



# General Data

- Sex: male
- Age: 59 y/o
- Birth date: February 5<sup>th</sup>, 1943
- Birth place: Taiwan
- Marital status: Married



# Chief complaint

- Fever on and off with increased yellowish skin for 2 months



# Present Illness

- This 59-year-old man was relative healthy before and denied having any systemic disease
- Two months before admission, he started having intermittent fever, weight loss from 60 kg to 55kg, fatigue, epigastric pain, yellowish skin and red color urine. Post-prandial vomiting, dyspepsia and generalized malaise were also noted.
- No precipitating or relieving factors of this epigastric pain were noted



# Present Illness

- Having these symptoms, he visited LMD, 中山 Hospital, and 萬芳 Hospital for help and fever subsided with antipyretics. However, fever recurred. After 2001/10/28, post-prandial vomiting, generalized jaundice, tea color urine were noted.
- In 中山 Hospital, cholangitis, hepatitis and pancreatitis were impressed. Since peri-ambullary tumor could not be ruled out, he was transferred to TMUH for further evaluation.



# Past History

- DM: more than 12 years with regular medical control for recent 3 years
- HTN: denied
- Hepatitis B carrier
- Tb: denied
- Surgical history: Nil

# Family History

- Father: NPC



# Physical Examination:

- General looking: jaundice
- Eye: icteric sclera
- Chest: clear breathing sound
- Heart: RHB, no murmur
- Abdomen: soft, flat
  - Liver span: 8cm at RMCL
  - Murphy's sign: negative
- Extremities: no pitting edema



# Hematology Report

- WBC:  $6.49 \times 10^3$
- RBC:  $3.55 \times 10^6$
- HGB: 11.1 g/dL
- HCT: 31.6%
- MCV: 88.9 fL
- PLT:  $282 \times 10^3/\mu\text{L}$
- %NEUT: 56.7
- %LYMPH: 33.0
- %MONO: 5.8
- %EOS: 1.1
- %BASO: 0.5
- %LUC: 3.0

# Biochemistry Report

- GLU: 326 mg/dl
- BUN: 16 mg/dl
- CREA: 0.8 mg/dl
- AST: 26 IU/L
- ALT: 52 IU/L
- Na: 136 mEq/L
- K: 4.10 mEq/L
- ALB: 2.9
- AMY: 55
- ALK-P: 297
- rGT: 589
- BIL-D: 2.3
- BIL-T: 3.4
- CA199: 133





# Urine Routine

- SG: 1.030
- PH: 7
- PRO: +-
- GLU: 3+
- KET: -
- BIL: 2+
- OB: -
- NIT: +
- URO: 4
- WBC: +-
- RBC: 0-2/HPF
- WBC: 0-2 /HPF
- EPI: 0-2 /HPF

# Image Studies

- 2001/11/08
  - CXR, KUB
- 2001/11/09
  - Abdominal CT, ERCP
- 2001/11/10
  - PTCO
- 2001/11/14
  - CXR
- 2001/11/15
  - KUB (Portable)

