

34TH ANNUAL **CONTROVERSIES, PROBLEMS
& TECHNIQUES IN SURGERY**

December 14 - 15, 2017

New York, NY

Montefiore  **EINSTEIN**

COURSE DIRECTORS:

Robert E. Michler, MD & W. Scott Melvin, MD

Minimal Access Surgery Approach to Common Bile duct Stones and Benign Biliary Disease

*Choledocho-duodenostomy,
Choledochal Cyst and
Bilioenteric Anastomoses*

Horacio J. Asbun MD, FACS
Professor of Surgery
Mayo Clinic



Nothing to disclose

Laparoscopic Approach to Biliary Disease

- Practiced for many years at selected centers
- Recent acceptance and expansion of minimal access techniques in HPB surgery.
- Minimal Access biliary procedures (other than LC):
 - Laparoscopic Cholecysto-jejunostomy
 - Choledochal Cyst resection
 - Laparoscopic Choledocho-jejunostomy
 - Laparoscopic Hepatico-jejunostomy

Laparoscopic Approach to Biliary Disease

Why?

- Advantages inherent to MIS
- Better visualization and access
- Mandatory better control of bleeding
- More precise hep-jej

Laparoscopic Approach to Biliary Disease

Why?

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- Better visualization and access
- Mandatory better control of bleeding
- More precise Hep-jej
- For by-pass in cancer patients significantly shortened life span

Laparoscopic Bilioenteric Anastomoses (BEA)

- 168 patients undergoing Lap pancreatoduodenectomy (2008-2014)
 - Pancreatic fistula (B/C) 15 (8.9%) *Biliary?*
- 11 patients undergoing other Lap BEA (2008-2010)
 - 1 stricture (*Required reoperation 14 months later*)

Laparoscopic Approach to Biliary Disease

- Learning Curve
- Complexity, cost & length
- Evaluation of results is not only limited to mortality and morbidity: *Long term follow-up needed*
- *Lack of prospective randomized series*

Laparoscopic Approach to Biliary Disease

Cholecysto-jejunostomy

- Shimi S, Banting S, Cuschieri A. Laparoscopy in the management of pancreatic cancer: endoscopic cholecystojejunostomy for advanced disease. *Br J Surg* 1992; 79(4):317-9.
- Fletcher DR, Jones RM. Laparoscopic cholecystjejunostomy as palliation for obstructive jaundice in inoperable carcinoma of pancreas. *Surg Endosc* 1992; 6(3):147-9.

Management of Common Bile Duct Obstruction

Pre-operative

- Directly dependent on your GI MD
 - *Skills*
 - *Outcomes*
 - *Availability*

Management of Common Bile Duct Obstruction

Intra-operative

- Directly dependent on surgeon
 - *Skills*
 - *Resources*

Management of Common Bile Duct Obstruction

Post-operative

- Residual
 - *GI (no controversy)*
- Primary CBD
 - *Dependent on number of recurrent events*

Laparoscopic Approach to Biliary Disease

Choledoco or Hepatico-jejunostomy

- Han HS, Yi NJ. Laparoscopic Roux-en-Y choledochojejunostomy for benign biliary disease. *Surg Laparosc Endosc Percutan Tech* 2004; 14(2):80-4.
- Chowbey PK, Soni V, Sharma A, et al. Laparoscopic hepaticojejunostomy for biliary strictures: the experience of 10 patients. *Surg Endosc* 2005; 19(2):273-9.
- Tang CN, Siu WT, Ha JP, et al. Laparoscopic biliary bypass--a single centre experience. *Hepatogastroenterology* 2007; 54(74):503-7.

Laparoscopic Bilioenteric Anastomoses (BEA)

- 33 patients undergoing Lap BEA (*single surgeon*)
- Sept 2008-Dec 2010
- Local ampullary resections and pancreas sparing duodenectomies were excluded

Laparoscopic Bilioenteric Anastomoses (BEA)

Table 1. Breakdown of all laparoscopic operations.

<u>Operation</u>	<u>Number of patients</u>
Pylorus-preserving <u>Pancreaticoduodenectomy</u>	19
Standard <u>Pancreaticoduodenectomy</u>	3
Total Pancreatectomy	3
Pylorus-preserving Total Pancreatectomy	2
<u>Choledochoduodenostomy</u>	2
<u>Cholecystojejunostomy</u>	1
<u>Choledochal cyst excision, Hepaticojejunostomy x 2</u>	1
Resection of CBD, <u>Hepaticojejunostomy x 2</u>	1
Excision of <u>biliary tree, Hepaticojejunostomy x 3</u>	1

