

# Advances in Biliary Disease Approaches

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## **Disclosure**

I HAVE NO ACTUAL OR POTENTIAL CONFLICT OF  
INTEREST IN THE PRESENTATION

## OBJECTIVES

- Advance in the diagnosis of Biliary disease (BD)
- Minimal invasive advances in BD
- Biliary Access after Bariatric procedures
- Trends in the main management of
  - Malignant Disease
  - Benign Disease

Diseases treated by biliary surgery are broadly divided into

### Benign Disease

- Cholelithiasis ,
- Bile duct injury,
- Postoperative bile duct stricture.

### Biliary tract cancers

- Cholangiocarcinom
- Gall bladder cancer
- Carcinoma of Vater's ampulla

## Shift in Biliary Surgery No more open procedure

### Gastro/Intervention

- Transplant
- Early Cancer

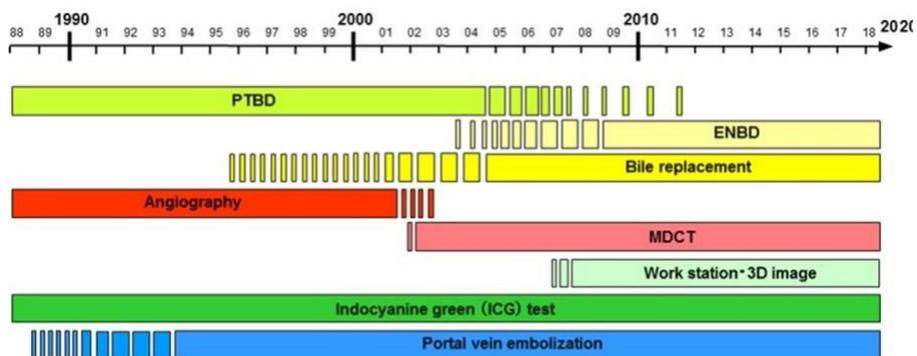
### Hepato-Biliary Surgeon

- Transplant
- Early Cancer

### General Surgeon

- Lap. Chole

## Change in the Pre-operative Management



Changes in preoperative management of hepatectomy for biliary tract cancer. ENBD, endoscopic nasobiliary drainage; MDCT, multidetector-row computed tomography; PTBD, percutaneous transhepatic biliary drainage

Comparison of effect between nasobiliary drainage and biliary stenting in malignant biliary obstruction: a systematic review and updated meta-analysis Wei Zhang & Xu Che World Journal of Surgical Oncology volume 18, Article number: 71 (2020)

## Biliary drainage

- Biliary drainage methods have changed from percutaneous transhepatic biliary drainage to endoscopic nasobiliary drainage, while the advent of multidetector-row computed tomography in imaging diagnostics now enables visualization of three-dimensional anatomy, extent of cancer progression, and hepatic segment volume.

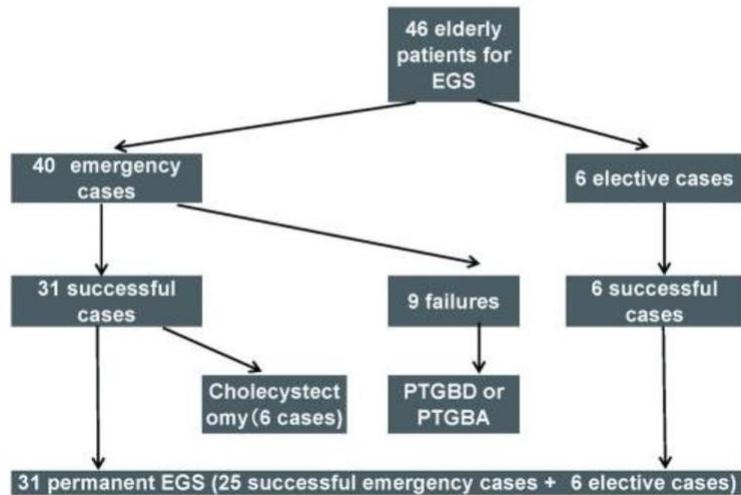
Fifty-year history of biliary surgery *Ann Gastroenterol Surg*. 2019 Nov; 3(6): 598–605.  
Published online 2019 Sep 30. doi: [10.1002/ags3.12289](https://doi.org/10.1002/ags3.12289) Masato Nagino

## Endoscopic gallbladder stenting (EGS)

- may not only be effective for acute cholecystitis, but could also be a viable strategy for long-term management of symptomatic cholelithiasis in patients who are poor surgical candidates

