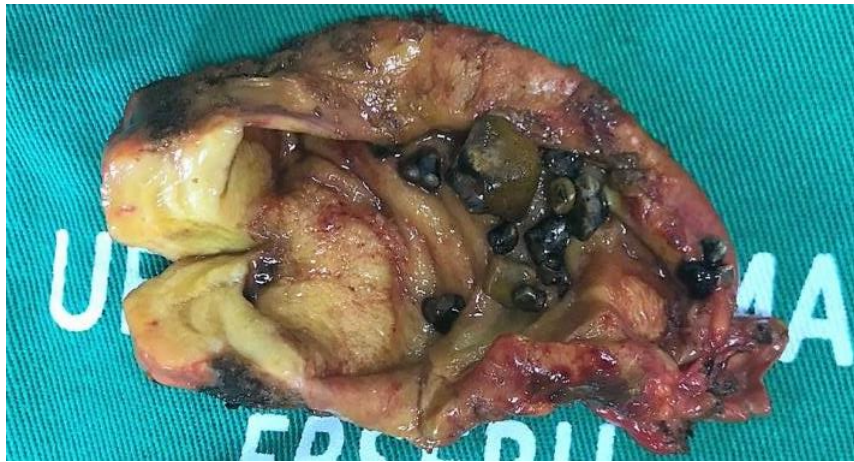


91° CONGRESO ARGENTINO DE CIRUGÍA

Buenos Aires, 9 al 12 de noviembre 2021

MANAGEMENT OF INCIDENTAL GALLBLADDER CARCINOMA



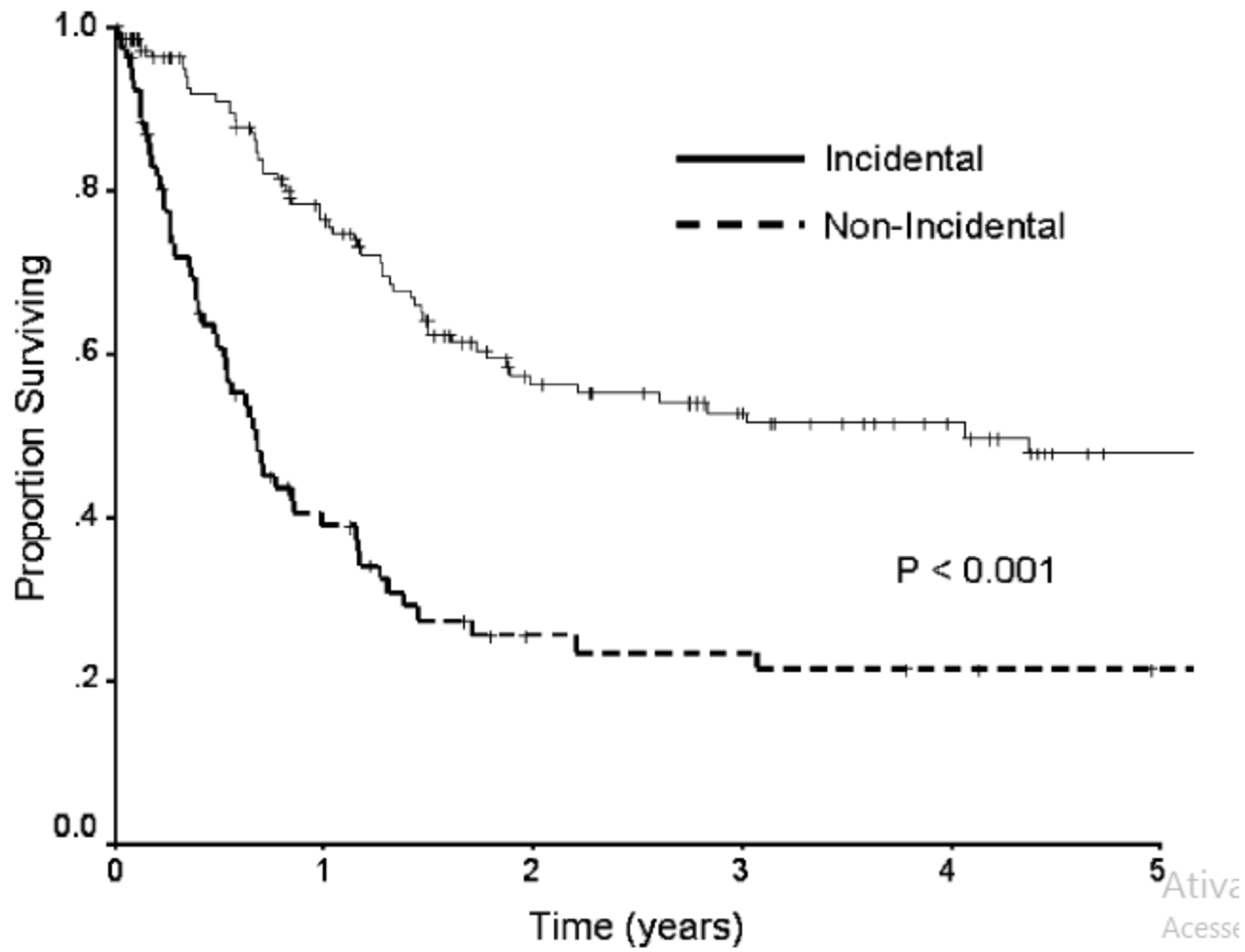
Orlando Jorge M. Torres

Full Professor and Chairman
Department of Gastrointestinal Surgery
Hepatopancreatobiliary Unit
Federal University of Maranhão - Brazil

GALLBLADDER CANCER

- ❑ Suspected preoperatively
- ❑ Unexpected finding during laparoscopic cholecystectomy
- ❑ Discovered incidentally (IGBC) by the pathologist

GALLBLADDER CANCER



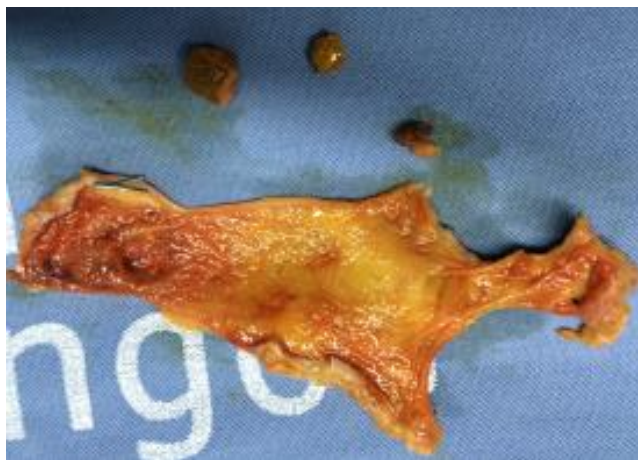


BRAZILIAN CONSENSUS ON INCIDENTAL GALLBLADDER CARCINOMA

Consenso brasileiro de carcinoma incidental de vesícula biliar

On behalf of the "International Study Group of Hepatopancreatobiliary Cancer- ISG-HPB-Cancer",

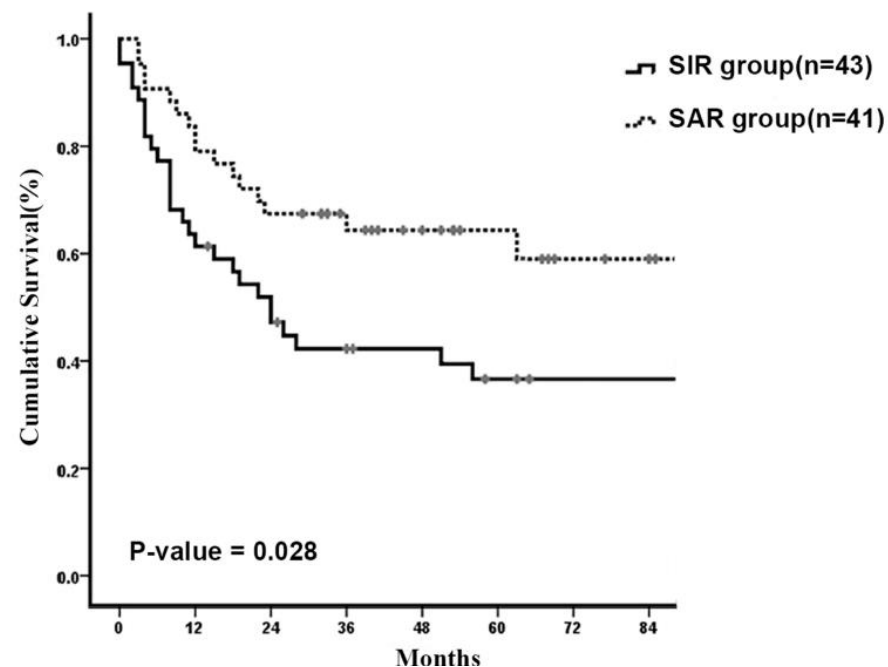
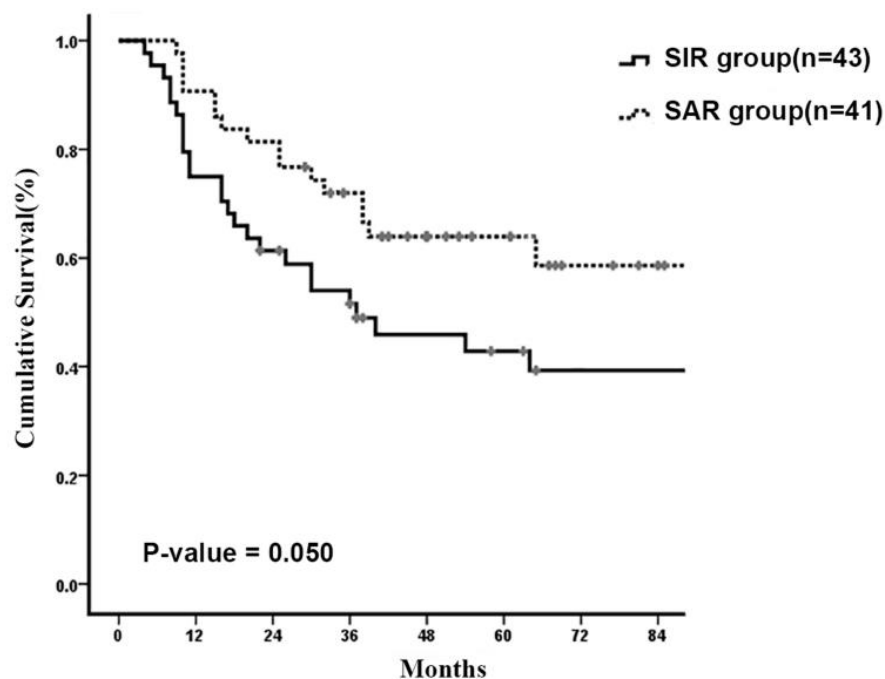
Felipe Jose F **COIMBRA**¹, Orlando Jorge M **TORRES**², Ruslan **ALIKHANOV**³, Anil **AGARWAL**⁴, Patrick **PESSAUX**⁵, Eduardo de Souza M **FERNANDES**⁶, Claudemiro **QUIREZE-JUNIOR**⁷, Raphael Leonardo C **ARAUJO**⁸, André Luis **GODOY**¹, Fabio Luis **WAECHTER**⁹, Alexandre Prado de **RESENDE**¹⁰, Marcio Fernando **BOFF**¹¹, Gustavo Rego **COELHO**¹², Marcelo Bruno de **REZENDE**¹³, Marcelo Moura **LINHARES**⁸, Marcos **BELOTTO**¹⁴, Jose Maria A **MORAES-JUNIOR**², Paulo Cezar G **AMARAL**¹⁵, Rinaldo Danesi **PINTO**¹⁶, Tercio **GENZINI**¹⁷, Agnaldo Soares **LIMA**¹⁸, Heber Salvador C **RIBEIRO**¹, Eduardo José **RAMOS**¹⁹, Marciano **ANGHINONI**²⁰, Lucio Lucas **PEREIRA**²¹, Marcelo **ENNE**²², Adriano **SAMPAIO**²³, André Luis **MONTAGNINI**²⁴, Alessandro **DINIZ**¹, Victor Hugo Fonseca de **JESUS**²⁵, Bhawna **SIROHI**²⁶, Shailesh V **SHRIKHANDE**²⁶, Renata D'Alpino **PEIXOTO**²⁷, Antonio Nocchi **KALIL**²⁸, Nicolas **JARUFE**²⁹, Martin **SMITH**³⁰, Paulo **HERMAN**²⁴.



"All cholecystectomy specimens should be examined by the surgeon intraoperatively".

A Comparison Between the Prognosis of Simultaneous and Salvage Radical Resection in Incidental Gallbladder Cancer

Simultaneous or Salvage



Overall survival

Disease free survival

ORIGINAL ARTICLE

All cholecystectomy specimens must be sent for histopathology to detect inapparent gallbladder cancer

Anil K. Agarwal, Raja Kalayarasan, Shivendra Singh, Amit Javed & Puja Sakhuja

Department of Gastrointestinal Surgery and Pathology, G. B. Pant Hospital and Maulana Azad Medical College, Delhi University, New Delhi, India

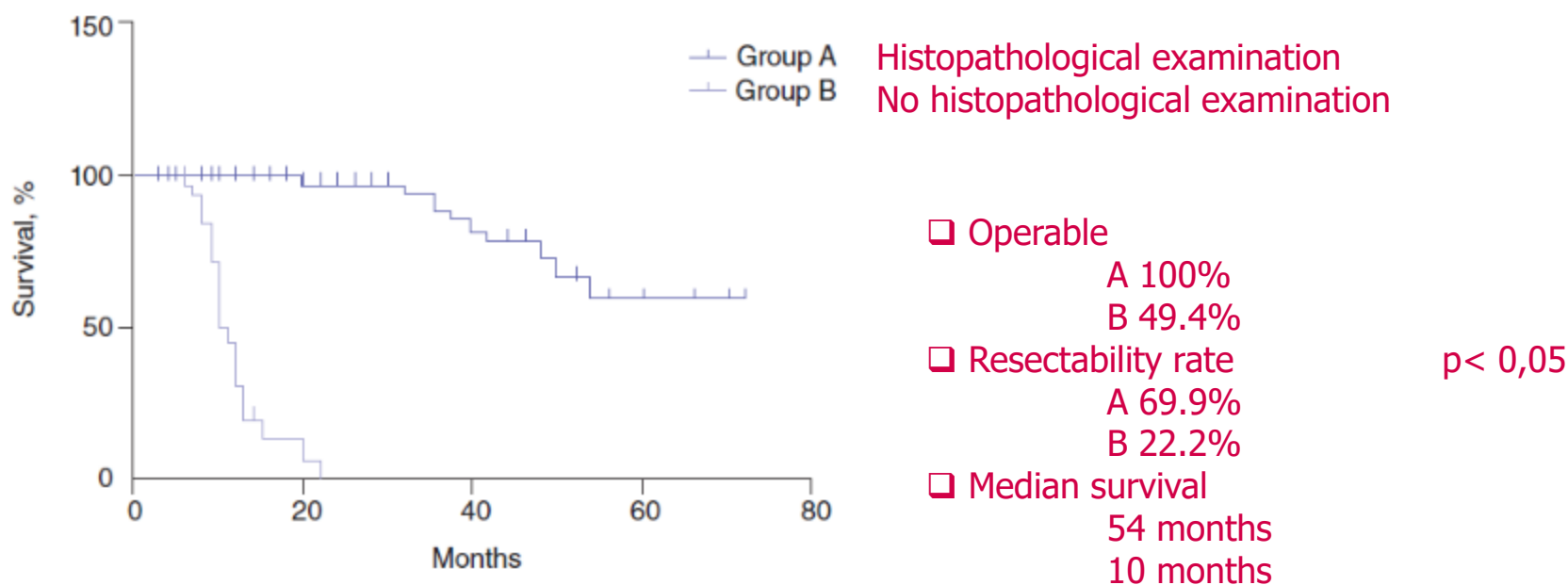


Figure 1 Survival rates in Groups A and B

ROUTINELY

Safe, selective histopathological examination of gallbladder specimens: a systematic review

