
 - **MRCP/ERCP/PTC/CT Cholangiography**
- **Tortuosity of the ducts**
- **Involvement of the cystic and pancreatic ducts**

Diagnosis

Radiologic Findings



Diagnosis

Radiologic Findings



ERCP vs. MRCP

ERCP

PROS:

- High spatial resolution
- Possibility of therapeutic intervention

CONS:

- Risk of severe complications
- Insensitive for cholangiocarcinoma

MRCP

PROS:

- Non-invasive
- Risk free
- Shorter duration
- Additional information (MRI and MRA)

CONS:

- Limited in non-dilated ducts
- Likely insensitive for early PSC

Diagnosis

Radiologic Findings



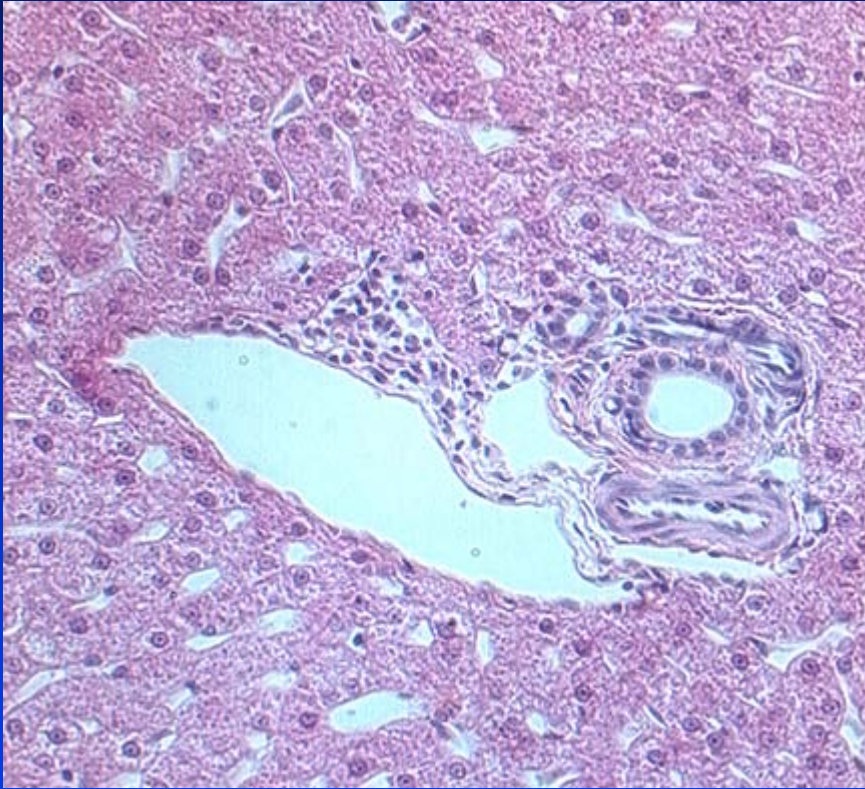
Diagnosis

Histologic Findings

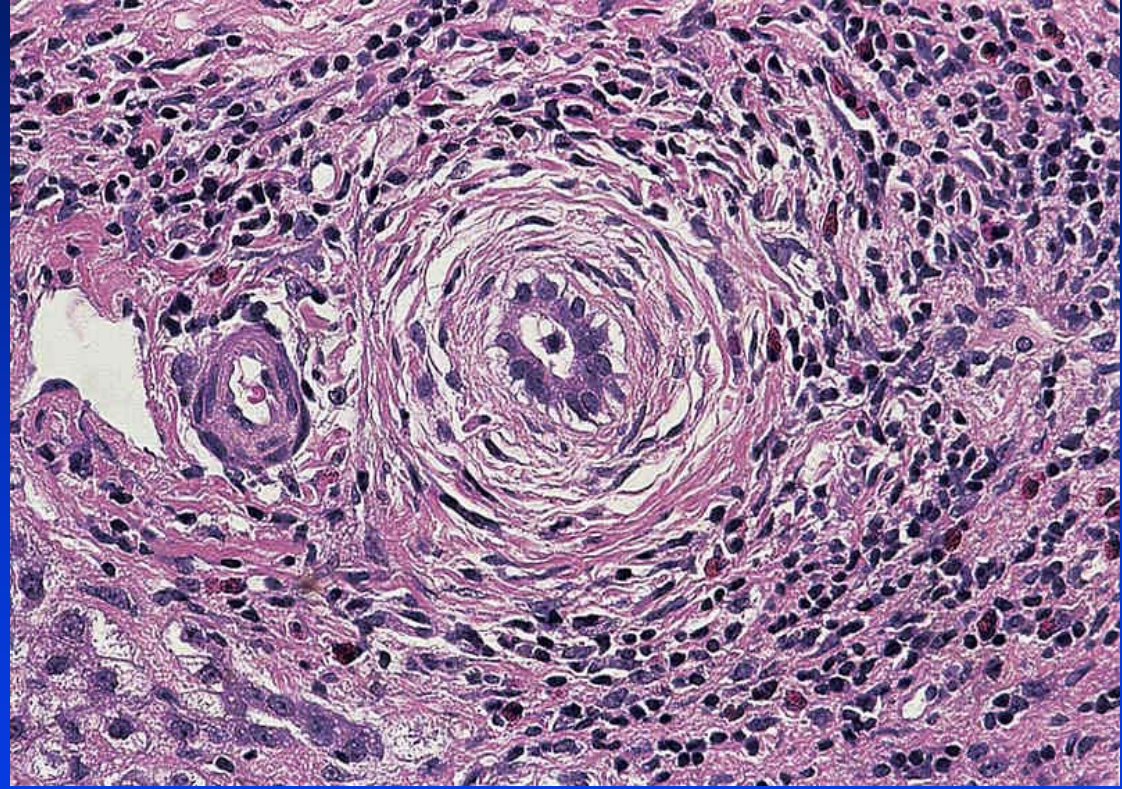
- **Ludwig Criteria**
 - **Stage 1: cholangitis or portal hepatitis**
 - **Stage 2: periportal hepatitis or fibrosis**
 - **Stage 3: necrosis and/or septal fibrosis (extending beyond the limiting plate)**
 - **Stage 4: biliary cirrhosis**

Diagnosis

Histologic Findings



- *normal portal triad*



- *dense inflammatory infiltrate*
- *concentric, periductal fibrosis*

Diagnosis

Variable Phenotypes?

- **Small-duct PSC**
 - **Normal cholangiogram**
 - **Lower risk of cholangiocarcinoma**
 - **Better prognosis (longer transplant-free survival)**
 - **Caveat: small amount of studies, limited number of patients studied, lack of long-term follow-up in many studies**

Modes of Presentation