Endoscopic gallbladder stenting for acute cholecystitis: a retrospective study of 46 elderly patients aged 65 years or older [Satoshi Maekawa](#),  
<sup>1</sup>[Ryosuke Nomura](#),<sup>2</sup>[Takayuki Murase](#),<sup>3</sup>[Yasuyoshi Ann](#),<sup>2</sup>[Masayuki Oeholm](#),<sup>1</sup> and [Masaru](#) Published online 2013 Apr 12. doi: [10.1186/1471-230X-13-65](https://doi.org/10.1186/1471-230X-13-65)

## Endoscopic Gall Bladder stenting



## Biliary drainage

- Endoscopic nasobiliary drainage without endoscopic sphincterotomy is a simple, safe, and effective treatment for acute cholangitis. This procedure is especially useful for critically ill patients and those with coagulopathy.

Advances in the endoscopic management of common bile duct stones Guru Trikudanathan, Mustafa A. Arain, Rajeev Attam, & Martin L. Freeman  
*Nature Reviews Gastroenterology & Hepatology* volume 11, pages 535–544 (2014)

## The current indications for ENBD are:

- 1-temporary drainage to treat obstructive jaundice and cholangitis caused by malignant or benign biliary stricture;
- 2- urgent drainage to treat suppurative cholangitis primarily caused by common bile duct stones;
- 3- temporary drainage after stone removal in patients with suspected incomplete clearance and/or with cholangitis; and
- 4- biliary leaks that occur primarily after surgery, as well as other indications

Endoscopic nasobiliary drainage: Current indications and evaluation of the products July 2006, Digestive Endoscopy 18(s1):S92 - S95

## Portal vein embolization

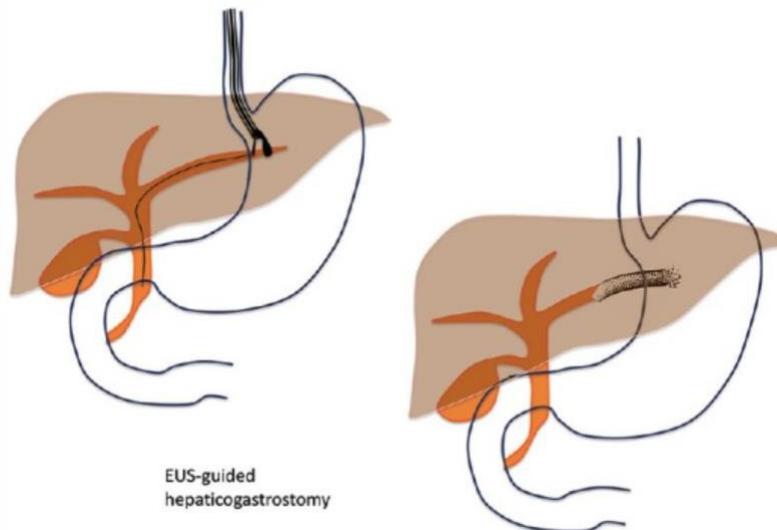
- Portal vein embolization has also greatly improved the safety of extended hepatectomy, and indication of extended hepatectomy can now be objectively determined with a combination of the indocyanine green test and computed tomography volumetry.

## Endoscopic Ultrasound

- EUS-guided biliary drainage (EUS-BD) has gained considerable attention as an approach to provide relief in malignant and benign biliary obstruction for patients when endoscopic retrograde cholangiopancreatography (ERCP) fails or is not feasible.

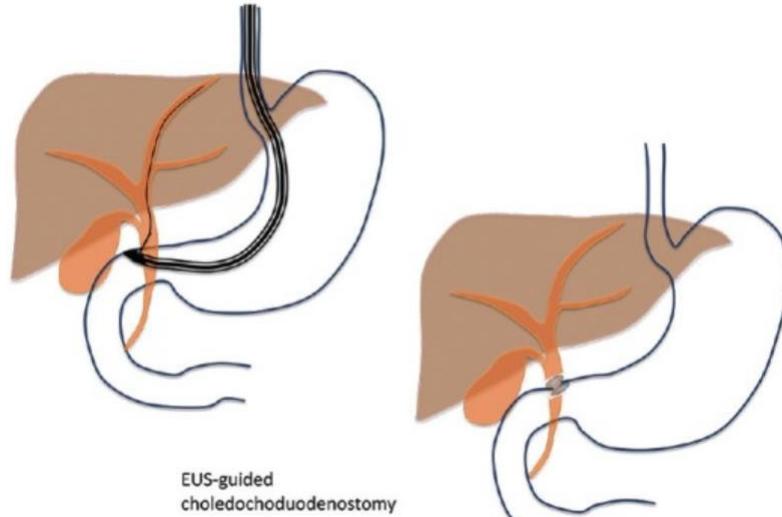
Therapeutic EUS: New tools, new devices, new applications  
[Barbara Braden<sup>1</sup>](#), [Vipin Gupta<sup>1</sup>](#), [Christoph Frank Dietrich<sup>2</sup>](#) *affiliations* *Endosc  
Ultrasound Actions*, . Nov-Dec 2019;8(6):370-381.

