

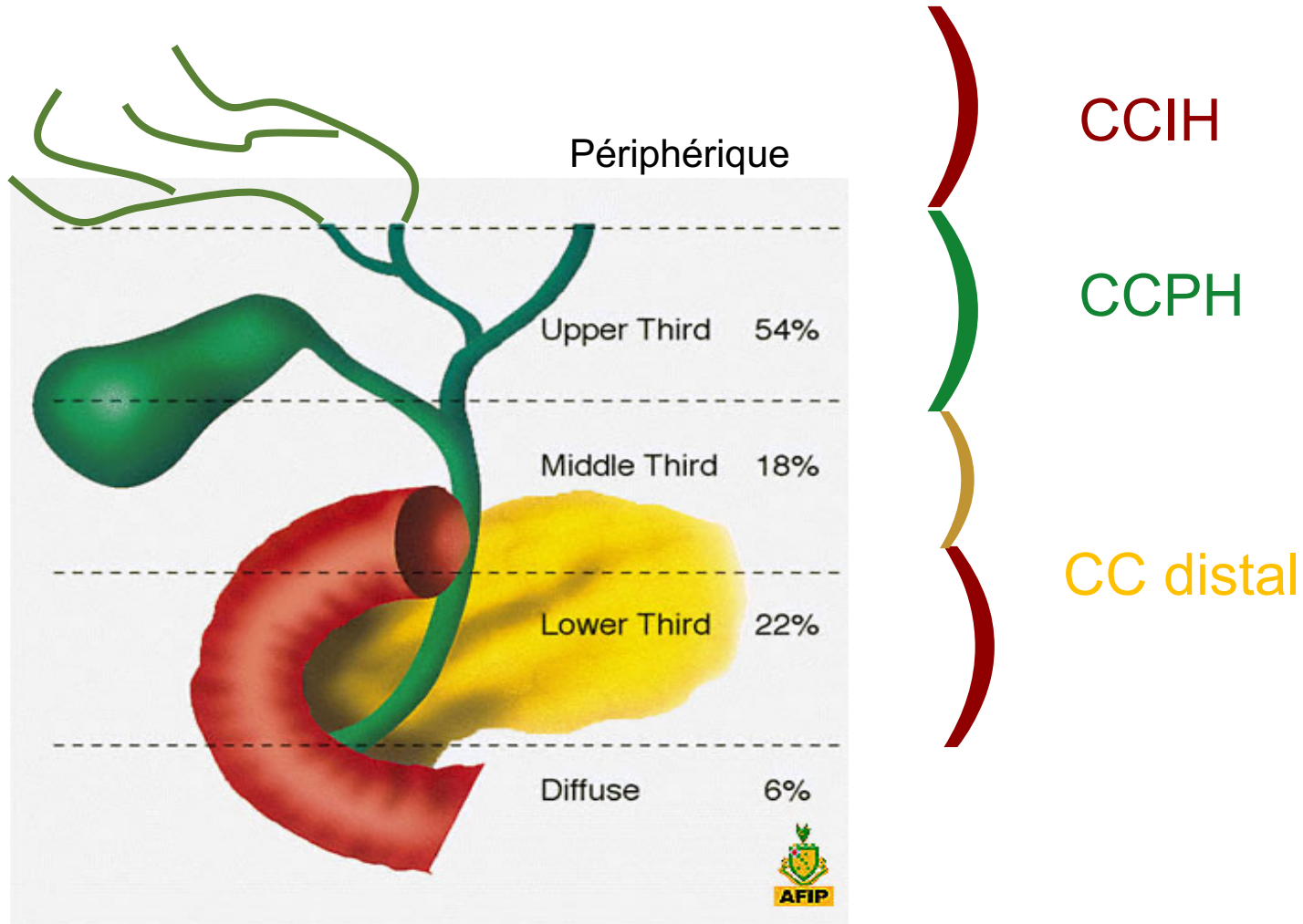
Cholangiocarcinome périhilaire

Dr Rami RHALEM

CHU Robert Debré, Reims, France

DIU chirurgie hépatobiliaire et pancréatique

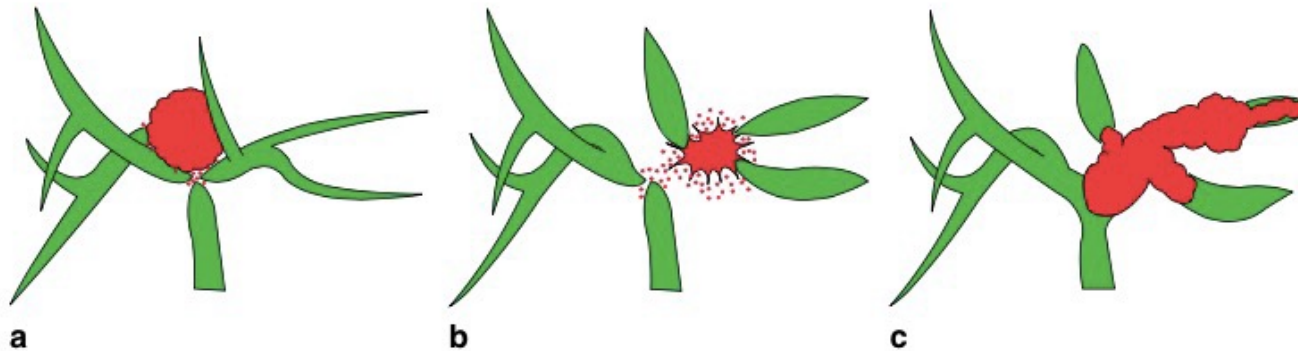
Cancer des voies biliaires



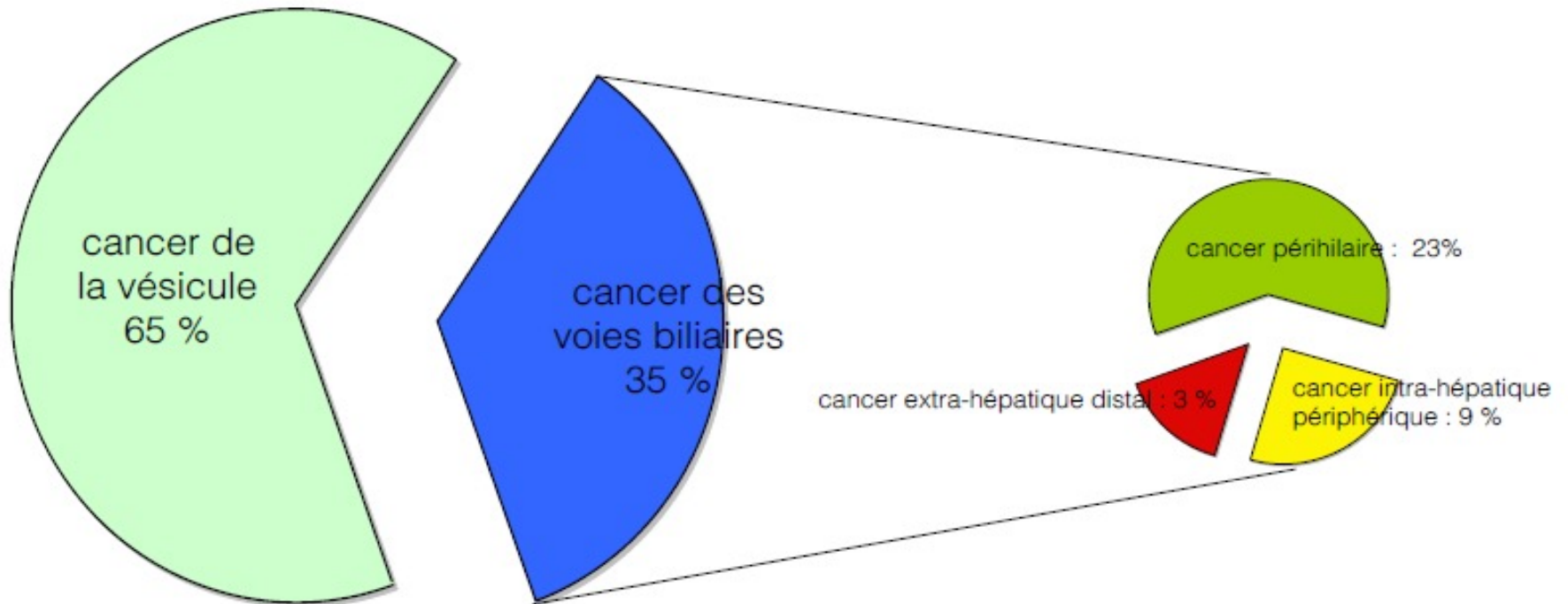
Cholangiocarcinomes: classification

3 localisations pour les cholangiocarcinomes:

- intra-hépatique
- péri-hilaire : cholangiocarcinomes envahissant ou nécessitant une résection de la convergence biliaire
- extra-hépatique

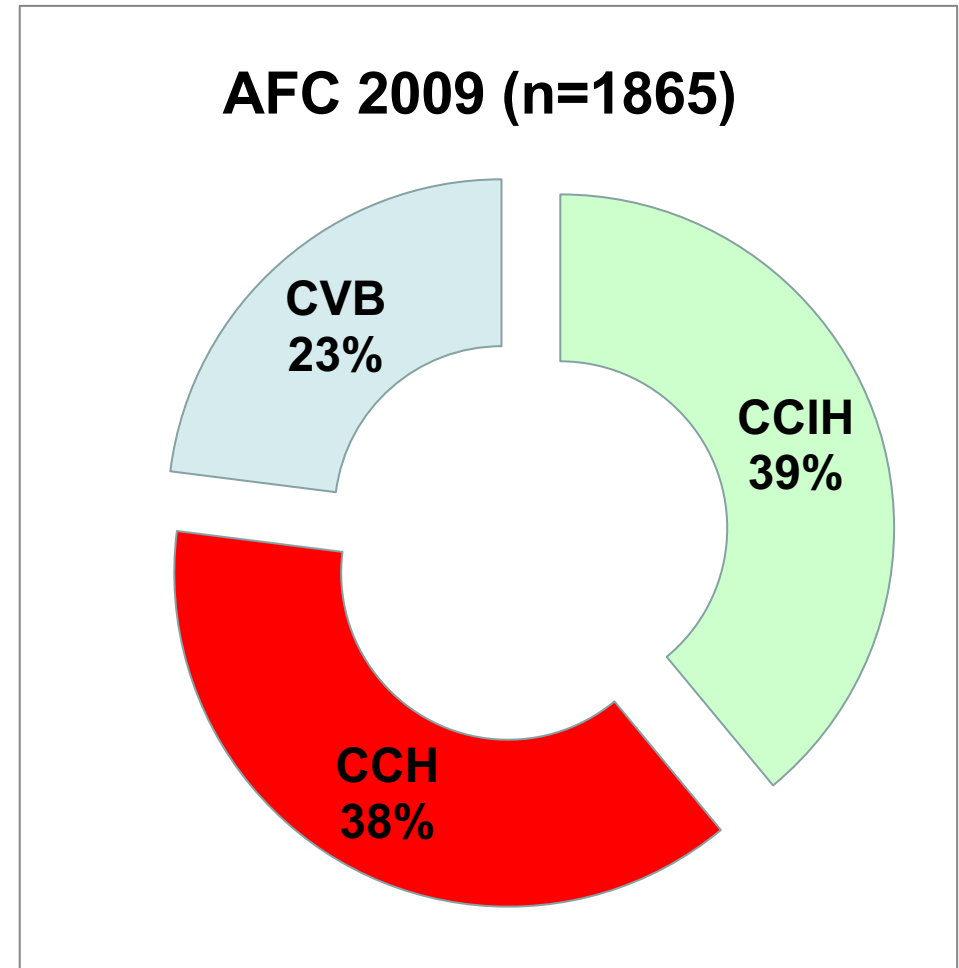


Epidémiologie



Rapport de l'AFC

- Taille < 2cm
- Survie sp. à 2 ans 15%
- Survie après chir. 5 ans 45%
- Mortalité chirurgie: 10%
- Morbidité: 50%



*CVB 5^{ème} rang cancers digestifs

Définitions

- Les cholangiocarcinomes qui se développent à partir des canaux biliaires droit ou gauche, ou à proximité de leur jonction, sont appelés cholangiocarcinomes hilaires et sont considérés comme des *cholangiocarcinomes extrahépatiques*
- N'inclut pas les K vésiculaires ou CCIH ou MH avec envahissement hilaires et périhilaires

Macroscopiquement

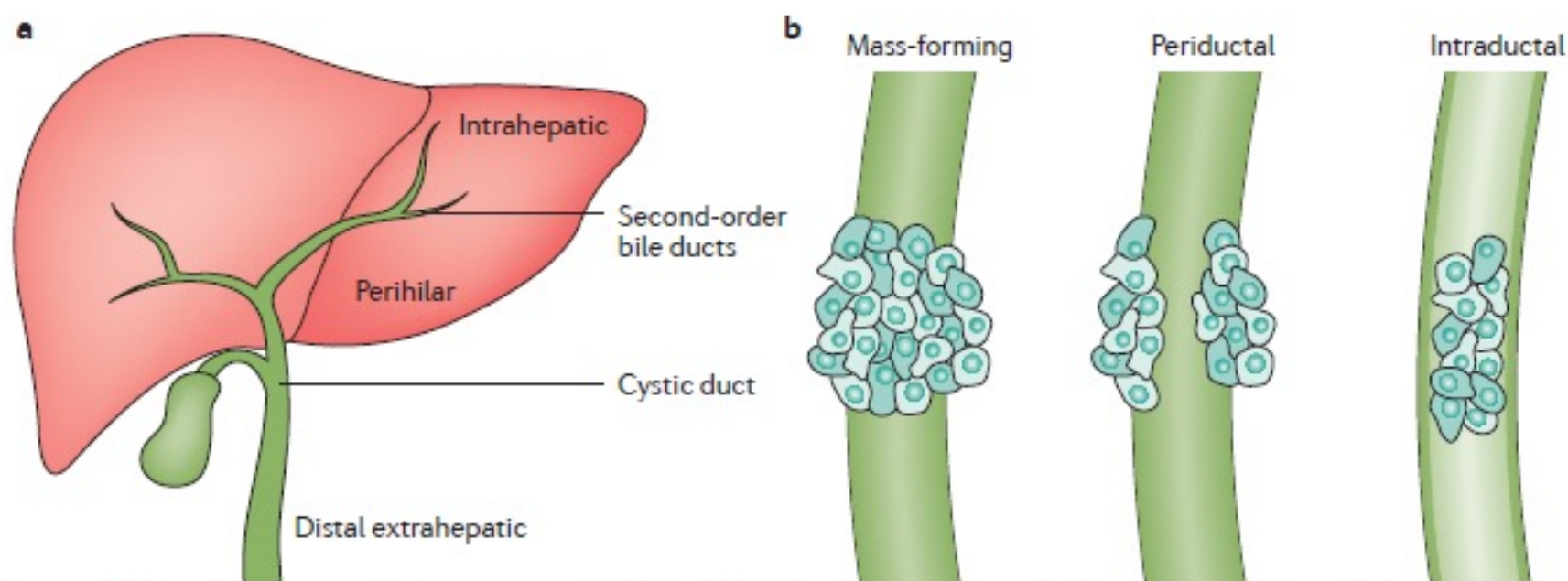
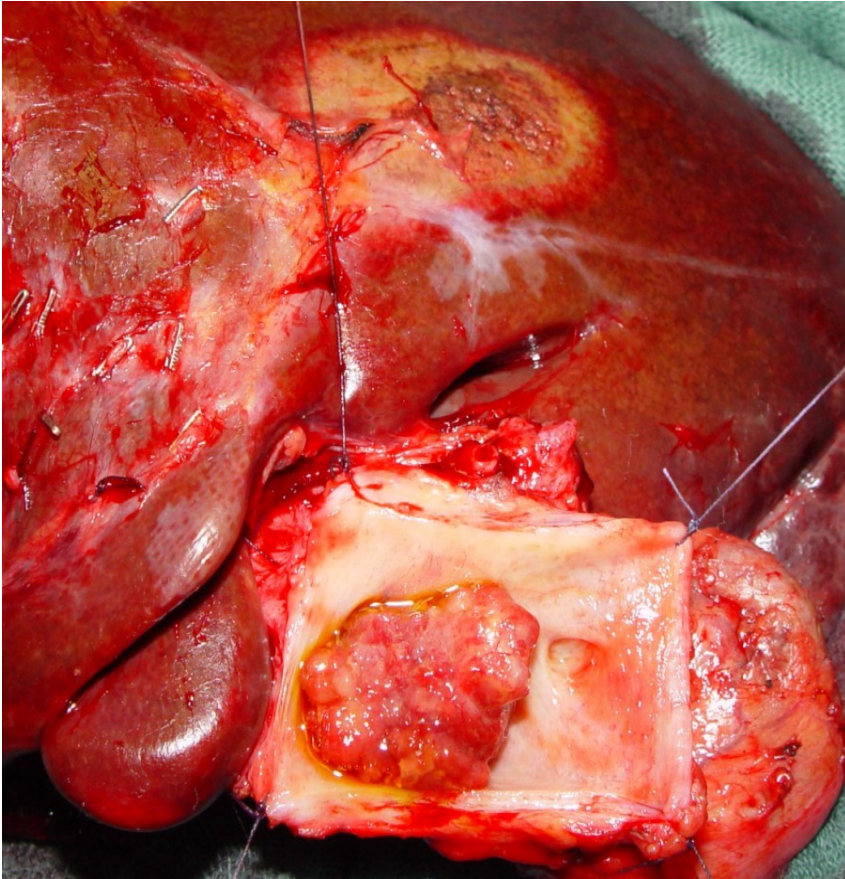
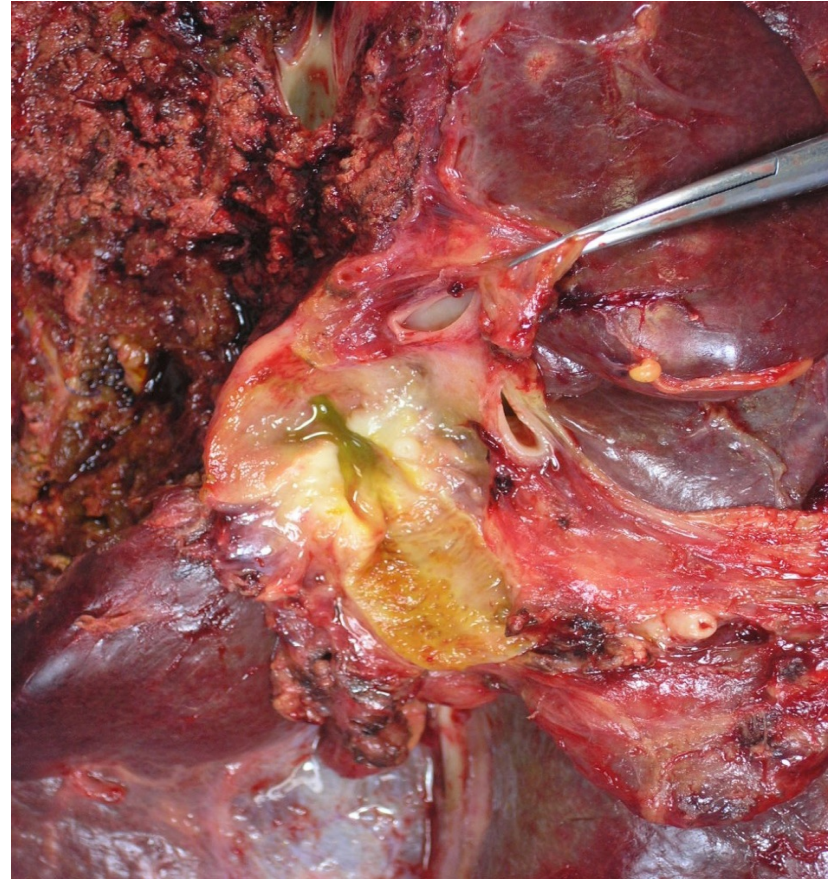


Figure 2 | Classifications and appearance of CCAs. a | Cholangiocarcinomas (CCAs) are classified according to the anatomical location into intrahepatic (iCCA), perihilar (pCCA) and distal (dCCA). b | Concerning the gross appearance, the iCCA can present three different patterns of growth: mass-forming; periductal infiltrating; and intraductal growth.