Laparoscopic Bilioenteric Anastomoses

Results

Morbidity

- Cardiac: 4 pt
- PE: 1pt
- DVT: 2 pt
- Pulmonary: 2 pt
- DGE: 5 pt
- Pancreatic fistulas 4 pts (2 grade A 2 grade C)
- GDA bleed: 1 pt
- Intra-abdominal abscess: 4 pt

Laparoscopic Bilioenteric Anastomoses

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Laparoscopic Bilioenteric Anastomoses

Results

- No bile leaks
- No strictures at 9 month median follow-up (2-13)*
- No re-operations*
- No mortality

Goldberg R, Asbun HJ et al 2011

- * 1 patient with stricture that required re-do anastomosis

Laparoscopic Approach to Biliary Disease

Choledochoduodenostomy:

- Gurbuz AT, Watson D, Fenoglio ME. Laparoscopic choledochoduodenostomy. *Am Surg* 1999; 65(3):212-4.
- Tinoco R, El-Kadre L, Tinoco A. Laparoscopic choledochoduodenostomy. *J Laparoendosc Adv Surg Tech A* 1999; 9(2):123-6.

Laparoscopic Approach to Biliary Disease: *Choledochoduodenostomy*

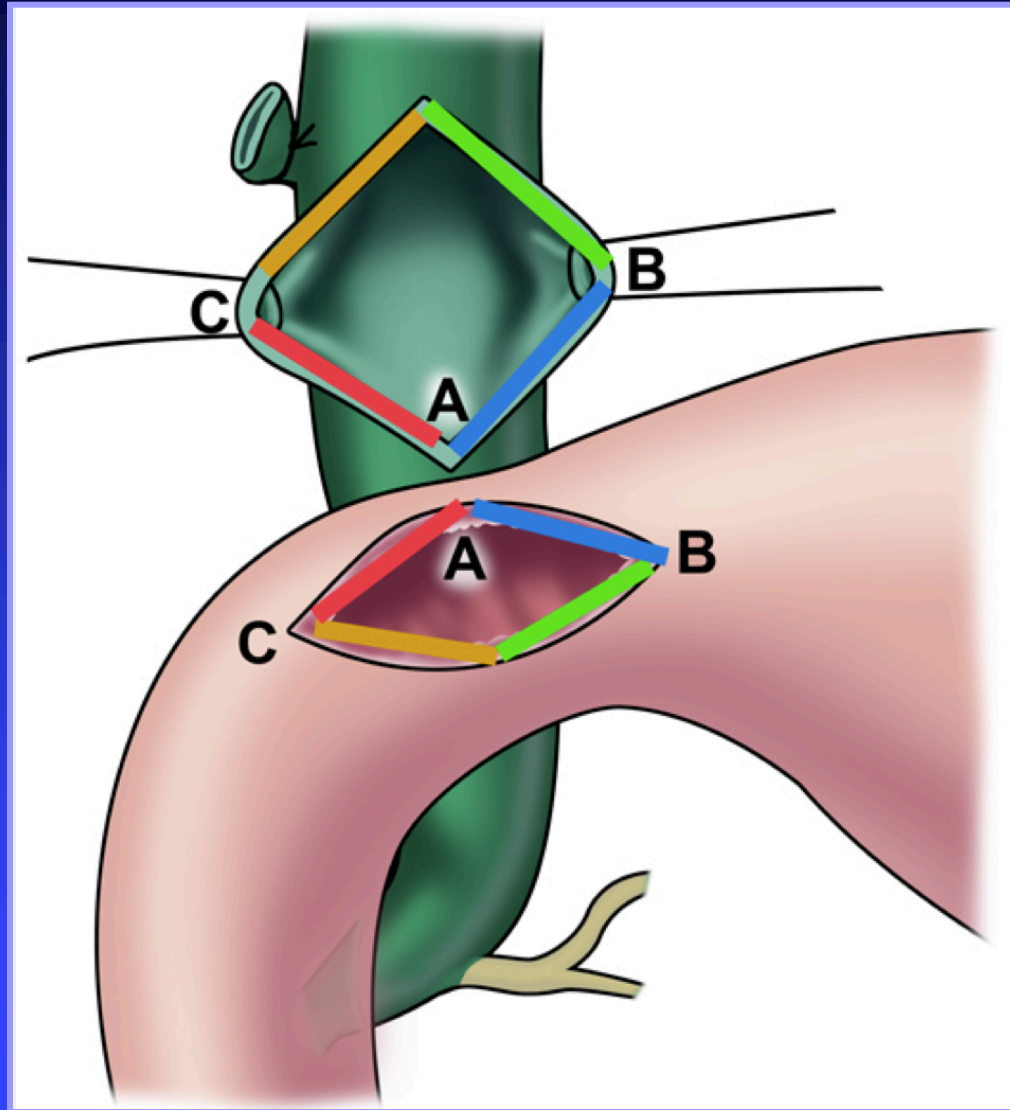
- *Usually done for primary common bile duct stones*
- *Usually patients have undergone many ERCP and clearance of the duct but stones recur*
- *Casted stones or multiple large stones that don't pass through*