2001/11/08



■ CXR: Negative findings

放射科報告

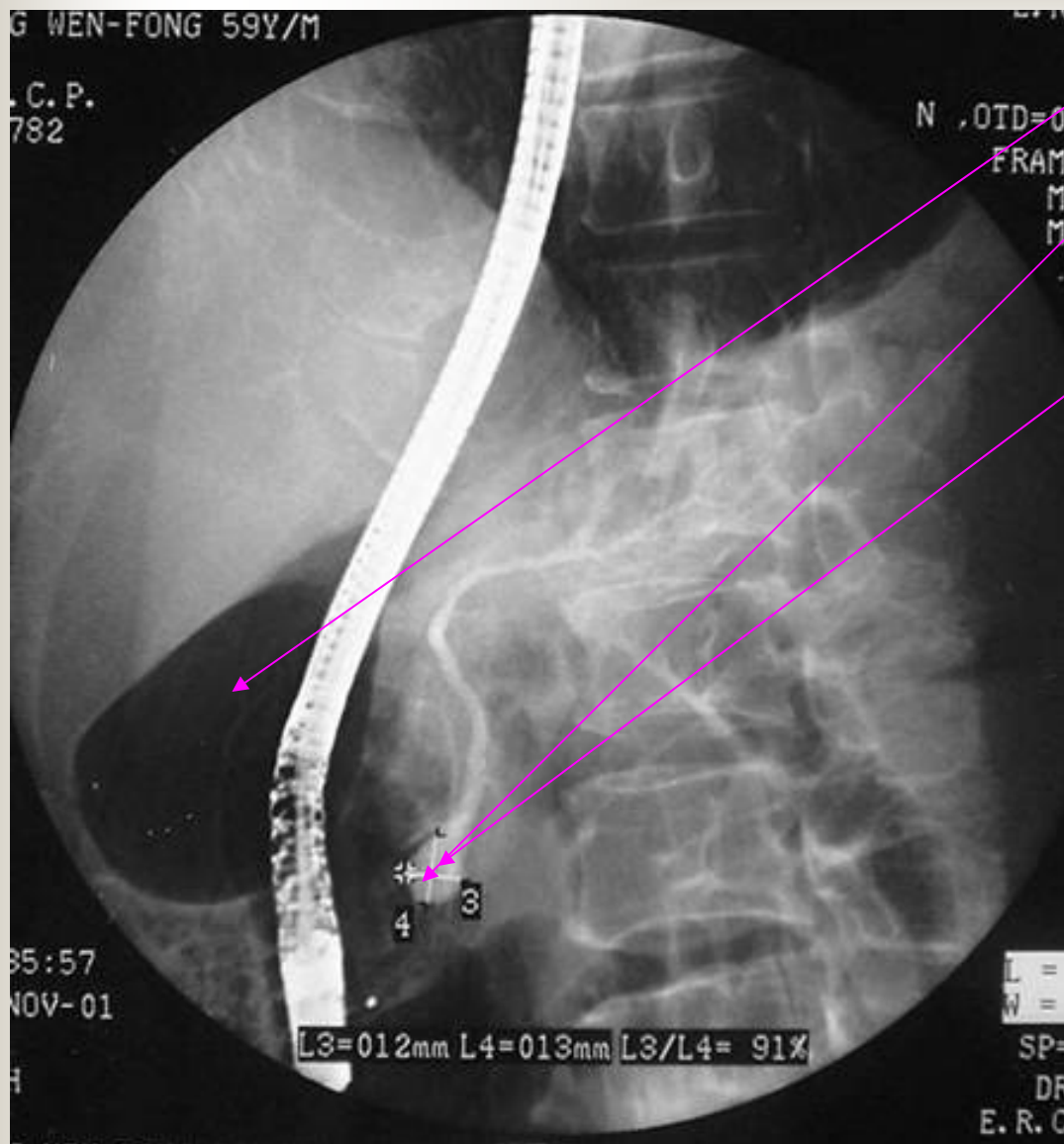
2001/11/08



■ KUB: Negative findings

放射科報告

2001/11/09



- Distended GB
- Pancreatic duct dilation
- Periapulla region obstruction

■ ERCP

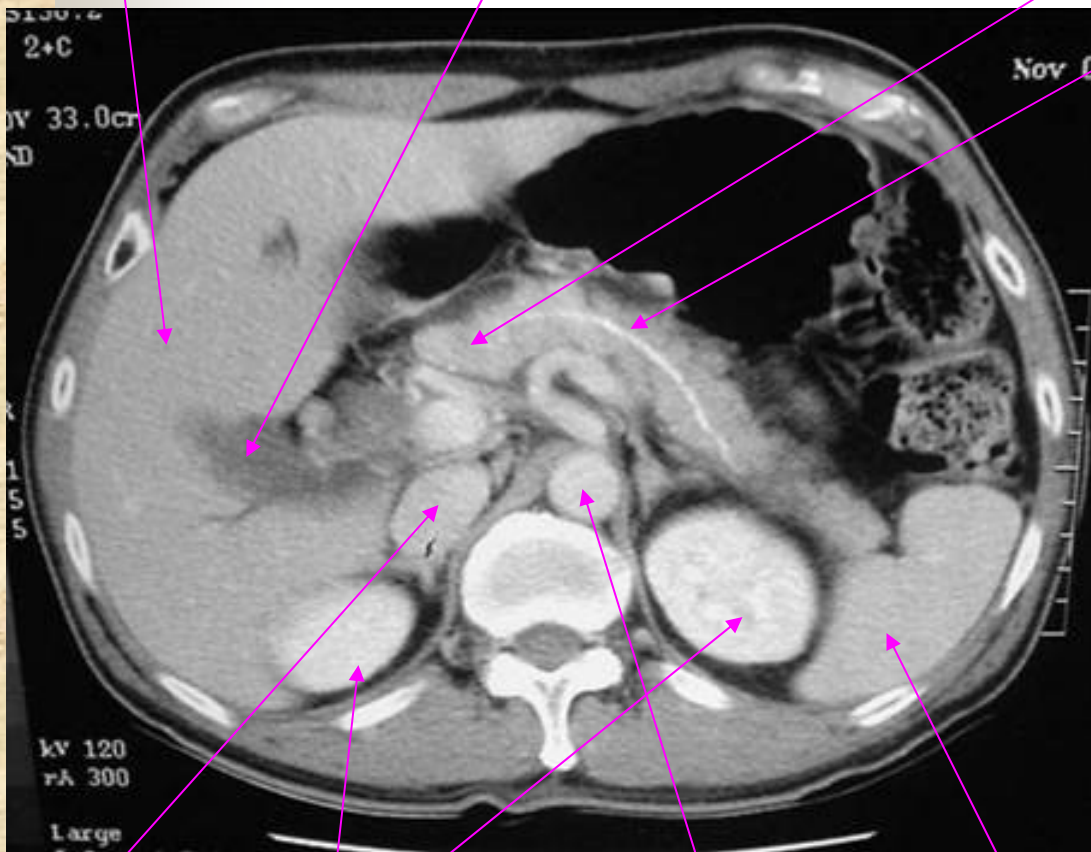