Macroscopiquement

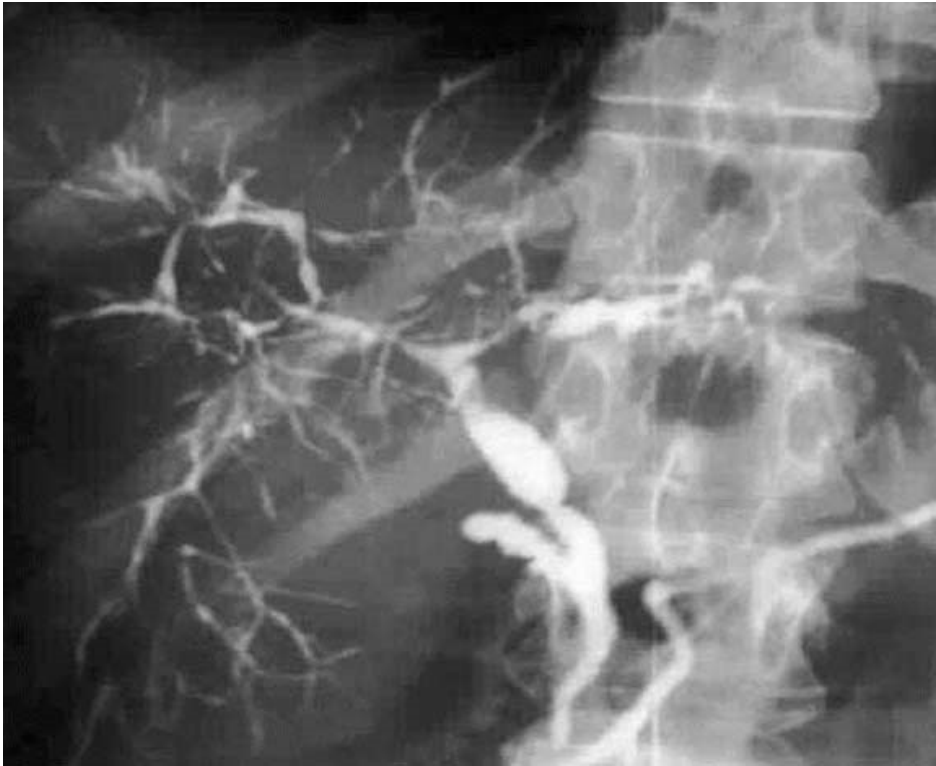


Nodulaire: 5%

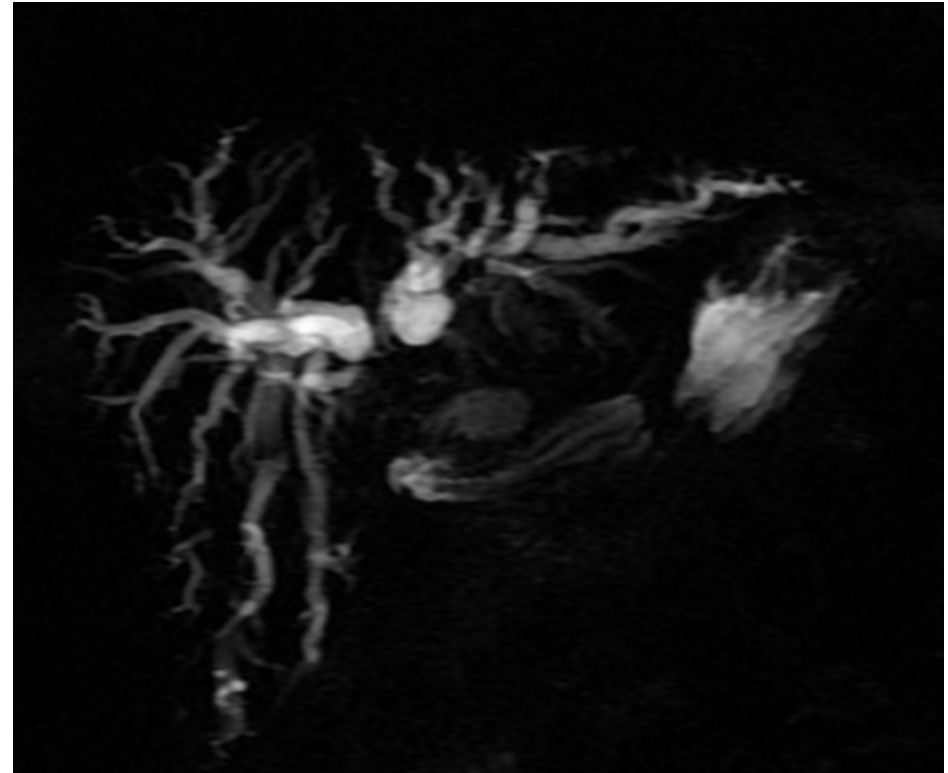


Infiltrant: 90%

CCH: Facteurs de risque



PSC 10%



De Novo 90%

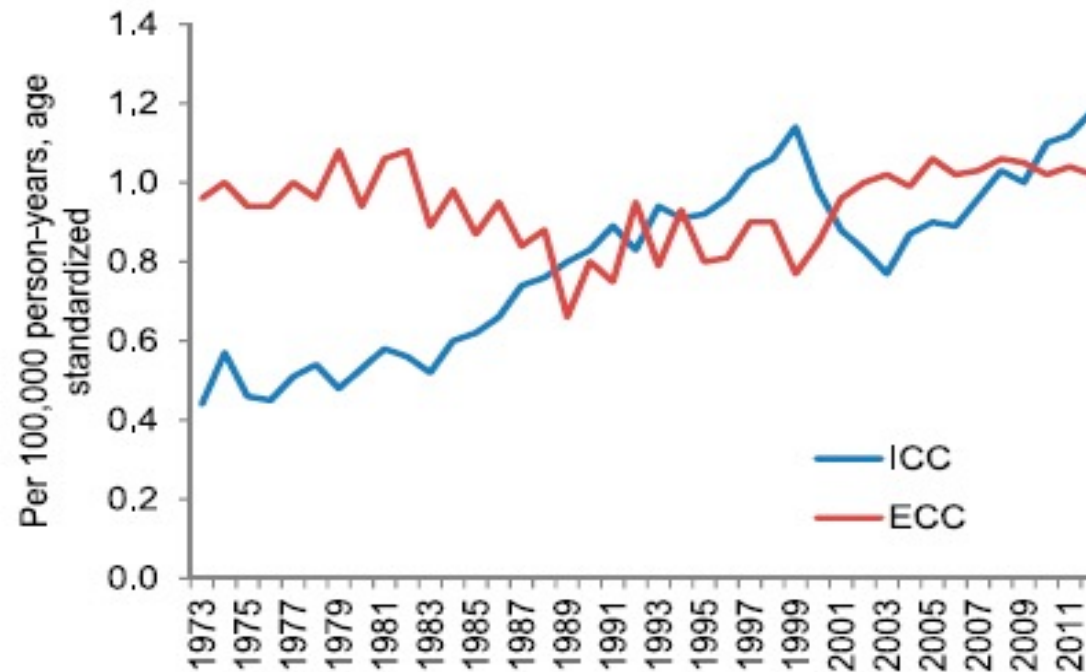
Incidence en augmentation

The Oncologist®

Hepatobiliary

Forty-Year Trends in Cholangiocarcinoma Incidence in the U.S.: Intrahepatic Disease on the Rise

SUPRIYA K. SAHA,^a ANDREW X. ZHU,^a CHARLES S. FUCHS,^b GABRIEL A. BROOKS^b



CCH: Clinique

- **Symptômes:**

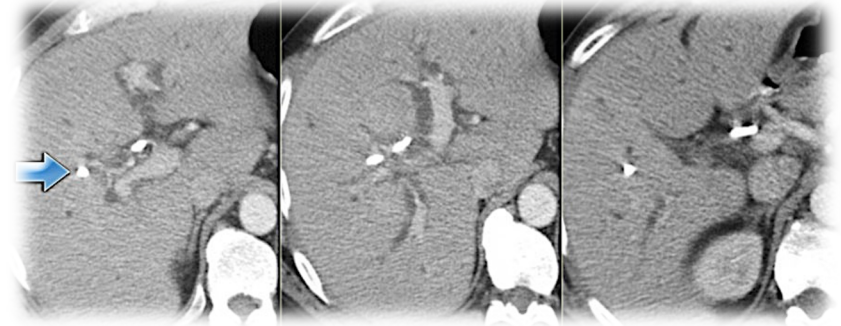
- Ictère rétentionnel (200 μ M)
- amaigrissement-prurit
- angiocholite
- cholestase biologique

70%

40%

10%

constante



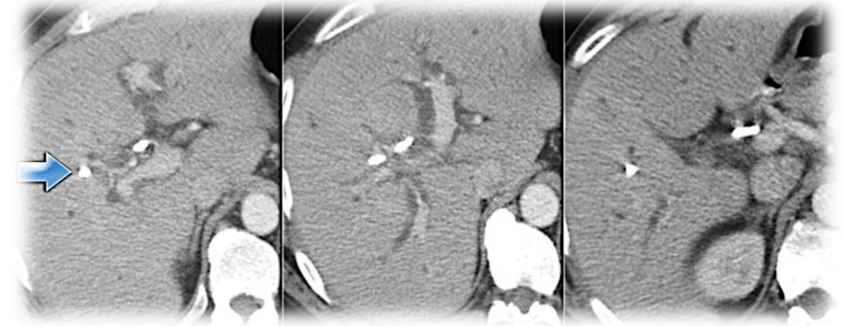
Données AFC 2011



CCH: Clinique

- **Symptômes:**

- Ictère rétentionnel ($200 \mu\text{M}$) 70%
- amaigrissement-prurit 40%
- angiocholite 10%
- cholestase biologique constante



Données AFC 2011

- **Bilan radiologique: Sténose hilaire**

- Echographie abdominale
- TDM abdominale
- Cholangio-IRM



CCH: Dg positif du cancer

- **Marqueurs tumoraux:** CA19-9 mais augmentation si cholestase
- **Imagerie:** Masse tumorale
- **Cytologie de la bile ou brossage des voies biliaires (Faux +/-)**
- **Biopsie:**
 - **Percutanée:** nécessité d'une masse / voies biliaires dilatées (risque ++)
 - **Cholangioscopie percutanée:** dissémination
 - **Endoscopie par voie rétrograde:** difficile / Spyglass

En fait, le plus souvent le diagnostic est « probable » et repose sur la clinique

Mais: Klatskin-like lesions ?

- Syndrome de *Minimally*

TABLE 1: Incidence of Klatskin-like lesions.

Author (year)	Incidence (%)	Region
Myburgh (1995) [5]	3	South Africa
Verbeek (1992) [7]	13	Netherlands
Gerhards (2001) [8]	15	Netherlands
Knoefel (2003) [9]	18	Germany
Koea (2004) [10]	24	New Zealand
Wetter (1991) [6]	31	California

on unique

- Pancréatite l

cholangite

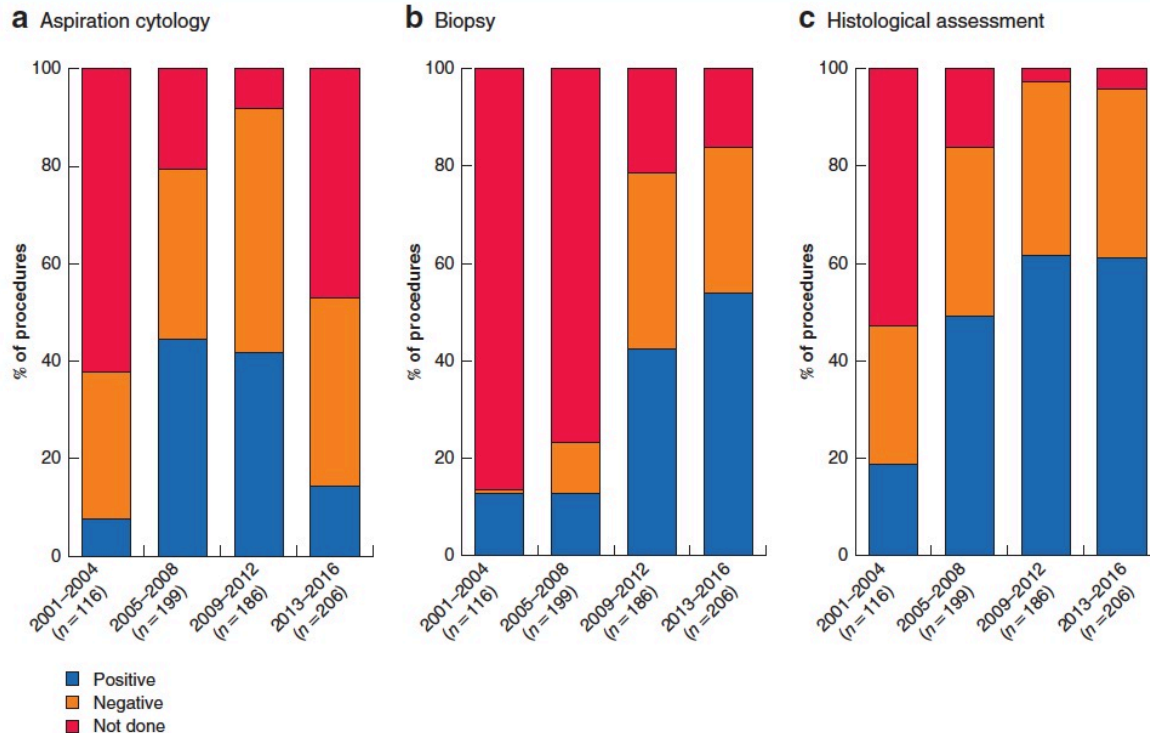
– taux sérique d'IgG4 > 100 mg/ml!

Mais: Klatskin-like lesions ?

Benign hilar bile duct strictures resected as perihilar cholangiocarcinoma

S. Otsuka^{1,2}, T. Ebata¹, Y. Yokoyama¹, T. Igami¹, T. Mizuno¹, J. Yamaguchi¹, S. Onoe¹, N. Watanabe¹, Y. Shimoyama² and M. Nagino¹

Fig. 1 Changes in the use of aspiration cytology and bile duct biopsy over time



- 2001-2016
- 707 résections
- Pas de Spyglass
- 22 (3.1%) lésions bénignes

Mais: Klatskin-like lesions ?

ORIGINAL ARTICLE

Impact of peroral cholangioscopy on the management of indeterminate biliary conditions: a multicentre prospective trial

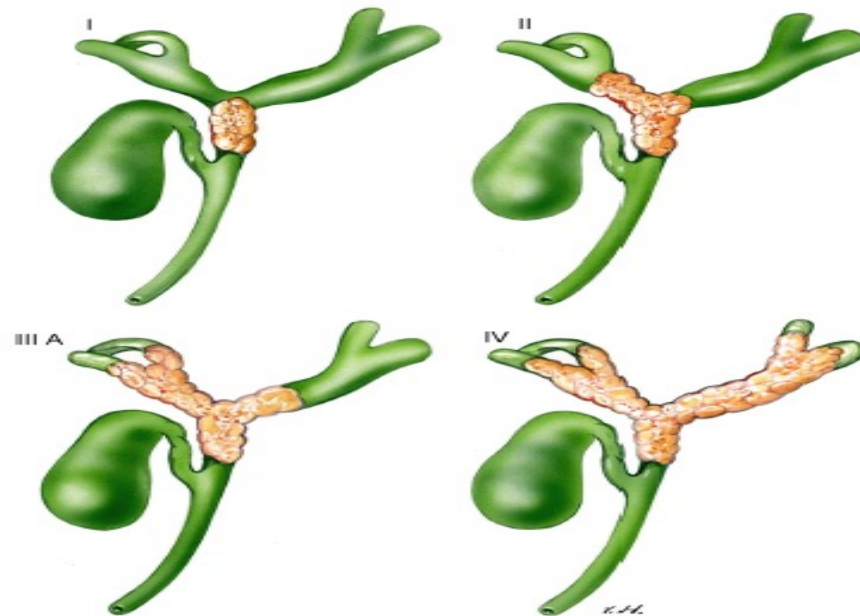
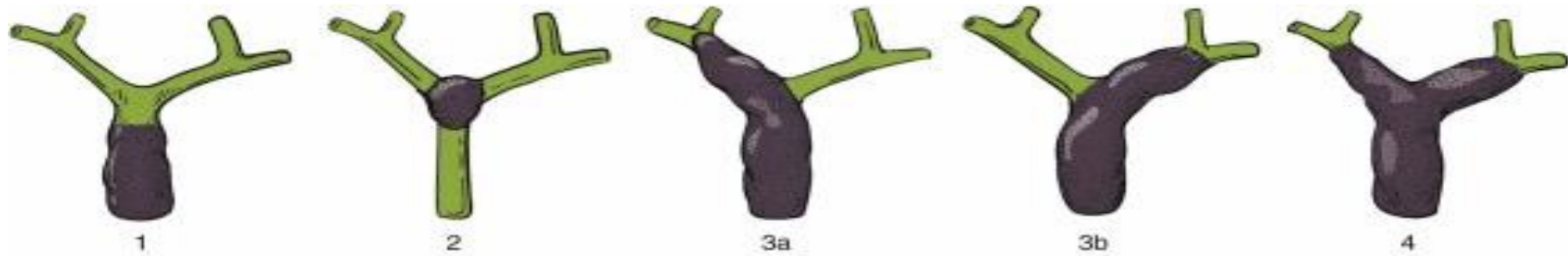
	Overall		Indeterminate biliary strictures		Primary sclerosing cholangitis	
	N	%	N	%	N	%
Benign	43	70.5	32	66.7	11	84,6
Malignant	18	29.5	16	33.3	2	15,4
Total	61	100	48	100	13	100

(a) Overall ($p < 10^{-5}$)	After SOC (%)		
	Inadequate	Adequate	
Before SOC (%)			
Inadequate	6	32	38 (62.3)
Adequate	5	18	23 (37.7)
	11 (18.0)	50 (82.0)	61 (100)
(b) IDBS ($p < 0.001$)	After SOC (%)		
	Inadequate	Adequate	
Before SOC (%)			
Inadequate	3	24	27 (43.8)
Adequate	4	17	21 (56.2)
	7 (14.6)	41 (85.4)	48 (100)

CCH: Particularités

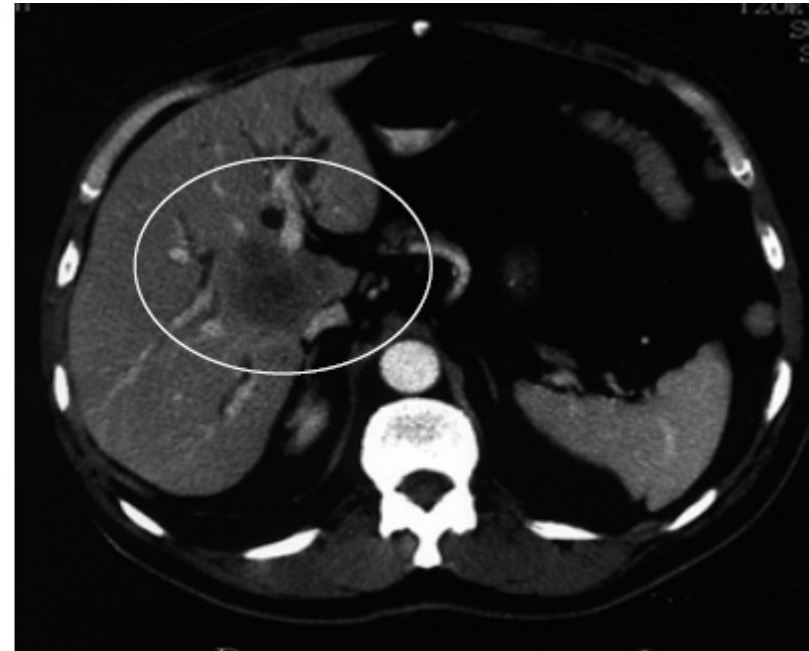
- Extension biliaire
- Envahissement vasculaire
- Engainement périnerveux
- Extension ganglionnaire

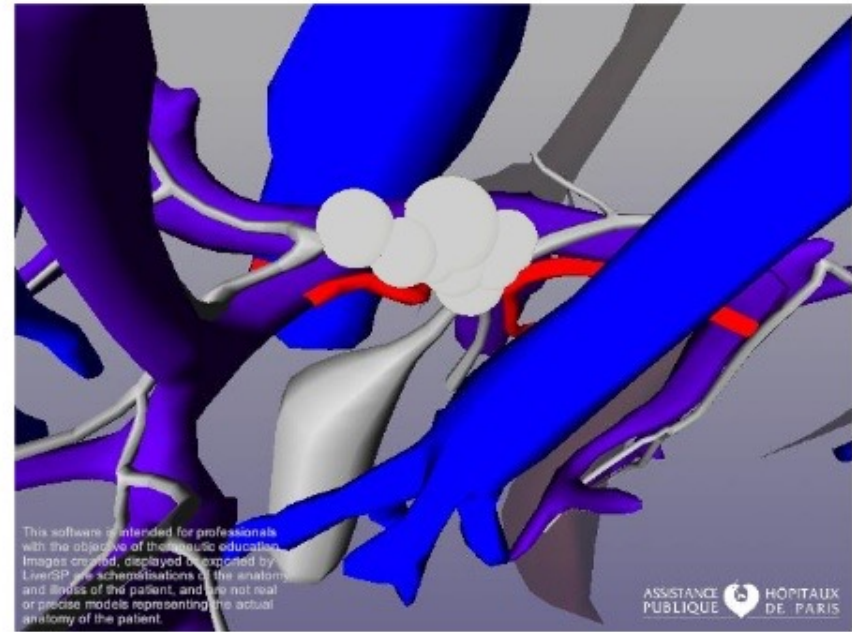
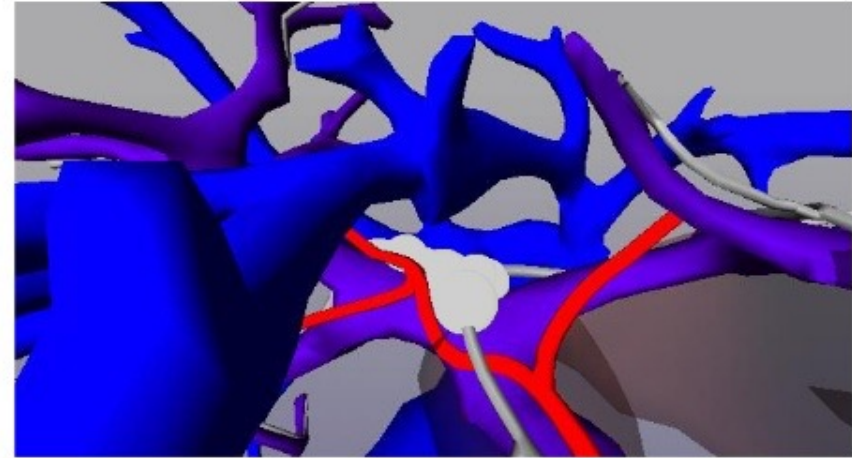
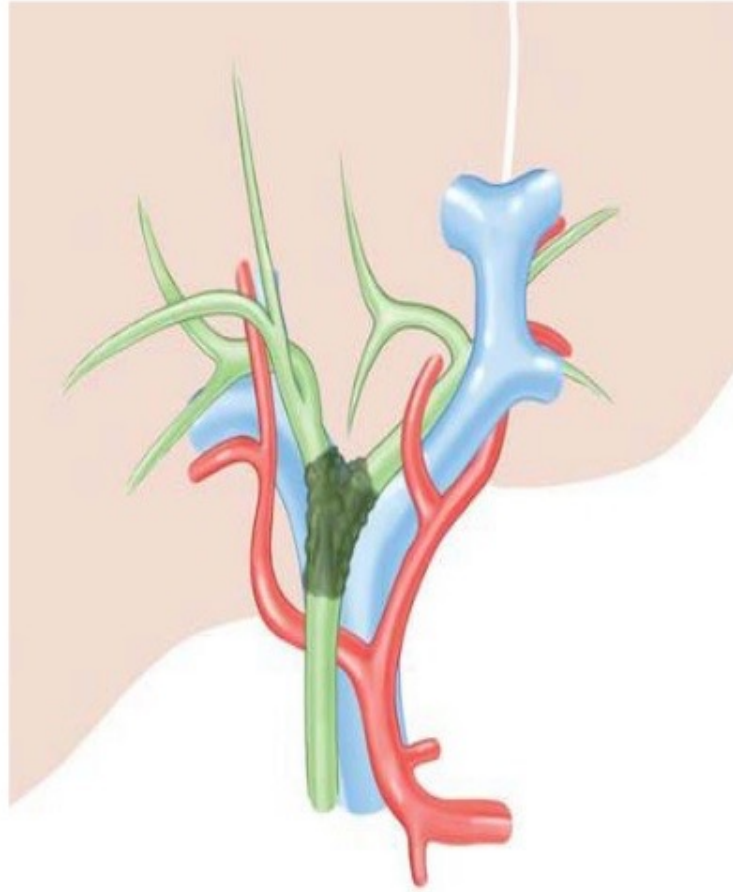
1^{ère}: Classification de BISMUTH