Choledocho-duodenostomy

Case presentation

- 68 yo female, recurrent episodes of RUQ pain
- S/p Laparoscopic Cholecystectomy 13 years prior
- Imaging demonstrates multiple CBD stones
- 11 ERCP for clearance of CBD during past 2 years

Choledocho-duodenostomy



Choledochoduodenostomy

Laparoscopic Choledochoduodenostomy for Primary Common Bile Duct Stones

John Stauffer, MD
Ross Goldberg, MD
J. Michael Parker, MD
Steven Bowers, MD
Horacio J. Asbun, MD

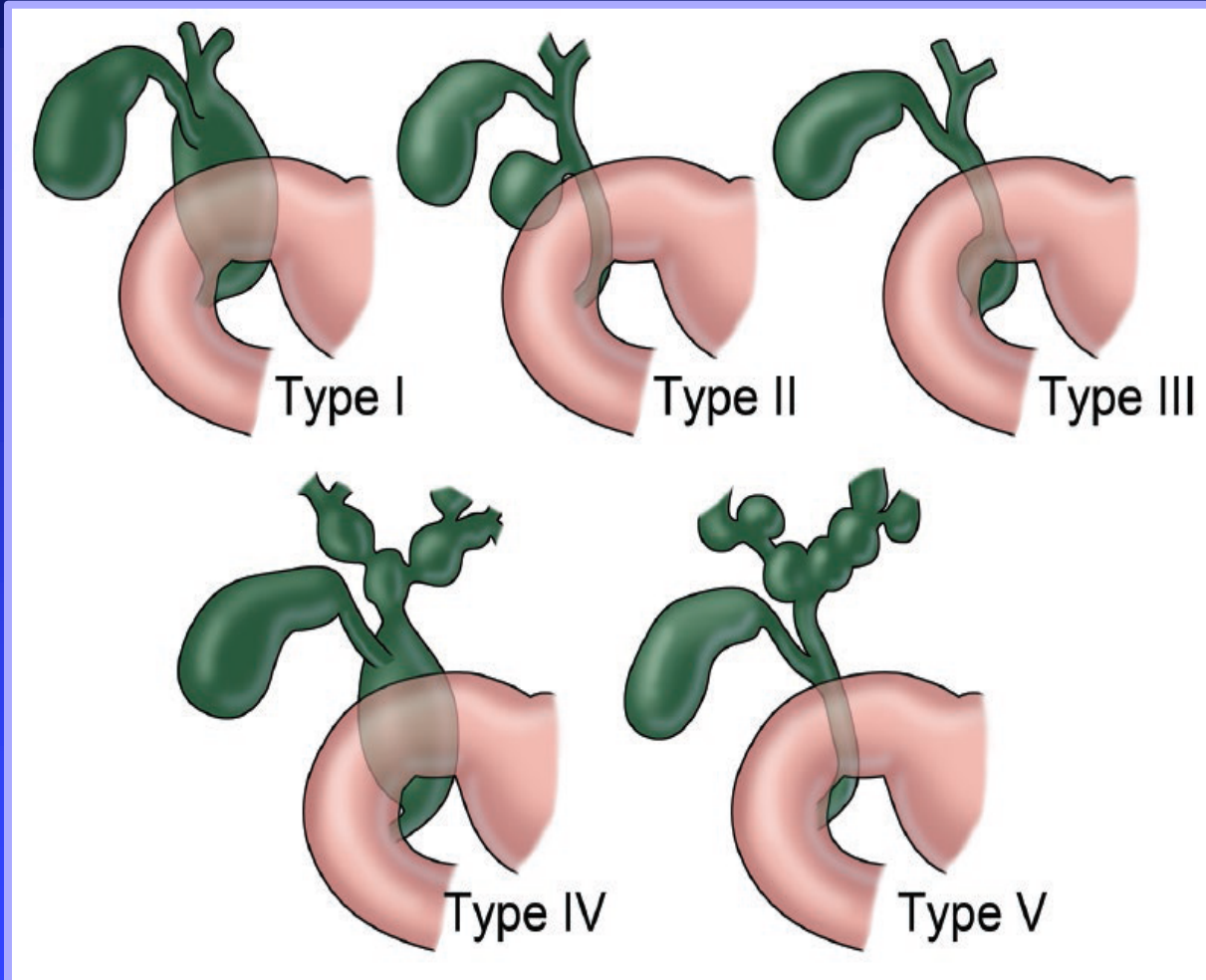
Mayo Clinic Florida



Choledochal Cyst

- Cystic dilations of the biliary tree
- 4:1 female preponderance
- Typically a surgical problem of infancy or childhood.
- 20% of patients, the diagnosis may be delayed until adulthood.
- Choledochal cysts are classified into 5 main type