V. P. Bastiaenen¹ , J. E. Tuijp¹, S. van Dieren¹, M. G. Besselink¹, T. M. van Gulik¹, L. Koens², P. J. Tanis¹ and W. A. Bemelman¹

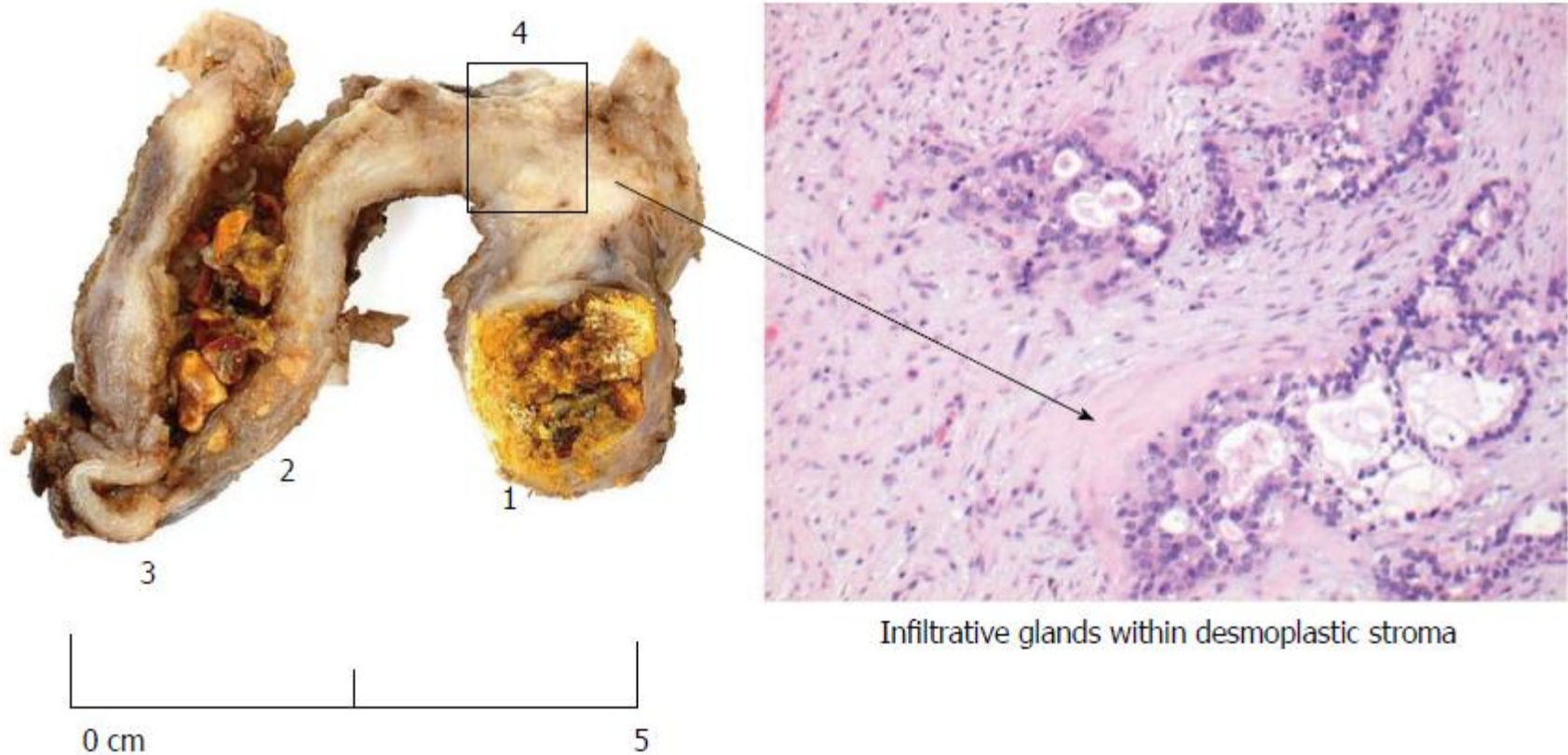
Original Article



Incidental Gallbladder Cancer: Routine versus Selective Histological Examination After Cholecystectomy

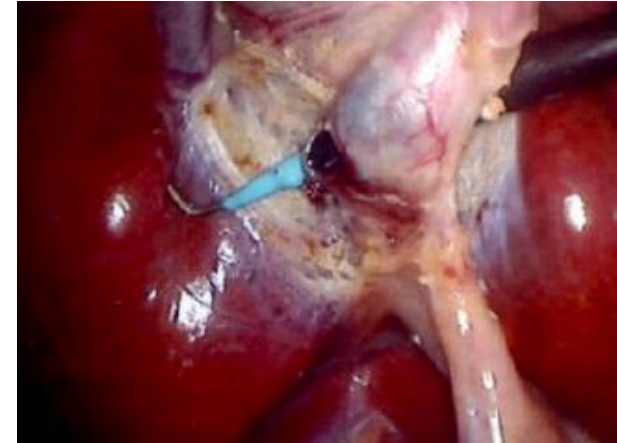
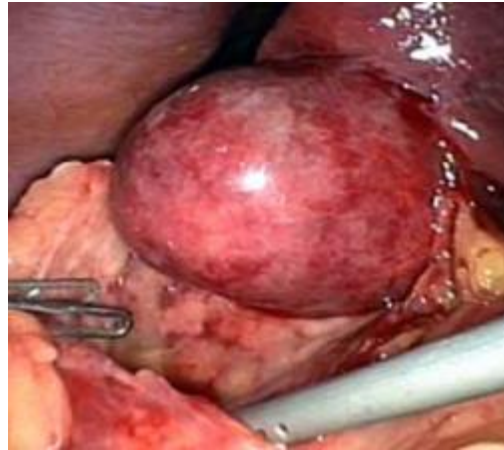
Andrew Alabi, MD, FRCS¹  A D. Arvind²  Nikhil Pawa, MD, FRCS¹ Shakir Karim, FRCP³
Jason Smith, MD, FRCS¹

HISTOPATHOLOGY



- ❑ 1. Cholesterol gallstones, impacted
- ❑ 2. RA sinuses containing impacted stones
- ❑ 3. Chronic cholecystitis
- ❑ 4. Ruptured gallbladder carcinoma

INCIDENTAL GALLBLADDER CARCINOMA



❑ INFORMATIONS:

Laparoscopic or laparotomic

Risk factors (suspected)

Acute cholecystitis

Gallbladder perforation (spillage of bile)

Use of endobag for removal of the gallbladder

Pneumoperitoneum was desufflate with the trocars in situ

Gallbladder was inspected once extracted

Tumor location

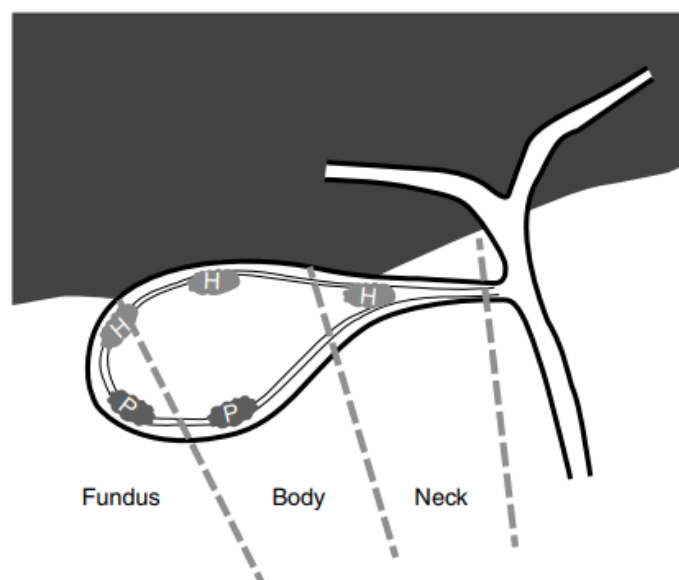


ORIGINAL ARTICLE – HEPATOBILIARY TUMORS

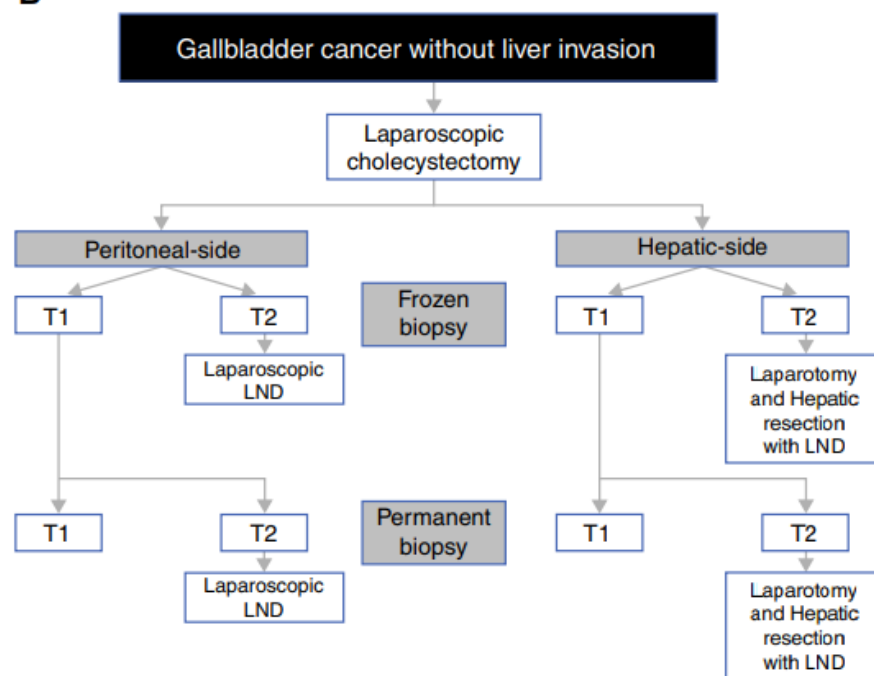
Surgical Strategy for T2 Gallbladder Cancer According to Tumor Location

Huisong Lee, MD¹, Dong Wook Choi, MD, PhD¹, Jin Young Park, MD¹, Sangmin Youn, MD¹, Wooil Kwon, MD¹, Jin Seok Heo, MD, PhD¹, Seong Ho Choi, MD, PhD¹, and Kee-Taek Jang, MD, PhD²

A

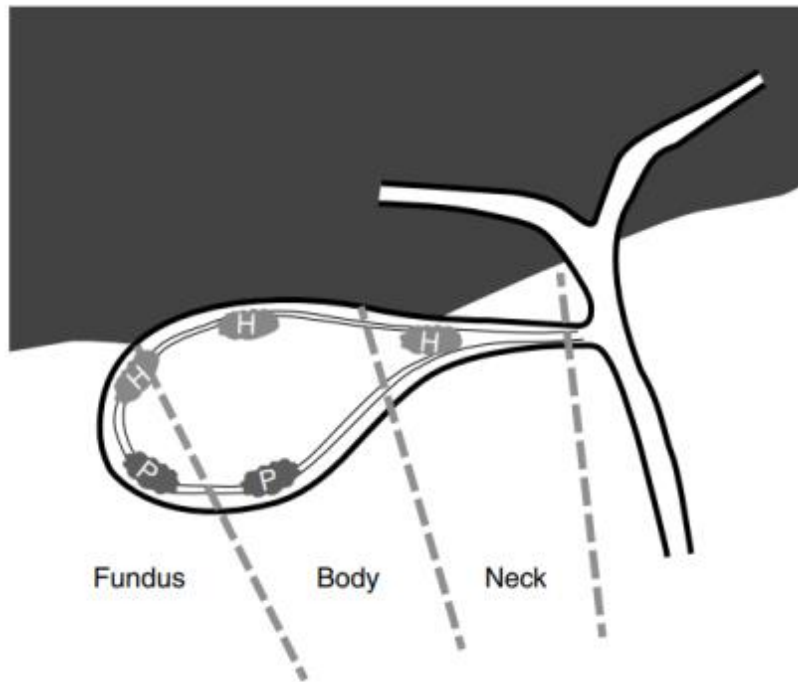


B

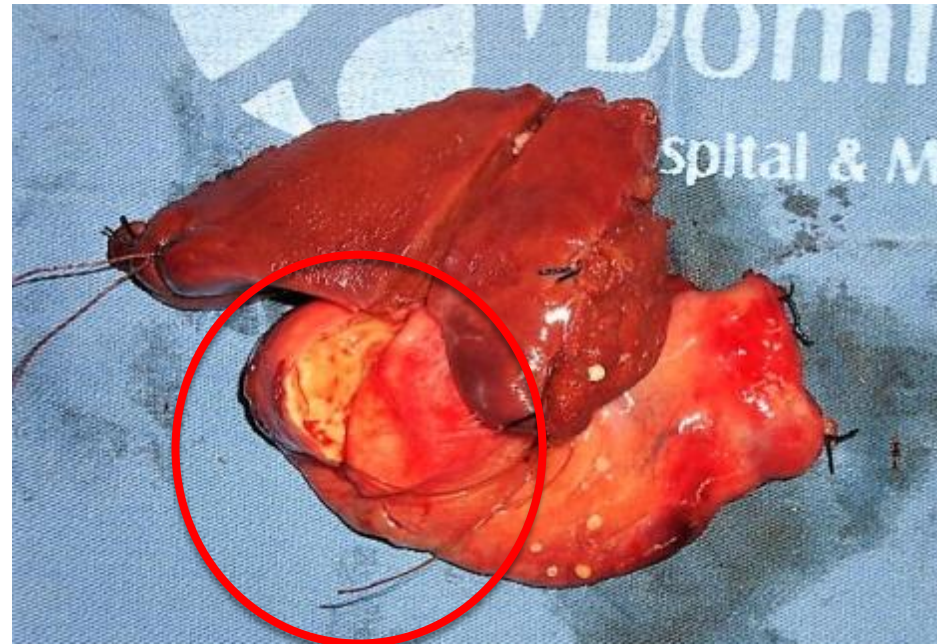
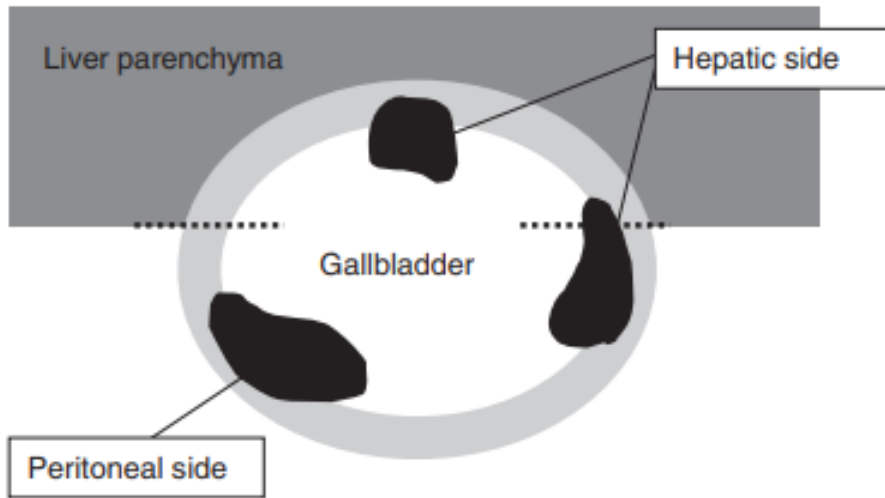