2001/11/09

■ Liver

■ Gall bladder

■ Pancreas

■ Pancreatic duct with contrast



■ CT

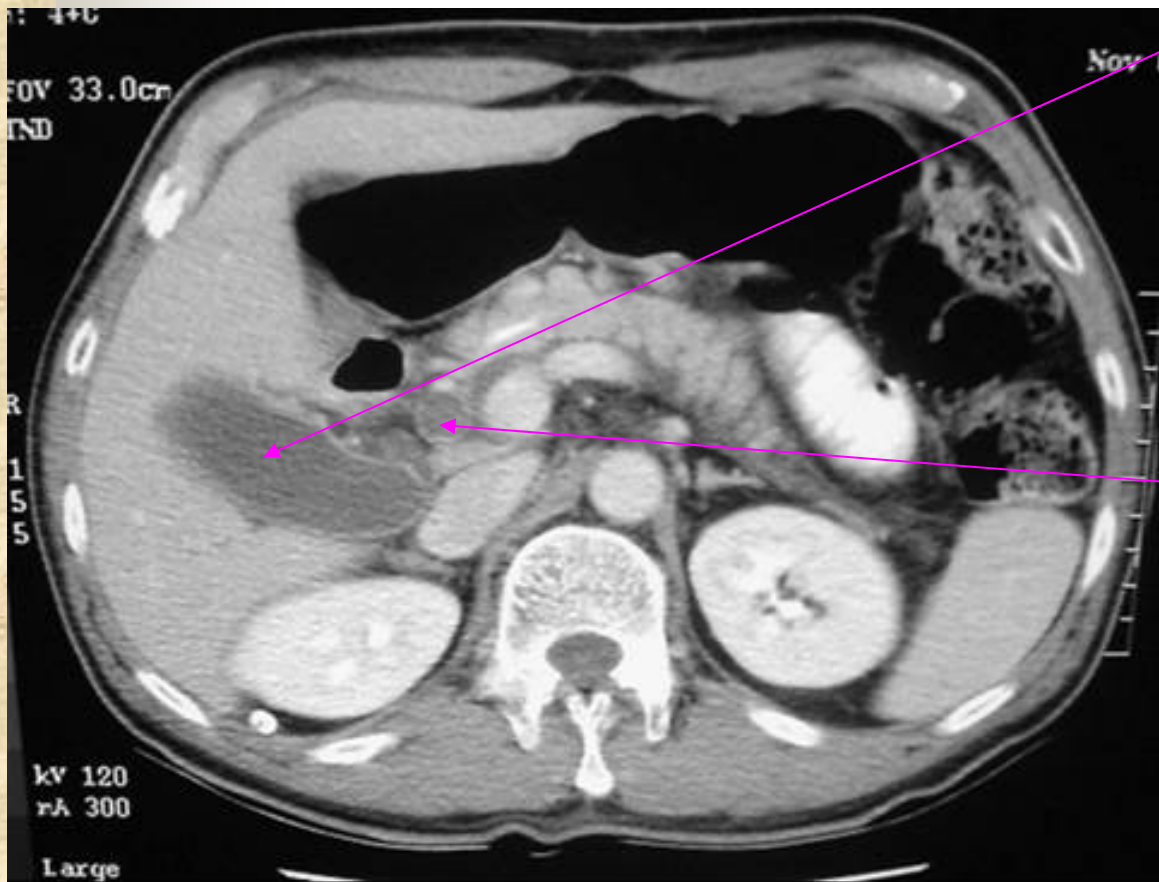
■ IVC

■ Kidneys

■ Aorta

■ Spleen

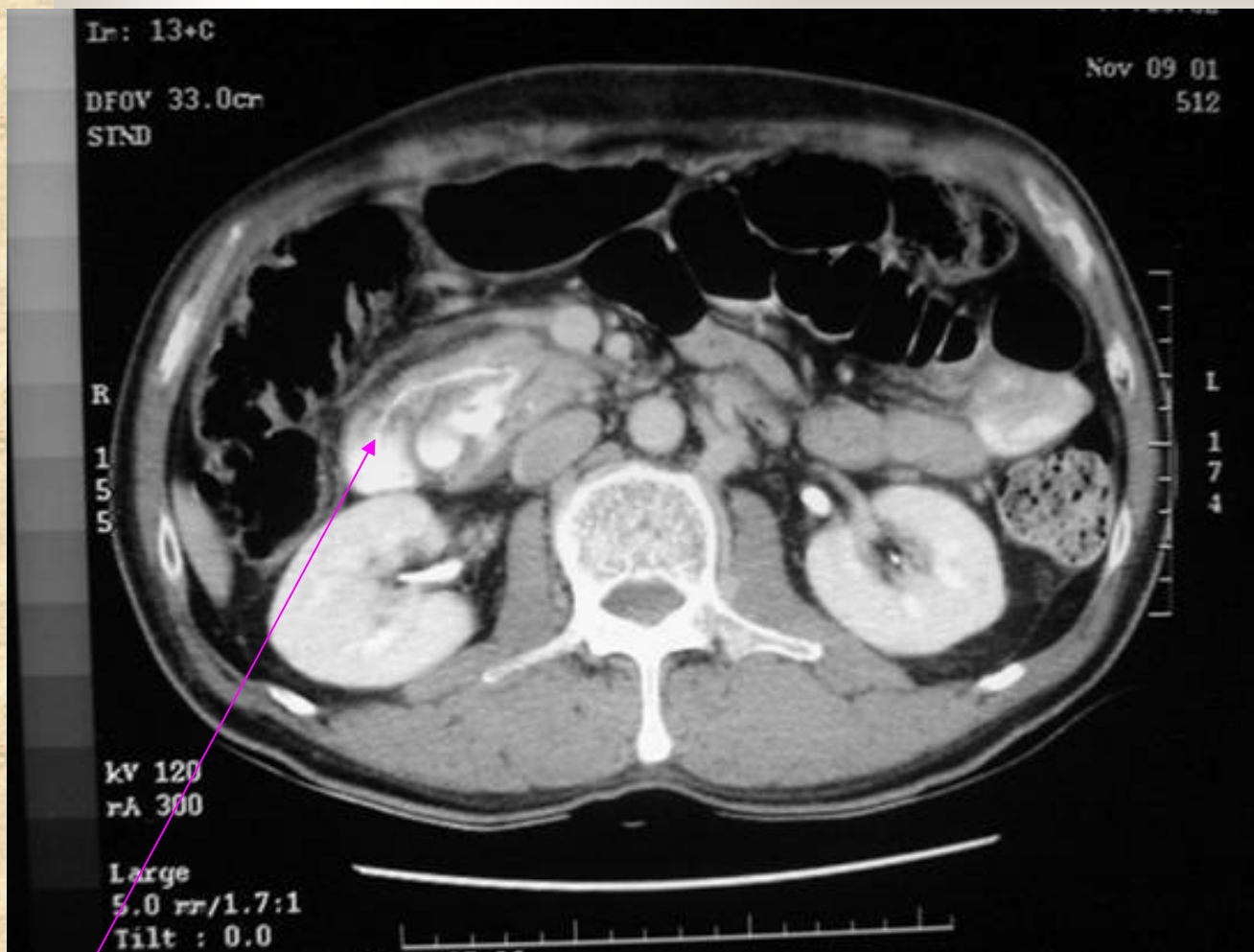
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■ Distended GB