Choledochal Cyst



Choledochal Cyst

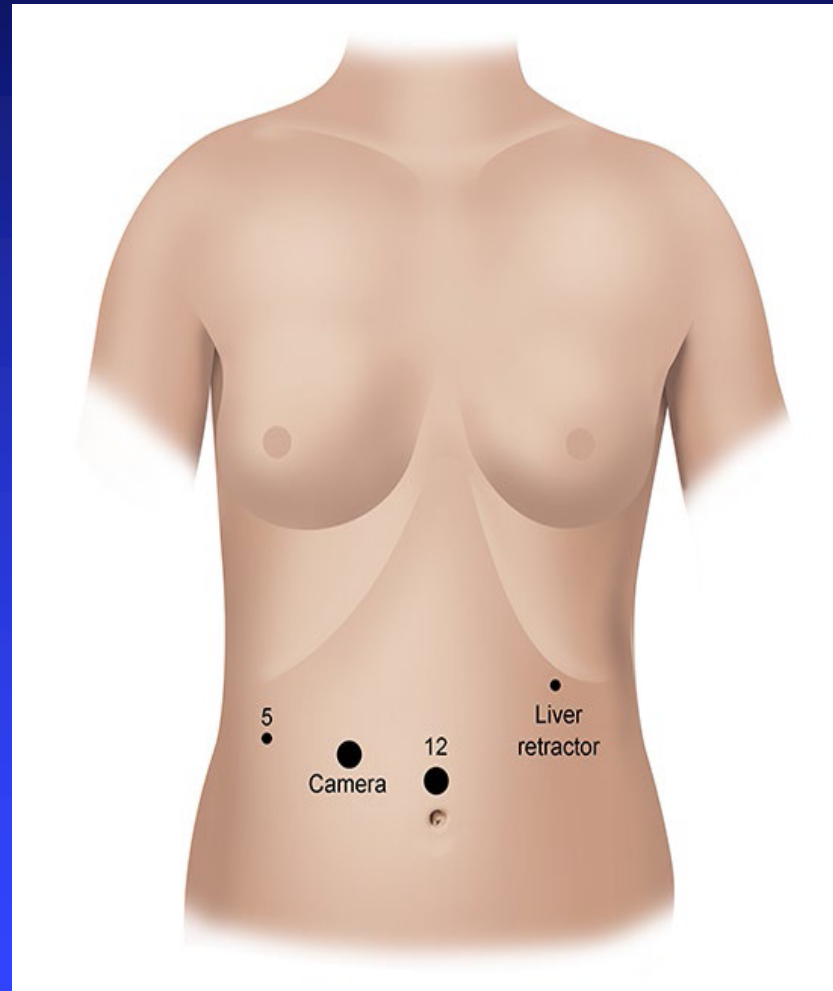
- Anomalous pancreaticobiliary ductal junction (APBDJ)
- MRI cholangiopancreatography (MRCP),
 - delineation of the biliary tree and the display of additional potentially relevant anatomic information.
- Operative goals include complete excision (?)