## Endoscopic Ultrasound

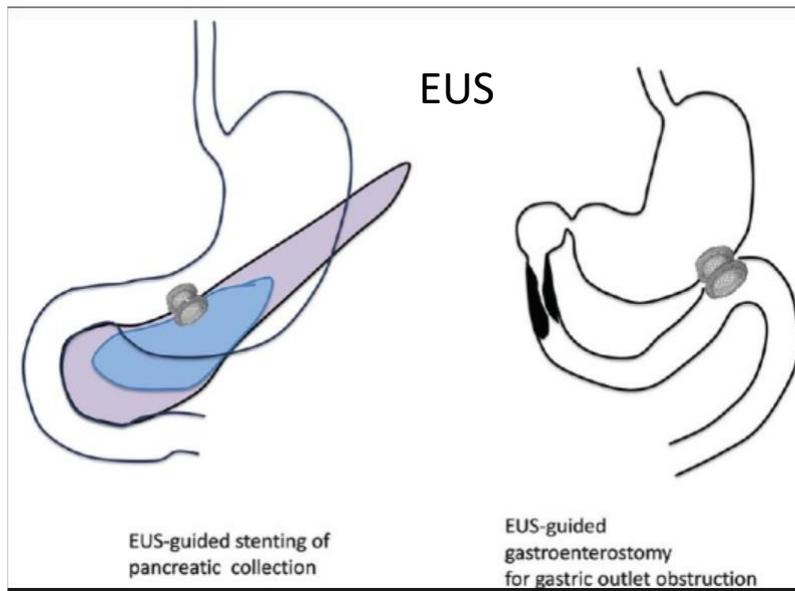


Therapeutic EUS: New tools, new devices, new applications [Barbara Braden<sup>1</sup>](#), [Vipin Gupta<sup>1</sup>](#), [Christoph Frank Dietrich<sup>2</sup>](#) *affiliations*  
*Endosc Ultrasound Actions*, . Nov-Dec 2019;8(6):370-381.

# Choledochojejunostomy



Therapeutic EUS: New tools, new devices, new applications [Barbara Braden<sup>1</sup>](#), [Vipin Gupta<sup>1</sup>](#), [Christoph Frank Dietrich<sup>2</sup>](#) affiliations Endosc Ultrasound Actions, . Nov-Dec 2019;8(6):370-381.



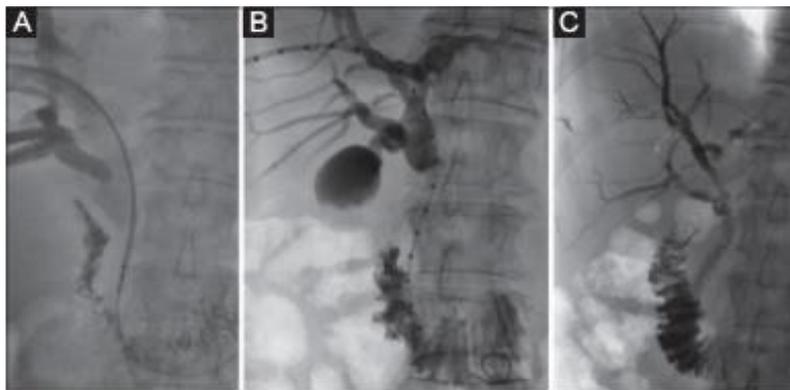
Therapeutic EUS: New tools, new devices, new applications [Barbara Braden<sup>1</sup>](#), [Vipin Gupta<sup>1</sup>](#), [Christoph Frank Dietrich<sup>2</sup>](#) affiliations Endosc Ultrasound Actions, . Nov-Dec 2019;8(6):370-381.