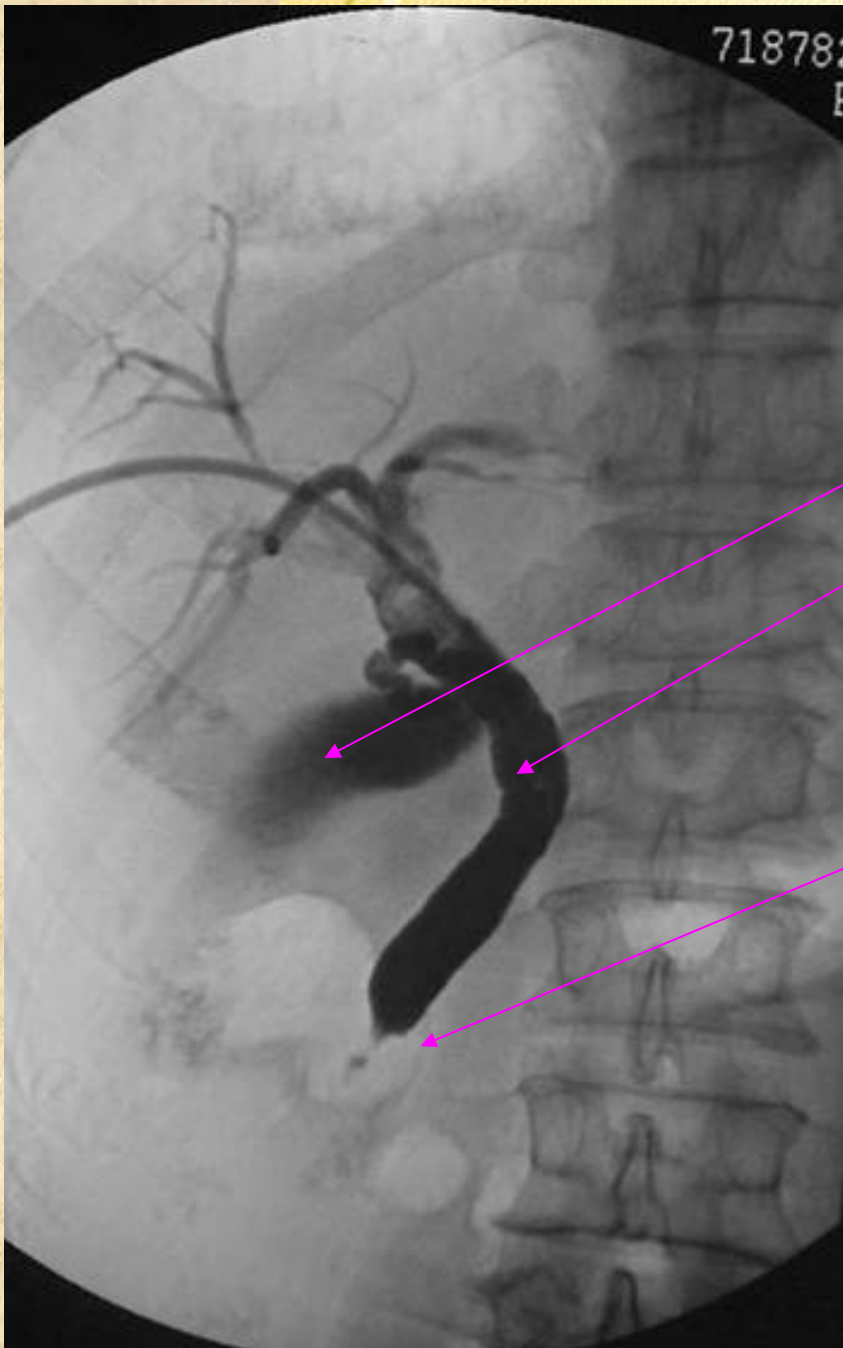
■ Dilated CBD

2001/11/09



Nodular lesion was noted at the ampullar of Vater of the 2<sup>nd</sup> portion duodenum





- PTC
- Distended GB
- CBD dilation
- Periapillary obstruction with irregular margin
- Obstructive level is noted at distal CBD, suggest periapillary lesion