Laparoscopic Approach to Biliary Disease

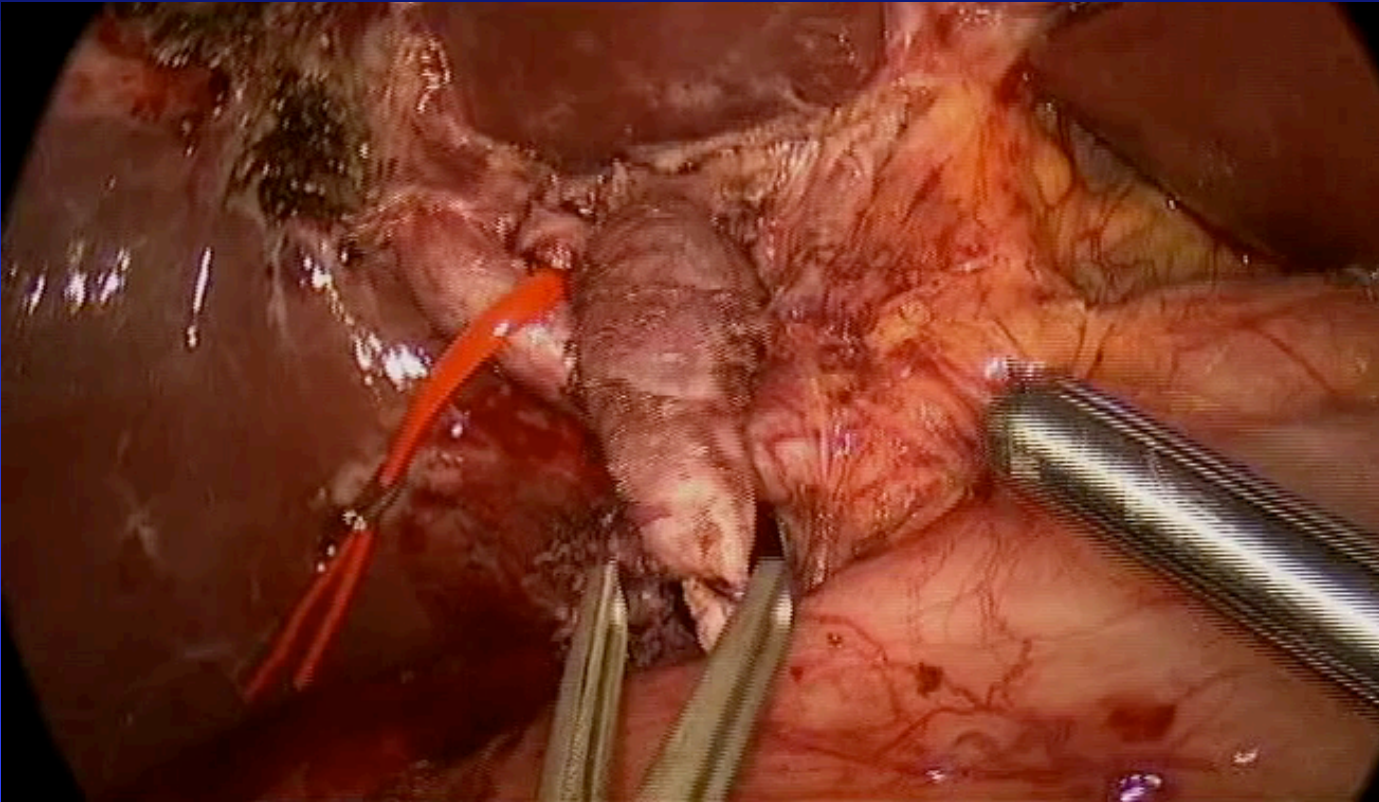
Choledochal Cyst Resection

- Palanivelu C, et al. Laparoscopic management of choledochal cysts: technique and outcomes--a retrospective study of 35 patients from a tertiary center. *J Am Coll Surg* 2008; 207(6):839-46.

Laparoscopic Cholecochal Cyst Resection



Choledocal Cyst *Extrapancreatic*



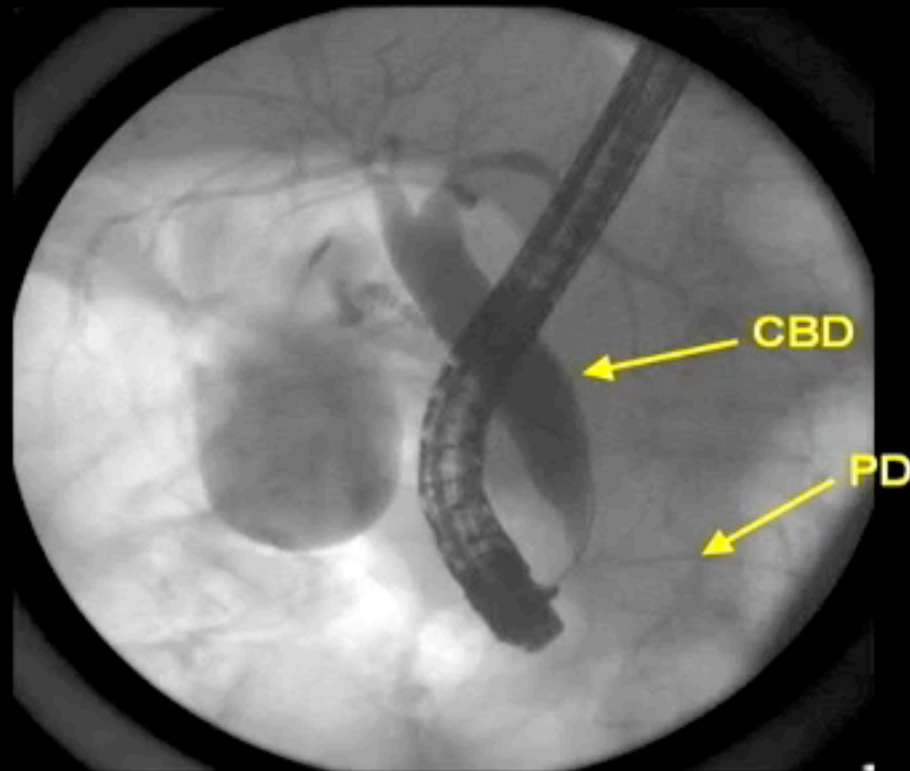
MIS Choledochal Cyst: *Intra-pancreatic extension*