## Endoscopy Assisted by pass post Roux en y



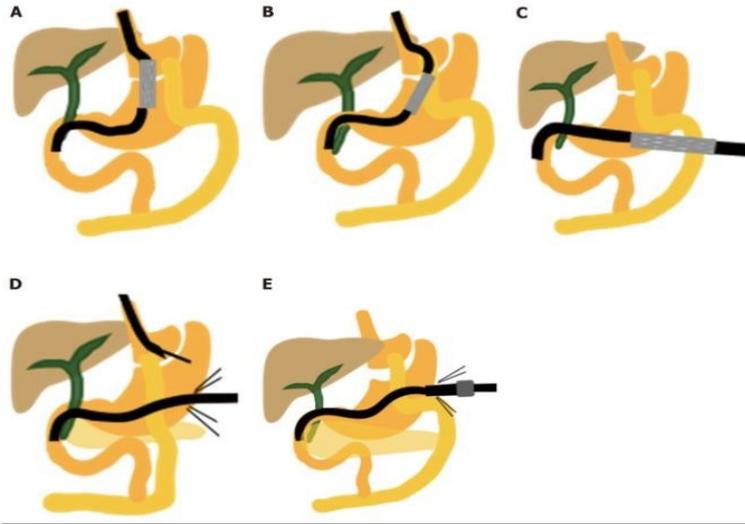
Endoscopic ultrasound-guided creation of a transgastric fistula for the management of hepatobiliary disease in patients with Roux-en-Y gastric bypass . *Endoscopy* 2017 Jun;49(6):549-552.

## Transhepatic



Dimitrios Tsetis et al. Malignant biliary obstruction: the current role of interventional radiology.. *Ann Gastroenterol* 2016; 29 (1): 33-36

## Laparoscopic approach



Current status of endoscopic retrograde cholangiopancreatography in patients with surgically altered anatomy World J Gastroenterol [Chonlada Krut Sri<sup>1</sup>](#), [Mitsuhiko Kida<sup>2</sup>](#), [Hiroshi Yamauchi<sup>3</sup>](#), [Tomohisa Iwai<sup>3</sup>](#), [Hiroshi Imaizumi<sup>3</sup>](#), [Wasaburo Koizumi<sup>3</sup>](#) 2019 Jul 14;25(26):3313-3333.

## EUS-BD

- In patients with inoperable malignant biliary strictures who failed an ERCP guided biliary stenting, EUS-BD seems to be an excellent management option and superior to PTBD with higher successful biliary drainage rates and relatively fewer complications.

EUS-guided biliary drainage versus ERCP for first-line palliation of malignant distal biliary obstruction: A systematic review and meta-analysis. [Sung Yong Han](#) *Scientific Reports* volume 9, Article number: 16551 (2019)

## EUS-BD



*Yousuke Nakai et al-* Focused Review Series: Expanding Indication: Interventional Endoscopic Management for Pancreaticobiliary Diseases. Clin Endosc 2019; 52(3): 220-225.

### Spyglass endoscope system for:

- Biliary system cancer
- Bile duct cancer
- Gallbladder cancer
- Gallstones
- Primary sclerosing cholangitis
- Biliary papillomatosis

## Computed tomography (MDCT)

- Prior to 2000, along with direct cholangiography with percutaneous transhepatic cholangiography (PTC)/PTBD, abdominal angiography was also widely used to ascertain the anatomy of the hepatic artery (HA) and portal vein (PV) and to diagnose the extent of cancer as a preoperative diagnostic imaging modality
- computed tomography (MDCT) in the 2000s drastically changed preoperative imaging diagnostics in the field of hepatobiliary-pancreatic medicine

## Routine Cholecystectomy

- For this reason, the surgeon during a laparoscopic cholecystectomy should always follow these simple rules:-perform an accurate preoperative diagnosis;
- -preserve the integrity of the gallbladder
- -use the endobag for the removal of the gallbladder
- -when in doubt, give up the laparoscopy to open access
- -carefully inspect the gallbladder once extracted
- -perform a histological examination impromptu;
- -desufflate the pneumoperitoneum with the trocars *in situ*

## Incidental Gall Bladder Cancer

- Patients with IGBC can be divided into two clinical groups:
- 1. Patients with GBC discovered during cholecystectomy for assumed benign disease.
- 2. Patients with GBC diagnosed histopathologically after cholecystectomy for benign disease.

**THANK YOU**