First Presentation...

- **Asymptomatic but abnormal liver enzymes (common)**
- **Itching, fatigue, jaundice (in combination or alone)**
- **Recurrent cholangitis**
- **Complications of chronic liver disease**

Modes of Presentation

First Presentation...

Table 2

Symptoms and signs at diagnosis of primary sclerosing cholangitis

Symptom or sign	Frequency (%)
Fatigue	75
Pruritus	70
Jaundice	65
Weight loss	40
Fever	35
Hepatomegaly	55
Splenomegaly	30
Hyperpigmentation	25
Xanthomas	4

Associated Diseases

Box 2. Diseases associated with primary sclerosing cholangitis

IBD
Celiac sprue
Sarcoidosis
Chronic pancreatitis
Rheumatoid arthritis
Retroperitoneal fibrosis
Thyroiditis
Sjogren's syndrome
Autoimmune hepatitis
Systemic sclerosis
Lupus erythematosus
Vasculitis
Peyronie's disease
Membranous nephropathy
Bronchiectasis
Autoimmune hemolytic anemia
Idiopathic thrombocytopenic purpura
Histiocytosis X
Cystic fibrosis
Eosinophilia

Conclusion

- **PSC is a chronic progressive fibrotic disease of the bile ducts leading to cirrhosis and carrying a variable (but high) risk of cholangiocarcinoma**
- **It is strongly associated with IBD and weakly associated with many other autoimmune diseases**
- **The cause is not entirely understood**
- **Advances in technology have allowed earlier detection**

I think that only daring speculation can lead us further
and not accumulation of facts... *Einstein*