TUMOR LOCATION

TUMOR LOCATION



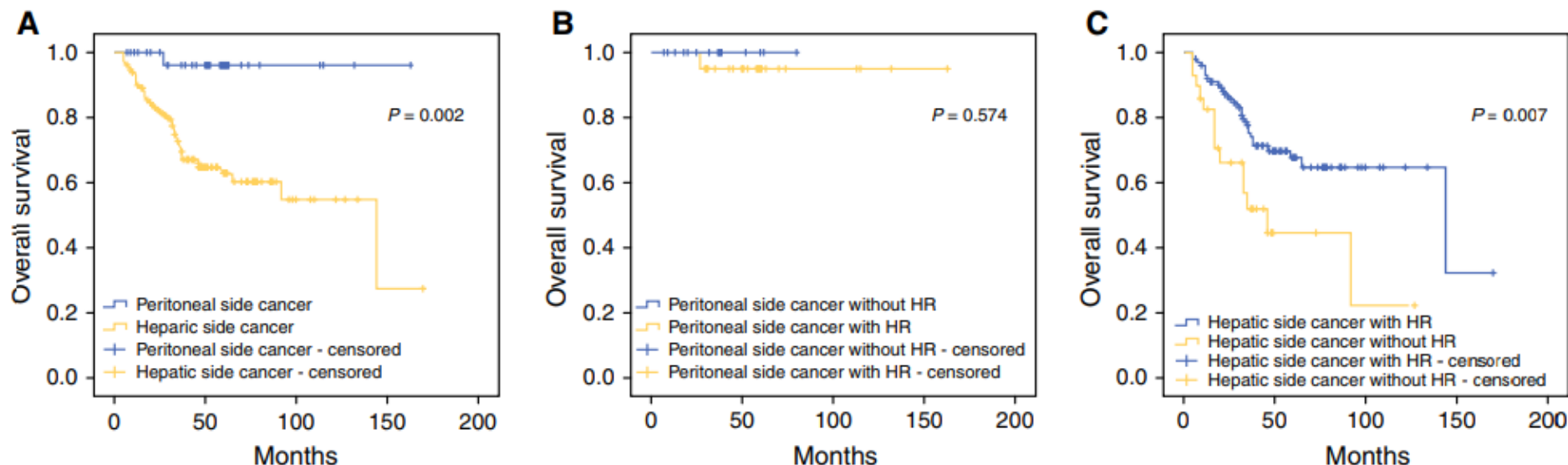
TUMOR LOCATION



ORIGINAL ARTICLE – HEPATOBILIARY TUMORS

Surgical Strategy for T2 Gallbladder Cancer According to Tumor Location

Huisong Lee, MD¹, Dong Wook Choi, MD, PhD¹, Jin Young Park, MD¹, Sangmin Youn, MD¹, Wooil Kwon, MD¹, Jin Seok Heo, MD, PhD¹, Seong Ho Choi, MD, PhD¹, and Kee-Taek Jang, MD, PhD²



TUMOR LOCATION

RESEARCH ARTICLE

Intraoperative bile spillage is associated with worse survival in gallbladder adenocarcinoma

SPILLAGE OF BILE

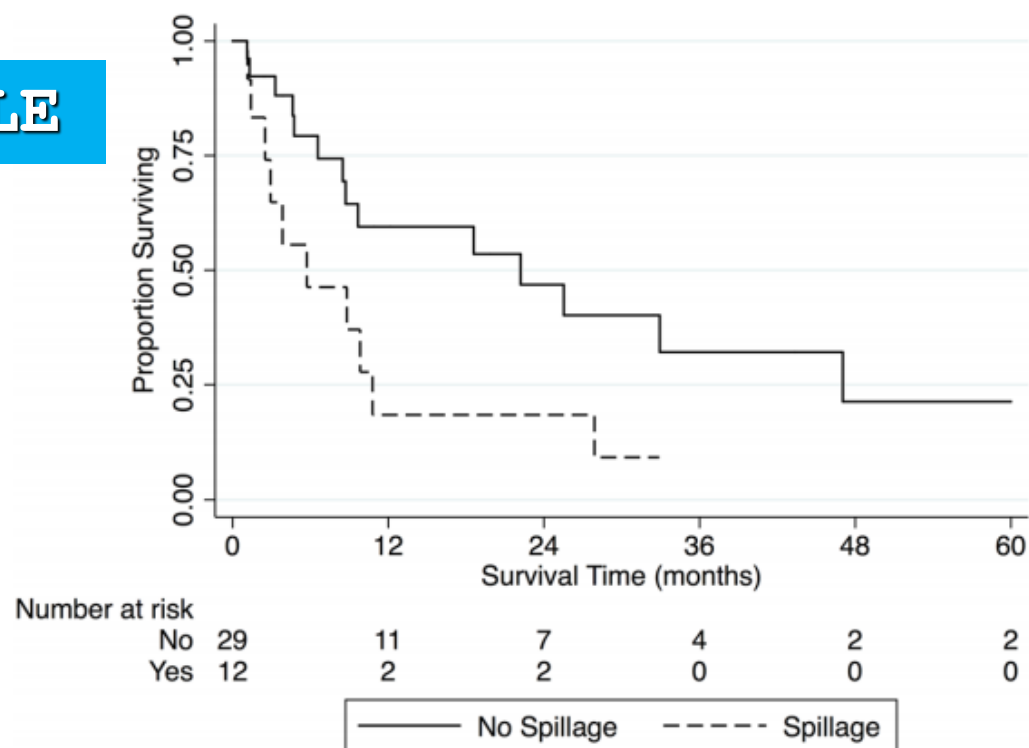


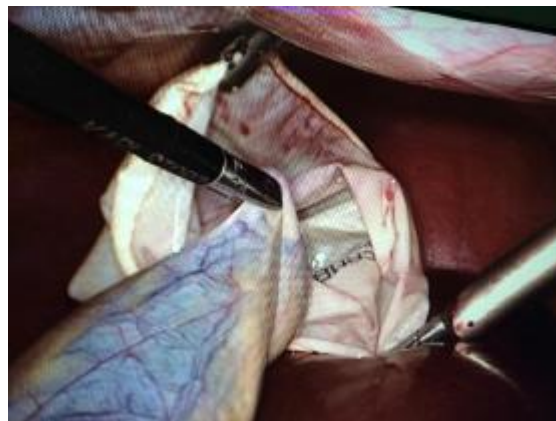
FIGURE 1 Progression-free survival by intraoperative bile spillage; Wilcoxon $P = .038$

AVOID BILE SPILLAGE

Use of Retrieval Bags in Incidental Gallbladder Cancer Cases

Thorsten Oliver Goetze · Vittorio Paolucci

- ❑ Port-site metastases occur in 14–17% of patients with incidentally discovered gallbladder carcinoma within the first 2 years after the initial operation.
- ❑ The most important risk factor for port-site metastases is gallbladder perforation during retrieval.
- ❑ Intraoperative perforation increases the incidence of port-site metastases from 9% to 40%.



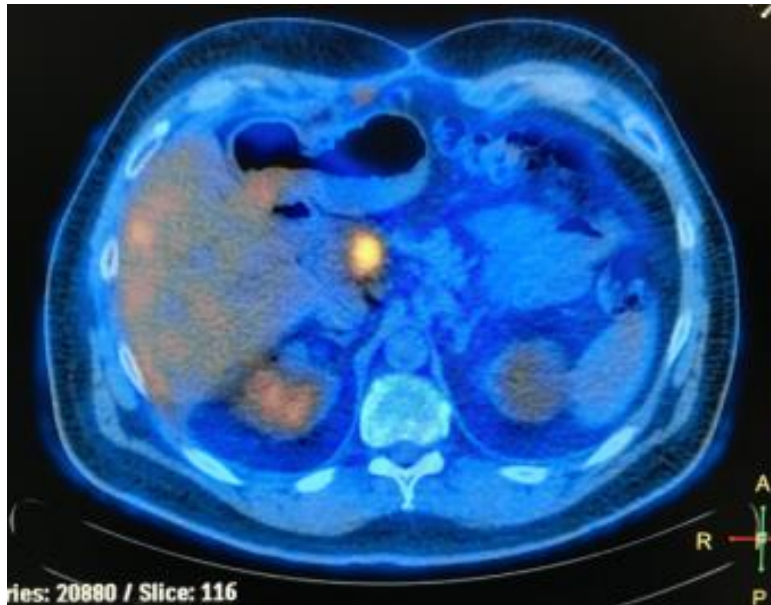
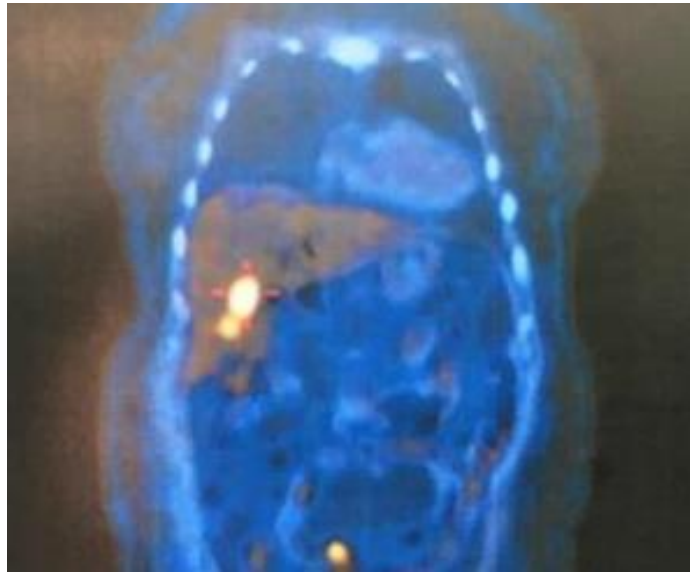
Use of Retrieval Bags in Incidental Gallbladder Cancer Cases

Thorsten Oliver Goetze · Vittorio Paolucci

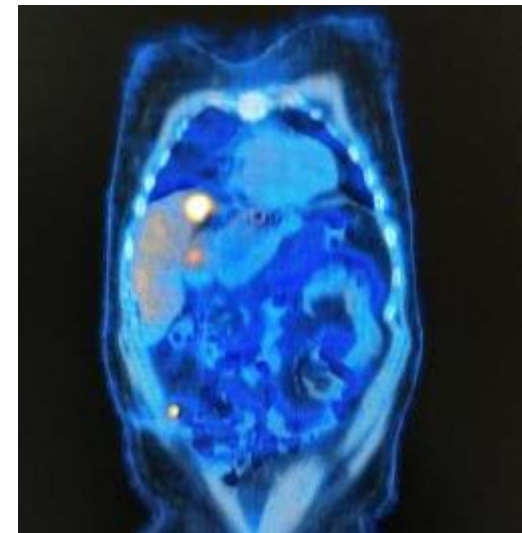
Table 8 Recurrence rate of laparoscopic patients with versus without perforation of the organ

Laparoscopy (total)	No Perforation	Perforation
$n = 330$	$n = 257$	$n = 73$
Relapse	Relapse	Relapse
$n = 98$ (30%)	$n = 70$ (27.2%)	$n = 28$ (38.4%)
χ^2 and Fisher's exact test, $P = 0.047$		

STAGING FOR GALLBLADDER CARCINOMA



PET-CT



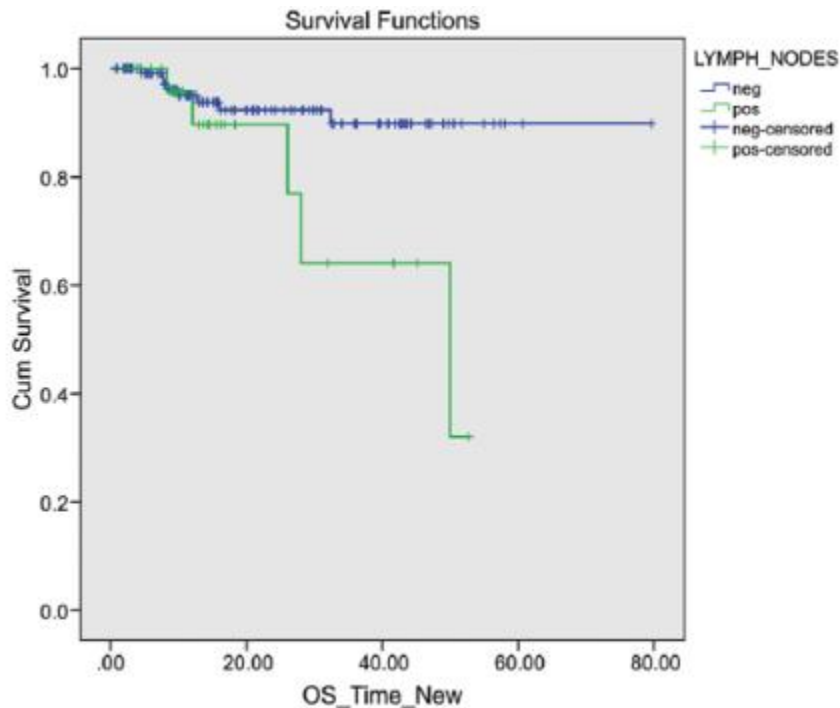
Role of PET CT Scan in Redefining Treatment of Incidental Gall Bladder Carcinoma

MAHESH GOEL, MS,^{1*} ANUP TAMHANKAR, MS, MCh,¹ VENKATESH RANGARAJAN, MD,²
SHRADDHA PATKAR, MS, MCh,¹ MUKTA RAMADWAR, MD,³ AND SHAILESH V. SHRIKHANDE, MS, FRCS¹

¹Gastrointestinal and Hepato-Pancreato-Biliary Surgical Service, Tata Memorial Centre, Mumbai, India

²Department of Nuclear Medicine, Tata Memorial Centre, Mumbai, India

³Department of Pathology, Tata Memorial Centre, Mumbai, India



□ PET-CT

Stratify patients

Avoid surgery in pT1b

Chemotherapy in pT2

STAGING FOR GALLBLADDER CARCINOMA

❑ 18-FDG positron emission tomography (PET)-CT

Occult peritoneal and/or omental metastases

Lymph node metastases

Residual disease on gallbladder bed

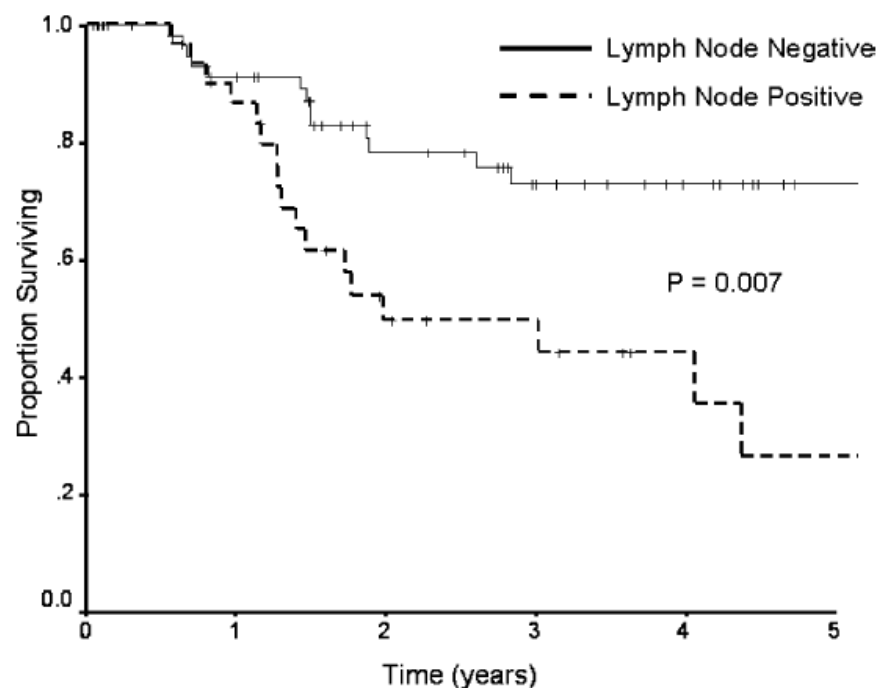
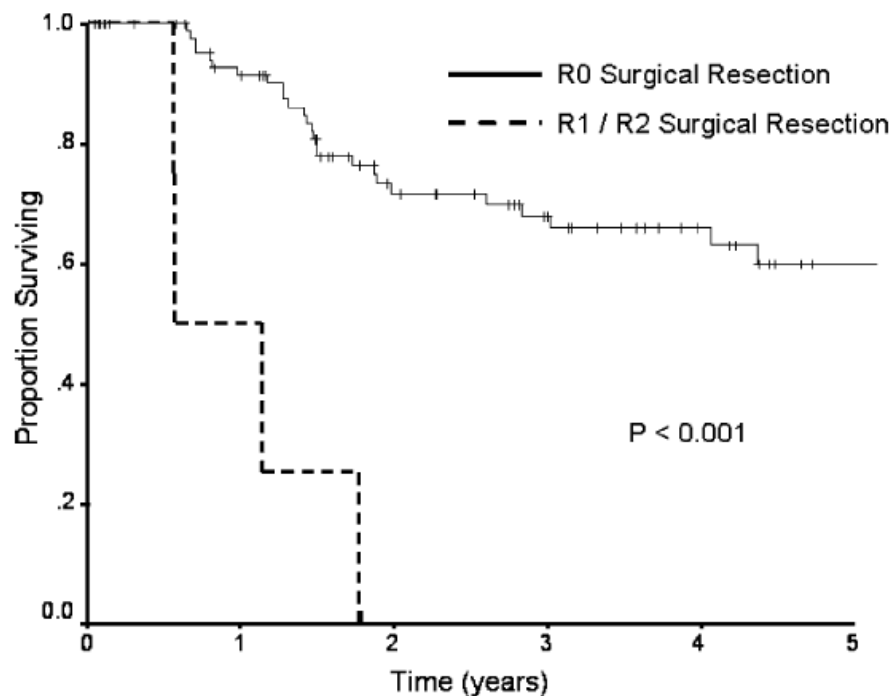
Port site disease