© MSKCC 2009

2^{ème}: Envahissement Vx



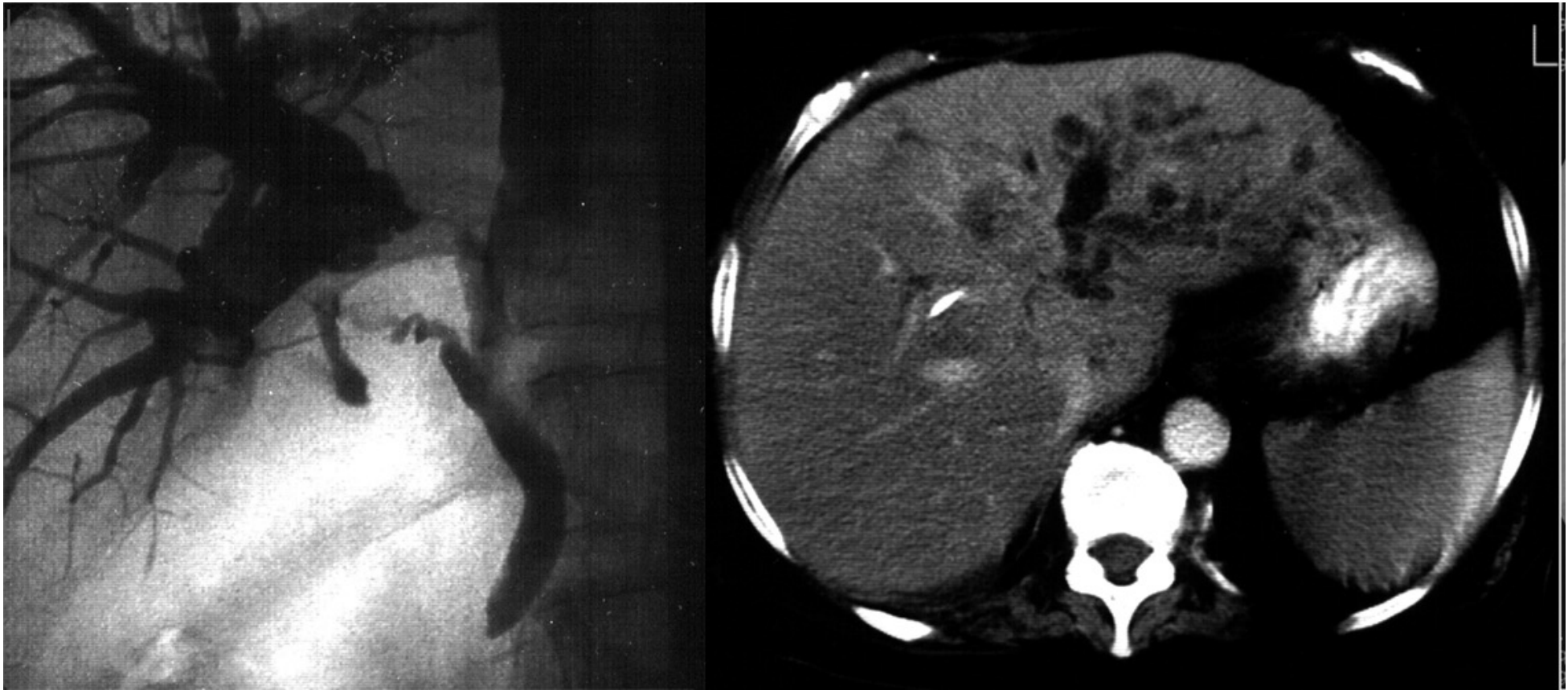


This software is intended for professionals with the objective of therapeutic education. Images created, displayed or exported by LiveSP are schematisations of the anatomy and illness of the patient, and are not real or precise models representing the actual anatomy of the patient.

Envahissement artériel



Envahissement portal



3^{ème}: Filets nerveux

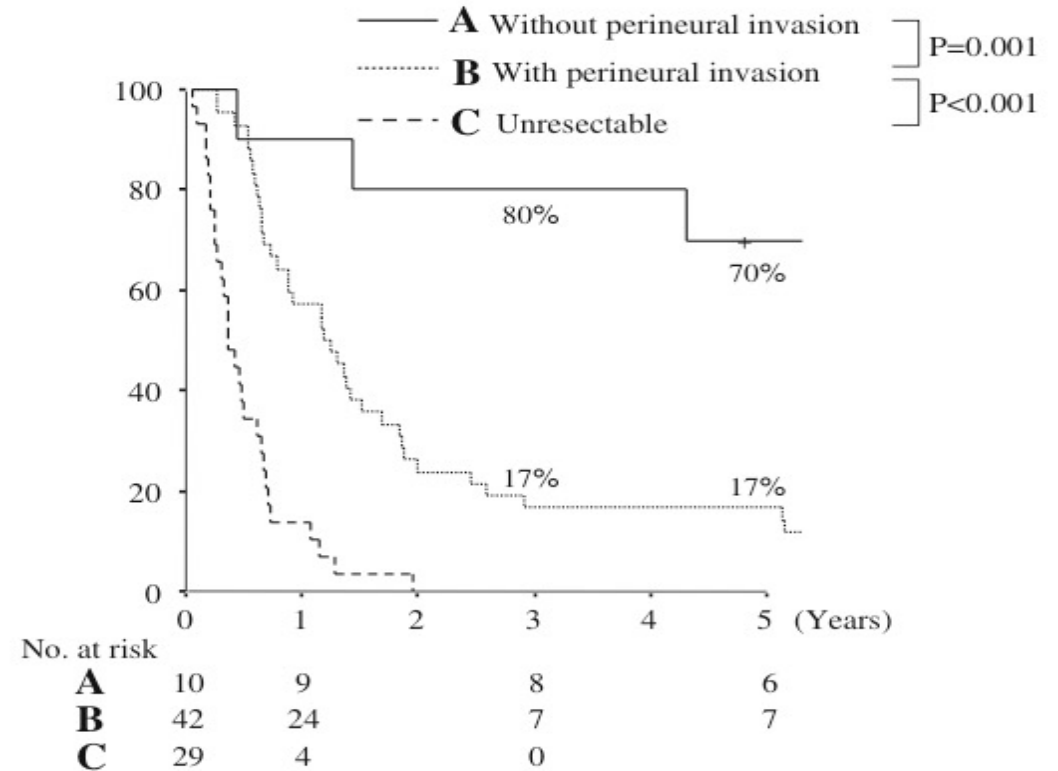
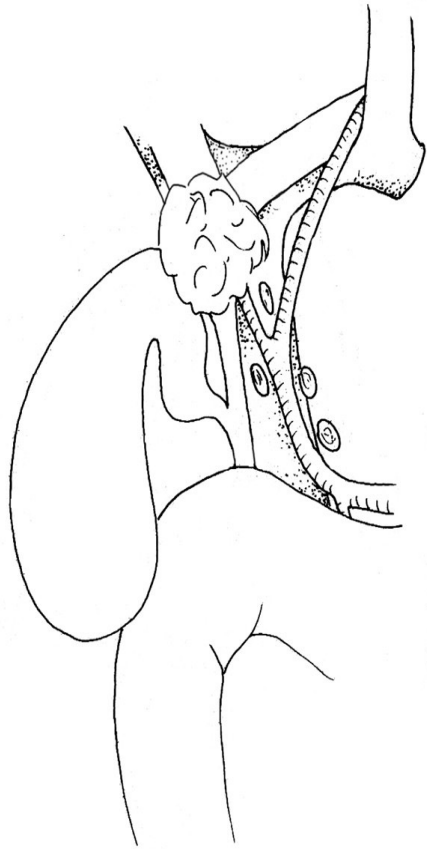
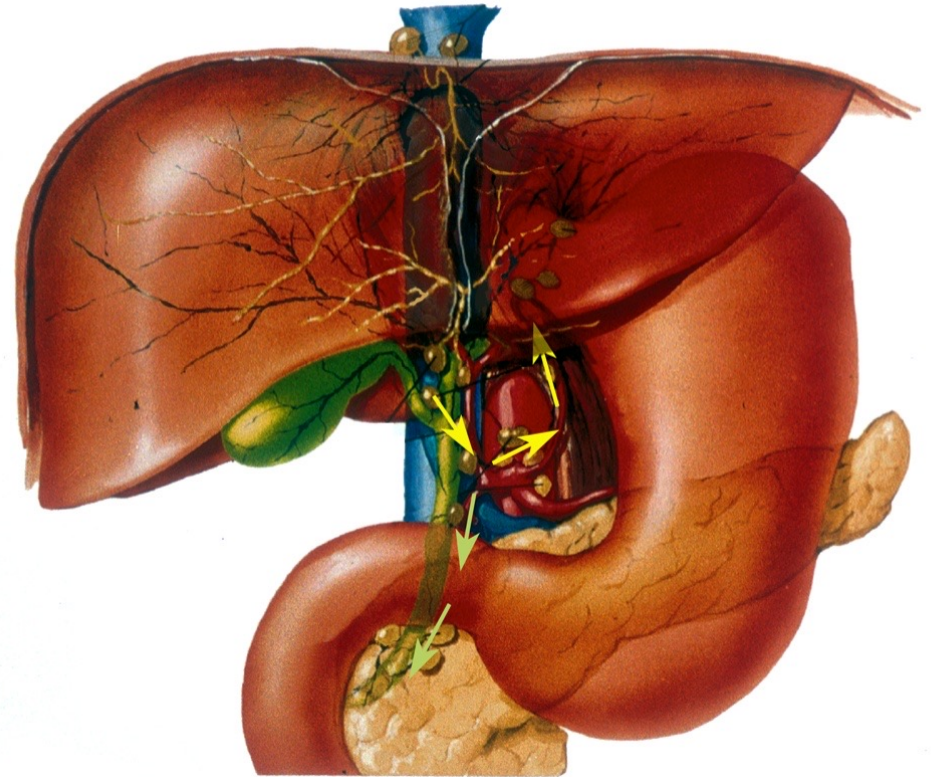


Fig. 3 Survival according to the presence or absence of perineural invasion. Survival curves are calculated by the Kaplan-Meier method

4^{ème}: Envahissement Gg

- PH
- AHC
- TC (M+)
- Interaortico-cave (M+)



Et l'ouest ?

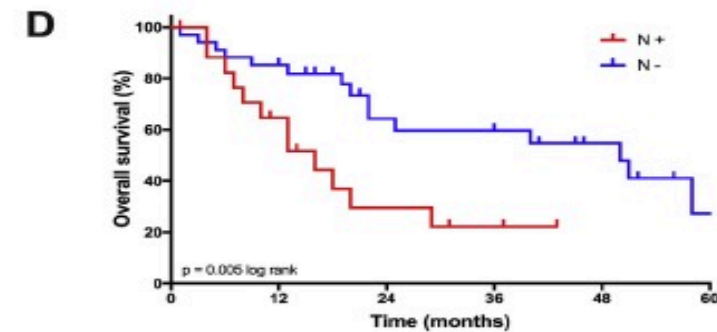
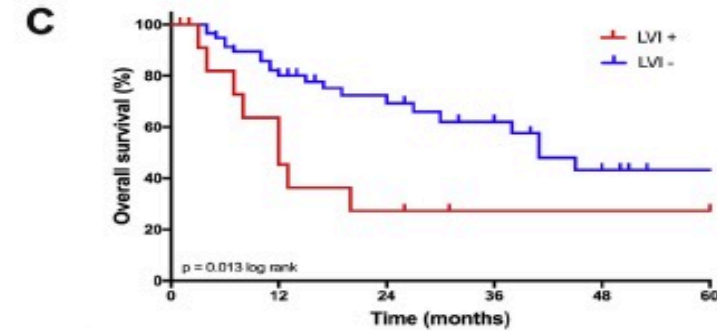
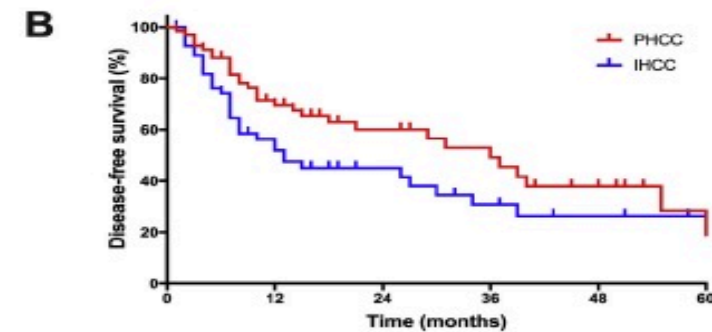
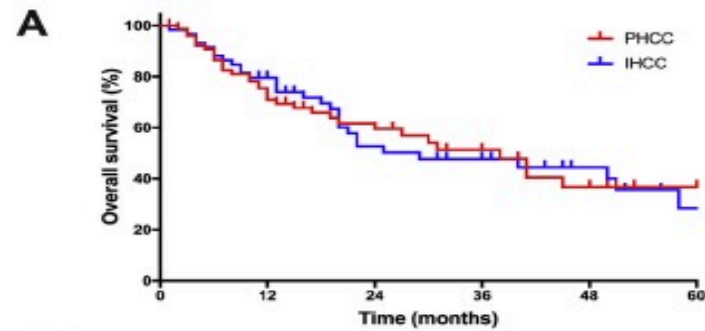


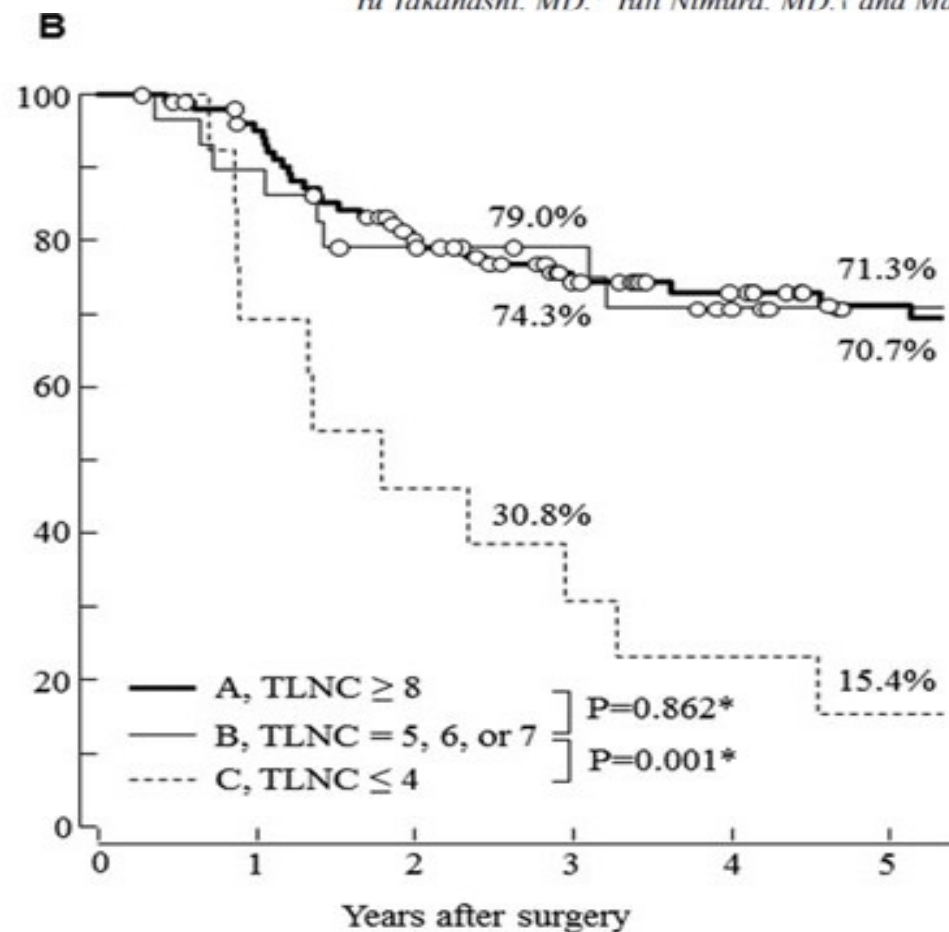
Fig. 1. Oncological survival in cholangiocarcinoma. **A: Overall survival in perihilar and intrahepatic cholangiocarcinoma.** The median OS for pCCA and iCCA was 3.2 years (95% CI: 2.2–4.2) and 2.1 years (95% CI: 0.3–3.8), respectively. **B: Disease-free survival in perihilar and intrahepatic cholangiocarcinoma.** The median DFS for pCCA and iCCA was 3.0 years (95% CI: 2.1–3.9) and 1.1 years (95% CI: 0.5–1.7), respectively. **C: Overall survival in perihilar cholangiocarcinoma stratified by lymph-vascular invasion.** The Kaplan-Meier analysis with respect to LVI showed a median OS of 3.4 years (95% CI: 2.7–4.2) in patients without LVI compared to 1.0 years (95% CI: 0.6–1.4) in patients with LVI ($p = 0.013$ log rank). **D: Overall survival in intrahepatic cholangiocarcinoma stratified by pN-category.** The Kaplan-Meier analysis with respect to pN-category showed a median OS of 4.2 years (95% CI: 1.7–6.7) in patients without lymph node metastases compared to 1.1 years (95% CI: 0.5–1.7) in patients with lymph node metastases ($p = 0.005$ log rank). CI, confidence interval; DFS, disease-free survival; iCCA, intrahepatic cholangiocarcinoma; LVI, lympho-vascular invasion; OS, overall survival; pCCA, perihilar cholangiocarcinoma.

Assessment of Nodal Status for Perihilar Cholangiocarcinoma

Location, Number, or Ratio of Involved Nodes

Taro Aoba, MD,* Tomoki Ebata, MD,* Yukihiro Yokoyama, MD,* Tsuyoshi Igami, MD,* Gen Sugawara, MD,* Yu Takahashi, MD,* Yuii Nimura, MD.† and Masato Nagino, MD*

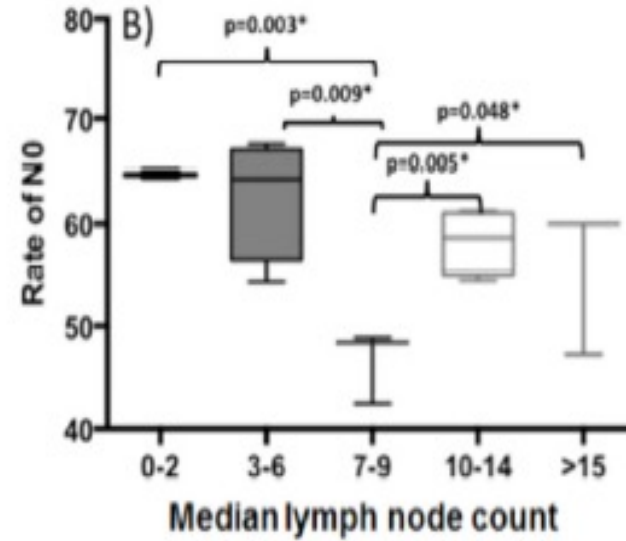
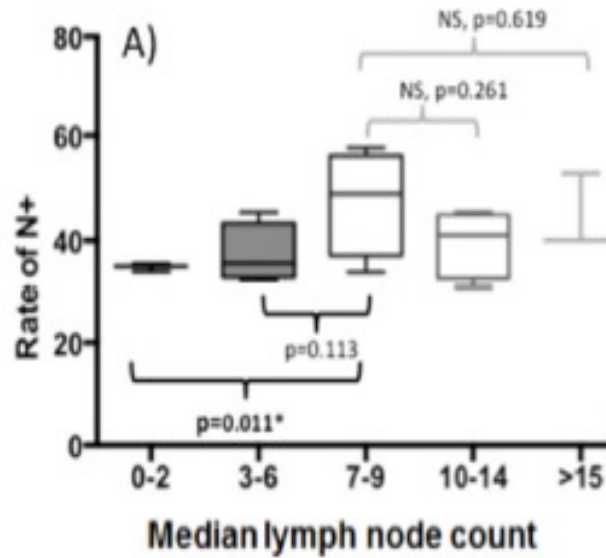
≥ 5 ganglions sur la pièce



No. at risk

A	106	96	58	39
B	29	26	19	10
C	13	9	4	2

Bismuth Type	Lymph Node Incidence
Type I (n=19)	21%
Type II (n=22)	27%
Type III (n=135)	41%
Type IV (n=144)	55%

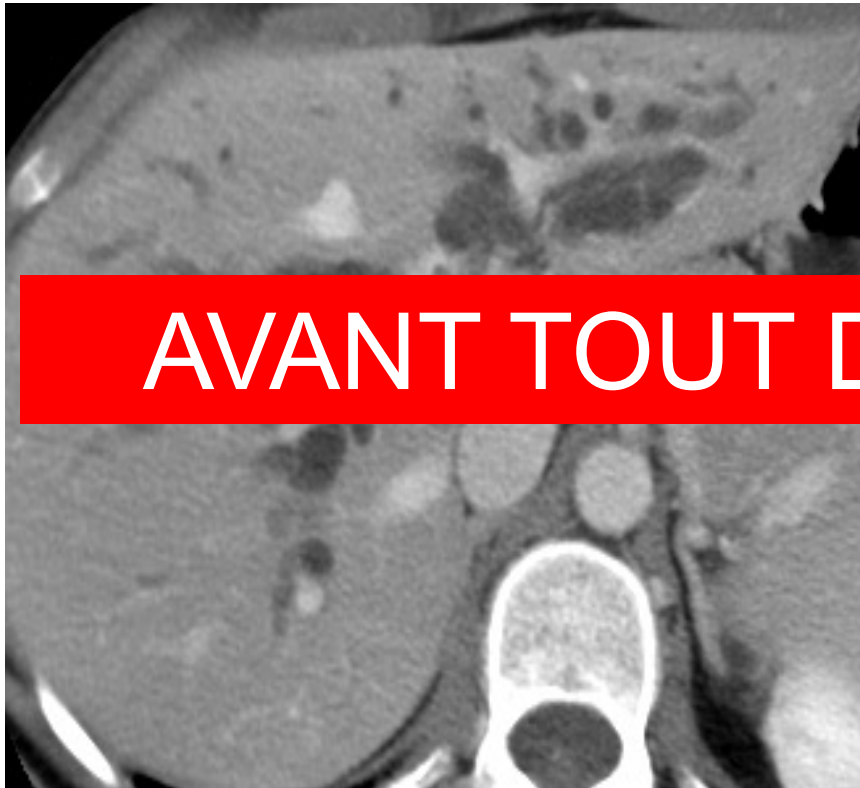


**≥ 7 Gg
nombre
optimal
pour le
staging**

Staging: Questions ?

- Envahissement biliaire ?
- Envahissement vasculaire ?
- Atrophie d'un lobe hépatique (branche portale) ?
- Métastases à distance ?