Surgical Options

- Leave portion of the intrapancreatic cyst in place
- Pancreaticoduodenectomy
- Excision of the intrapancreatic portion of the cyst

Choledocal Cyst *Intrapancreatic*

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Laparoscopic Approach to Biliary Disease

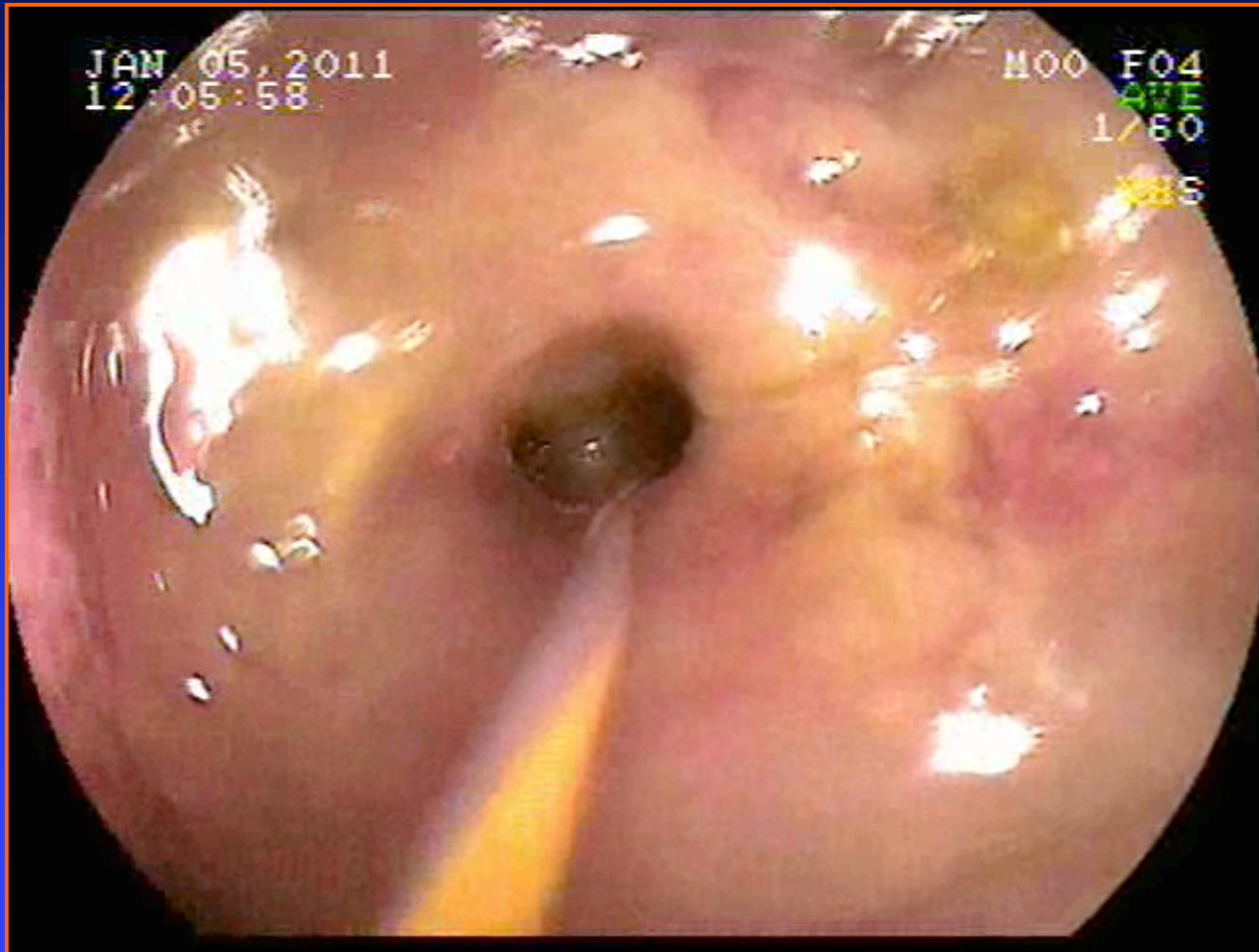
Cystic duct cyst

Case Presentation

- ◎ 67yo Female
 - Six year history of intermittent RUQ abdominal pain, progressively worsened
 - 3cm benign appearing cyst discovered 6 years prior
 - Follow-up imaging: Cyst enlarged to 6cm
 - s/p Cholecystectomy 20yrs prior