RESIDUAL DISEASE

Site of Disease After 2nd Surgery	Number of Patients (%)		
	T1 (<i>n</i> =8)	T2 (<i>n</i> =67)	T3 (<i>n</i> =22)
Disease any site	3 (37.5)	38 (56.7)	17 (77.3)
Residual cancer in liver bed	0 (0)	7 (10.4)	8 (36.4)
Metastatic disease in lymph nodes	1 (12.5)	21 (31.3)	10 (45.5)
Common bile duct			

RE-RESECTION

- ❑ R0 resection
- ❑ Lymphadenectomy



INCIDENTAL GALLBLADDER CARCINOMA

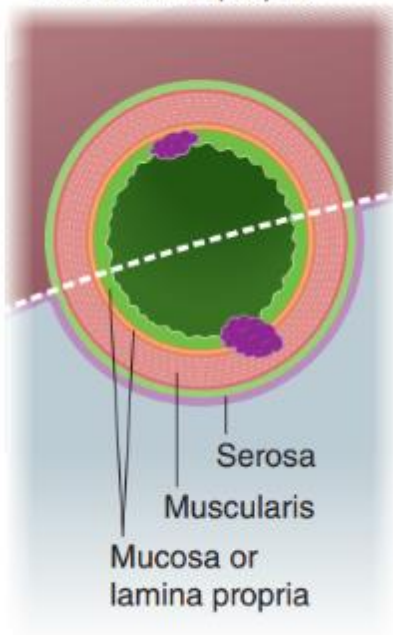
RE-RESECTION IS ASSOCIATED WITH BETTER SURVIVAL

41% VS 15% (Five years)

ORIGINAL SCIENTIFIC REPORT

What is the Better Choice for T1b Gallbladder Cancer: Simple Versus Extended Cholecystectomy

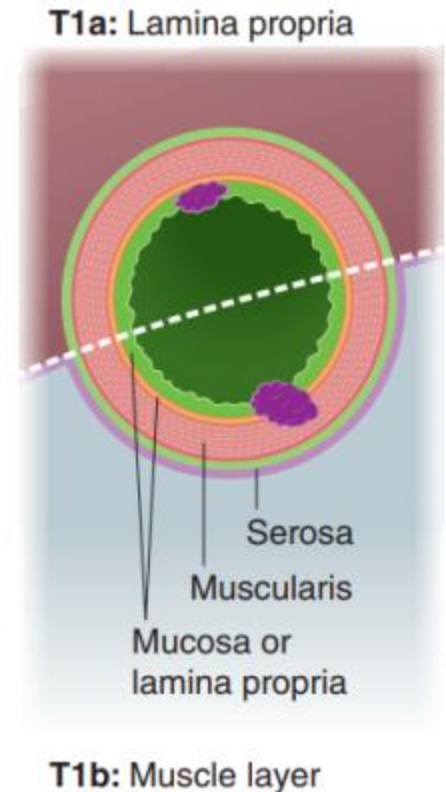
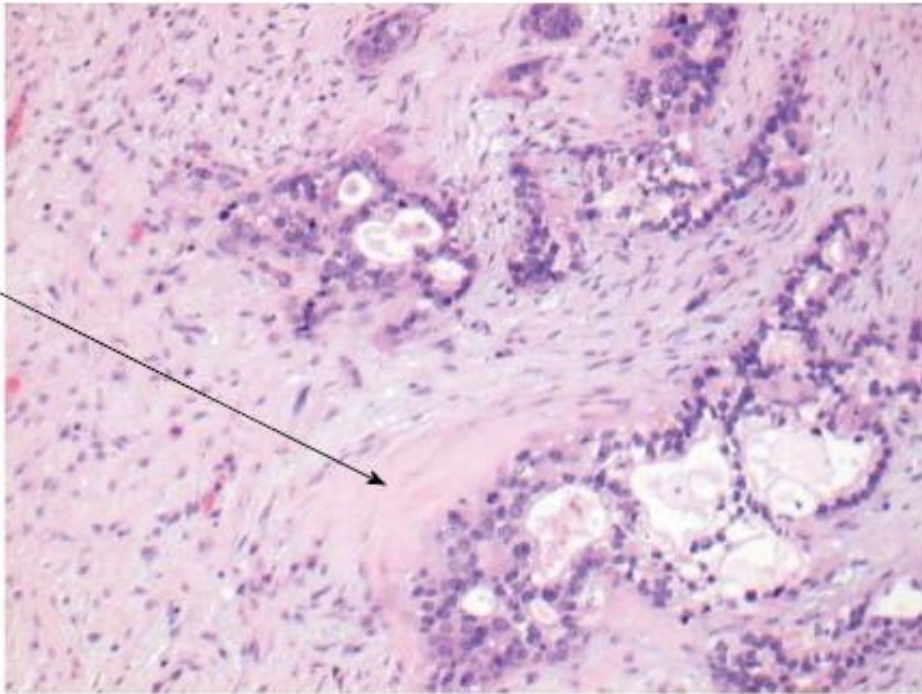
T1a: Lamina propria



T1b: Muscle layer

EXTENDED CHOLECYSTECTOMY

INCIDENTAL GALLBLADDER CARCINOMA



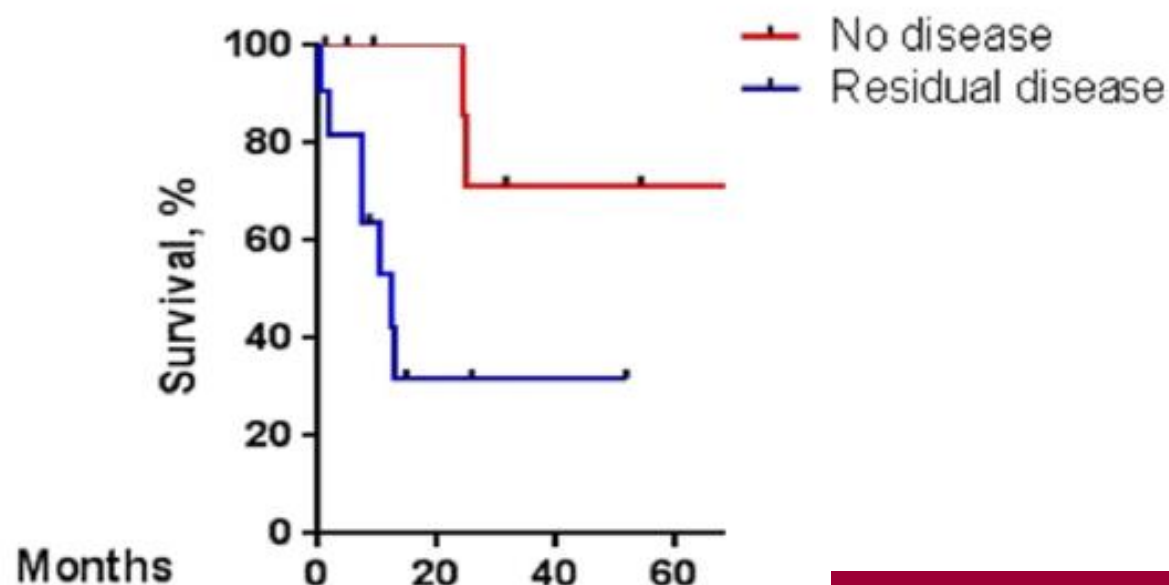
- ❑ 1. T1b or more (including cystic duct)
- ❑ 2. Positive cystic duct lymph node

RE-RESECTION

ORIGINAL ARTICLE

Does a second resection provide a survival benefit in patients diagnosed with incidental T1b/T2 gallbladder cancer following cholecystectomy?

Henry Watson¹, Bobby Dasari¹, Judy Wyatt², Ernest Hidalgo¹, Raj Prasad¹, Peter Lodge¹ & Giles Toogood¹



RE-RESECTION

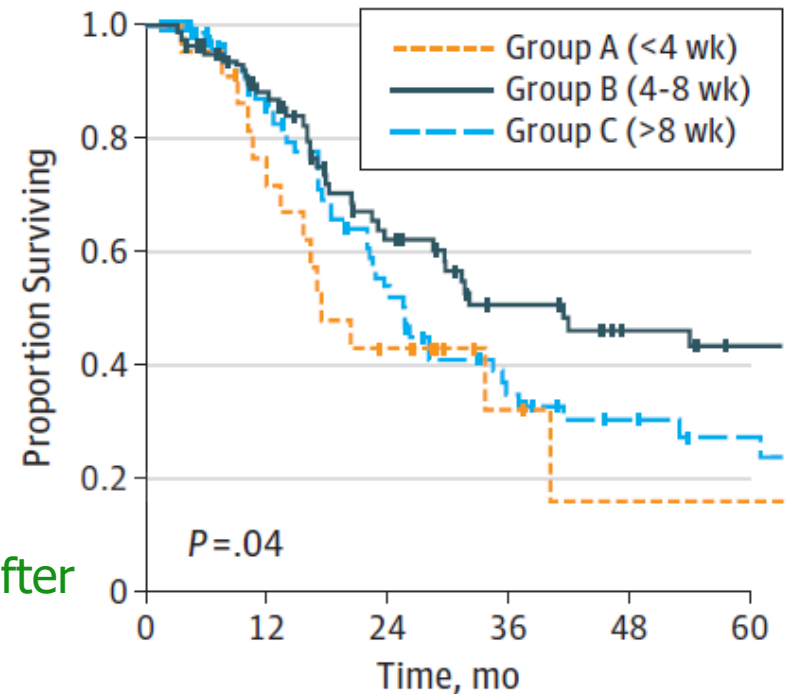
TIME TO RE-RESECTION

JAMA Surgery | Original Investigation

Association of Optimal Time Interval to Re-resection for Incidental Gallbladder Cancer With Overall Survival A Multi-Institution Analysis From the US Extrahepatic Biliary Malignancy Consortium

Cecilia G. Ethun, MD; Lauren M. Postlewait, MD; Nina Le, BS; Timothy M. Pawlik, MD, MPH, PhD; Stefan Buettner, MD; George Poultsides, MD; Thuy Tran, MD; Kamran Idrees, MD; Chelsea A. Isom, MD; Ryan C. Fields, MD; Linda X. Jin, MD; Sharon M. Weber, MD; Ahmed Salem, MD; Robert C. G. Martin, MD; Charles Scoggins, MD; Perry Shen, MD; Harveshp D. Mogal, MD; Carl Schmidt, MD; Eliza Beal, MD; Ioannis Hatzaras, MD; Rivka Shenoy, MD; David A. Kooby, MD; Shishir K. Maithel, MD

C OS since cholecystectomy



□ Time to re-resection

Appears to be between 4 and 8 weeks after the initial cholecystectomy.

$p < 0.05$



BRAZILIAN CONSENSUS ON INCIDENTAL GALLBLADDER CARCINOMA

Consenso brasileiro de carcinoma incidental de vesícula biliar

On behalf of the "International Study Group of Hepatopancreatobiliary Cancer- ISG-HPB-Cancer",

Question 5

Which is the ideal timeframe between cholecystectomy and radical surgery for incidentally discovered gallbladder cancer?

Reoperation should be performed as early as possible once final histopathological staging is available, metastatic workup is complete and patients is fit for reoperation which may take 2-4 weeks after index cholecystectomy depending on the time of referral and the stage of the disease.

TIME TO RE-RESECTION

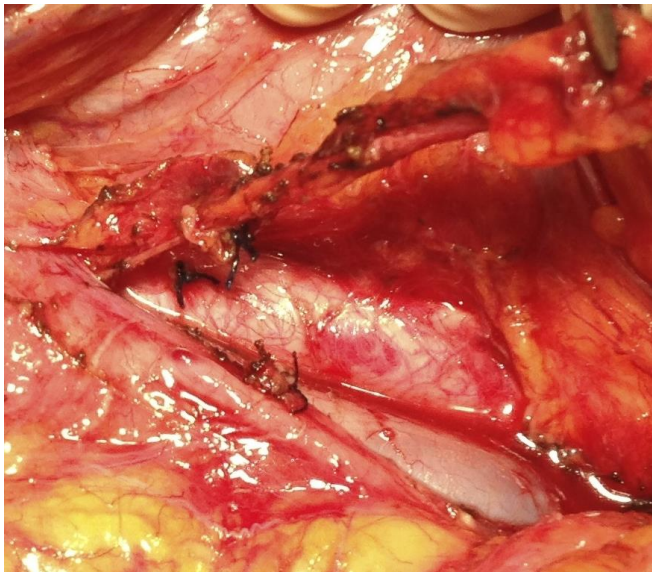
LAPAROSCOPIC STAGING

- ❑ Avoid unnecessary surgery (38-62%)
- ❑ Oncologic ireresecability in up 23%
- ❑ High incidence of positive findings
- ❑ Recommended for re-resection

LAPAROSCOPIC STAGING



❑ Frozen section of lymph node 16b1



ORIGINAL ARTICLE

Role of routine 16b1 lymph node biopsy in the management of gallbladder cancer: an analysis

Anil K. Agarwal, Raja Kalayarasan, Amit Javed & Puja Sakhuja

Department of Gastrointestinal Surgery and Pathology, Govind Ballabh Pant Hospital and Maulana Azad Medical College, Delhi University, New Delhi, India