Staging: Examens clés



AVANT TOUT DRAINAGE BILIAIRE



Scanner triphasique –
Reconstruction vasculaire

Cholangio-IRM

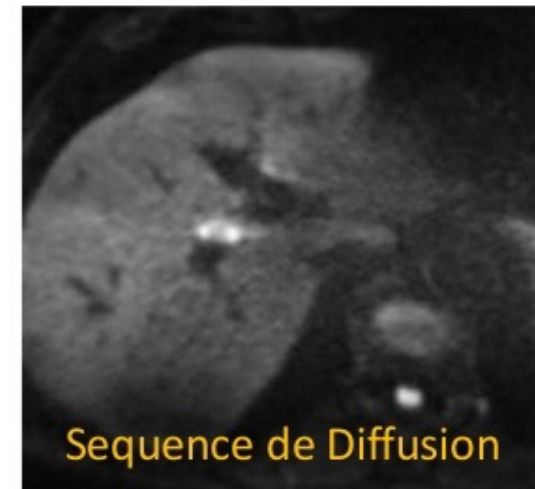
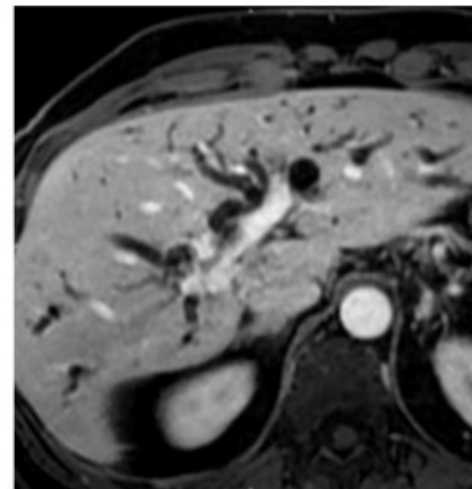
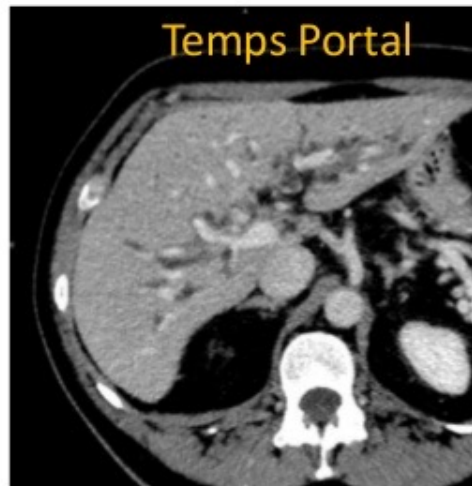
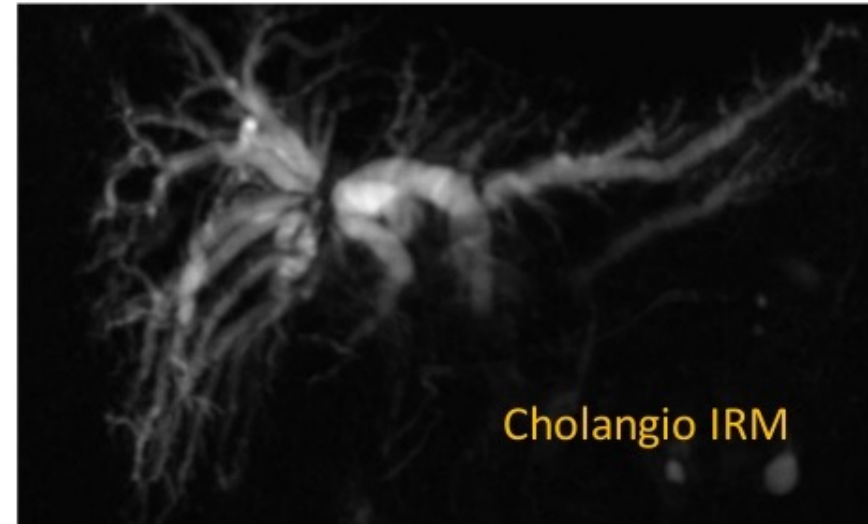
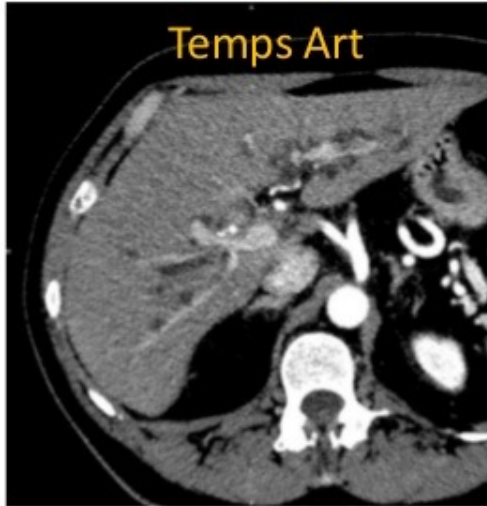
CCH: Dg positif du cancer



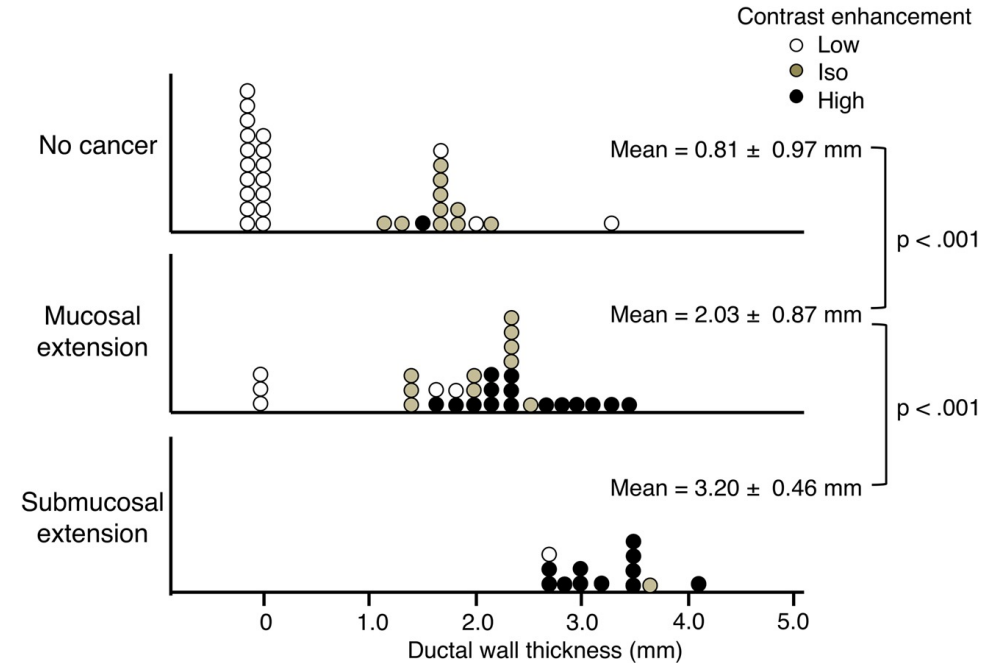
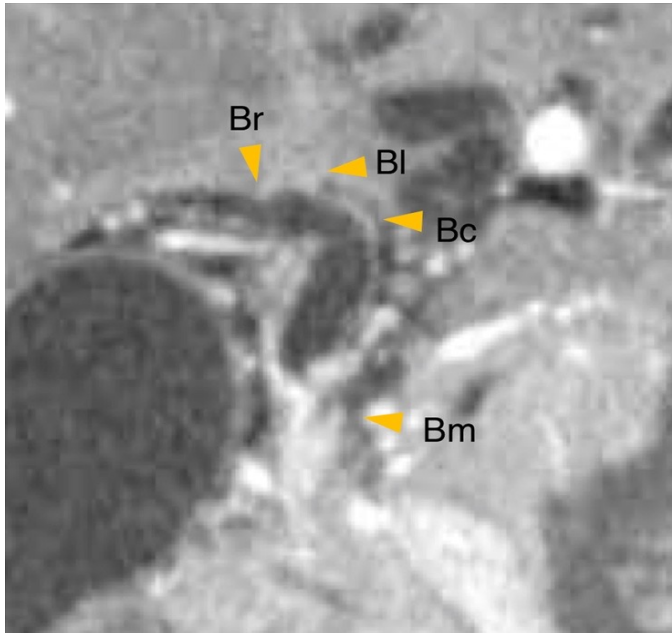
Tout canal biliaire infecté et non drainé ne guérira jamais de l'infection et entraînera de nouvelles crises d'angiocholite

Un TDM

Une IRM



Envahissement sous muqueux



the two modalities showed highest accuracy (83.8%). The depth of tumor invasion could be predicted by combination of the ductal wall thickness and contrast enhancement on MDCT, that is, at 11 of 13 sites (84.6%) with submucosal invasion, ductal wall thickness was > 2.5 mm with high contrast enhancement.

Engainement périnerveux

Body Imaging

Preliminary study of perineural invasion in patients with hilar cholangiocarcinoma by computed tomography imaging



Jie Li^a, Lixue Wang^a, Li Li^b, Jian Qiao^a, Zhuozhao Zheng^{a,*}

^a Department of Radiology, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, 168 Li Tang Road, Changping District, 102218 Beijing, China

^b Department of Pathology, Beijing Tsinghua Changgung Hospital, School of Clinical Medicine, Tsinghua University, 168 Li Tang Road, Changping District, 102218 Beijing, China

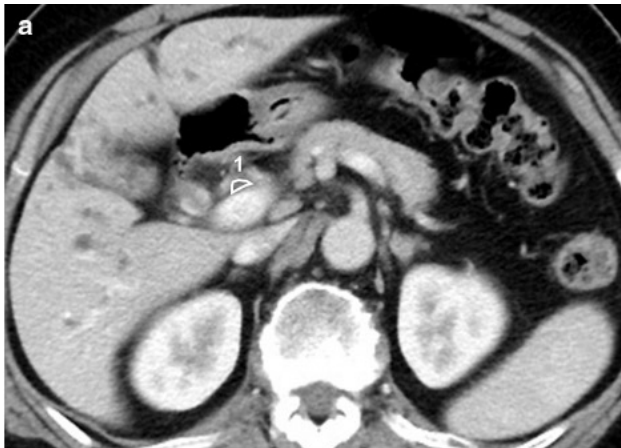
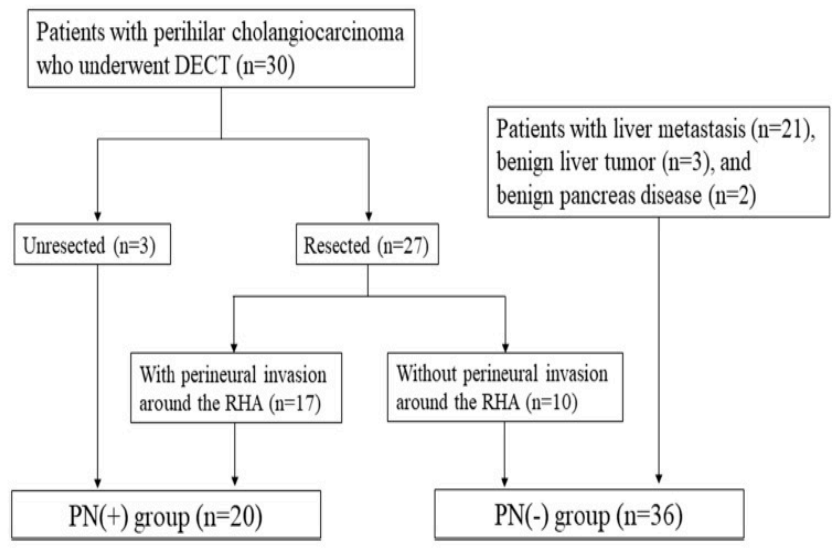
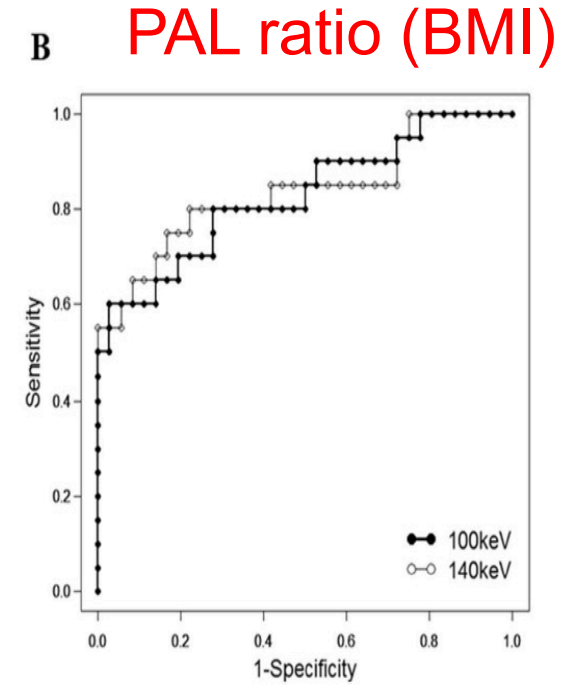
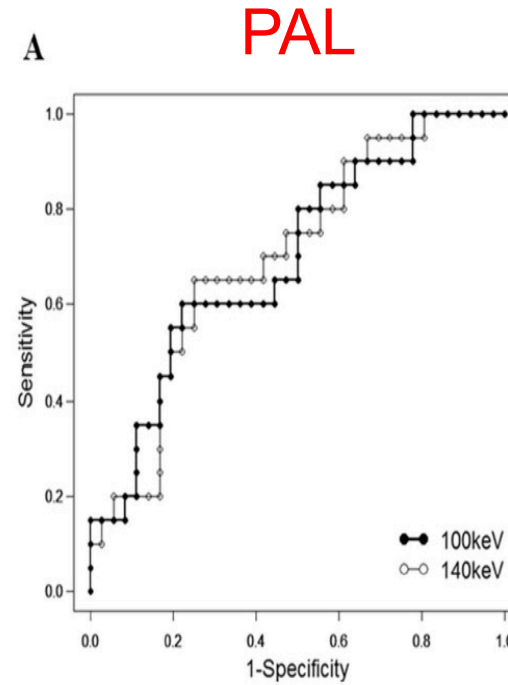
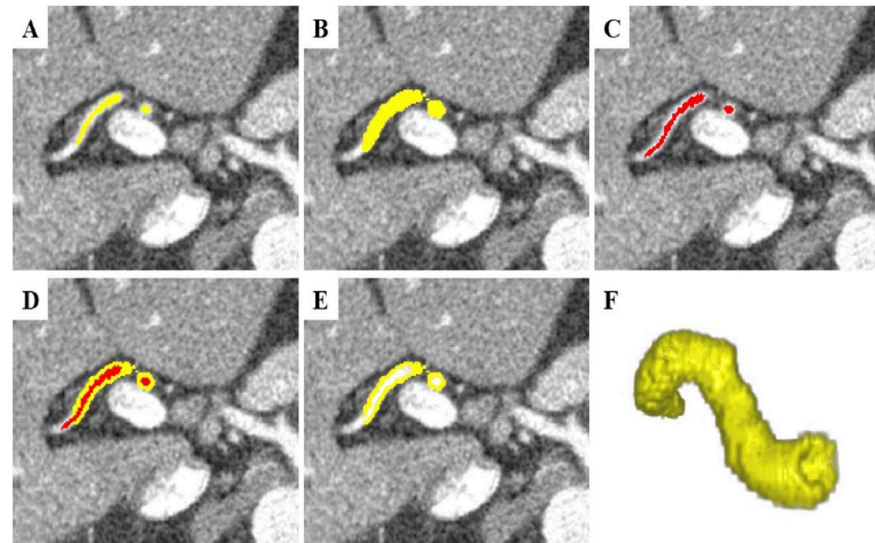


Table 3
Evaluation efficiency of CT value measurements.

	AUC (95% CI)	Sensitivity (%)	Specificity (%)	P	Optimal threshold (Hu)
Region 1	0.734 (0.528, 0.939)	90.9	60.0	0.019	-18.9
Region 2	0.730 (0.498, 0.962)	83.6	70.0	0.021	-10.9
Region 3	0.709 (0.533, 0.885)	65.5	70.0	0.037	-17.4
Right celiac ganglia	0.770 (0.581, 0.959)	78.0	80.0	0.007	56.1

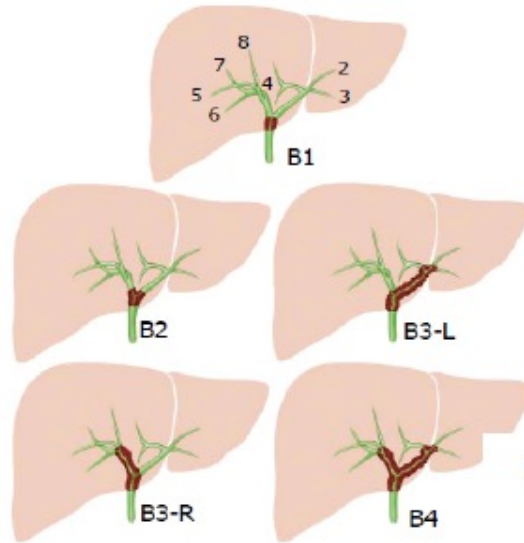
AUC = area under curve; CI = confidence interval.

Engainement périnerveux

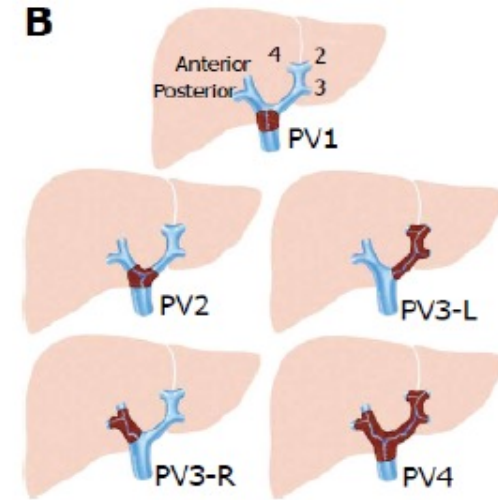


CCH: Classification

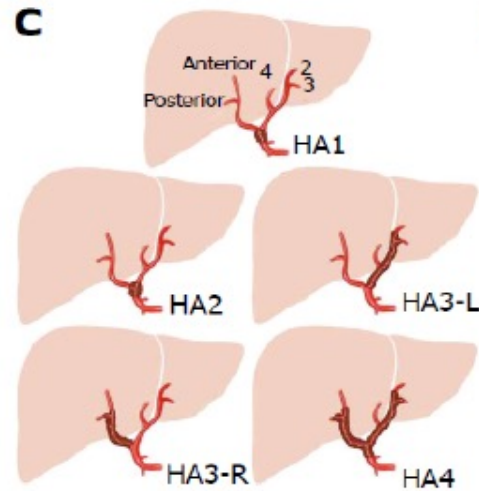
A



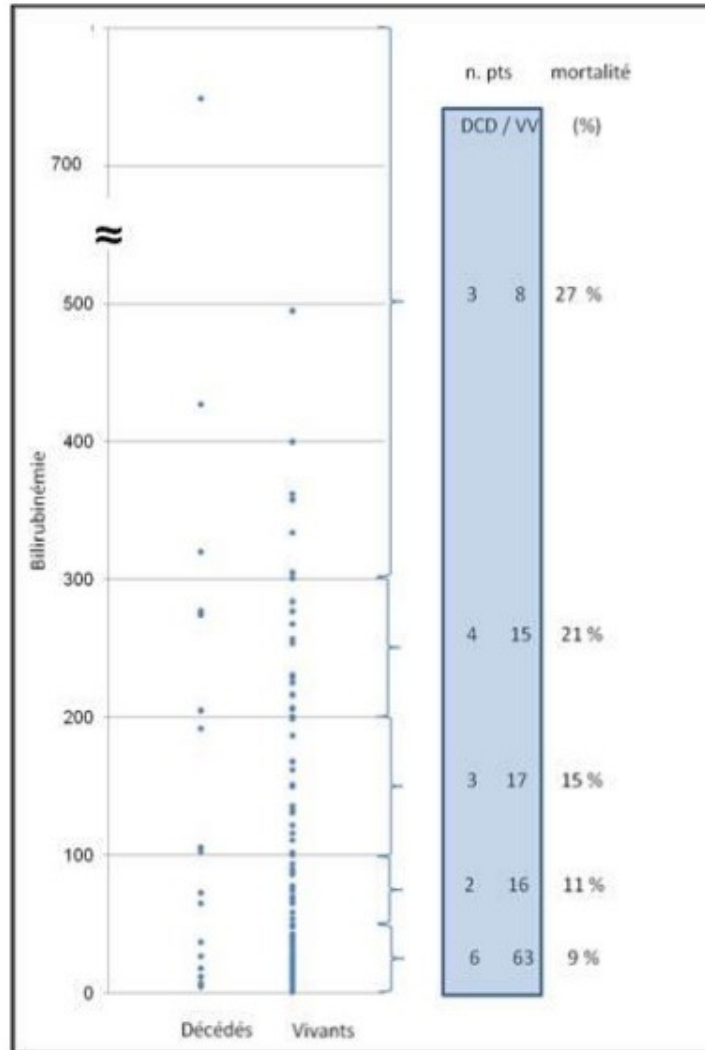
B



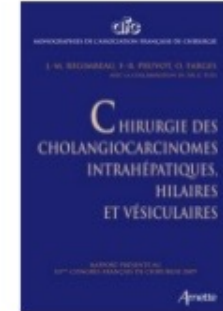
C



Po. mortality after hepatectomy and Preop. bilirubin plasmatic rate



Series of French
Association of Surgery
(1998 – 2008)



Mortality after right hepatectomy for hilar
cholangiocarcinoma (n=137 patients)

Clear correlation with mortality
9% for preop. Bilirubin < 50 µmol/L
27% for preop. Bilirubin > 300 µmol/L

Drainage biliaire préopératoire

Multicentre European study of preoperative biliary drainage for hilar cholangiocarcinoma

O. Farges¹, J. M. Regimbeau⁷, D. Fuks⁷, Y. P. Le Treut², D. Cherqui³, P. Bachellier⁴, J. Y. Mabrut⁵, M. Adham⁵, F. R. Pruvot⁶ and J. F. Gigot^{8*}

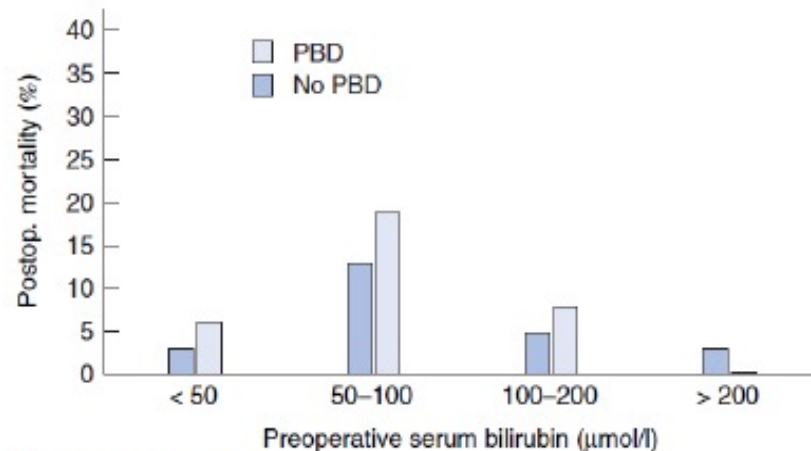
British Journal of Surgery 2013; 100: 274–283

