



# Personal Profile

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- Name: 劉XX
- Gender: Female
- Age: 53-y/o
- Past history
  - Hepatitis B carrier



# Chief complaint

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- Fever on and off for 2 days



# Present illness

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- 94.10.14
  - Sudden onset of epigastric pain
- 94.10.15
  - Fever on and off, up to 39.5°C
- 94.10.16
  - Chang Gung ER
  - Abdominal CT, EUS, ERCP, MRCP was done. CBD tumor was diagnosed, and ENBD was inserted.
- 94.10.31
  - Admitted to our hospital because of personal reason



## Lab data

	941031	941104
GOT	37	43
GPT	32	50
Bilirubin D	0.4	
Bilirubin T	1.3	
ALK-P		66



# Differential diagnosis

<b>CBD stone/Gallbladder stone</b>	<ol style="list-style-type: none"><li>1. Ultrasound: sensitivity 15-40%</li><li>2. Endoscopic ultrasonography</li><li>3. CT scan: 75-99%</li><li>4. MRCP</li></ol>
<b>CBD stricture</b>	<ol style="list-style-type: none"><li>1. 95% due to surgical trauma</li><li>2. ERCP: gradual tapering of a dilated duct</li></ol>
<b>Primary sclerosing cholangitis</b>	<ol style="list-style-type: none"><li>1. Antimitochondrial antibody: high titer</li><li>2. Associated with ulcerative colitis</li><li>3. ERCP: beaded appearance of the bile duct</li></ol>