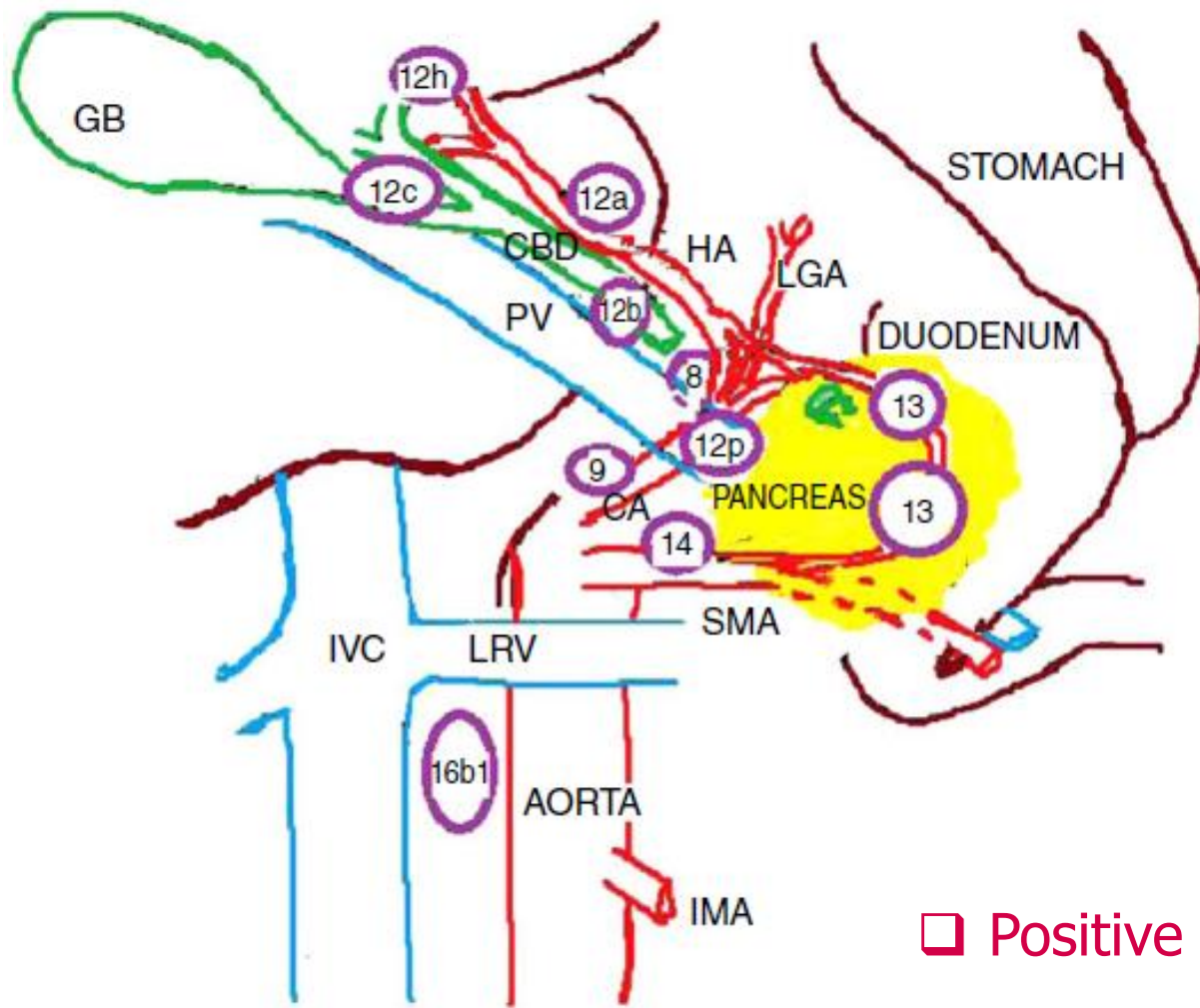
Table 1 Clinicopathological characteristics in gallbladder cancer (GBC) patients with 16b1 lymph node (LN) metastases (Group A) and without 16b1 LN metastases (Group B)

Characteristics	Group A (n = 34)	Group B (n = 149)	P-value
Clinical stage, n (%)			
Early GBC	2 (5.9%)	23 (15.4%)	0.175
Locally advanced GBC	32 (94.1%)	126 (84.6%)	
Jaundice	11 (32.4%)	18 (12.1%)	0.008
Gastric outlet obstruction	4 (11.8%)	5 (3.4%)	0.063
Incidental GBC, n (%)			
Stage T1b	–	6 (4.0%)	1.000
Stages T2 and T3	2 (5.9%)	23 (15.4%)	
Tumour markers			
CEA, ng/ml, median (range)	21.7 (2.3–189)	10.6 (2.7–105)	0.012
CA 19-9, U/ml, median (range)	181.5 (10.3–1081)	79.3 (12.6–313)	0.023

CEA, carcinoembryonic antigen; CA 19-9, carbohydrate antigen 19-9.

LYMPH NODE BIOPSY

❑ Frozen section of lymph node 16b1

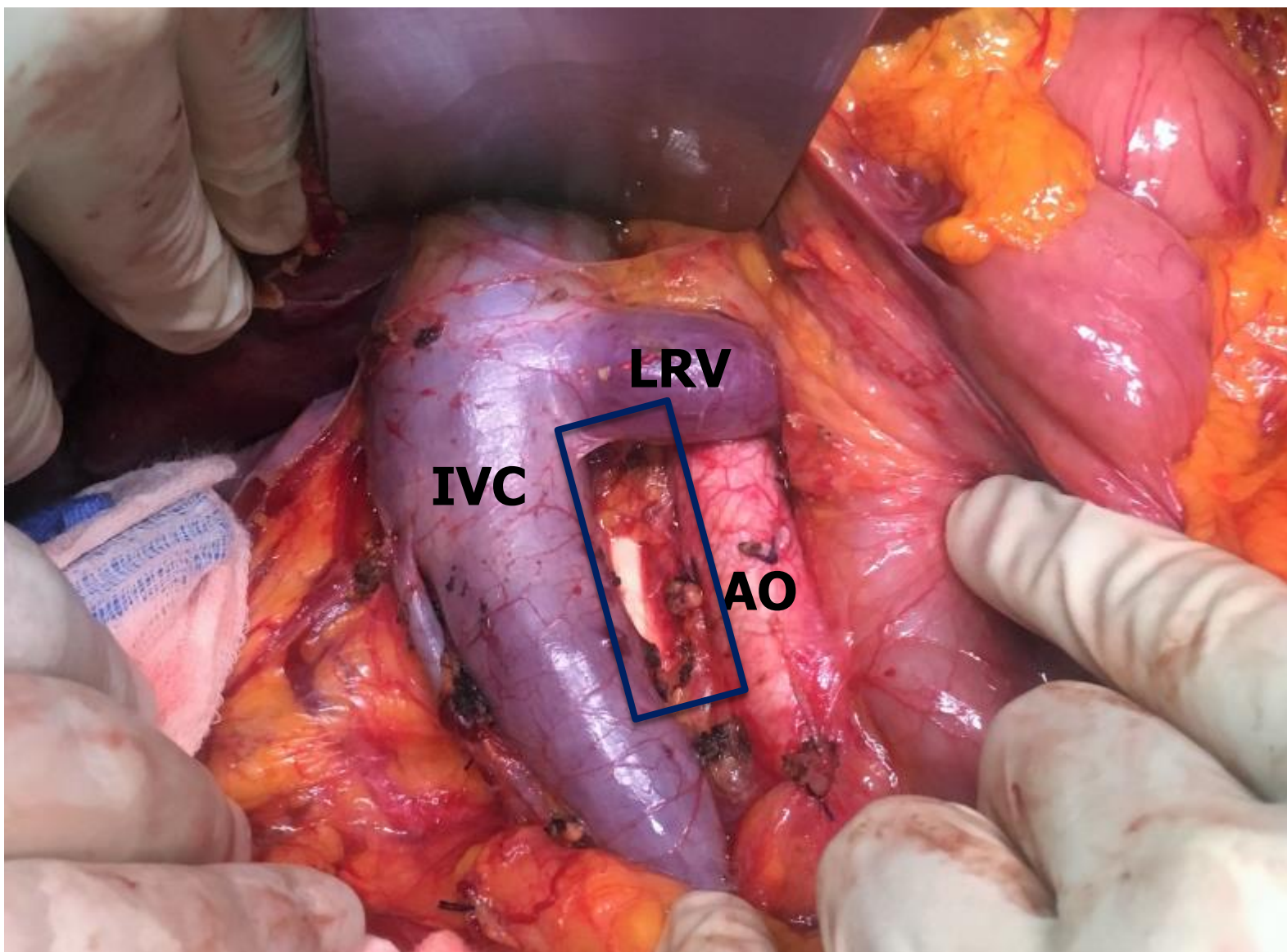


Abbreviations

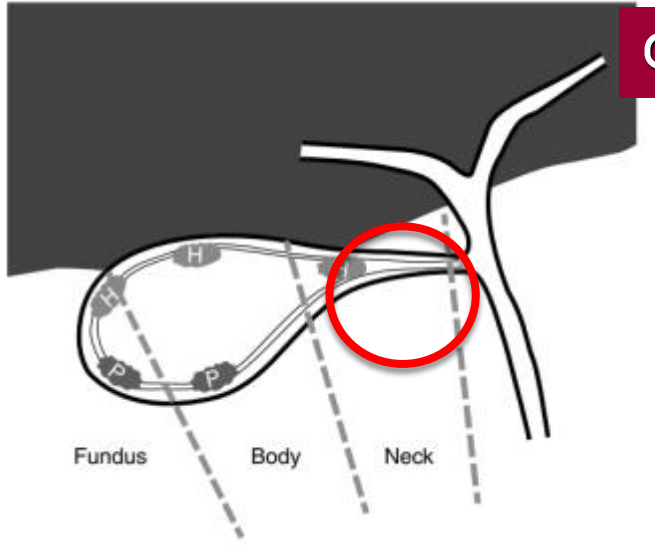
GB – Gallbladder
CBD – Common bile duct
PV – Portal vein
HA – Hepatic artery
LGA – Left gastric artery
CA – Coeliac artery
SMA – Superior mesenteric artery
IMA – Inferior mesenteric artery
LRV – Left renal vein
IVC – Inferior vena cava

❑ Positive

Do not proceed the surgery

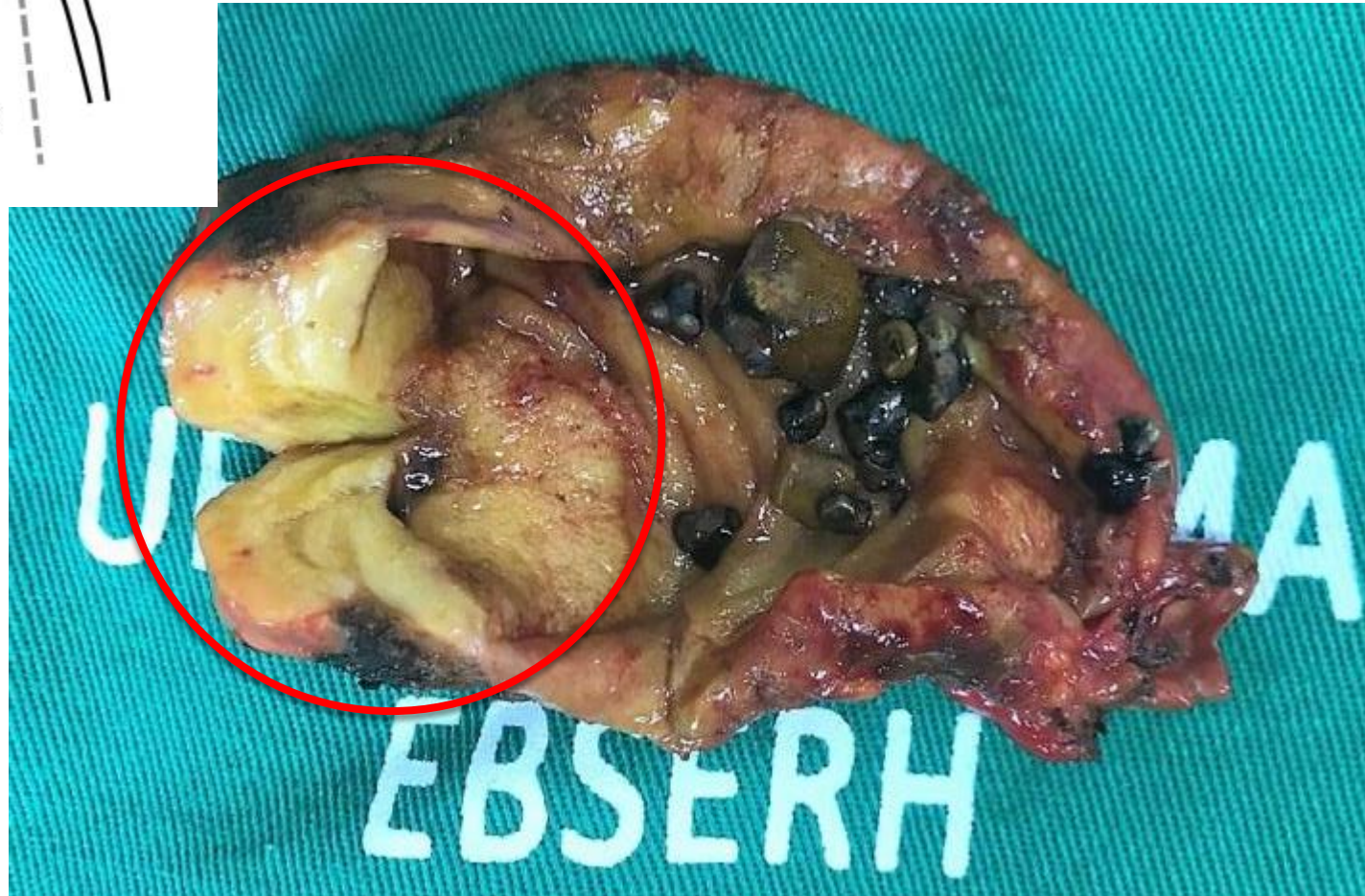
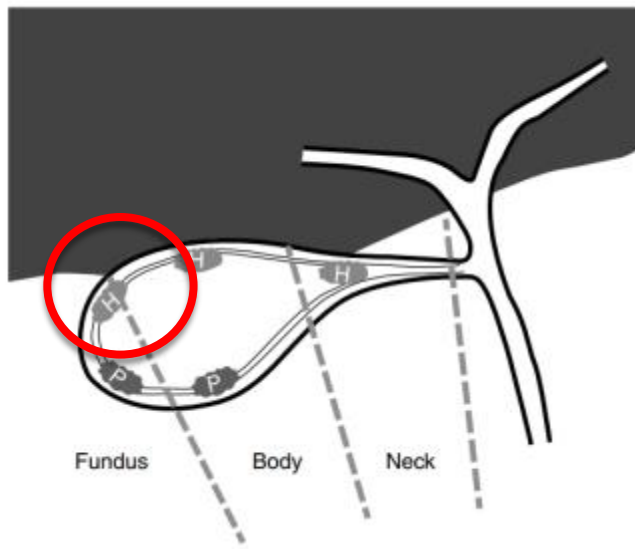


CYSTIC DUCT EVALUATION

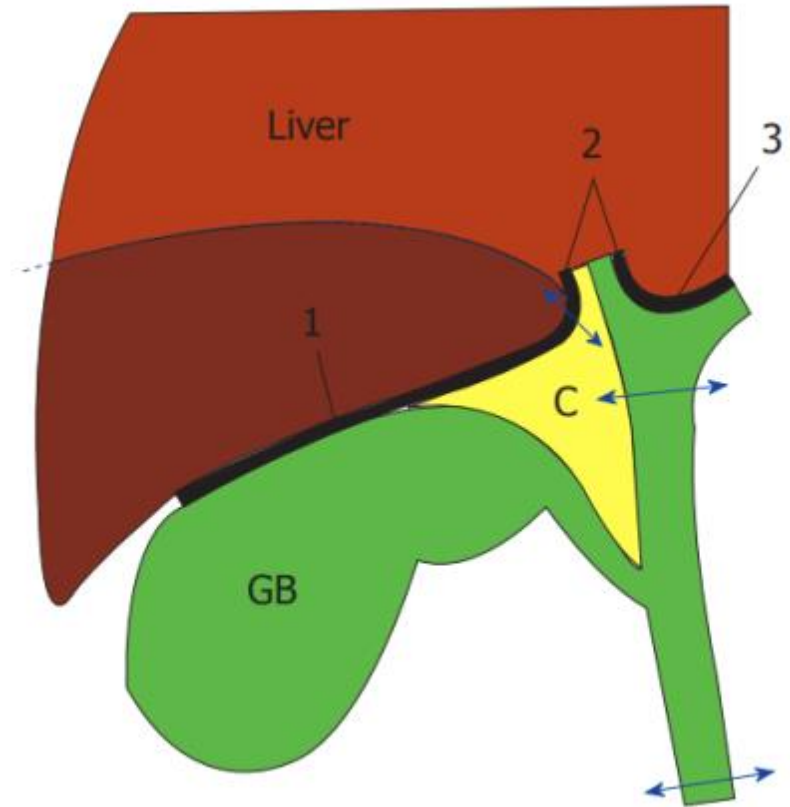
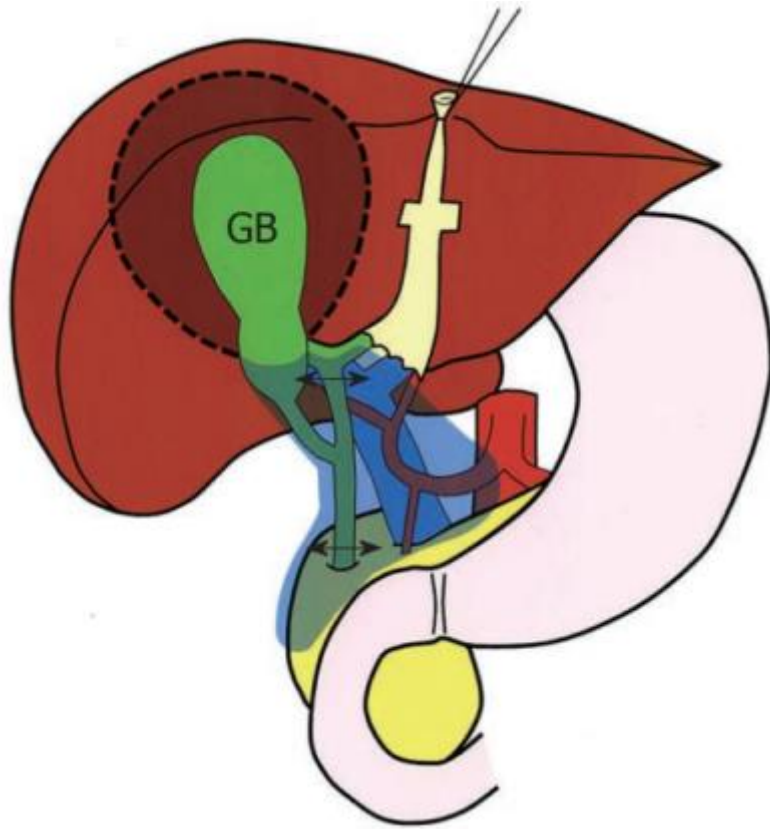