	Univariable analysis		Multivariable analysis	
	Odds ratio	P*	Adjusted odds ratio	P†
All hepatectomies				
Hypertension	2.21 (1.04, 4.63)	0.033	2.00 (0.96, 4.21)	0.071
Diabetes	1.62 (0.51, 4.31)	0.282	1.08 (0.39, 3.03)	0.874
Serum bilirubin > 50 µmol/l				
At referral	2.57 (1.07, 7.13)	0.031	0.87 (0.26, 2.94)	0.823
Before surgery	3.55 (1.58, 8.78)	0.001	4.83 (1.58, 14.71)	0.002
Right hepatectomies	2.43 (1.14, 5.45)	0.017	3.16 (1.50, 6.65)	0.001
Right-sided hepatectomies				
Hypertension	2.88 (1.14, 7.29)	0.018	2.79 (1.11, 7.05)	0.029
PBD	0.35 (0.13, 0.89)	0.026	0.29 (0.11, 0.77)	0.013
Serum bilirubin > 50 µmol/l				
At referral	2.86 (0.98, 10.10)	0.051	0.88 (0.19, 4.08)	0.874
Before surgery	6.24 (2.27, 20.10)	< 0.001	7.02 (1.73, 28.52)	0.002
No. of biliary anastomoses	1.76 (0.57, 4.90)	0.283	3.26 (1.02, 10.35)	0.048
Left-sided hepatectomies				
PBD	3.69 (0.85, 22.30)	0.060	4.06 (1.01, 16.30)	0.035
Serum bilirubin > 50 µmol/l				
At referral	2.45 (0.49, 23.70)	0.345	0.33 (0.01, 19.10)	0.582
Before surgery	1.99 (0.47, 11.80)	0.372	7.15 (0.12, 399.20)	0.266

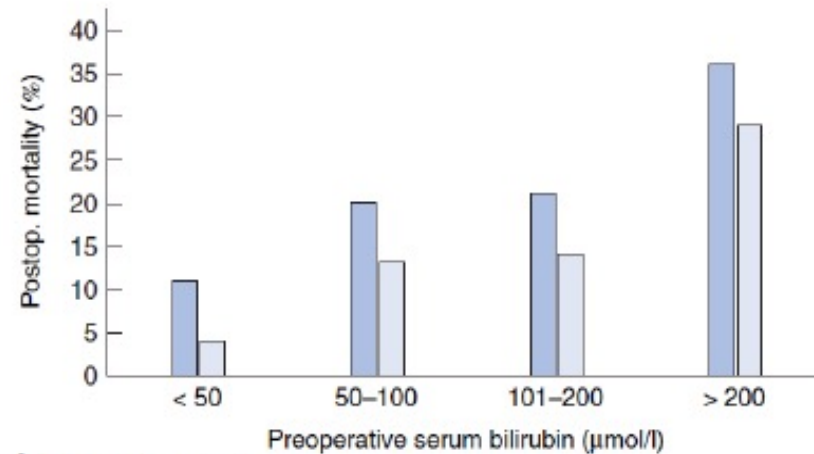
Multicentre European study of preoperative biliary drainage for hilar cholangiocarcinoma

O. Farges¹, J. M. Regimbeau⁷, D. Fuks⁷, Y. P. Le Treut², D. Cherqui³, P. Bachellier⁴, J. Y. Mabrut⁵, M. Adham⁵, F. R. Pruvot⁶ and J. F. Gigot^{8*}

British Journal of Surgery 2013; 100: 274–283

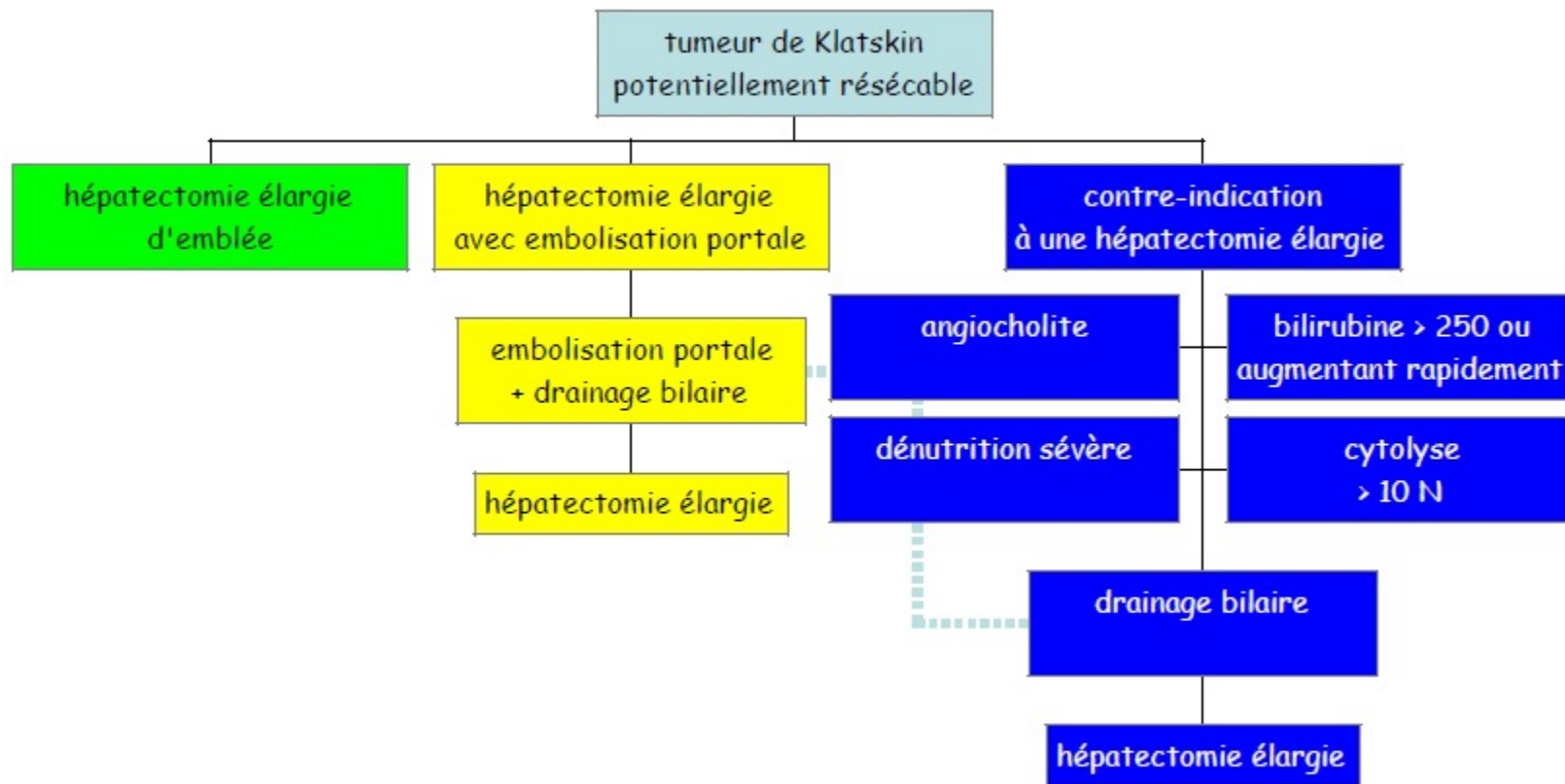


a Left hepatectomy

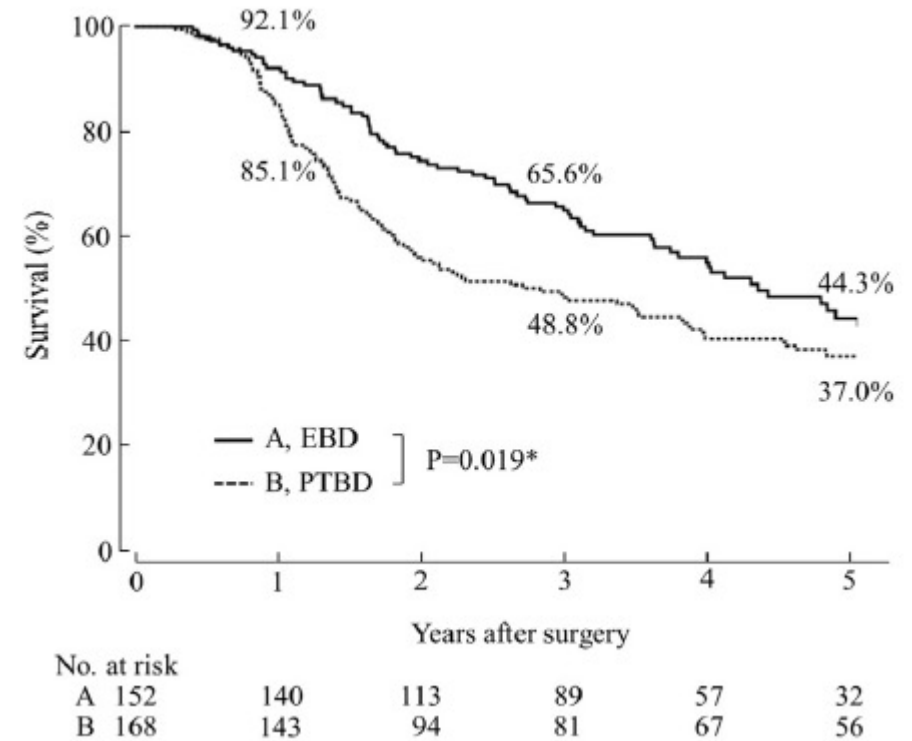
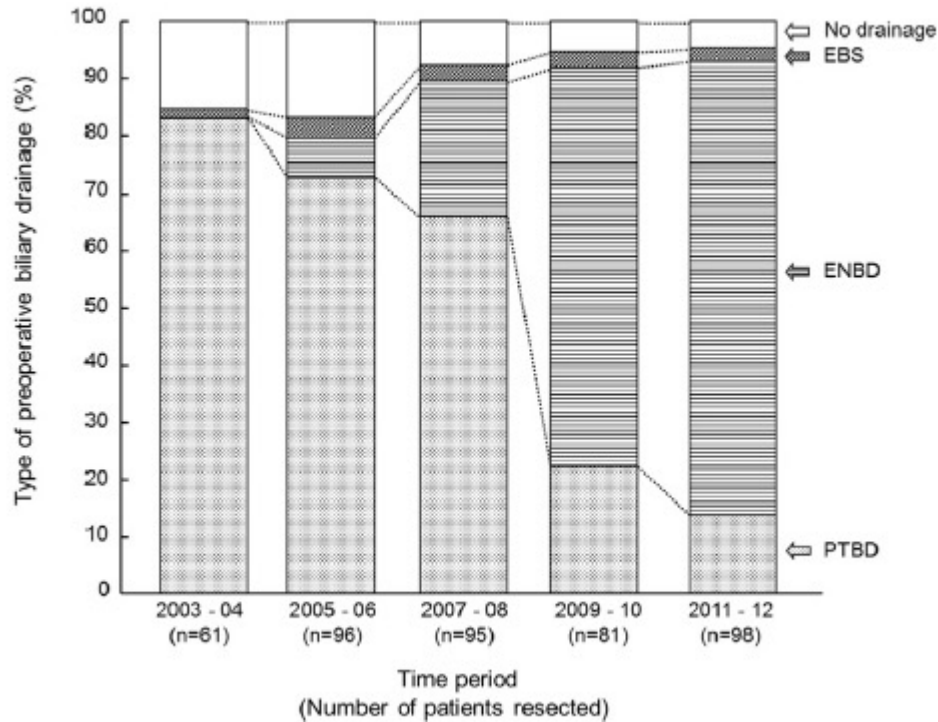


b Right hepatectomy

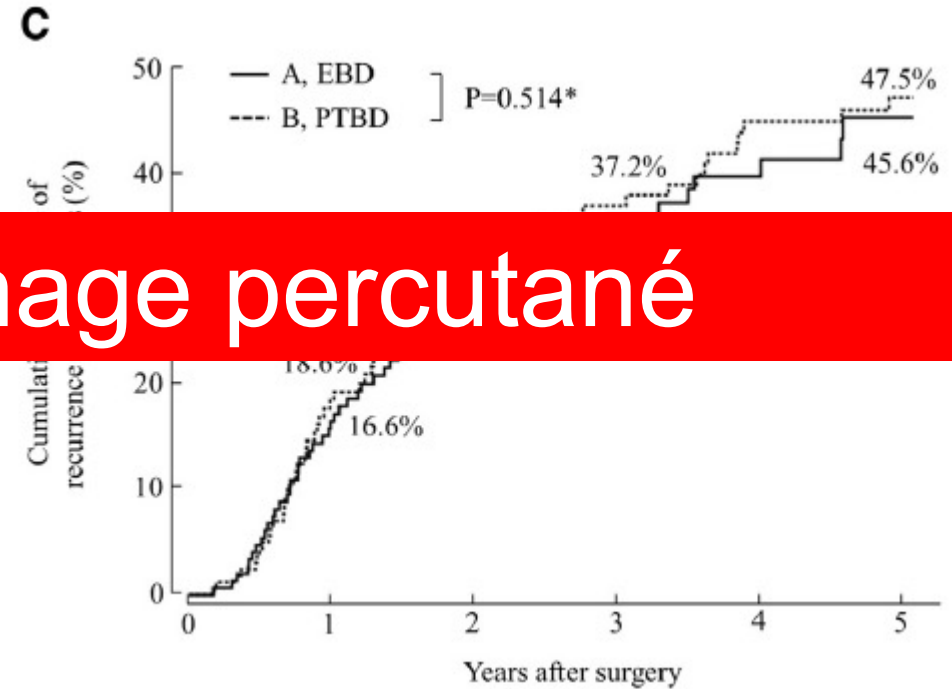
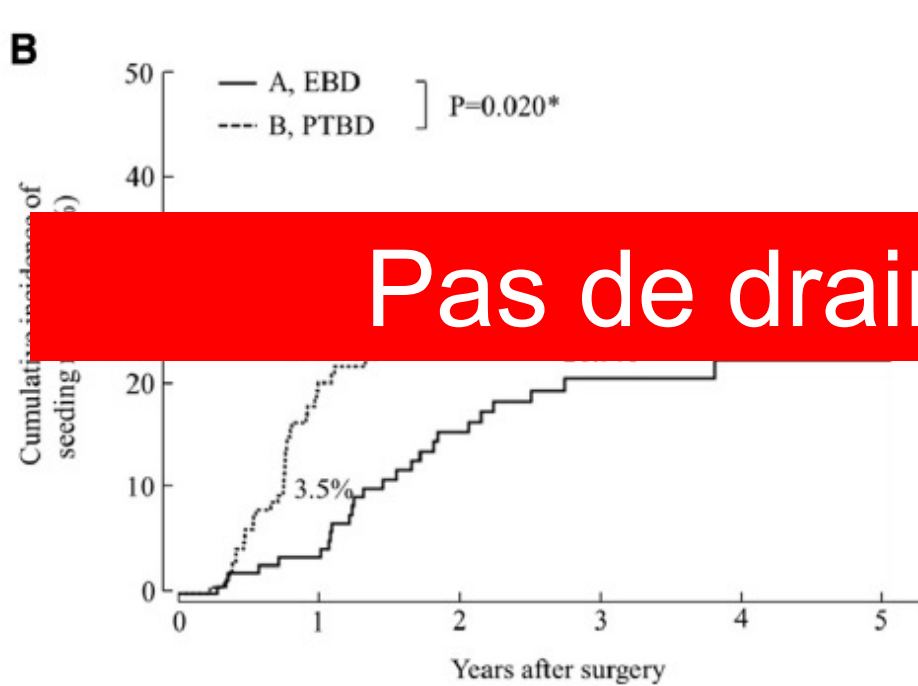
Drainage biliaire préop: Indications



Drainage biliaire: Moyens ?



Drainage biliaire: Moyens ?



Pas de drainage percutané

Drainage biliaire: Moyens?



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SURGERY



Pleural dissemination of cholangiocarcinoma caused by percutaneous transhepatic biliary drainage during the management of resectable cholangiocarcinoma

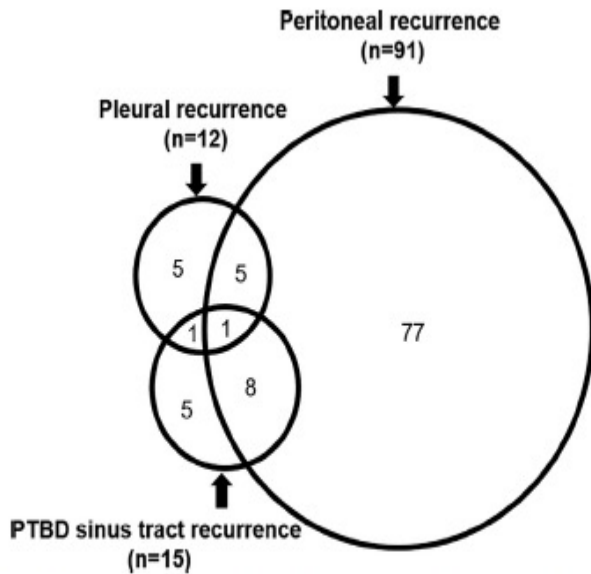
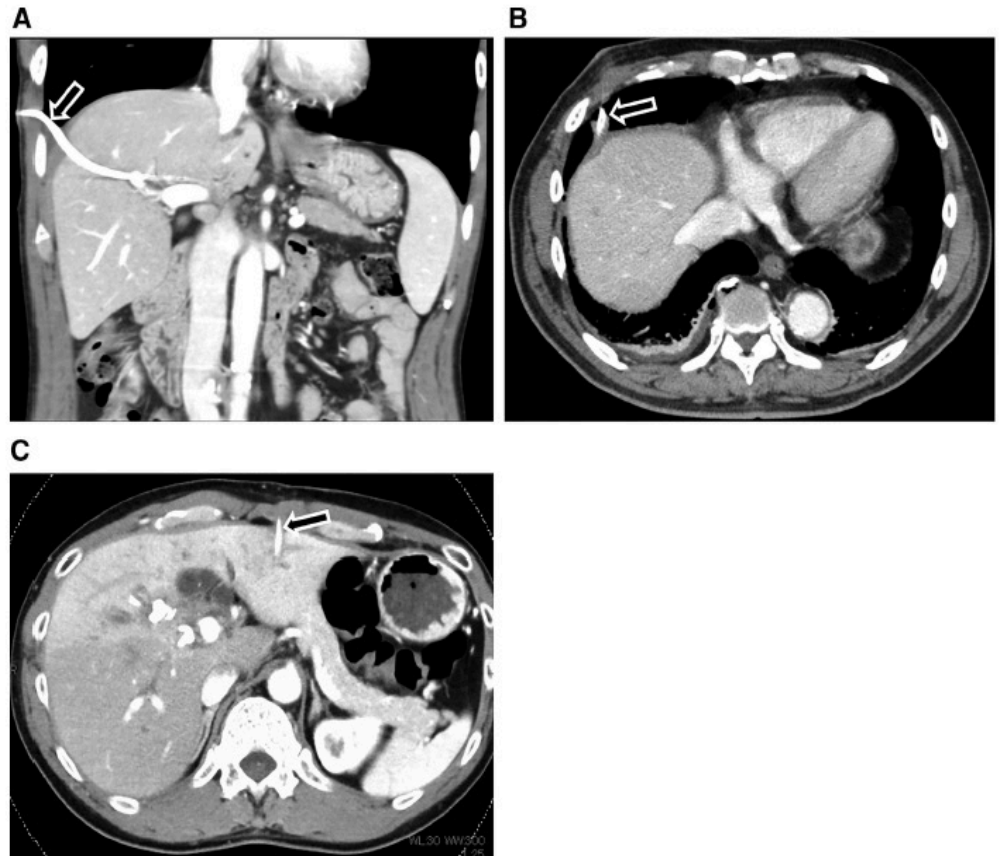


Fig. 3. Relation among 3 types of seeding metastasis, including peritoneal recurrence, pleural recurrence, and percutaneous transhepatic biliary drainage (PTBD) sinus tract recurrence.



Drainage biliaire: Moyens ?

Endoscopic versus percutaneous biliary drainage in patients with resectable perihilar cholangiocarcinoma: a multicentre, randomised controlled trial



Lancet Gastroenterol Hepatol
2018

Robert J S Coelen*, Eva Roos*, Jimme K Wiggers, Marc G Besselink, Carlijn I Buis, Olivier R C Busch, Cornelis H C Dejong, Otto M van Delden, Casper H J van Eijck, Paul Fockens, Dirk J Gouma, Bas Groot Koerkamp, Michiel W de Haan, Jeanin E van Hooft, Jan N M Ijzermans, G Matthijs Kater, Jan J Kooistra, Krijn P van Lienden, Adriaan Moelker, Steven W M Olde Damink, Jan-Werner Poley, Robert J Porte, Rogier J de Ridder, Joanne Verheij, Victor van Woerden, Erik A J Rauws, Marcel G W Dijkgraaf, Thomas M van Gulik†

	Endoscopic biliary drainage (n=27)	Percutaneous transhepatic biliary drainage (n=27)	p value
Any complication	11 (41%)	11 (41%)	1.00
Specific complications			
Cholecystitis	1 (4%)	1 (4%)	1.00
Pancreatitis	5 (19%)	1 (4%)	0.19
Haemorrhage	1 (4%)	2 (7%)	1.00
Perforation	1 (4%)	0	1.00
Portal vein thrombosis	1 (4%)	0	1.00
Stent or drain dysfunction	5 (19%)	6 (22%)	0.74
Stent or drain dislocation	1 (4%)	5 (19%)	0.19
Death	0	3 (11%)	0.24
Number of complications	--	--	0.88†
0	9 (33%)	10 (37%)	--
1	11 (41%)	8 (30%)	--
≥2	7 (26%)	9 (33%)	--

Data are n (%). *Relative risk 0.94, 95% CI 0.64–1.40; absolute risk difference 3.7%. †Jonckheere-Terpstra test.