# Image



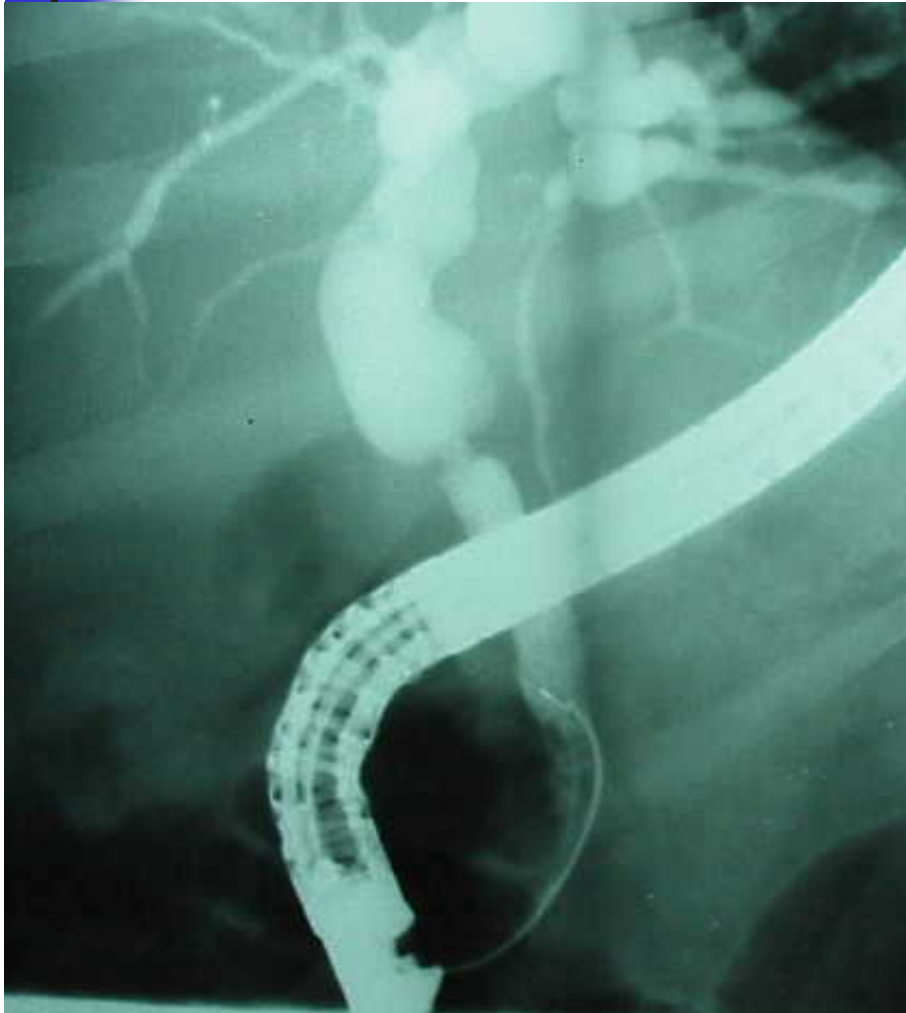


# CBD stone

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# CBD stricture



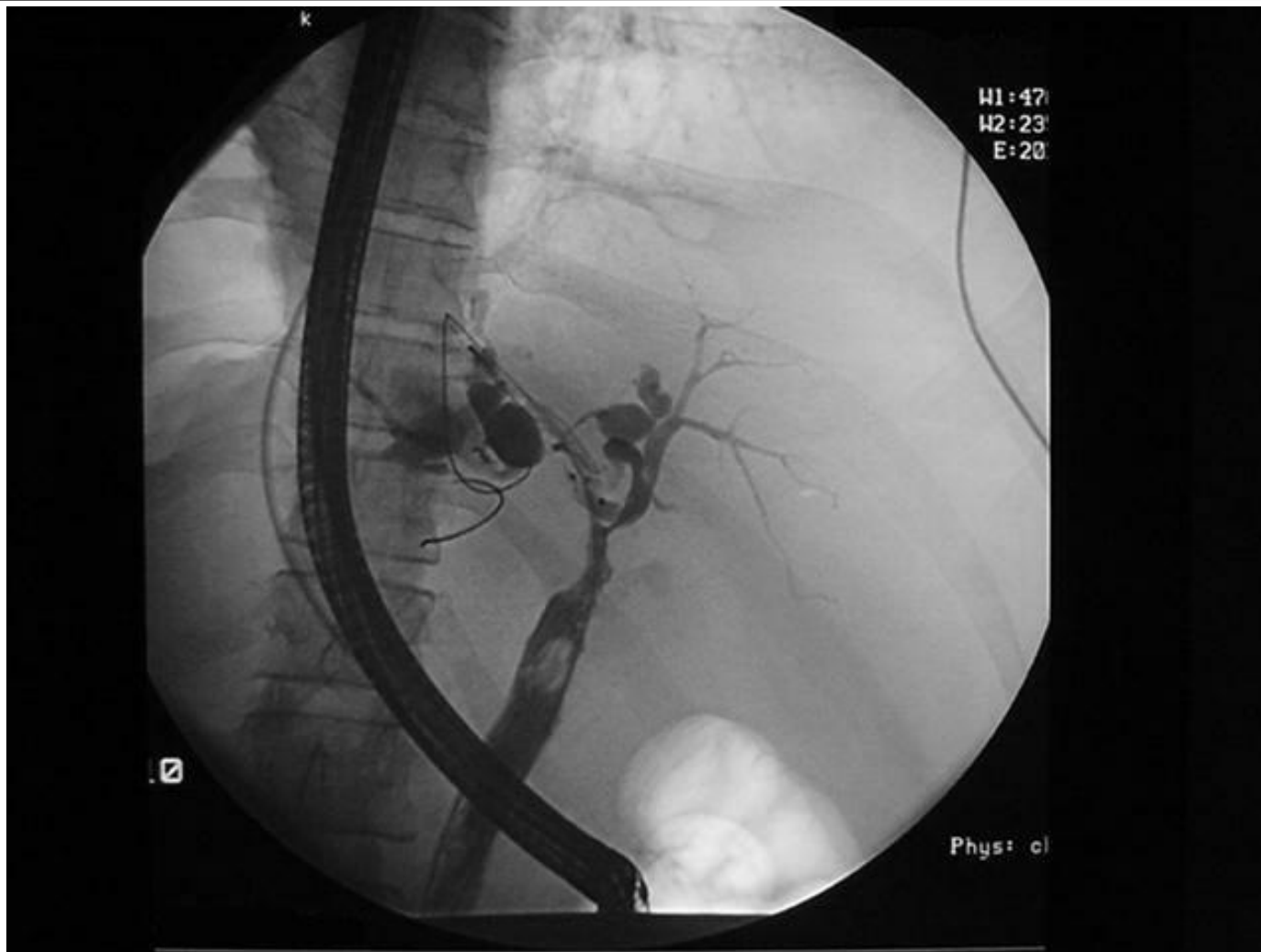