ROUTINELY

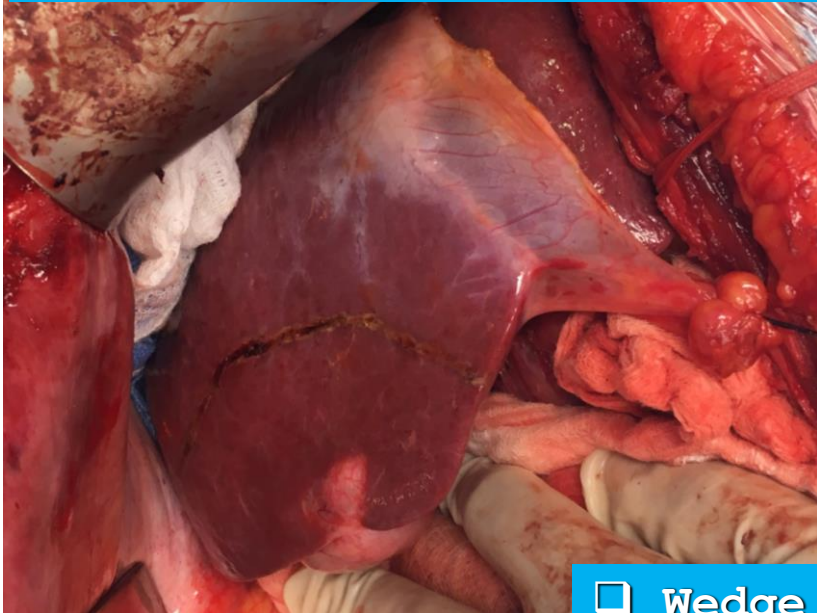




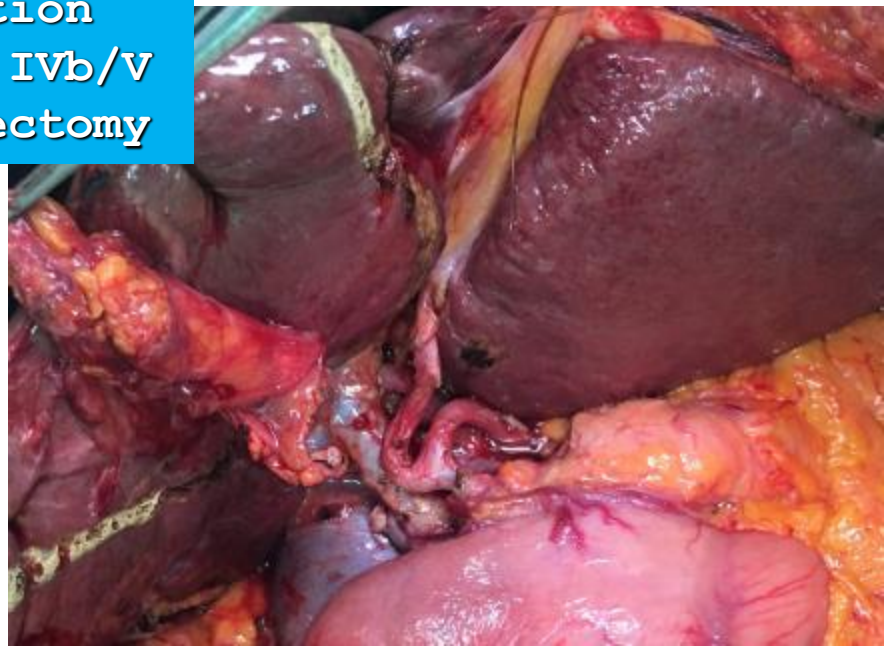
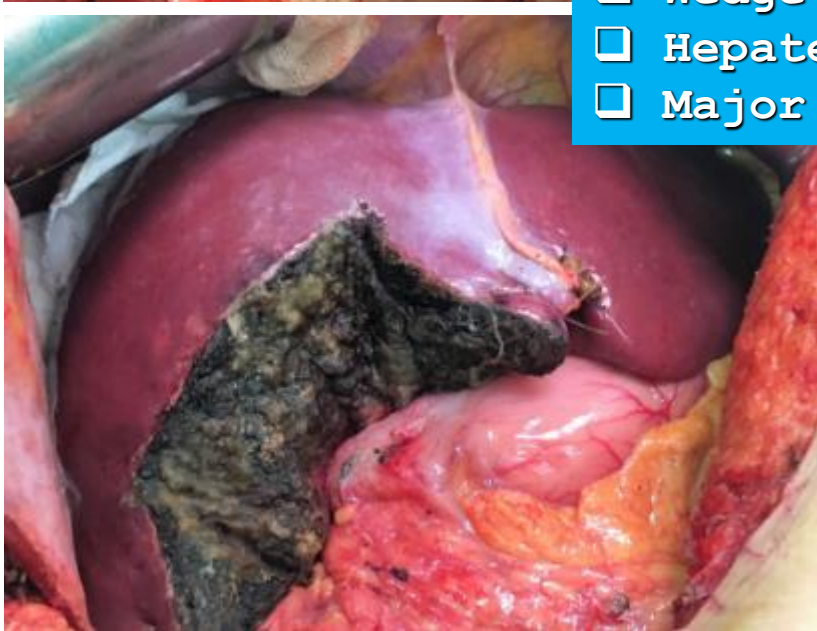
EXTENT OF LIVER RESECTION



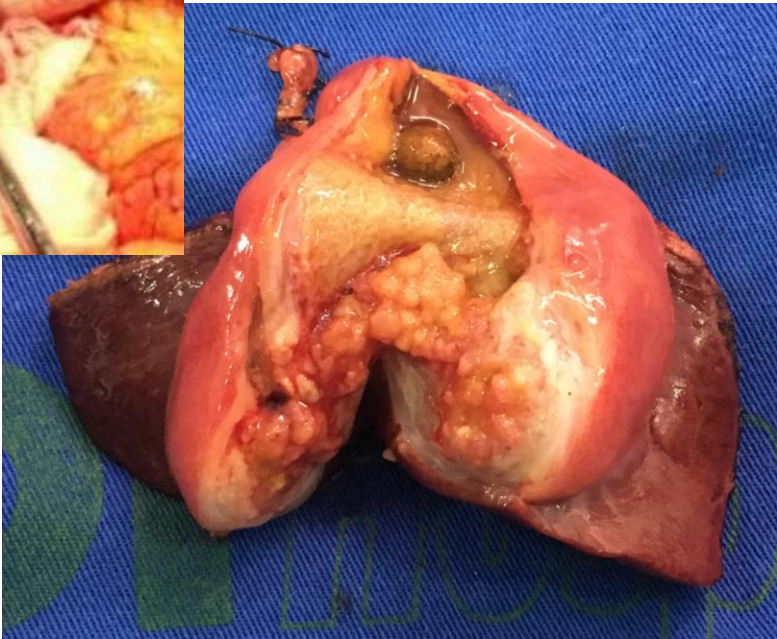
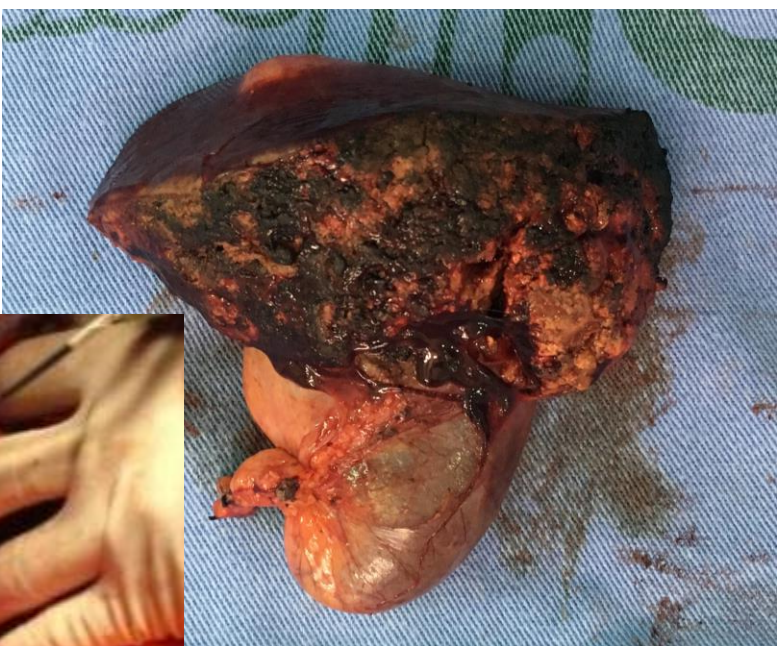
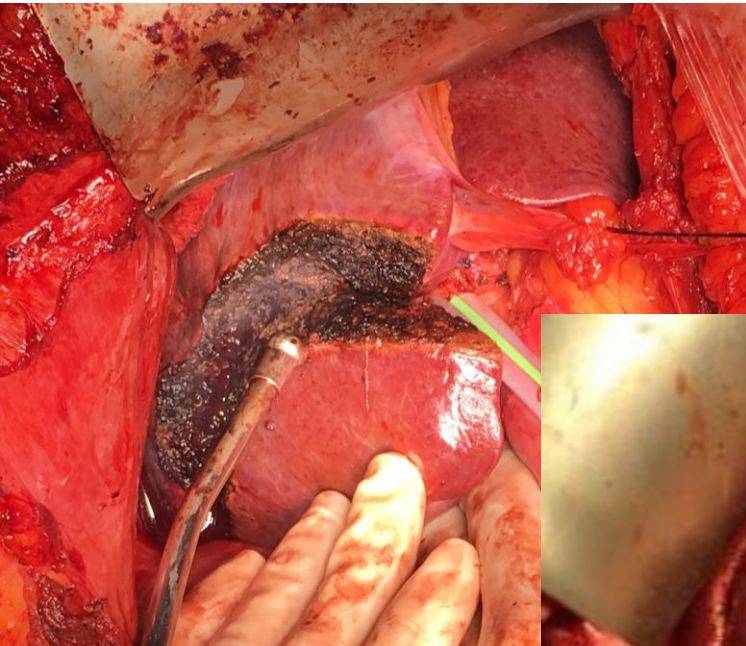
EXTENT OF LIVER RESECTION

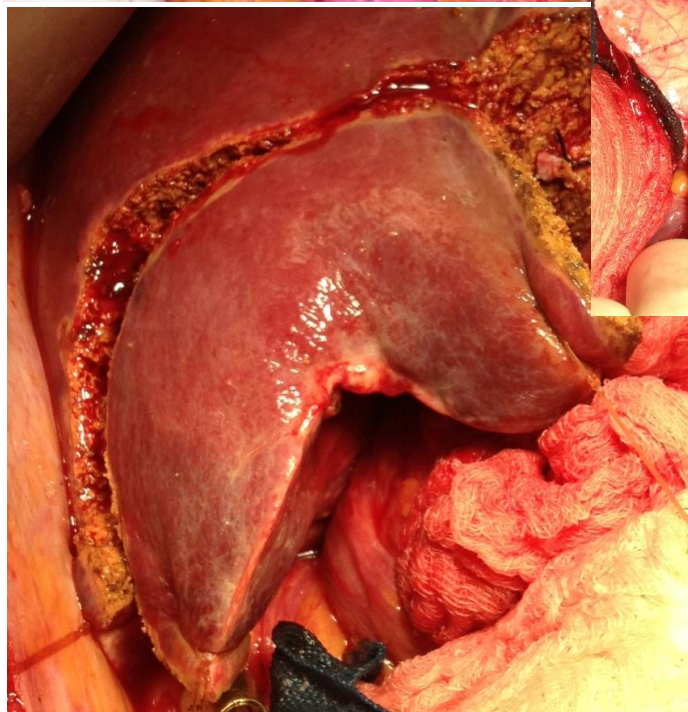
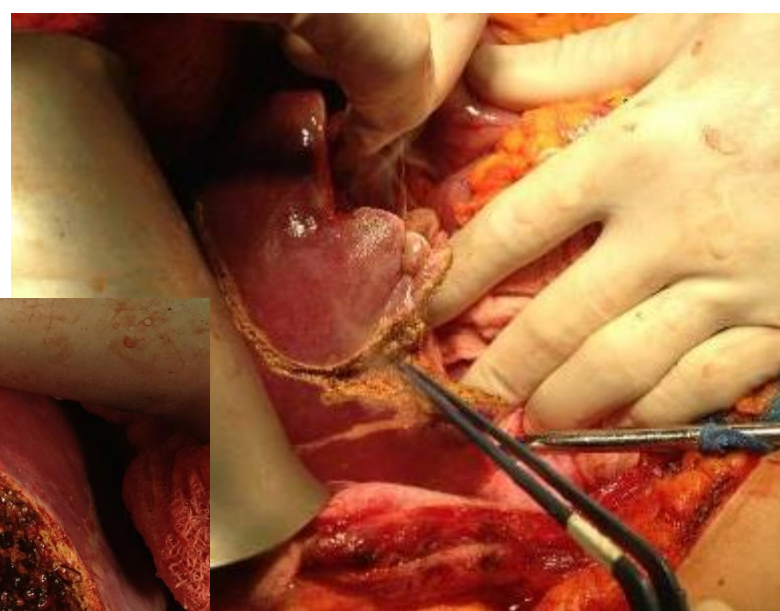
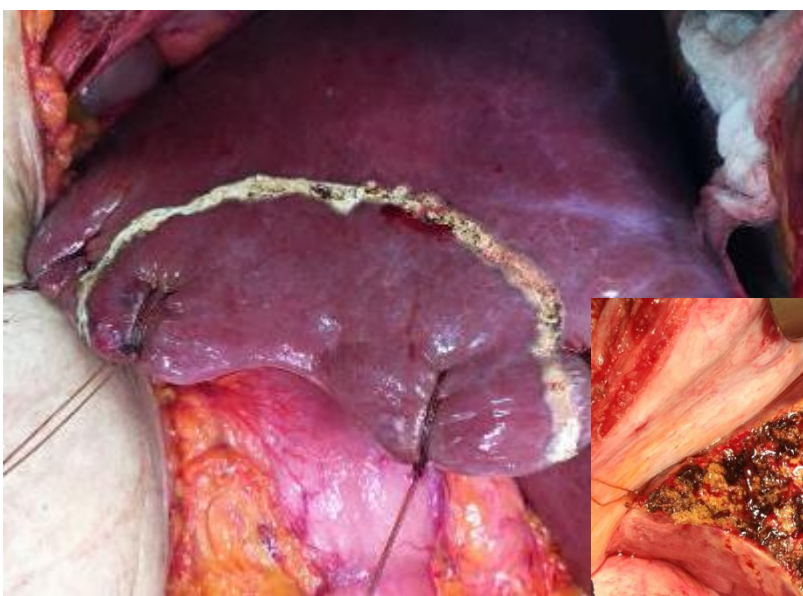