Table 3: Severe complications between randomisation and surgery

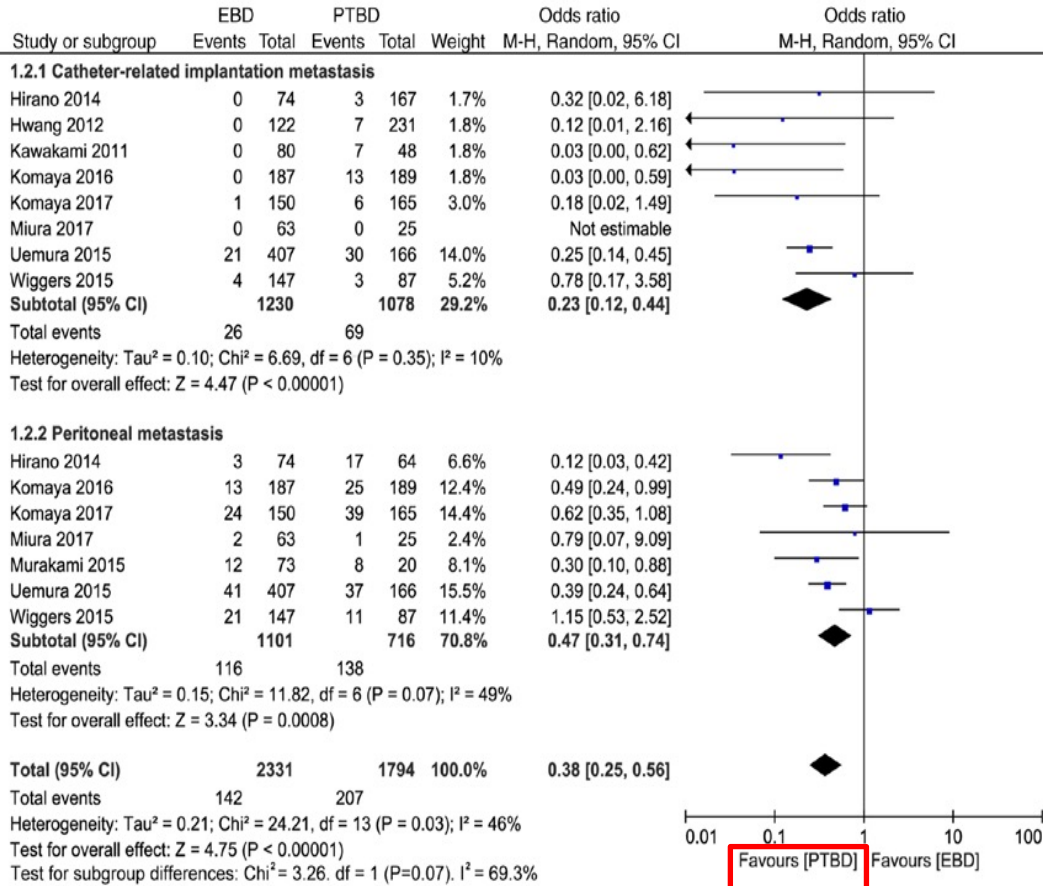
	Endoscopic biliary drainage (n=22)	Percutaneous transhepatic biliary drainage (n=20)	p value
Wound infection	1 (5%)	1 (5%)	1.00
Pneumonia	0	1 (5%)	0.48
Haemorrhage	1 (5%)	2 (10%)	0.60
Portal vein thrombosis	0	1 (5%)	0.48
Biliary leakage	4 (18%)	2 (10%)	0.67
Liver failure	2 (9%)	5 (25%)	0.23
Relaparotomy	3 (14%)	5 (25%)	0.45
Death within 90 days			
With or without resection	3 (14%)	8 (40%)	0.08†
After resection	2 (17%; n=12)	5 (45%; n=11)	0.19

Data are n (%), or n (%; n). *Relative risk 1.19, 95% CI 0.73–1.96; absolute risk difference 10.4%. †Relative risk 2.93, 95% CI 0.91–9.55; absolute risk difference 26.4%.

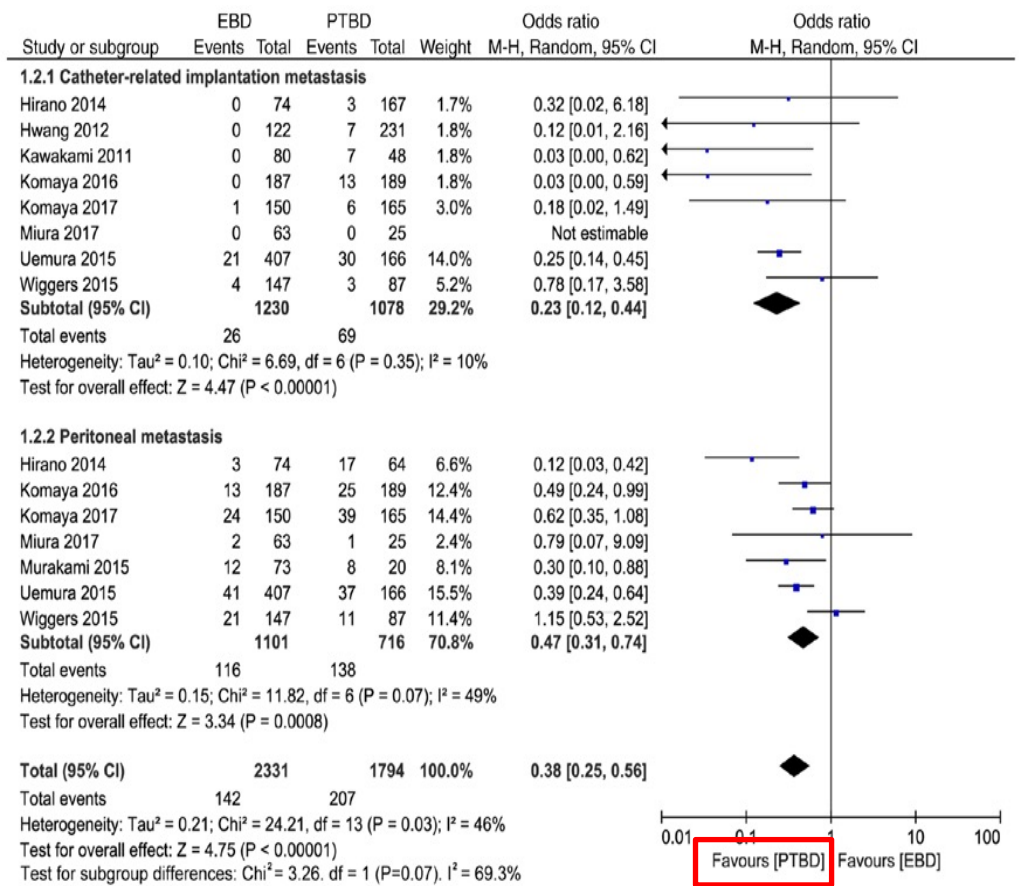
Table 4: Severe complications within 90 days after surgery

Pas de drainage percutané

Effects of different preoperative biliary drainage methods for resected malignant obstruction jaundice on the incidence rate of implantation metastasis: A meta-analysis



Site of Metastasis



Site of tumor

Drainage biliaire: DNB ?

Preoperative course of patients undergoing endoscopic nasobiliary drainage during the management of resectable perihilar cholangiocarcinoma

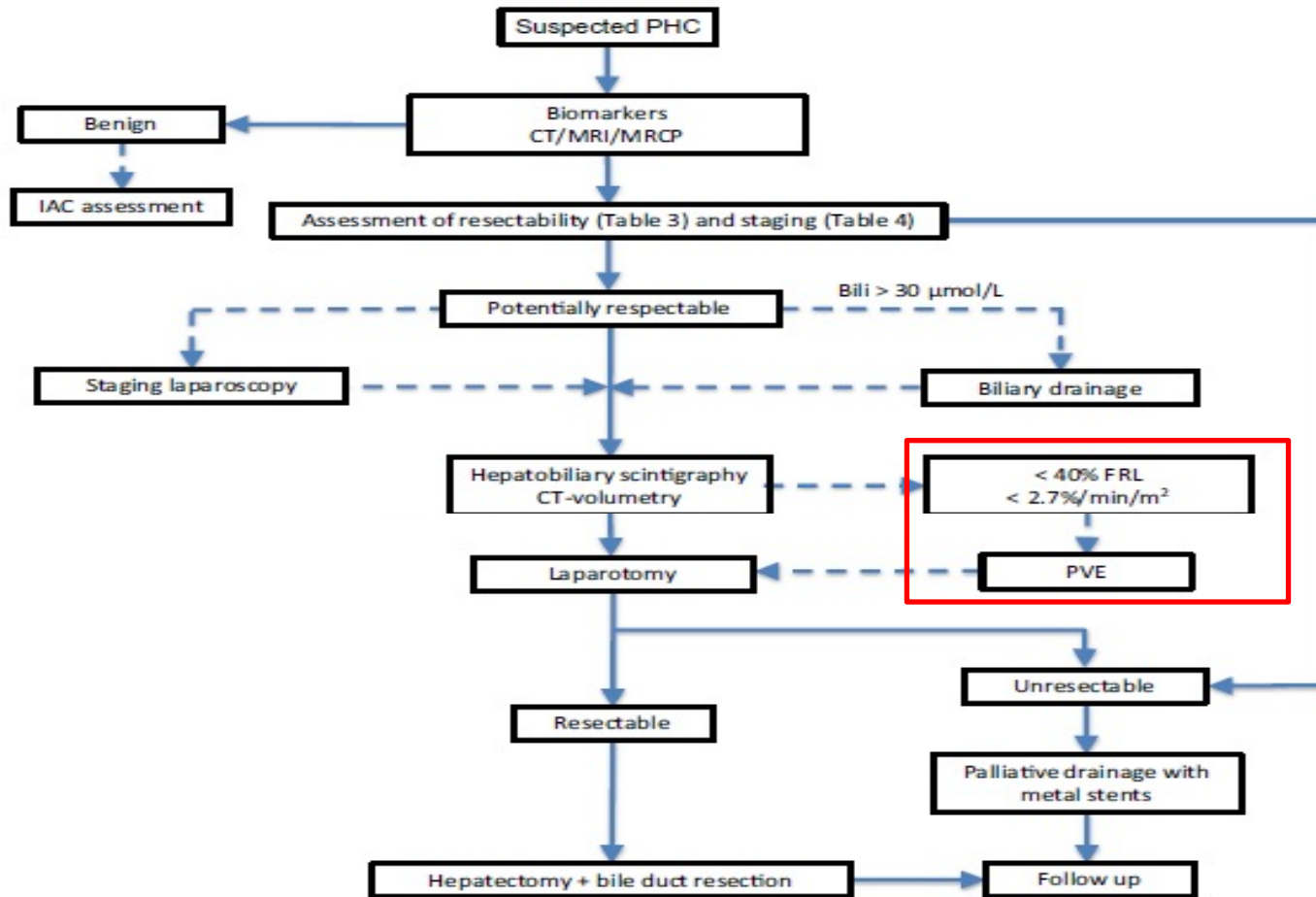
Takashi Maeda · Tomoki Ebata · Yukihiro
Yokoyama · Takashi Mizuno · Junpei Yamaguchi ·
Shunsuke Onoe · Nobuyuki Watanabe · Hiroki
Kawashima · Masato Nagino

J Hepatobiliary Pancreat Sci (2019) ***-**-**



- 191 patients résequés
- Angiocholites préop:
 - 0: 120 patients
 - 1: 59 patients
 - 2: 12 patients

Optimisation préopératoire



Optimisation préopératoire

Survey of preoperative management protocol for perihilar cholangiocarcinoma at 10 Japanese high-volume centers with a combined experience of 2,778 cases

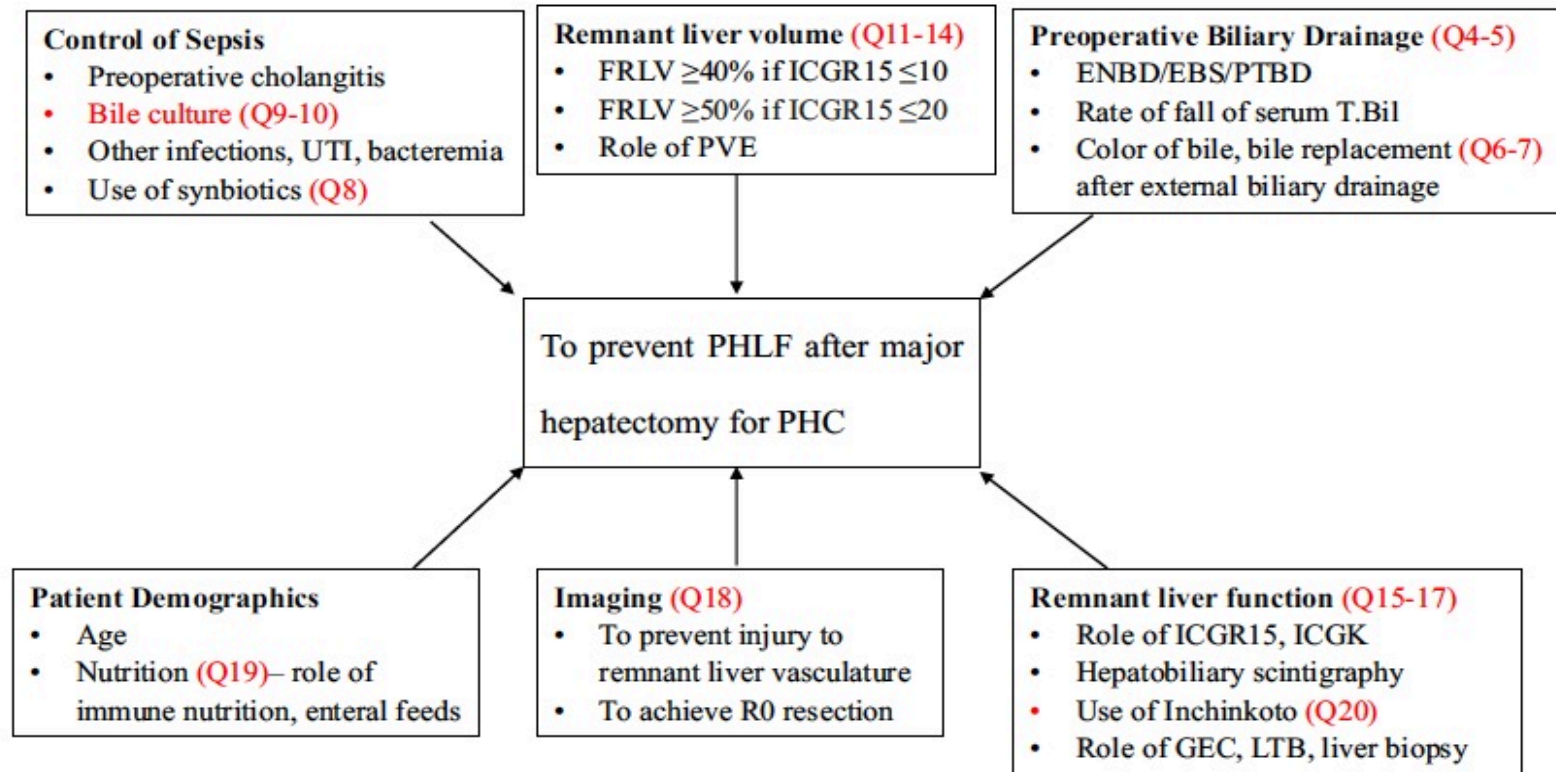
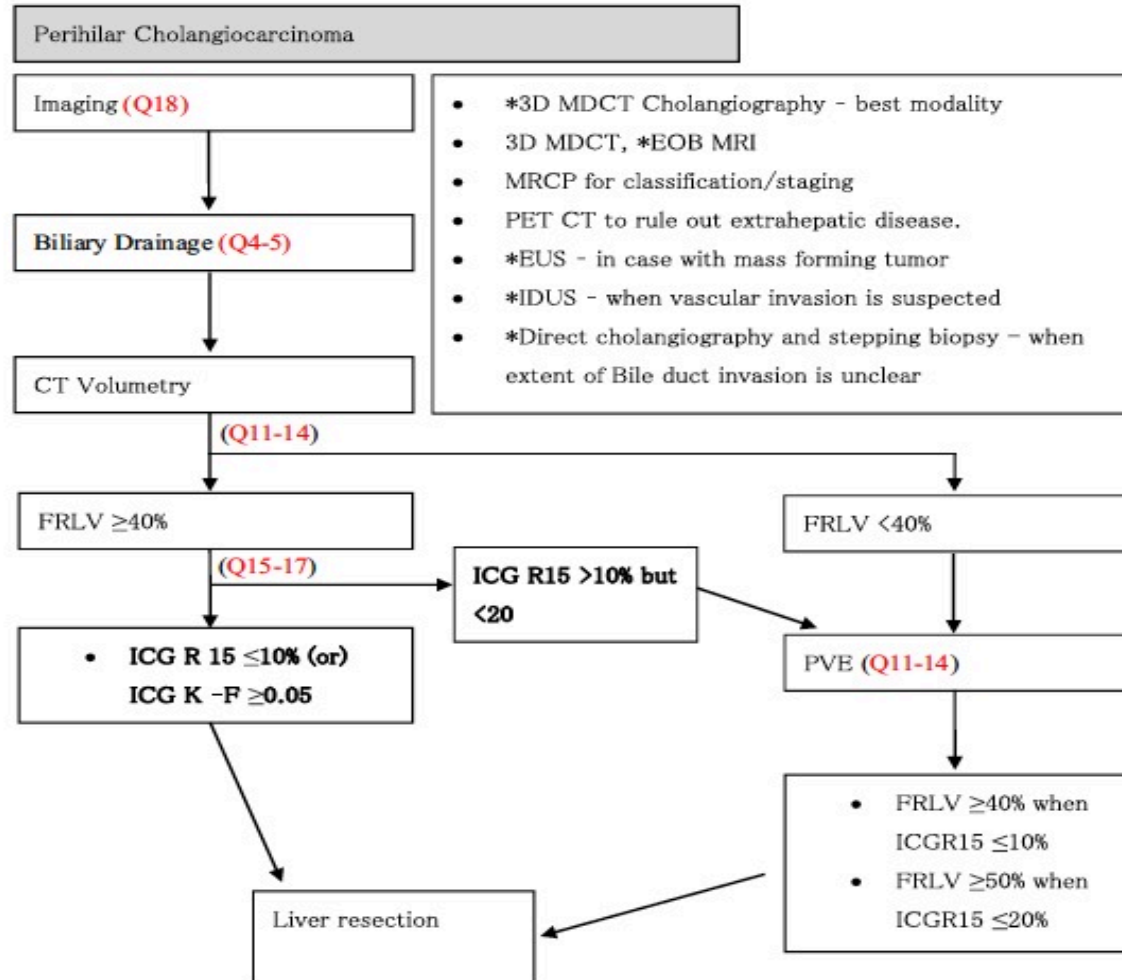


Fig. 1 How to prevent post-hepatectomy liver failure (PHLF) after major liver resections for perihilar cholangiocarcinoma (PHC)?

Optimisation préopératoire

Survey of preoperative management protocol for perihilar cholangiocarcinoma at 10 Japanese high-volume centers with a combined experience of 2,778 cases

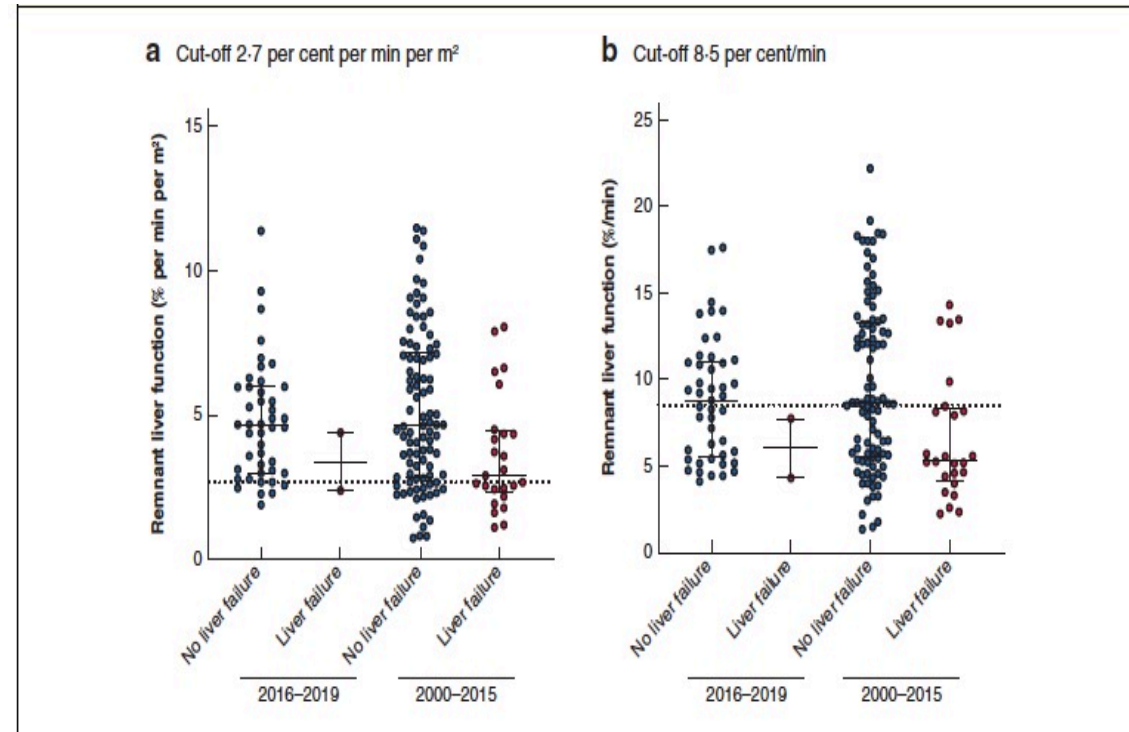
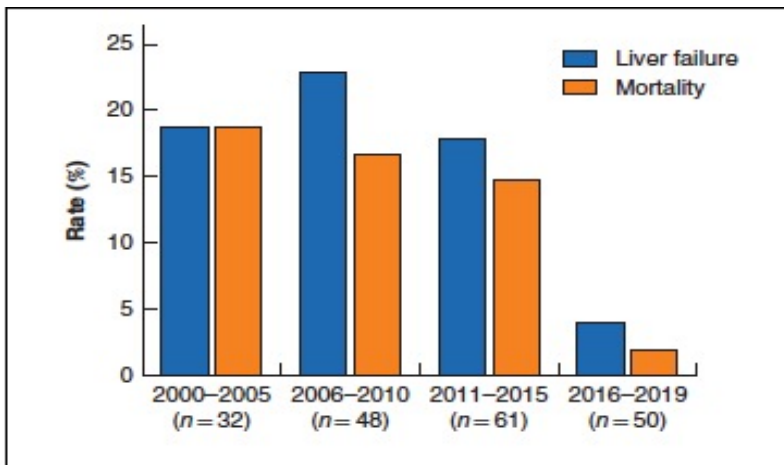