# Primary sclerosing cholangitis



# Cholangiocarcinoma



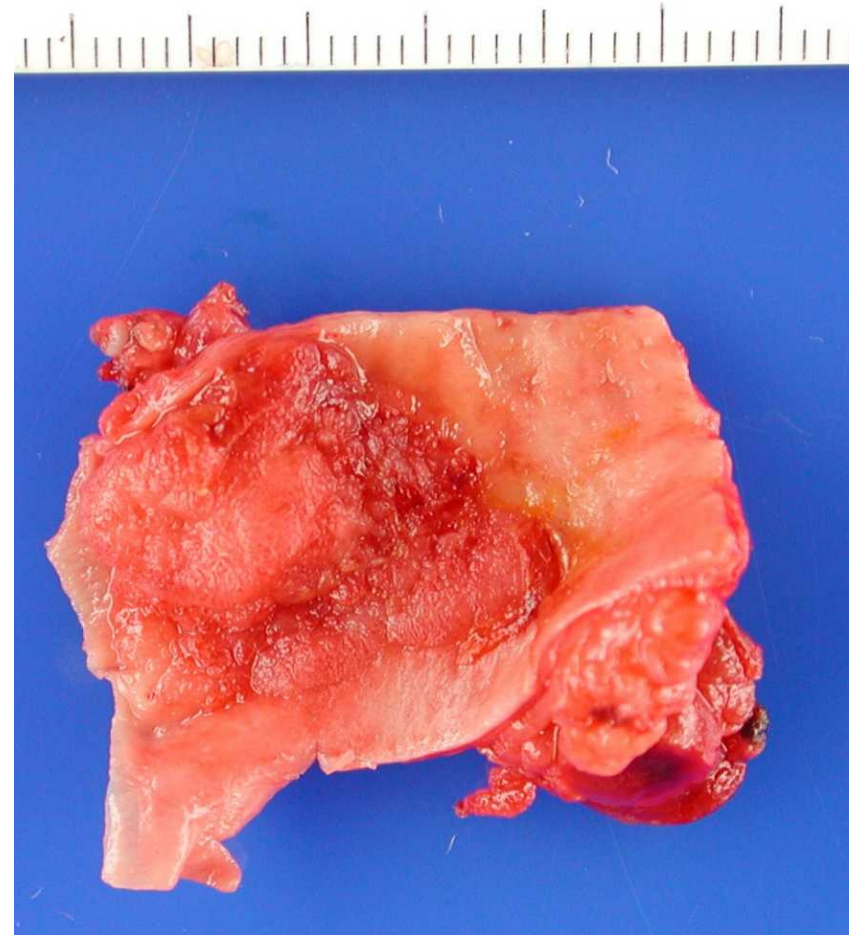
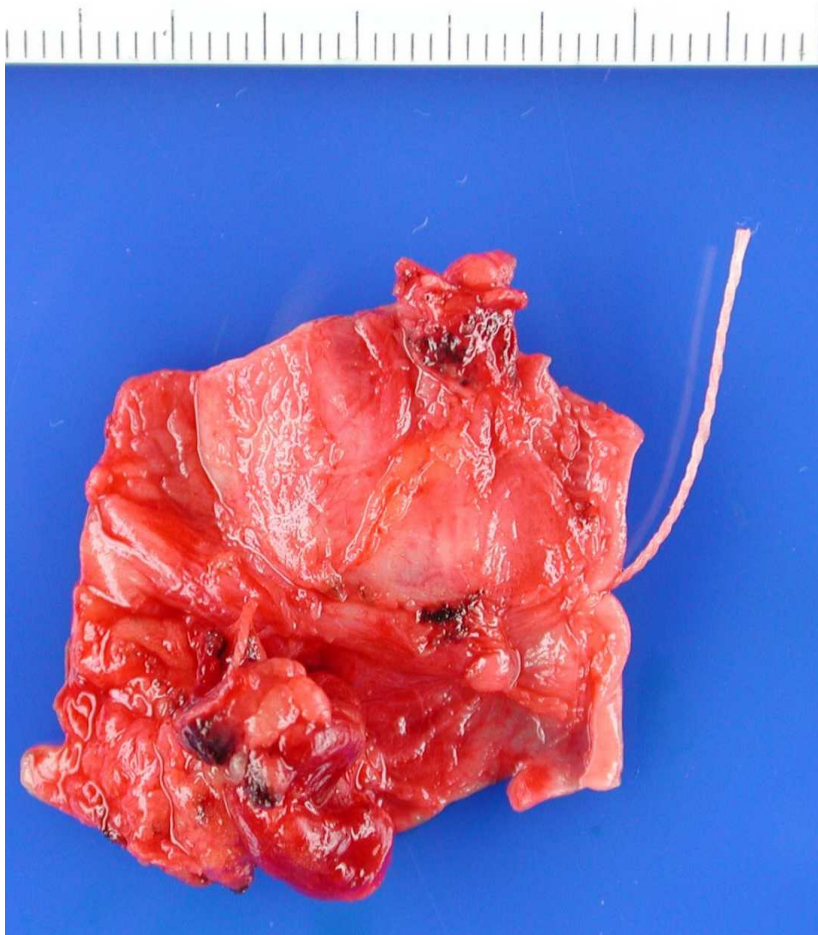