Hepatico-jejunostomy

Single anastomosis at bifurcation



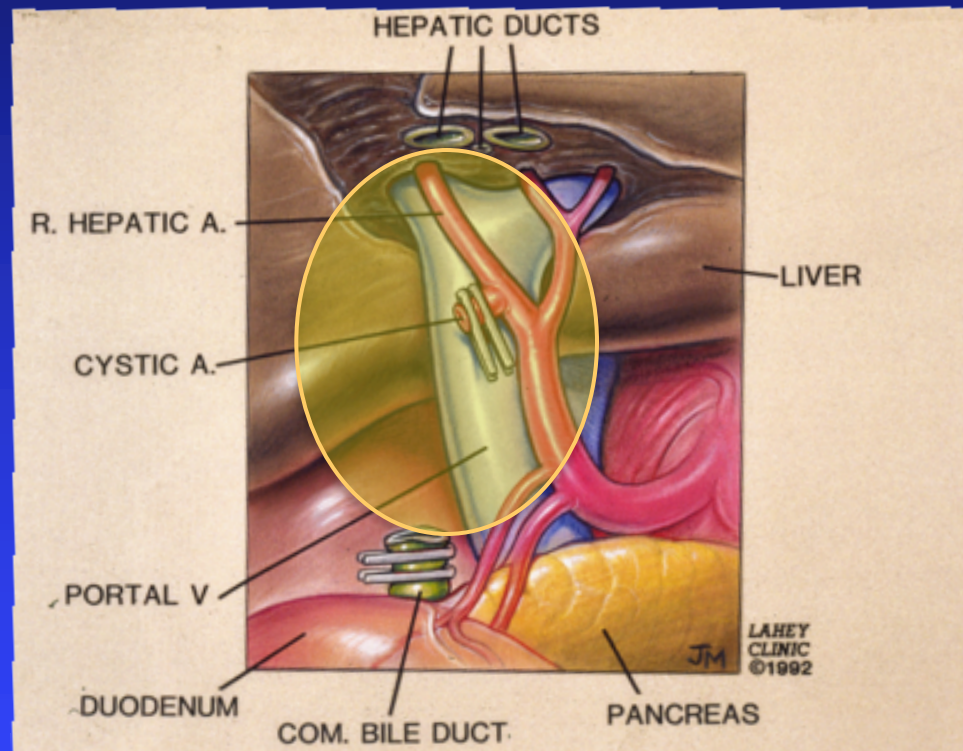
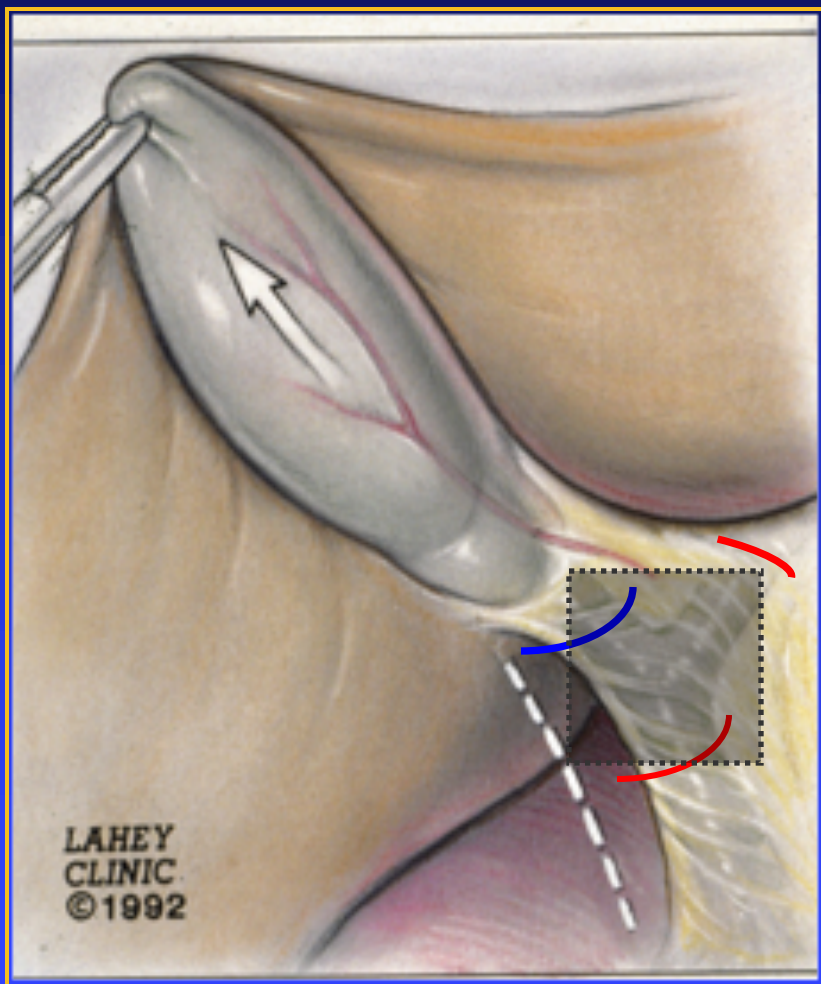
BDI

Laparoscopic BDI repair ?