# D/D of biliary dilatation

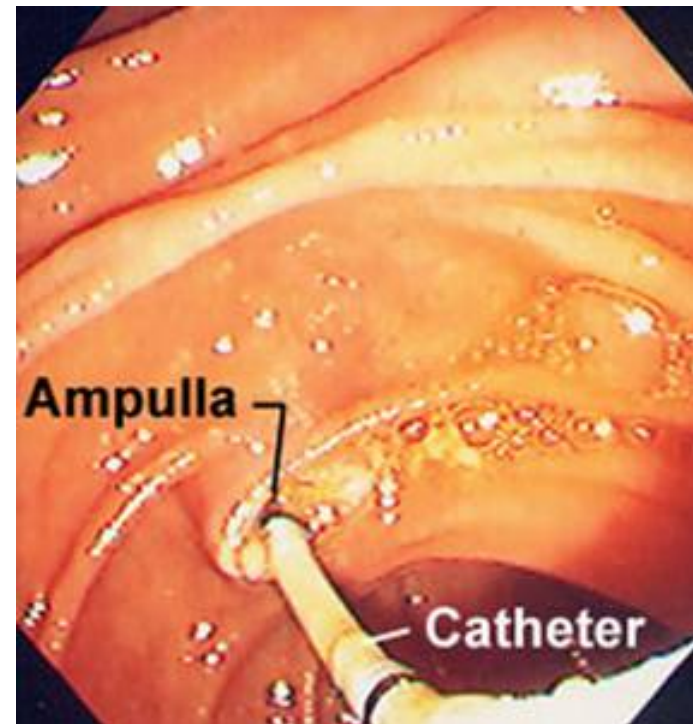
- Common duct stone
- Benign stricture
- Pancreatic cancer, cholangiocarcinoma, ampullary carcinoma, lymphoma
- Pancreatitis
- Cholangitis – oriental, pyogenic, sclerosing
- Caroli's disease
  - Congenital dilatation of the intrahepatic bile ducts.
- Choledochal cyst



# Discussion

- Major causes of biliary obstruction : gallstones, tumor, stricture and pancreatitis
- Gallstones obstructing the bile ducts are seen as calcific or soft tissue density structures within the bile duct surrounded by a crescent of fluid-density bile.
  - which is not seen in this patient.
  - the diagnosis is less likely to be gallstone
- CT didn't show evidence of pancreatitis

- We can see nodular lesion in the 2<sup>nd</sup> portion of the duodenum and distal CBD obstruction lesion was also noted → suggest tumor lesion near the ampulla of Vater
- The most common tumor in that location:
  - Pancreatic cancer
  - Cholangiocarcinoma
  - Ampullary carcinoma
  - Lymphoma
- Benign tumors:
  - Adenoma
  - Papilloma
  - Fibroma
  - Cystadenoma





## ■ Image of Pancreatic cancer

- CT is effective in identifying tumor extension, either posteriorly into the retroperitoneum or into the portahepatis, as well as metastatic disease either in the liver or in the regional lymph nodes. It should be noted, however, that these metastatic lesions need to be 2 cm in size to be reliably detected.
- Certainly the presence of ascites should significantly increase the suspicion of metastatic peritoneal disease.
- CT-guided FNA cytology may be used to pursue histologic confirmation of malignancy in patients who appear to have unresectable lesions because of either metastatic disease or extension of primary tumor into the SMV, PV, SMA, or other key adjacent structures. FNA cytology is not indicated if the patient is to undergo surgical exploration.



## ■ Images of Cholangiocarcinoma

- As gray-scale ultrasonography has improved, the diagnosis of cholangiocarcinoma is supported by finding a hilar bile duct mass in up to two thirds of patients.
- Ultrasound and CT scan also are useful in determining preoperatively the presence of intrahepatic tumor due to direct extension or metastases, and of enlarged periportal lymph nodes suggesting nodal metastases.
- Cholangiography definitively demonstrates a lesion obstructing the left and right hepatic duct at the hilar confluence, and percutaneous transhepatic cholangiography (PTC) and endoscopic retrograde cholangiopancreatography (ERCP) are both useful in assessing patients with extrahepatic biliary obstruction. these lesions.



# Carcinoma of the Ampulla of Vater

## ■ Frequency:

- Ampullary cancer accounts for approximately 0.2% of all GI tract malignancies.

## ■ Mortality/Morbidity

- Most of these tumors are resectable for cure at diagnosis; however, the 5-year survival rate is only 40%.

## ■ Race & Sex:

- No predilection is seen.



# Carcinoma of the Ampulla of Vater

- within 2 cm of the distal end of the common bile duct, where it passes through the wall of the duodenum and ampullary papilla.
- Adenocarcinomas: 90 % of ampullary tumors
- Lymph nodes metastases: 50%.
  - Nodes along the superior mesenteric, gastroduodenal, common hepatic, and splenic arteries
- Metastasis:
  - Liver (66%) of distant metastasis, followed by lymph nodes (22%).
  - In advanced cases, lung metastasis also may occur.