Optimisation préopératoire: PVE

Effect of structured use of preoperative portal vein embolization on outcomes after liver resection of perihilar cholangiocarcinoma

L. C. Franken¹, F. Rassam¹, K. P. van Lienden², R. J. Bennink², M. G. Besselink¹, O. R. Busch¹, J. I. Erdmann¹, T. M. van Gulik¹ and P. B. Olthof^{1,3}

	2016–2019 (n = 50)	2000–2015 (n = 141)	P*
Major morbidity (Clavien–Dindo grade \geq IIIA)	26 (52)	82 (58.2)	0.451
Liver failure (grade B/C)	2 (4)	28 (19.9)	0.008
Biliary leakage (grade B/C)	16 (32)	45 (31.9)	0.991
Bleeding (grade B/C)	2 (4)	12 (8.5)	0.293
Drainage of intra-abdominal abscess	17 (35)	56 (39.7)	0.534
90-day mortality	1 (2)	23 (16.3)	0.009



Optimisation préopératoire

Cardiovasc Intervent Radiol
<https://doi.org/10.1007/s00270-018-2075-0>



CLINICAL INVESTIGATION INTERVENTIONAL ONCOLOGY

Preoperative Portal Vein Embolization Alone with Biliary Drainage Compared to a Combination of Simultaneous Portal Vein, Right Hepatic Vein Embolization and Biliary Drainage in Klatskin Tumor

Arnaud Hocquelet¹ · Charalampos Sotiriadis¹ · Rafael Duran¹ · Boris Guiu² · Takamune Yamaguchi³ · Nermin Halkic³ · Emmanuel Melloul³ · Nicolas Demartines³ · Alban Denys¹

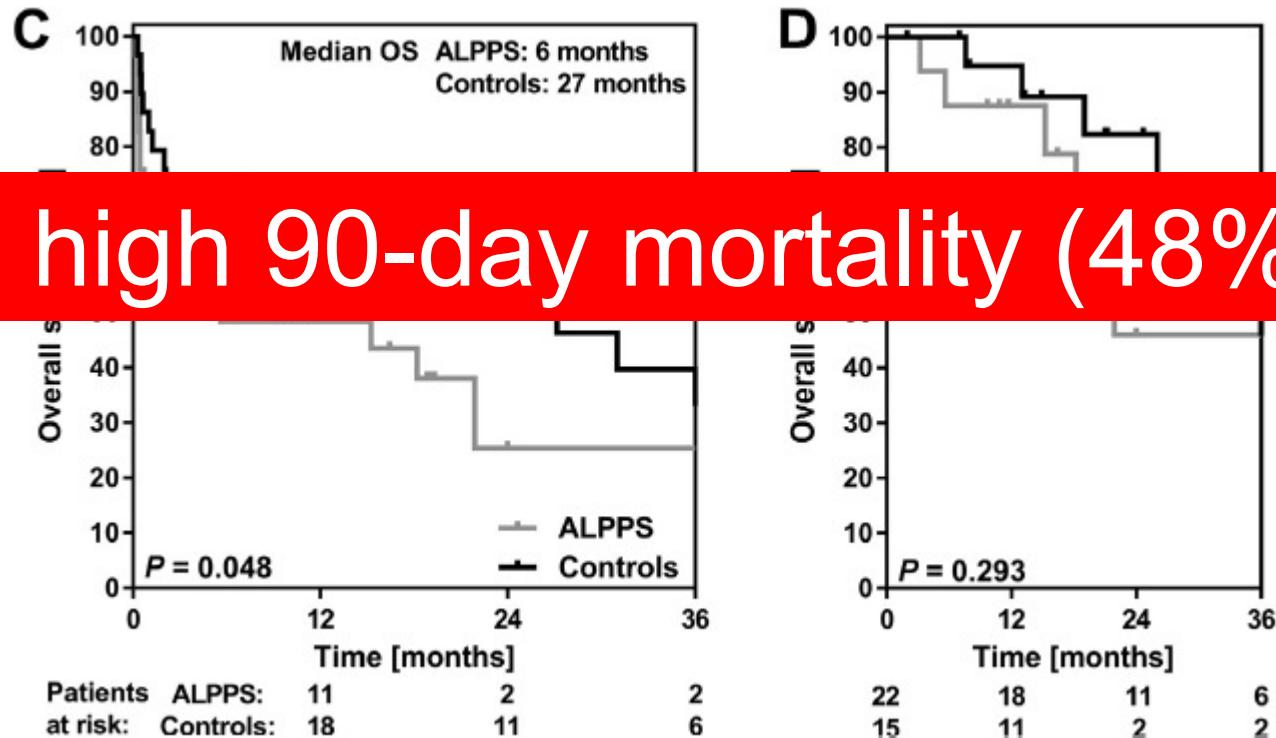
	PVE + BD	LVD + BD	<i>p</i> value
Age (years)	62 (54–68)	60 (54–71)	0.809
Bilirubin level (umol/l)			
Before embolization	243 (189–300)	197 (114–287)	0.522
3 weeks	18 (15–21)	20 (17–47)	0.410
Day 5 post-surgery	27 (18–60)	48 (28–60)	0.806
Prothrombin time (%)			
Before embolization	87 (77–100)	80 (65–100)	0.624
3 weeks	85 (75–100)	85 (70–100)	0.915
Day 5 post-surgery	65 (60–75)	77 (71–95)	0.216
FRL before (cc)	429(391–560)	517(310–828)	0.631
FRL ratio before (%)	31 (24–33)	30.5 (23–35.5)	0.998
FRL after (cc)	531 cc (500–626)	845(693–960)	0.016
FRL ratio after (%)	39 (36–42)	42.3 (34–47)	0.521
eFRL after (%)	37 (30–44)	58 (54–71)	0.017
%FRL hypertrophy	31.3 (12–40)	67 (29–123)	0.078
Hospital stay after surgery (days)	44 (43–55)	14 (8–37)	0.114
3-month postoperative mortality	2	0	0.429

ALPPS: NO

ORIGINAL ARTICLE

High mortality after ALPPS for perihilar cholangiocarcinoma: case-control analysis including the first series from the international ALPPS registry

Pim B. Olthof¹, Robert J.S. Coelen¹, Jimme K. Wiggers¹, Bas Groot Koerkamp², Massimo Malago³, Roberto Hernandez-Alejandro^{4,5}, Stefan A. Topp⁶, Marco Vivarelli⁷, Luca A. Aldrighetti⁸, Ricardo Robles Campos⁹, Karl J. Oldhafer¹⁰, William R. Jarnagin¹¹ & Thomas M. van Gulik¹



high 90-day mortality (48%)

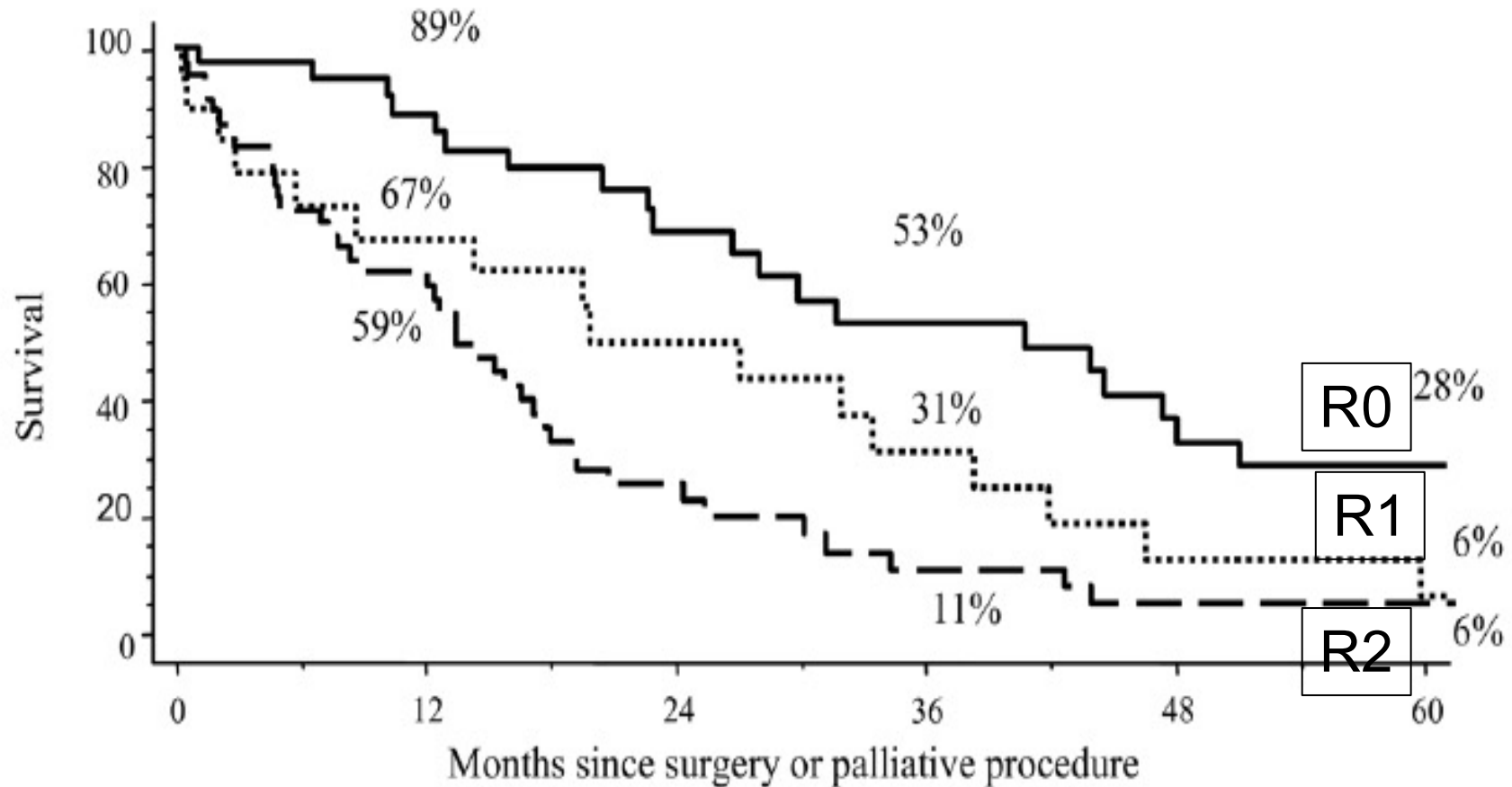
CCH: Contre-indications à la chir

- 1. Métastases (péritoine, poumon ...)**
- 2. Métastase ganglionnaire régionale à distance (TC)**
- 3. Envahissement controlatéral de l'artère et ou artério-porte**
- 4. Atrophie d'un foie avec envahissement controlatéral de la branche portale**

CCH: Chirurgie = Résection R0

**Résection complète avec une marge de résection
saine (R0):
Rationnel?**

Résection R0: Rationnel



CCH: Chirurgie = Résection R0

**Résection complète avec une marge de résection
saine (R0):**

Etendue de cette marge ?

Résection R0: Etendue de la marge

The Pattern of Infiltration at the Proximal Border of Hilar Bile Duct Carcinoma

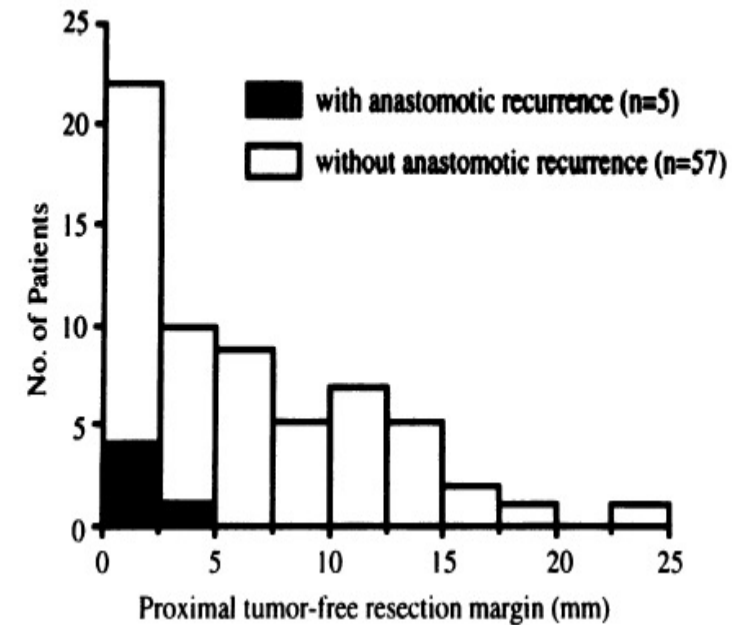
A Histologic Analysis of 62 Resected Cases

Eiji Sakamoto, MD, Yuji Nimura, MD, Naokazu Hayakawa, MD, Junichi Kamiya, MD, Satoshi Kondo, MD, Masato Nagino, MD, Michio Kanai, MD, Masahiko Miyachi, MD, and Katsuhiko Uesaka, MD

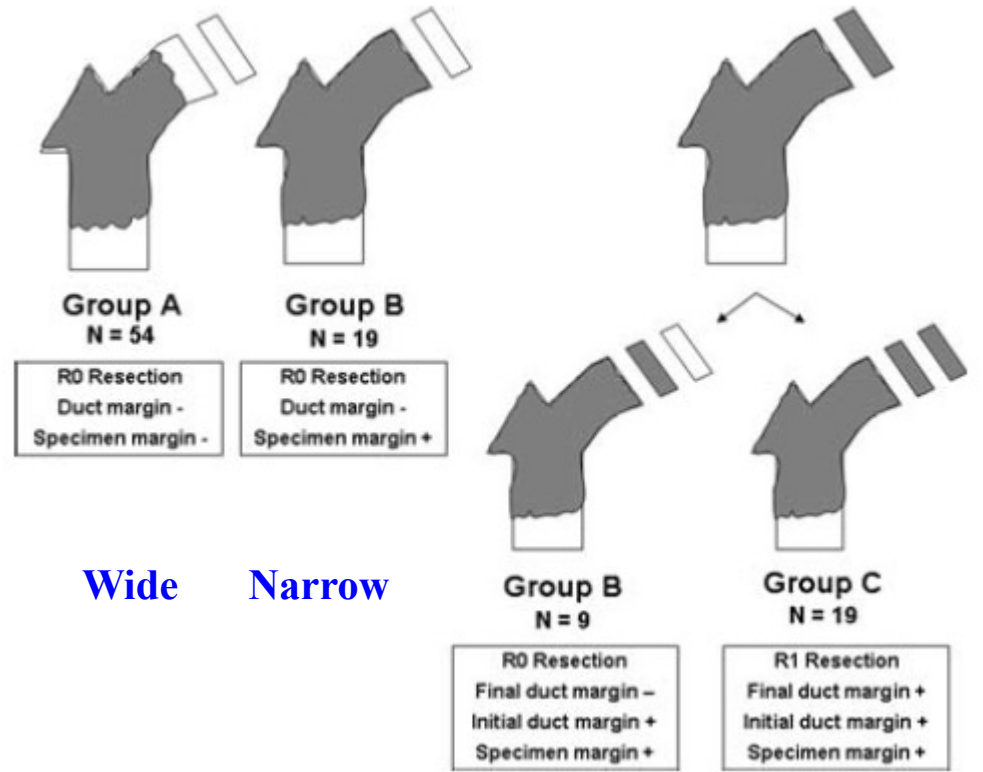
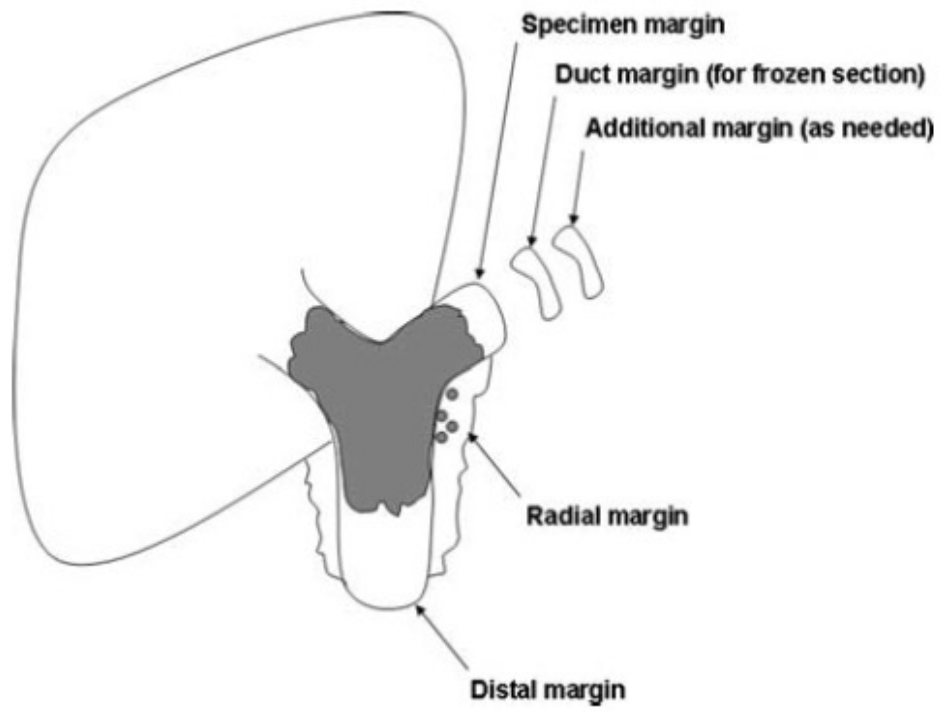
length of free resection margin

% of anastomotic recurrence

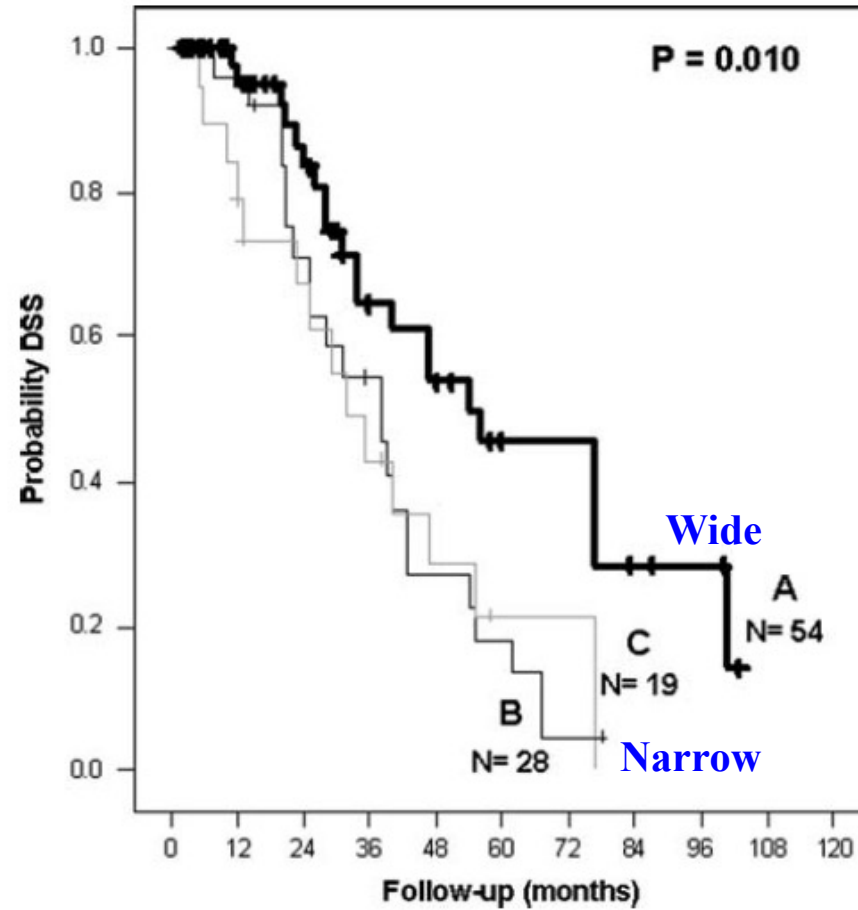
< 2,5 mm	18 %
2,5 - 5 mm	10 %
> 5 mm	0 %



Résection R0: Marges



Résection R0: Marges

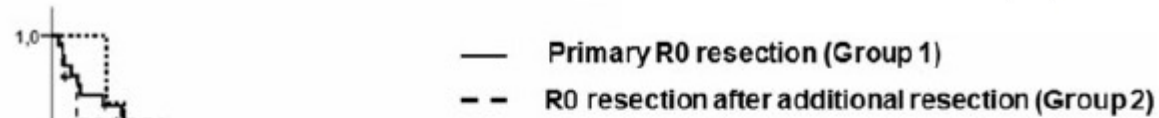


Résection R0: Recoupe?