- ☐ Wedge resection
- ☐ Hepatectomy IVb/V
- ☐ Major hepatectomy











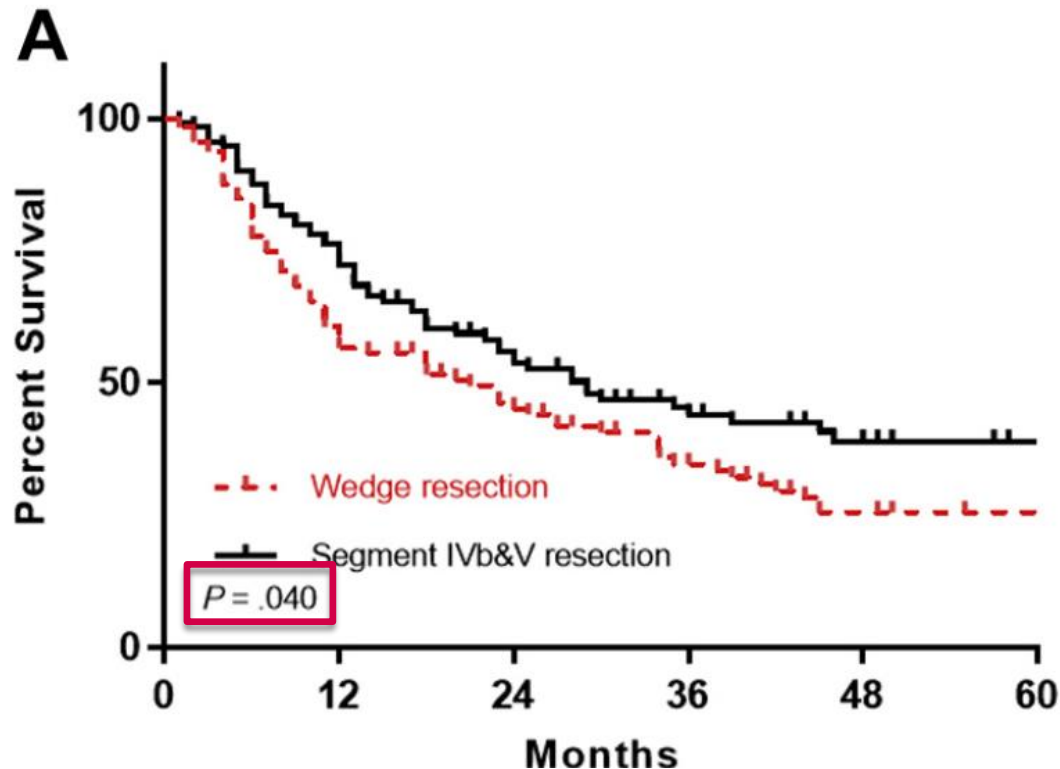
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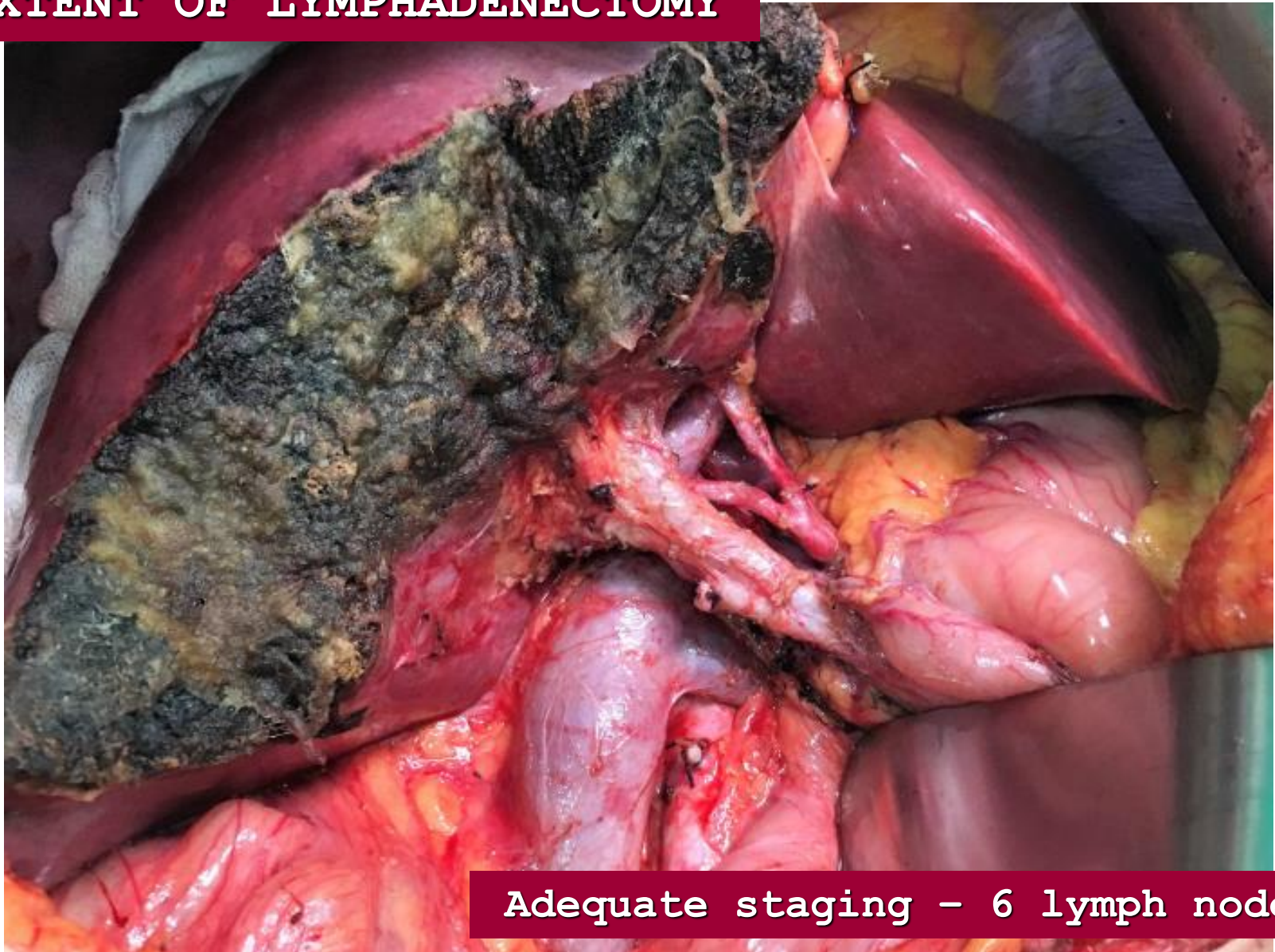
Surgery

journal homepage: www.elsevier.com/locate/surg

Hepatectomy strategy for T2 gallbladder cancer between segment IVb and V resection and wedge resection: A propensity score-matched study



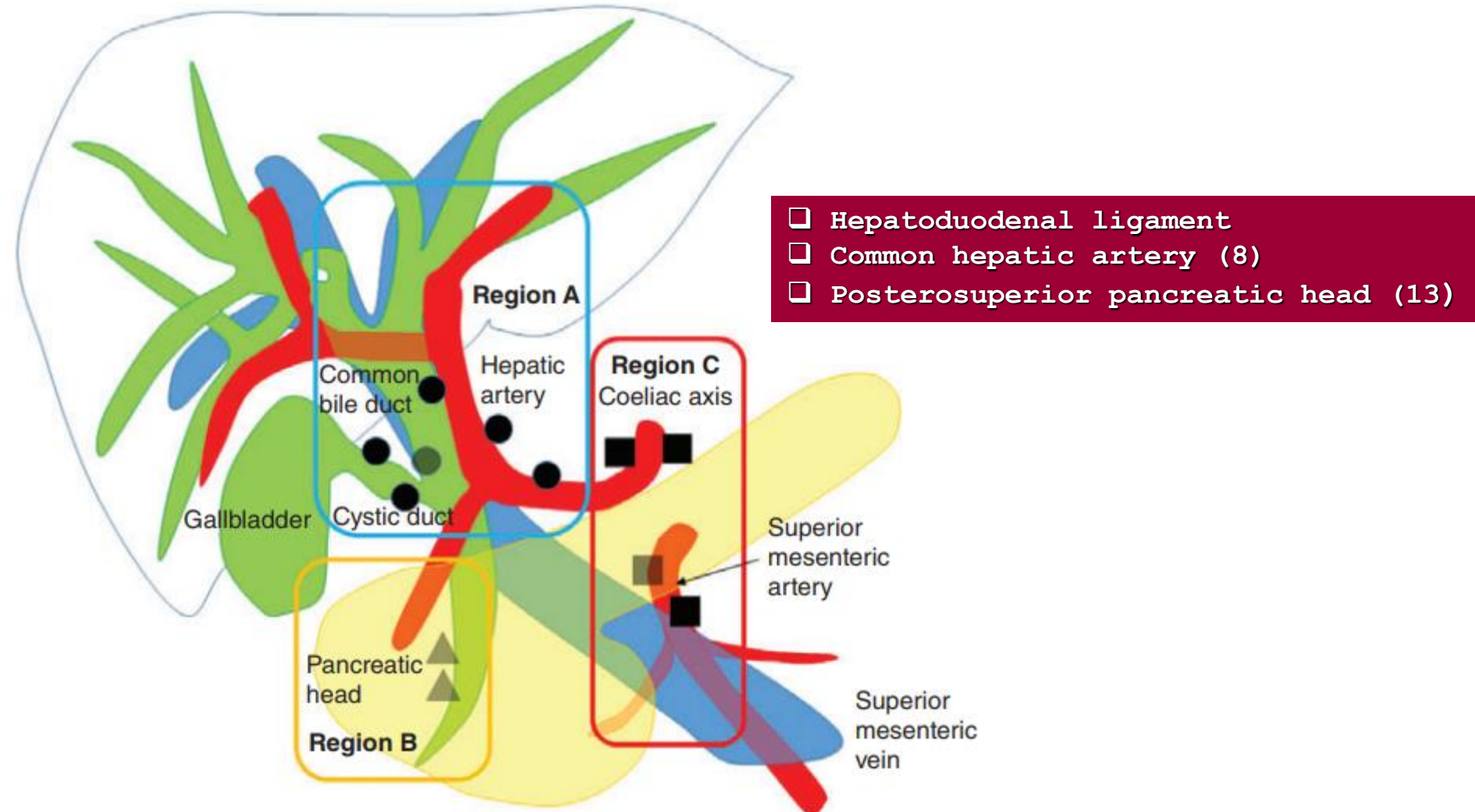
EXTENT OF LYMPHADENECTOMY



Adequate staging – 6 lymph nodes

Extent of lymph node dissection in patients with gallbladder cancer

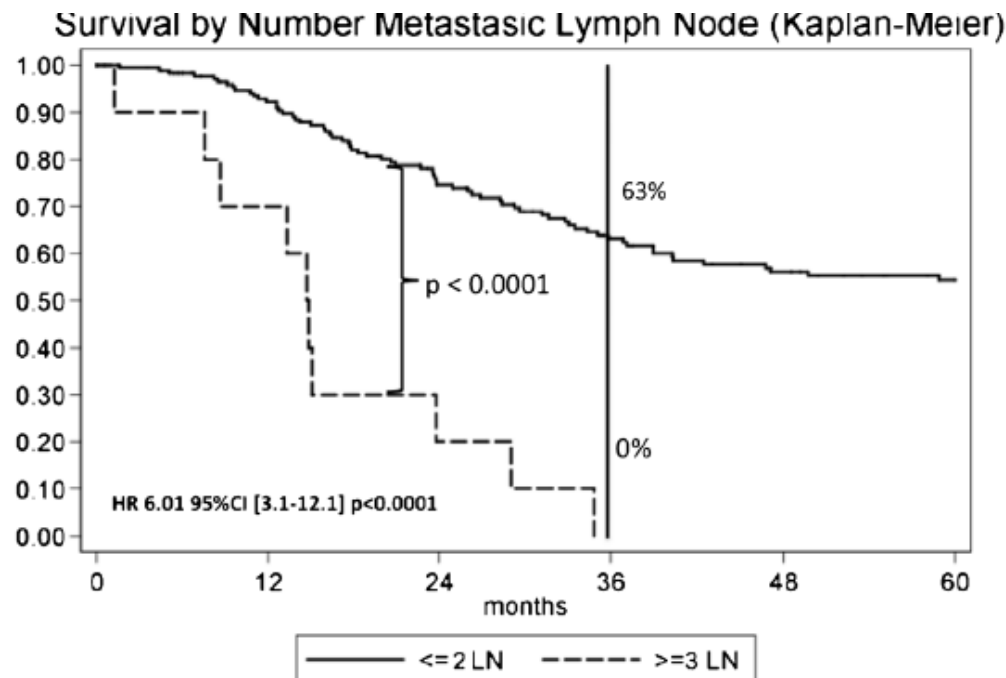
Y. Kishi¹ , S. Nara¹, M. Esaki¹, N. Hiraoka² and K. Shimada¹



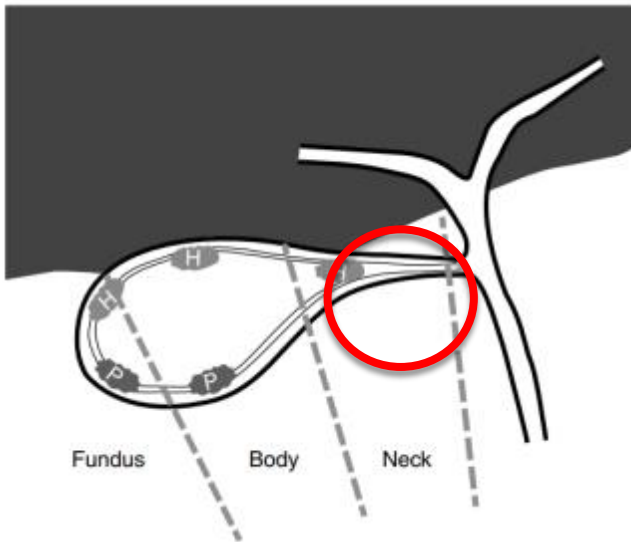


Extended Lymphadenectomy Is Required for Incidental Gallbladder Cancer Independent of Cystic Duct Lymph Node Status

Eduardo A. Vega^{1,2} • Eduardo Vinuela^{2,3} • Suguru Yamashita^{1,4} • Marcel Sanhueza^{2,3} • Gabriel Cavada⁵ • Cristian Diaz^{2,3} • Thomas A. Aloia¹ • Yun Shin Chun¹ • Ching-Wei D Tzeng¹ • Masayuki Okuno¹ • Claire Goumard¹ • Jean-Nicolas Vauthey¹ • Jeffrey E. Lee¹ • Claudius Conrad¹ 