# Carcinoma of the Ampulla of Vater

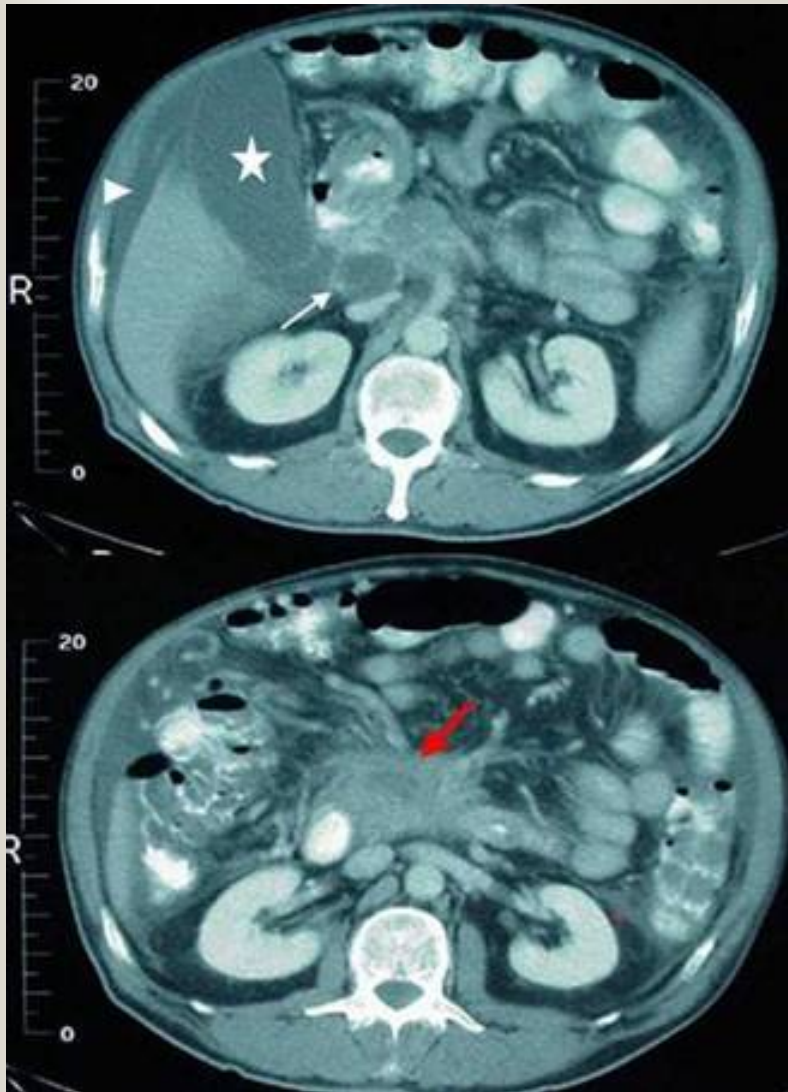
## ■ History:

- Jaundice, Pruritus
- Loss of appetite, Dyspepsia and vomiting
- Progressive weight loss, Epigastric pain:
- Diarrhea is due to the absence of lipase within the gut caused by pancreatic duct obstruction.

## ■ Physical exams

- The Courvoisier sign, painless jaundice associated with a palpable gallbladder
- Fever
- Hepatomegaly
- Acute pancreatitis or migratory thrombophlebitis.
- Palpable fixed epigastric masses or supraclavicular nodes are signs of advanced disease and inoperability.

# Carcinoma of the Ampulla of Vater



**Radiological correlate of the "Courvoisier" sign.**

The gallbladder (star) is massively distended.

There is dilation of the extrahepatic biliary tree (white arrow).

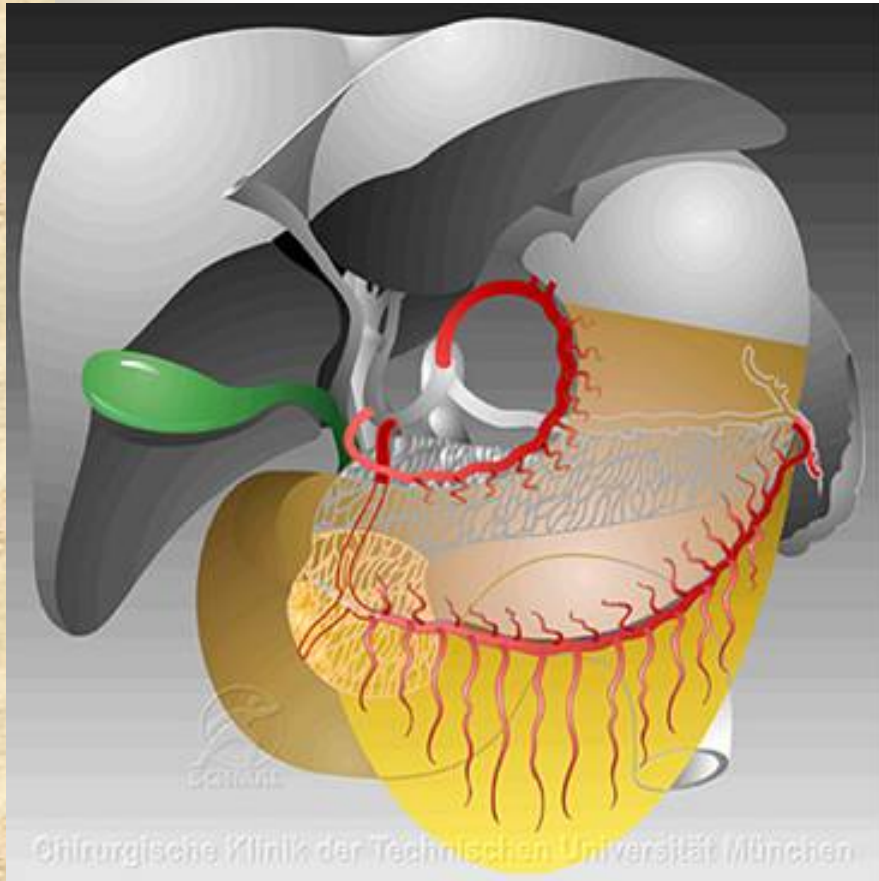
A more caudal cut demonstrates a mass in the pancreatic head (red arrow).