# Surgery

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- 94/11/3
  - Cholecystectomy + resection of CBD tumor + Roux-en-Y anastomosis
  - Tumor 1.5-2cm in length at mild CBD with regional LN enlarged

# Specimen





# Pathology

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- CBD tissue fragment measuring 3.5cm in length and 2.2 cm in circumference
- adenocarcinoma
- free of tumor at both proximal and distal margins



# CBD Tumor

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# Clinical

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- Age: 60 ~ 65 -y/o
- Symptoms:
  - Jaundice followed by pruritus
    - Delayed jaundice: If only on main hepatic duct involved
  - Mild epigastric pain: about 1/3 patients
  - Diarrhea, anorexia, weight loss
- PE finding:
  - Deeply jaundice
  - Liver: may be large and smooth



# Lab studies

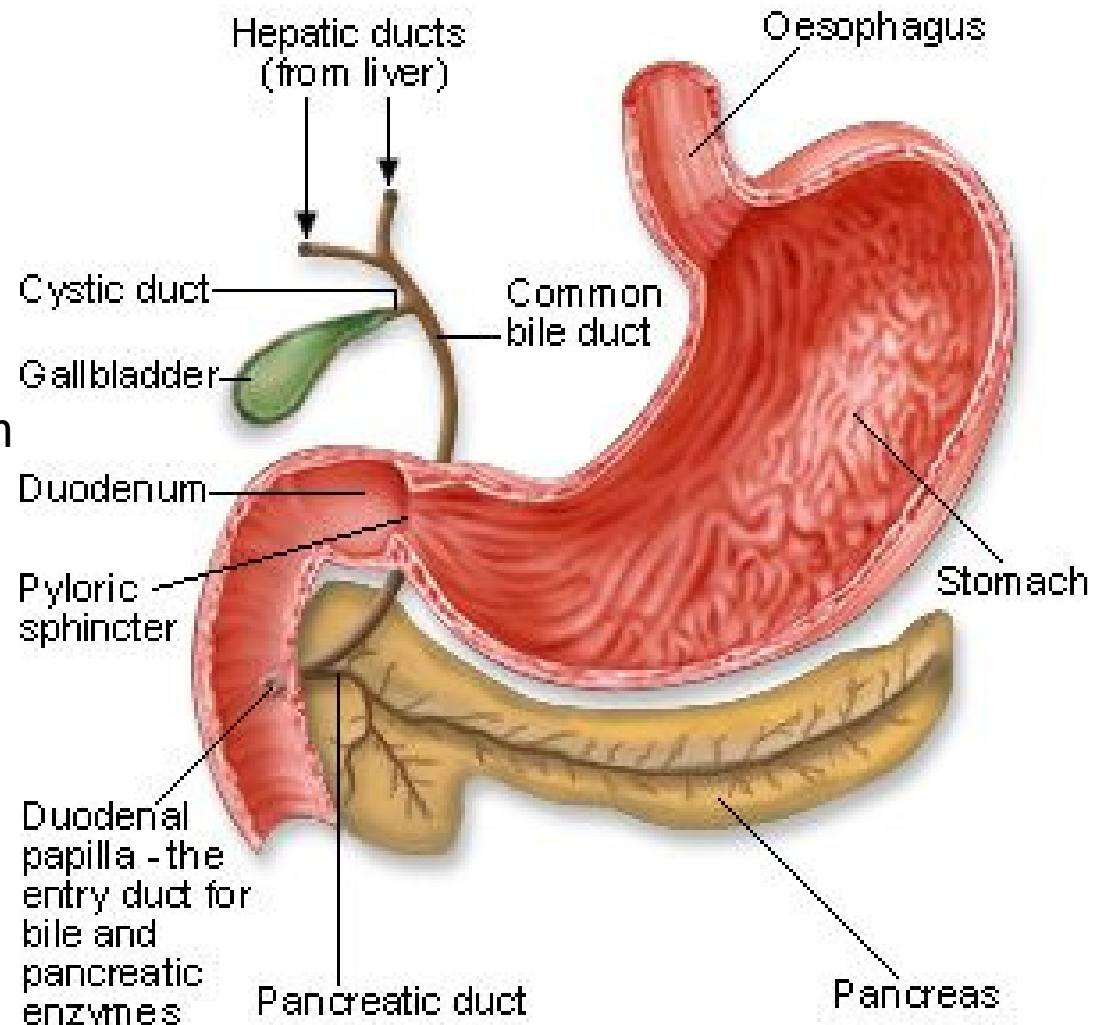
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- CBC/DC
  - Anemia
  - leucocytosis
- Liver function tests
  - Cholestasis
  - Fluctuations in serum level
    - incomplete obstruction
    - primary involvement of only 1 hepatic duct
- CEA, AFP: usually normal
- Feces: pale and fatty with occasional blood