- Not to just have a small incision or earlier discharge*
- Truly feel you may do a better job*
- Experience*

Bile Duct Injury During LC

Mechanism of Injury



Asbun, Rossi et al, 1993

Laparoscopic Bilioenteric Anastomoses

Conclusions

- *Technically feasible,*
- *Being performed more frequently*
- *Good results*
- *Requires advanced laparoscopic skills*
- *Requires experience in HPB surgery*
- *Indications and procedures same than open*



**13TH ANNUAL KUWAIT
POSTGRADUATE ASSEMBLY IN SURGERY
2ND KUWAIT SURGICAL SOCIETY**



Minimal Access Surgery Approach to Benign Biliary Disease

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Professor of Surgery

Mayo Clinic



Minimal Access Surgery Approach to Benign Biliary Disease

Advancements in Laparoscopic Liver
Surgery Course

Tampa , Florida May 9, 2014

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The banner features a photograph of the Far Eastern Memorial Hospital building on the left. To the right of the photo, the text reads: "成為民眾首選的醫學中心" (To become the first medical center for the people seeking for medical service). On the far right, the "ELSA 2013" logo is displayed, with the year "2013" containing a pair of surgical scissors. Below this, the Far Eastern Memorial Hospital logo and name are shown in both Chinese ("亞東紀念醫院") and English ("FAR EASTERN MEMORIAL HOSPITAL").

ELSA PreCongress Symposium MIS HPB & The 2nd Far Eastern Symposium on Minimally Invasive Surgery-- HPB Surgery

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*Congreso de la Asociacion Mexicana de Cirugia General
Noviembre 1-4, Veracruz, Mexico*

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38th Annual Meeting of KSELS &
20th Anniversary International Symposium

KSELS 2016

April 29 (Fri) ~ 30 (Sat)
Millennium Seoul Hilton Hotel, Korea



Quantum Leap over 20 Years of Challenge

Minimal Access Surgery Approach to Benign Biliary Disease:

*Choledocho-duodenostomy, choledochal Cyst
and Bilioenteric Anastomoses*

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Minimal Access Surgery Approach to Bilioenteric Anastomoses



New Perspectives in Hepatobiliary and Pancreatic Surgery Advanced Course

September 22-24, 2016, Strasbourg, France

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Minimal Access Surgery Approach to Benign Biliary Disease

Choledocho-duodenostomy, Choledochal Cyst and Bilioenteric Anastomoses

4th INTERNATIONAL SYMPOSIUM FOR Hepato-Pancreato-Biliary Surgery

Lectures and live transmission of surgical demonstrations on Minimal Access Surgery & Robotic Surgery

1-2 December 2016

HKEC Training Centre for Healthcare Management & Clinical Technology
Pamela Youde Nethersole Eastern Hospital
3 Lok Man Road, Chai Wan, Hong Kong

Symposium Director
Dr CN TANG ^{PHIGH}

Invited Overseas Faculty
Prof Horacio ASBUN ^{USA}
Dr Kuo Hsin CHEN ^{Taiwan}
Dr José COSTA-MAIA ^{Portugal}
Prof Ho-Seong HAN ^{Korea}
Prof Hironori KANEKO ^{Japan}
Prof Norihiro KOKUDO ^{Japan}
Prof Masatoshi MAKUUCHI ^{Japan}
Dr Yuichiro OTSUKA ^{Japan}
Dr C PALANIVELU ^{India}
Prof Go WAKABAYASHI ^{Japan}
Dr Yao Ming WU ^{Taiwan}
Prof Hiroki YAMAUE ^{Japan}

Invited Local Faculty
Dr Albert CHAN ^{HK}
Dr Oliver CHAN ^{HK}
Dr Tan To CHEUNG ^{HK}
Dr Daniel CHUNG ^{HK}
Dr Ting Pong FUNG ^{HK}
Dr Eric LAI ^{HK}
Dr KR Fai LEE ^{HK}
Dr William MENG ^{Private Practice}

Target Participants
HPB and general surgeons
Surgical and OT nurses

Registration Fee
Doctor: HK\$4000* / HK\$5000
Nurse: HK\$800* / HK\$1000
*On members of Hong Kong Society of Robotic Surgery

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CME & CNE Accredited

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Choledocho-duodenostomy, Choledochal Cyst and Bilioenteric Anastomoses

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