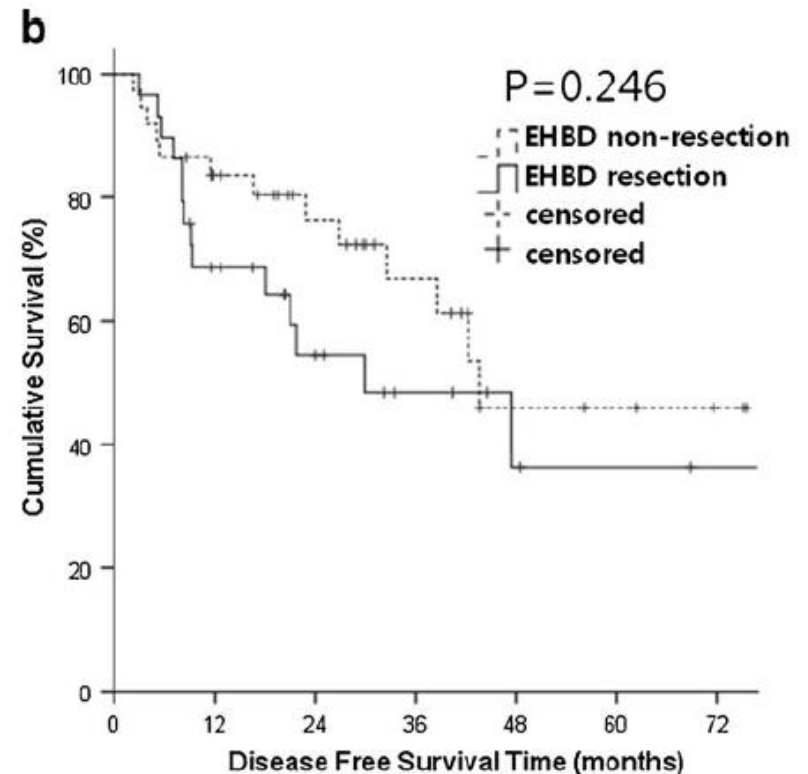
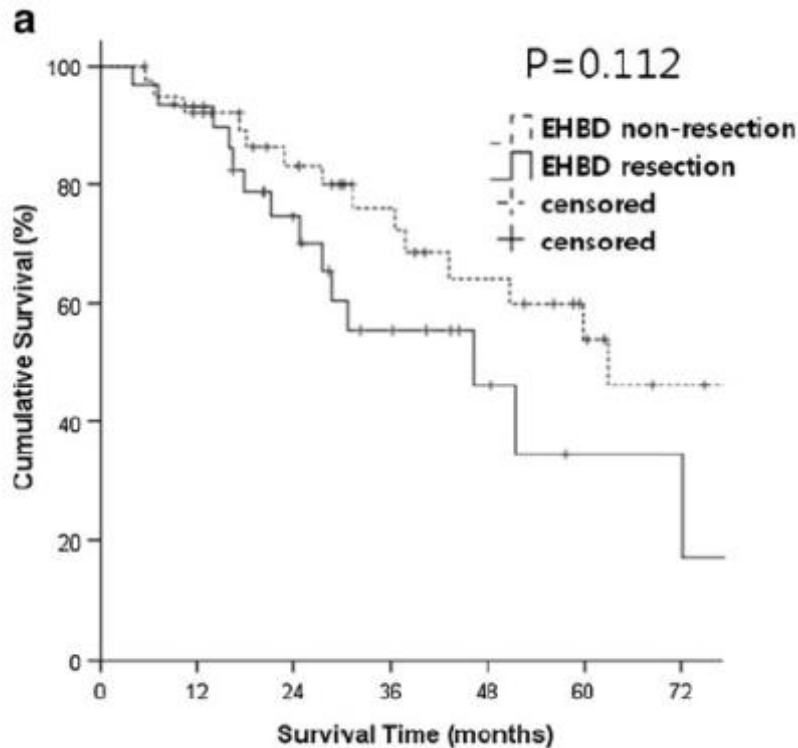
EXTRAHEPATIC BILE DUCT RESECTION



- ☐ Cistic duct not identified during re-resection
- ☐ Lymph node involving the biliary tract
- ☐ Adequate lymphadenectomy not possible

Surgical strategy for T2 and T3 gallbladder cancer: is extrahepatic bile duct resection always necessary?

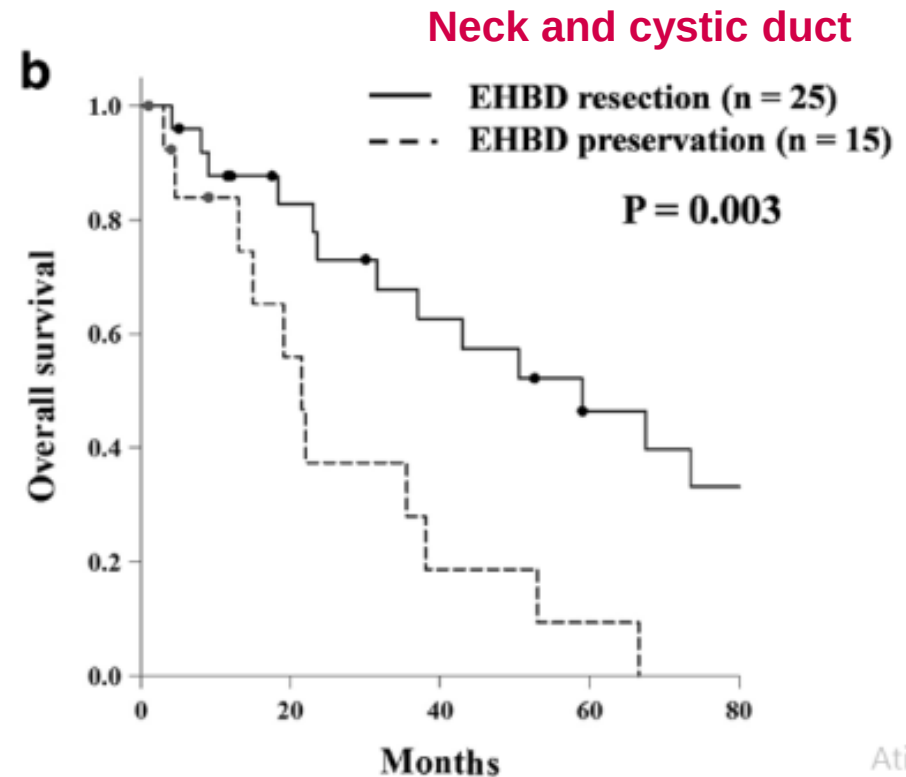
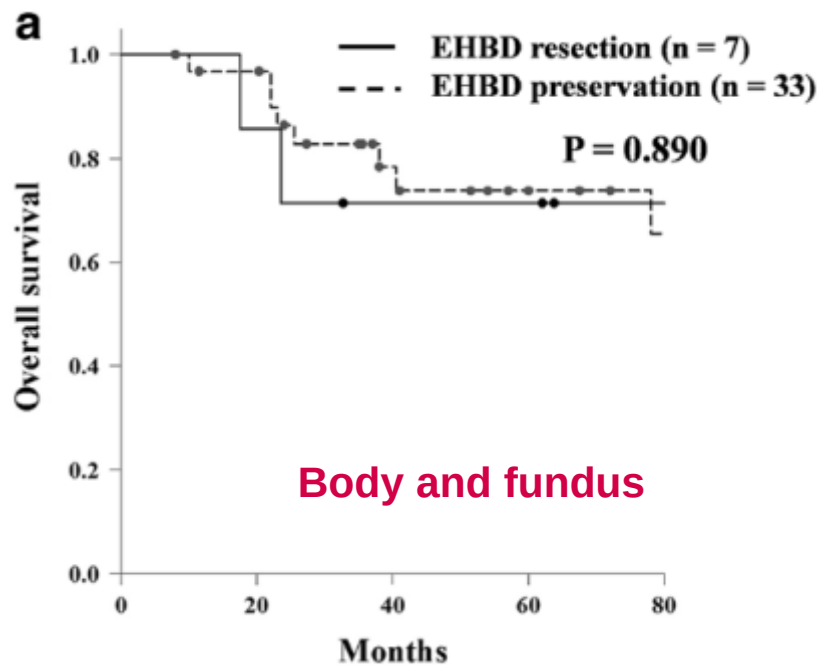
Sae Byeol Choi • Hyung Joon Han • Wan Bae Kim •
Tae Jin Song • Sung Ock Suh • Sang Yong Choi



ORIGINAL ARTICLE

Indication of extrahepatic bile duct resection for gallbladder cancer

Hiroshi Kurahara¹  • Kosei Maemura¹ • Yuko Mataka¹ • Masahiko Sakoda¹ • Satoshi Iino¹ • Yota Kawasaki¹ • Shinichiro Mori¹ • Takaaki Arigami¹ • Yuko Kijima¹ • Hiroyuki Shinchi² • Shoji Natsugoe¹



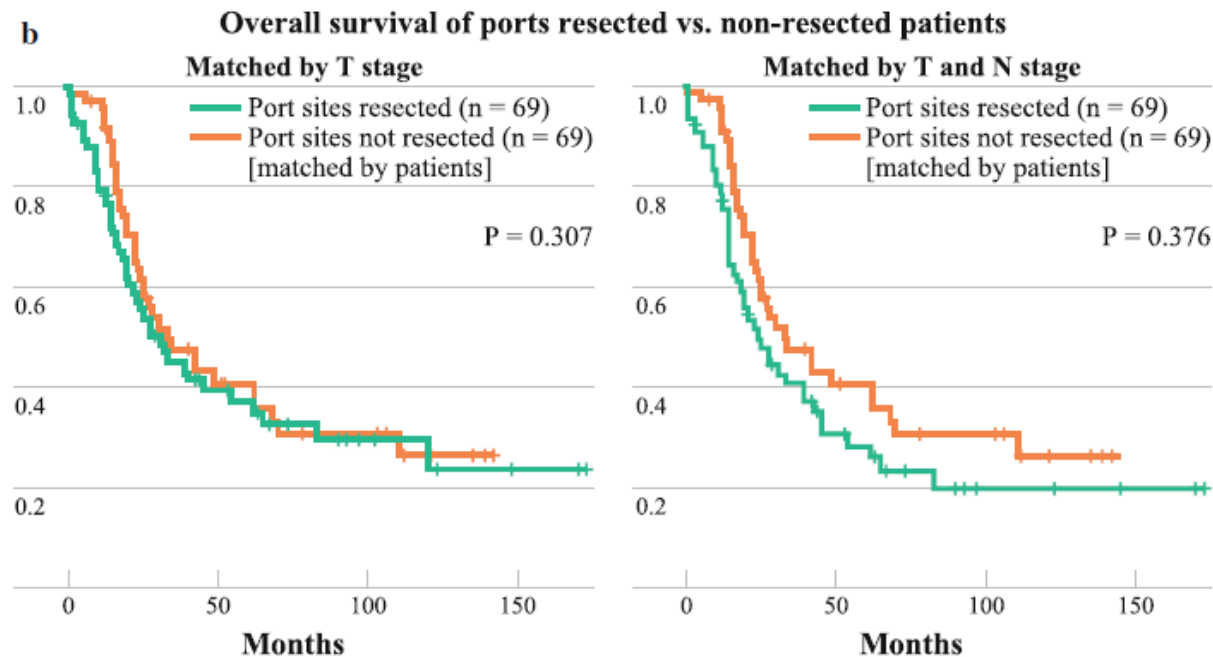
PORT-SITE RESECTION

- ☐ Peritoneal disease
- ☐ No survival benefit
- ☐ Incisional hernia

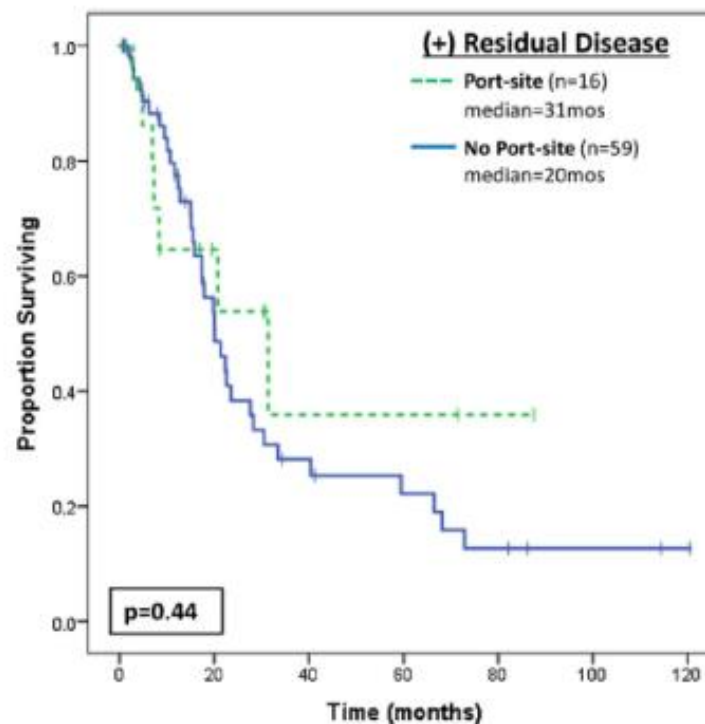
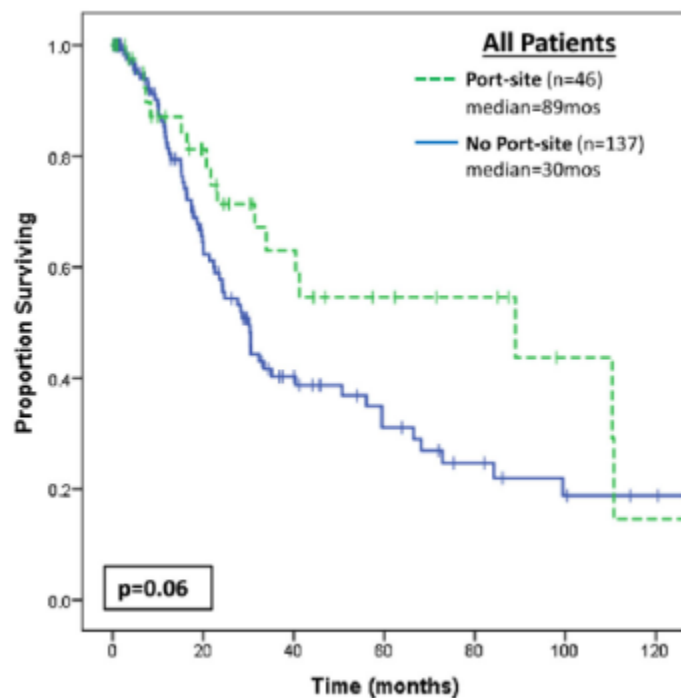


Is Port Site Resection Necessary in the Surgical Management of Gallbladder Cancer?

Ajay V. Maker, MD^{1,2}, Jean M. Butte, MD², Jacqueline Oxenberg, DO², Deborah Kuk, MS³, Mithat Gonen, PhD³, Yuman Fong, MD², Ronald P. DeMatteo, MD², Michael I. D'Angelica, MD², Peter J. Allen, MD², and William R. Jarnagin, MD²



Routine port-site excision in incidentally discovered gallbladder cancer is not associated with improved survival: A multi-institution analysis from the US Extrahepatic Biliary Malignancy Consortium



Routine port-site excision in incidentally discovered gallbladder cancer is not associated with improved survival: A multi-institution analysis from the US Extrahepatic Biliary Malignancy Consortium

- ❑ Port-site excision
 - ❑ Peritoneal disease
 - ❑ No survival benefit
 - ❑ Recurrence similar to no excision
 - ❑ Not recommended routinely

ORIGINAL ARTICLE

Minimally invasive versus the conventional open surgical approach of a radical cholecystectomy for gallbladder cancer: a retrospective comparative study

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Table 1 Comparison of clinicopathological features of patients who underwent a laparoscopic (Group A) and open (Group B) radical cholecystectomy

Parameter	Group A (n = 24)	Group B (n = 46)	P value
Demography			
Age, median (range)	44 (21–61)	49 (23–70)	0.281
Sex ratio, female: male	2.6:1	3:1	0.848
Operative data			
Duration of surgery in min, median (range)	270 (180–340)	240 (180–360)	0.021
Blood loss in ml, median (range)	200 (100–850)	275 (100–800)	0.034
Post-operative data			
Hospital stay in days, median (range)	5 (3–16)	5 (3–17)	0.111
Morbidity, n (%)	3 (12.5)	8 (17.4)	0.737
Histopathology			
Lymph node yield, median (range) [mean (± SD)]			
Overall	10 (4–31) [12.5 (± 5.4)]	11 (5–26) [12.9 (± 5.4)]	0.642
Primary GBC	12 (6–31) [13.6 (± 4.8)]	12.5 (5–26) [13.9 (± 5.6)]	0.781
IGBC	5 (4–10) [5.5 (± 1.7)]	6 (5–10) [7.4 (± 1.9)]	0.146

MINIMALLY INVASIVE APPROACH

- ☐ Adequate nodal evaluation (aortocaval)
- ☐ Achieve R0 resection
- ☐ Hepatectomy and biliary reconstruction
- ☐ No difference

Gumbs AA, Jarufe N, Gayet B. (2013). Surg Endosc 2013;27:406–414.

Agarwal AK, et al. HPB 2015;17: 536-41



Thanks !