The arrow head points at ascites.

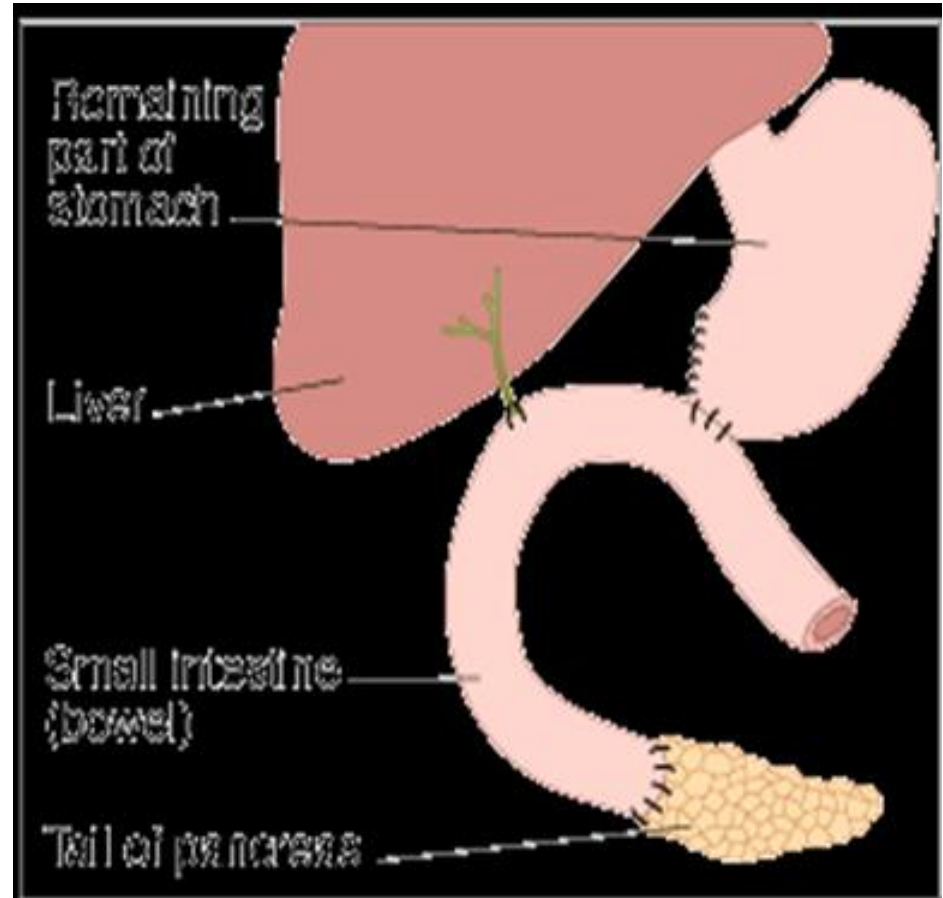
<http://www.vh.org/adult/provider/internalmedicine/GIAtlas/Organ/pages/5-BiliaryTree/CourvoisierImage1.html>

# Surgical treatment:

- Whipple's Operation was performed at November 18th, 2001



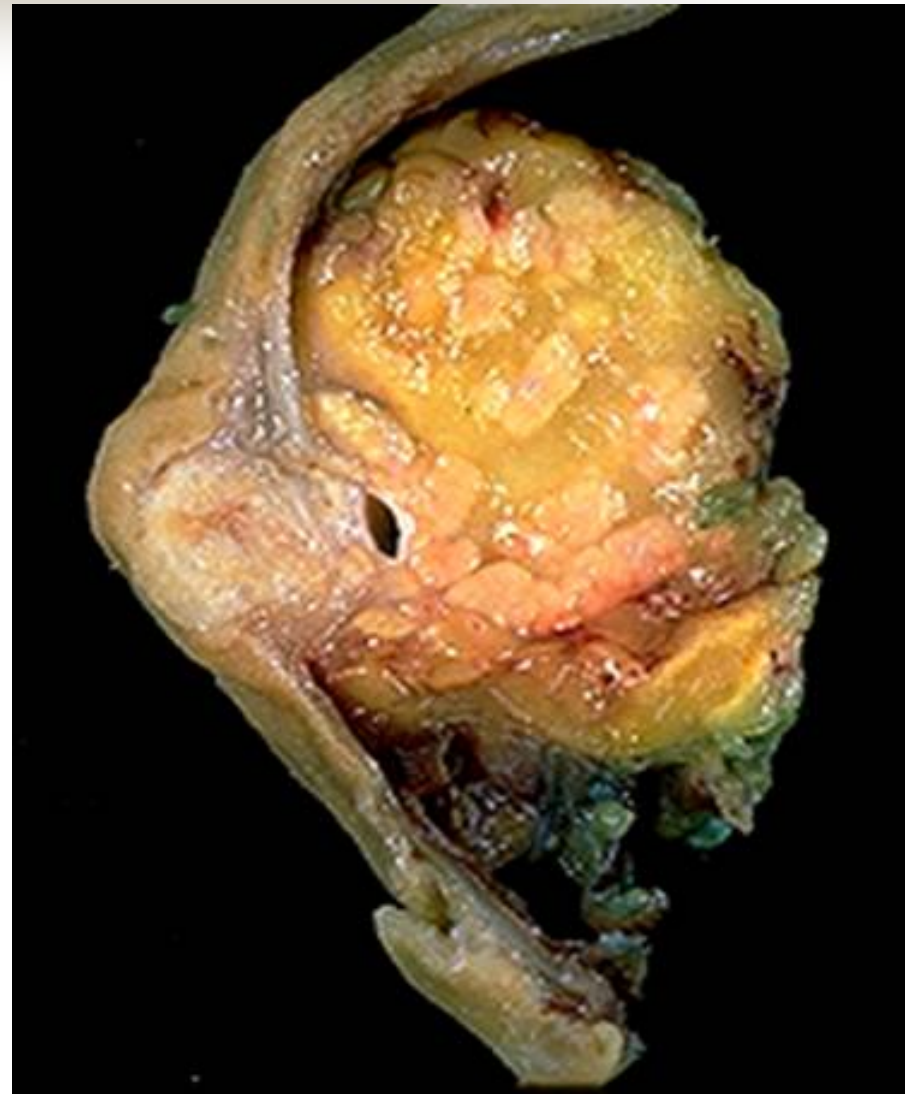
<http://nt1.chir.med.tu-muenchen.de/manual/KLIFI49.HTM>