# Anatomy

- Upper third
  - From the confluence of the hepatic duct to the level of the cystic duct
- Middle third
  - From the cystic duct to the upper part of the duodenum
- Lower third
  - From the upper part of the duodenum to the papilla of Vater
- Bile duct tumor
  - Upper third:55%
  - Middle third:15%
  - Lower third:10%
  - Diffuse:10%





# Bismuth classification

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- Type I
  - Involvement of the common hepatic duct
- Type II
  - Involvement of the bifurcation without the secondary intrahepatic ducts
- Type III a
  - Extends into the right secondary intrahepatic duct
- Type III b
  - Extends into the left secondary intrahepatic duct
- Type IV
  - Involvement of the secondary intrahepatic ducts on both sides



# Imaging Studies

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- Ultrasound
  - Ultrasound of the liver
    - First choice in patients with obstructive jaundice
    - Dilated intrahepatic biliary duct
    - The absence of dilatation of bile ducts
      - Suggest drug-related jaundice, primary biliary cirrhosis
- CT scan
  - Intrahepatic biliary dilatation, lobar atrophy
  - Tumor mass may be difficult to demonstrate
  - Diagnose the level of obstruction: nearly all patients
  - A specific diagnosis: about 78%
- MRCP
- ERCP



# Imaging Studies

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- Radiologically, cholangiocarcinomas present in three distinct patterns
- Intrahepatic mass
  - About 20-30% cases
  - Calcification
  - Ultrasound
    - Hypoechoic, hyperechoic, or mixed echogenicity mass
  - CT
    - Low-density, heterogeneous, and often peripherally enhancing mass
- Klatskin tumor
  - The most common
  - Ultrasound and CT
    - Intrahepatic biliary dilatation
    - a normal-appearing cystic duct
    - Hilar mass
    - Segmental or lobar atrophy may exist
    - Portal and retroperitoneal adenopathy are common
- Distal duct tumor
  - Less common
  - Present as a stricture, may be irregular
  - Polypoid-filling defect



# Treatment

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- Medical therapy
  - Unfit for surgery or unresectable tumor
  - Jaundice and itching
    - ENBD
  - Chemotherapy
    - Not been proven to be of definite benefit
  - Radiotherapy



# Treatment

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- Surgical therapy
  - Proximal tumor
    - Type I and II (no evidence of vascular invasion)
      - Local excision
      - Positive margin → resection of the corresponding lobe
    - Type III
      - Right or left hepatic lobectomy
  - Middle duct tumor
    - Bile duct resection + Roux-en Y
  - Distal duct tumor
    - Whipple operation
  - Unresectable tumor
    - Cholecystectomy
    - Roux-en Y hepaticojejunostomy
    - Choledochojejunostomy proximal to tumor



# Prognosis

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- Influenced by the location of the tumor
- Good prognosis factor
  - Distal bile duct
  - Histologically differentiated
  - Polypoidal tumor
- Poor prognosis factor
  - Involvement of LN
  - Vascular invasion
  - Advanced T stage
  - Positive tumor margin of the resected specimen
  - Present of mutations of p53 gene



# Prognosis

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- Hilar cholangiocarcinoma
  - Overall resection rate: 40 - 60%
  - The mean survival for patients with curative resection
    - 1 year: 67-80%
    - 5 years: 11-21%
  - Local resection vs. major hepatic resection
    - Operative mortality rate: 8% vs. 15%
    - Mean survival: 21 months vs. 24 months
- Distal bile duct cancer
  - Resection rate greater than 60%
  - Prognosis better than hilar tumor
  - Mean survival: 39 months
  - 1 year: 50-70%
  - 3 years: 17-39%
- Diffuse intrahepatic tumors
  - Dismal prognosis
  - Most patients die within a year of diagnosis