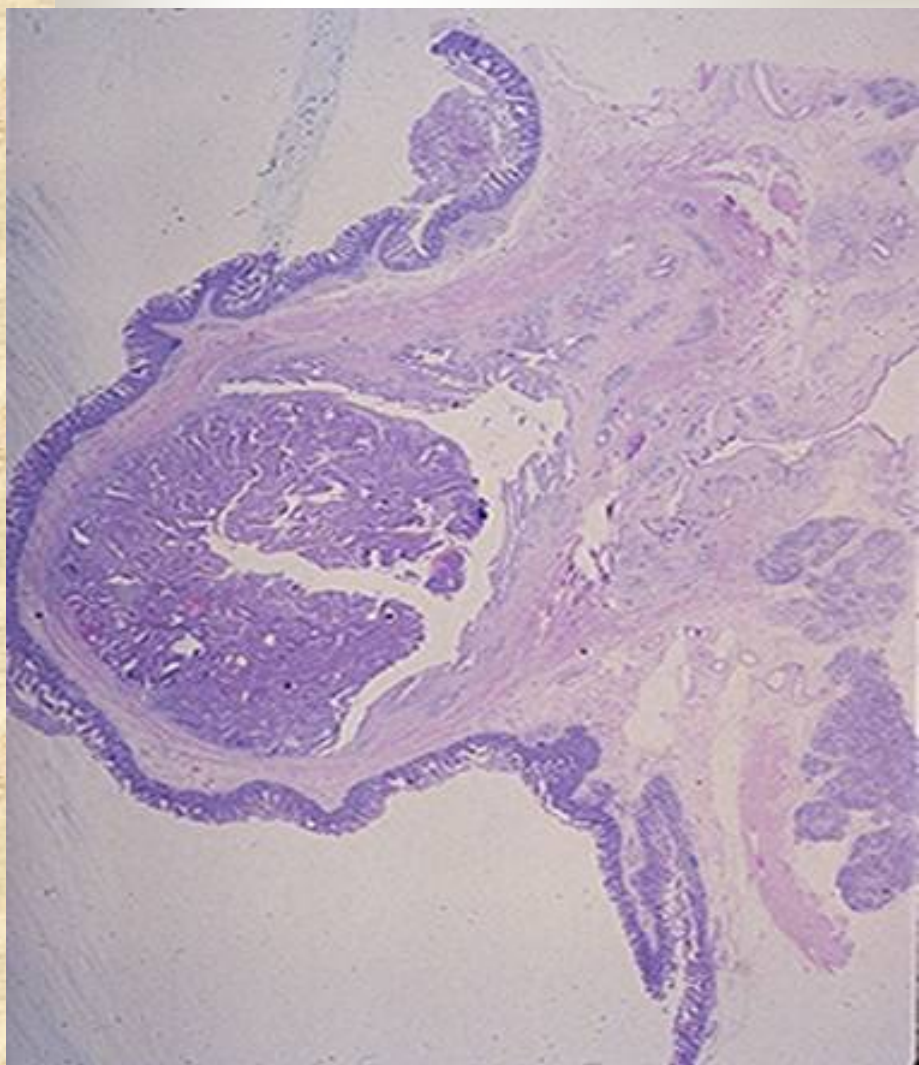
<http://www.cancerhelp.org.uk/help/default.asp?page=3124>

# Pathology

- The tumor mainly located in the submucosal area and did not invade through the muscular layer. Focal tumor necrosis was noted.
- No metastatic carcinoma was noted in any resected lymph nodes.



<http://www.pds.med.umich.edu/users/greenson/DECLIVER>



- The submucosal tumor showed a picture of periampulla adenocarcinoma.
- The neoplastic cells grow in tubulo-glandular and cribriform patterns with pleomorphic and hyperchromatic nuclei with focal prominent nucleoli in the desmoplastic stroma.

<http://www.pds.med.umich.edu/users/greenson/DECLIVER>