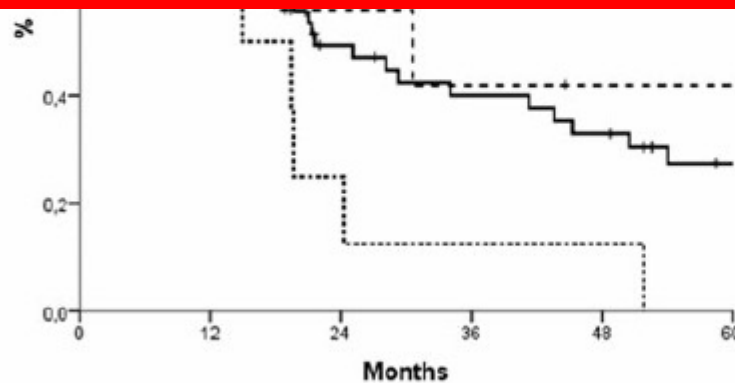
Additional Resection of an Intraoperative Margin-Positive Proximal Bile Duct Improves Survival in Patients With Hilar Cholangiocarcinoma

Dario Ribero, MD, Marco Amisano, MD,* Roberto Lo Tesoriere, MD,* Stefano Rosso, MD, MSc,† Alessandro Ferrero, MD,* and Lorenzo Capussotti, MD**

Overall survival



Amélioration de la survie



N° at risk

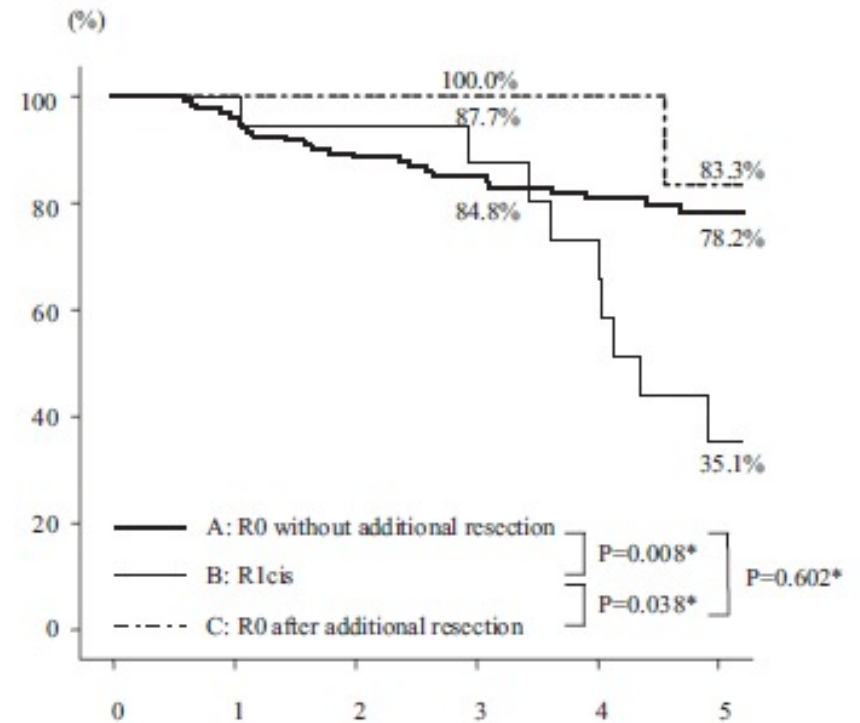
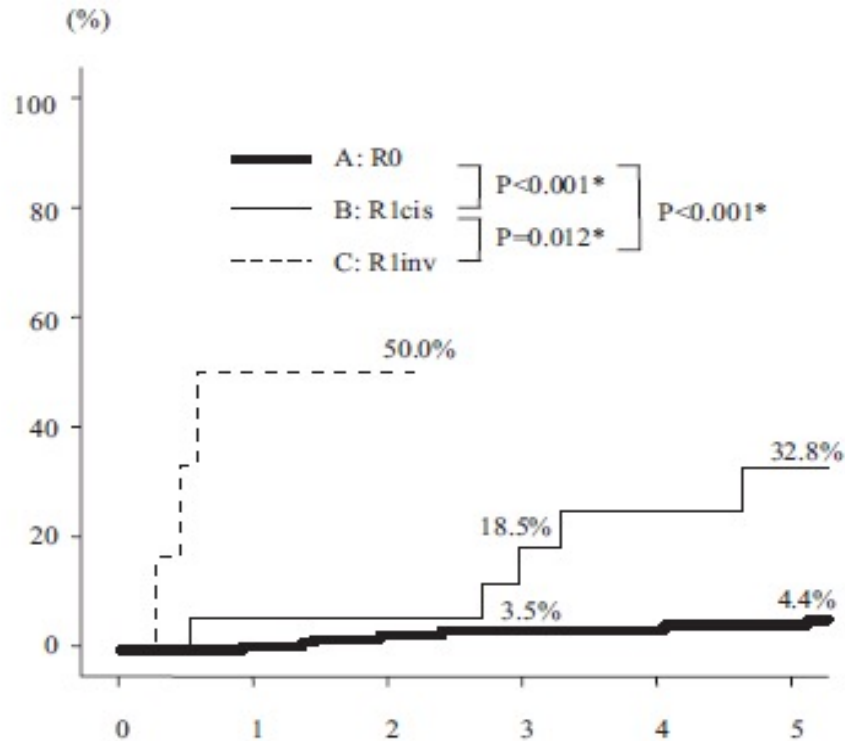
	0	12	24	36	48	60
Group 1	48	34	22	17	14	8
Group 2	11	8	4	3	2	2
Group 3	8	5	2	1	1	0

Résection R0: Recoupe?

Residual Carcinoma In Situ at the Ductal Stump has a Negative Survival Effect

An Analysis of Early-stage Cholangiocarcinomas

Tetsuo Tsukahara, MD,*† Tomoki Ebata, MD,* Yoshie Shimoyama, MD,† Yukihiro Yokoyama, MD,*
Tsuyoshi Igami, MD,* Gen Sugawara, MD,* Takashi Mizuno, MD,* and Masato Nagino, MD*



Recoupe: BilIN (HG)

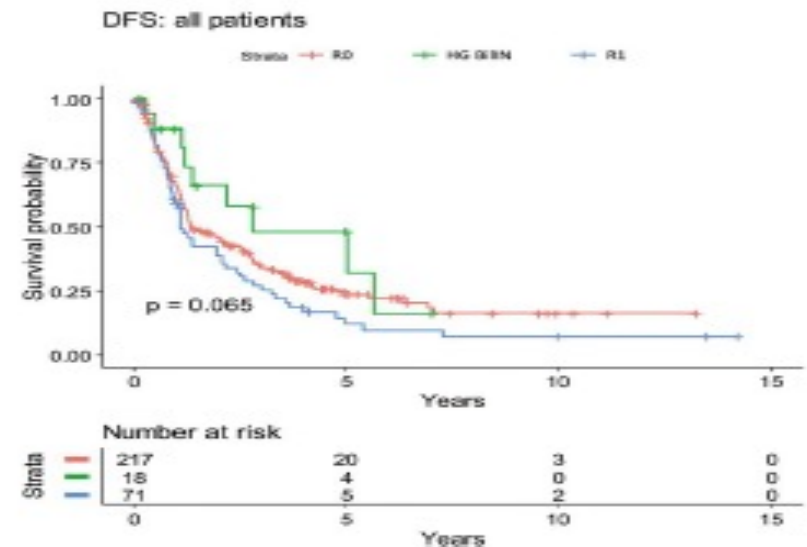
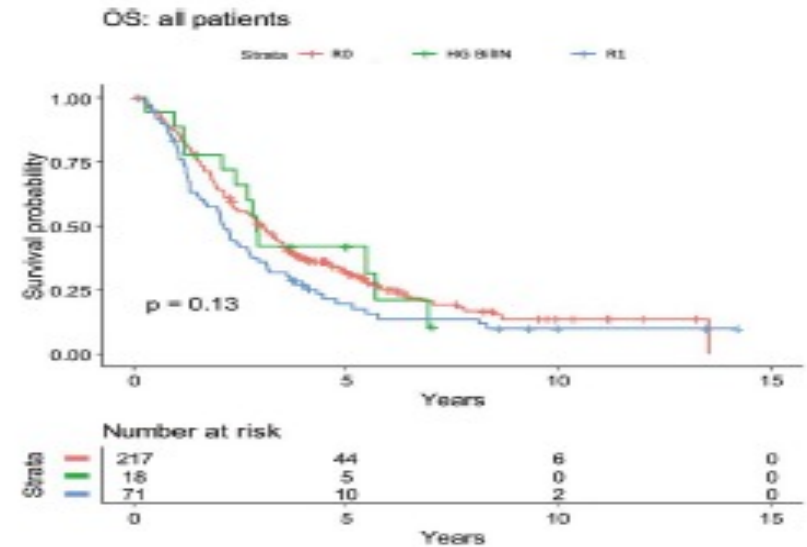
ORIGINAL ARTICLE

Prognostic implication of high grade biliary intraepithelial neoplasia in bile duct resection margins in patients with resected perihilar cholangiocarcinoma

	R0 group (n = 217)	HG BilIN group (n = 18)	R1 group (n = 71)	P-value
Adjuvant chemotherapy (%)	38 (17.5)	8 (44.4)	24 (33.8)	.001
Adjuvant radiotherapy (%)	9 (4.1)	8 (44.4)	19 (26.7)	<.001
Recurrence (%)	149 (68.7)	9 (50.0)	56 (78.9)	.044
Site of recurrence				
Locoregional (%)	49 (32.9)	4 (44.4)	18 (32.1)	.76
Systemic (%)	100 (68.7)	5 (55.6)	38 (67.9)	
Time of recurrence ^a				
Early recurrence (%)	69 (46.3)	3 (33.3)	27 (48.2)	.339
Late recurrence (%)	80 (53.7)	6 (66.7)	29 (51.8)	

Abbreviations: HG BilIN, high grade biliary intraepithelial neoplasia; R0, no tumor at margin; R1 microscopic tumor at margin.

^aCutoff: 1 y.



Résection R0: Marge distale

Original article

Clinical value of additional resection of a margin-positive distal bile duct in perihilar cholangiocarcinoma

S. Otsuka^{1,2}, T. Ebata¹, Y. Yokoyama¹, T. Mizuno¹, T. Tsukahara^{1,2}, Y. Shimoyama², M. Ando³ and M. Nagino¹

¹Division of Surgical Oncology, Department of Surgery, and ²Department of Pathology and Clinical Laboratories, Nagoya University Graduate School of Medicine, and ³Data Coordinating Centre, Department of Advanced Medicine, Nagoya University Hospital, Nagoya, Japan

Correspondence to: Professor M. Nagino, Department of Surgery, Nagoya University Graduate School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466-8550, Japan (e-mail: nagino@med.nagoya-u.ac.jp)

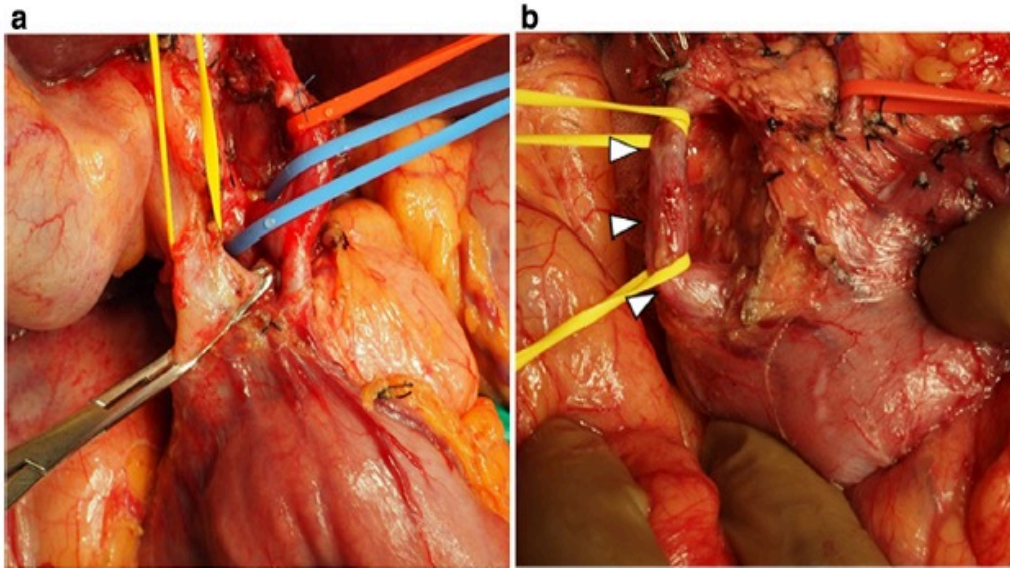
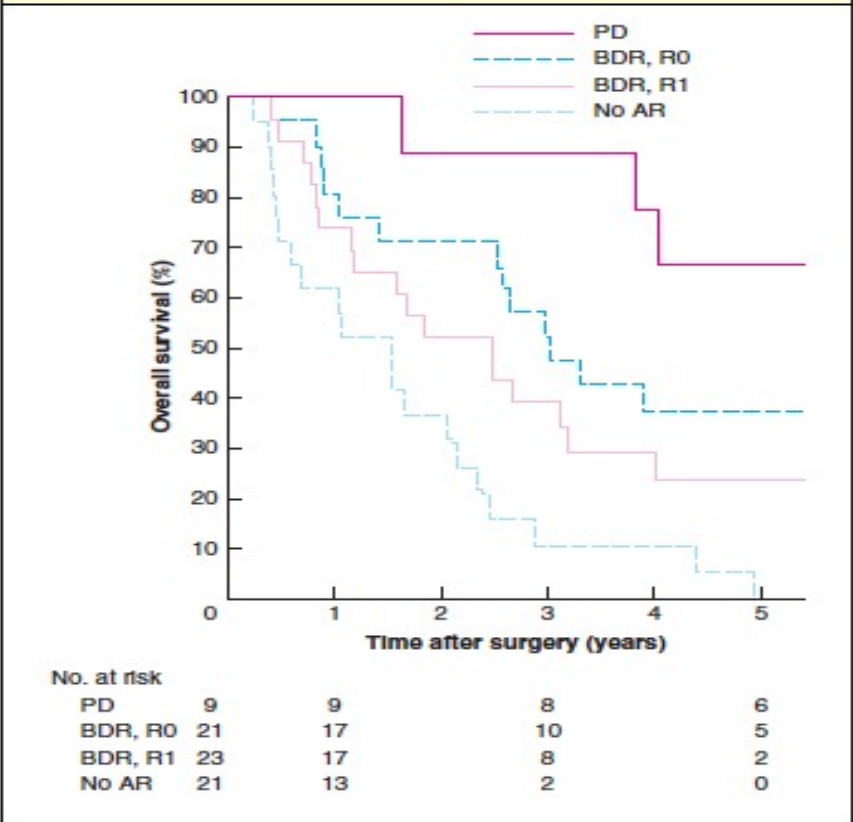


Fig. 2 Kaplan–Meier analysis of overall survival of patients with frozen-section-positive distal bile duct margin, according to type of additional resection



$P = 0.025$ (pancreatoduodenectomy (PD) versus bile duct resection (BDR), R0), $P = 0.254$ (BDR, R0 versus BDR, R1), $P = 0.019$ (BDR, R1 versus no additional resection (AR)) (log rank test).

Marge radiaire

ORIGINAL ARTICLE

A Study on Radial Margin Status in Resected Perihilar Cholangiocarcinoma

Kentaro Shinohara, MD,* Tomoki Ebata, MD,* Yoshie Shimoyama, MD,† Takashi Mizuno, MD,*
 Yukihiro Yokoyama, MD,* Junpei Yamaguchi, MD,* Shunsuke Onoe, MD,*
 Nobuyuki Watanabe, MD,* and Masato Nagino, MD*

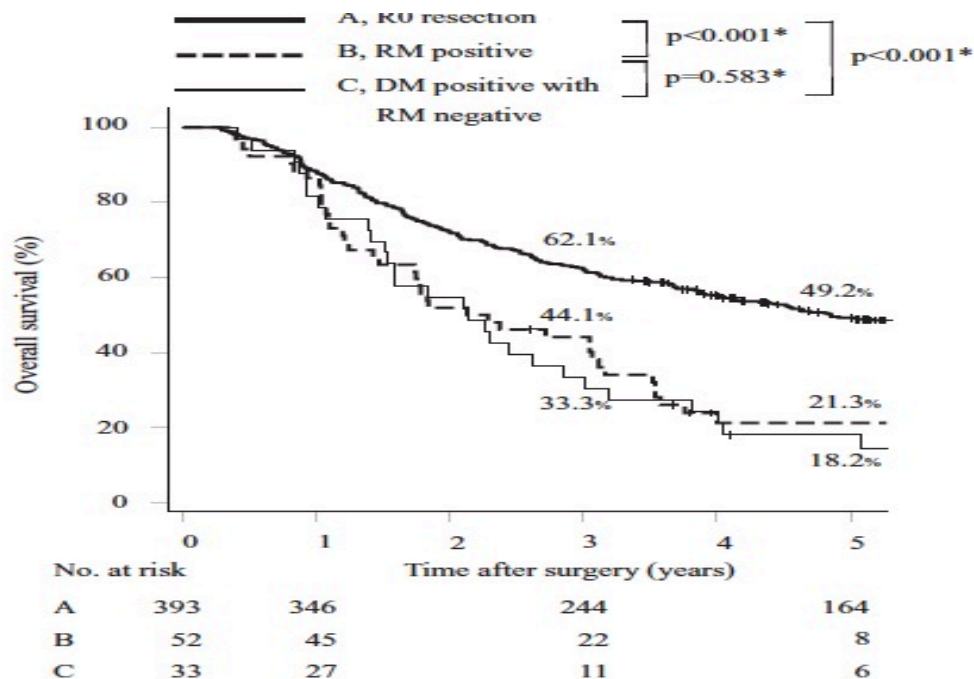


FIGURE 3. Overall survival according to surgical margin status. RM indicates radial margin; DM, ductal margin. *Log-rank test.

CCH: Principes de la chirurgie

- Dans tous les cas:
 - Résection de la VBP et la convergence biliaire
 - Curage Gg
 - Résection hépatique
 - Reconstruction biliaire
- En fonction de l'extension locorégionale:
 - Résection et reconstruction vasculaires
 - DPC (ou résection de la VBP intrapancréatique !)

Oncologic Resection for Malignant Tumors of the Liver

*Shefali Agrawal, MD**, and *Jacques Belghiti, MD†*

(*Ann Surg* 2011;253:656–665)

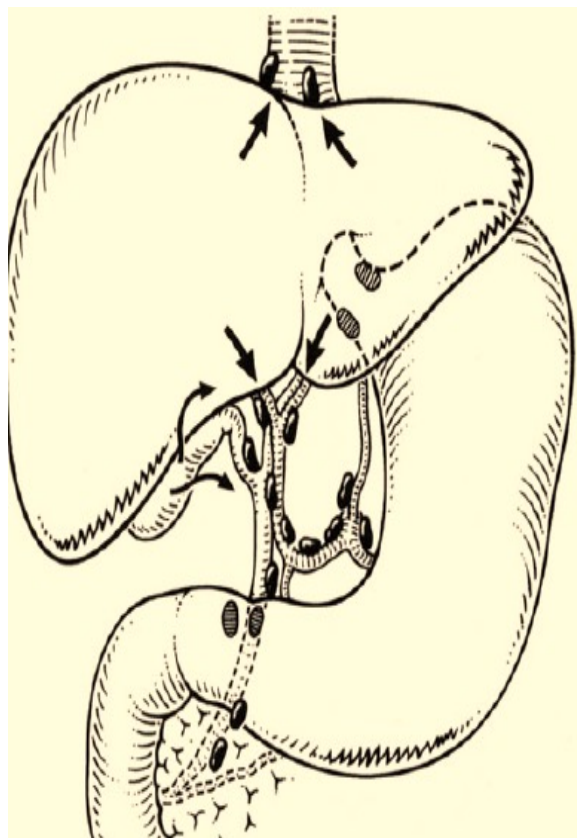
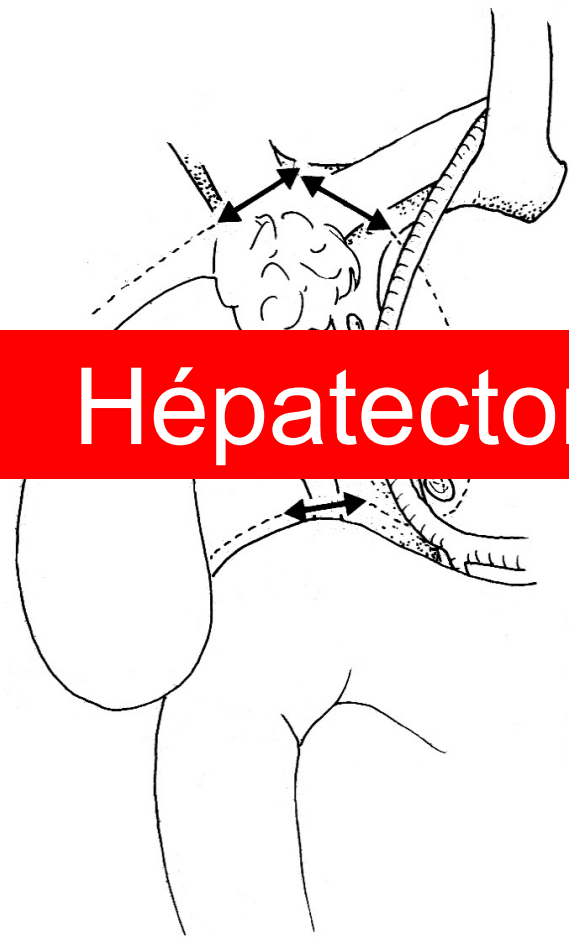


TABLE 4. Summary of Recommendations for Oncologic Resection of Malignant Tumors of the Liver

Operative Procedure	Intrahepatic Cholangio-Carcinoma		Hilar Cholangio-Carcinoma	CLM	Non-CLM
	HCC				
Anatomic resection	+		+		
Width of resection margin					
<1 cm		+	+		+
1 cm				+	
2 cm	+				
Major vascular resection	+	+	+	+	+
Regional lymph node dissection	+	+	+	+	+

>5

Type 1



Hépatectomie droite > Résection VBP

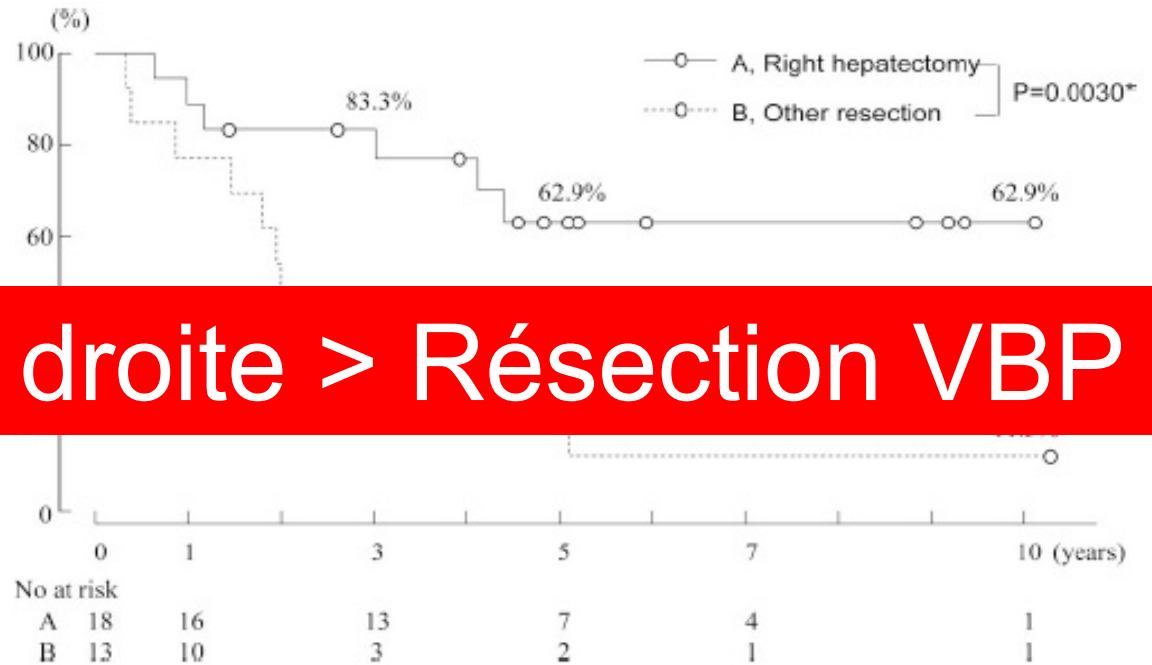
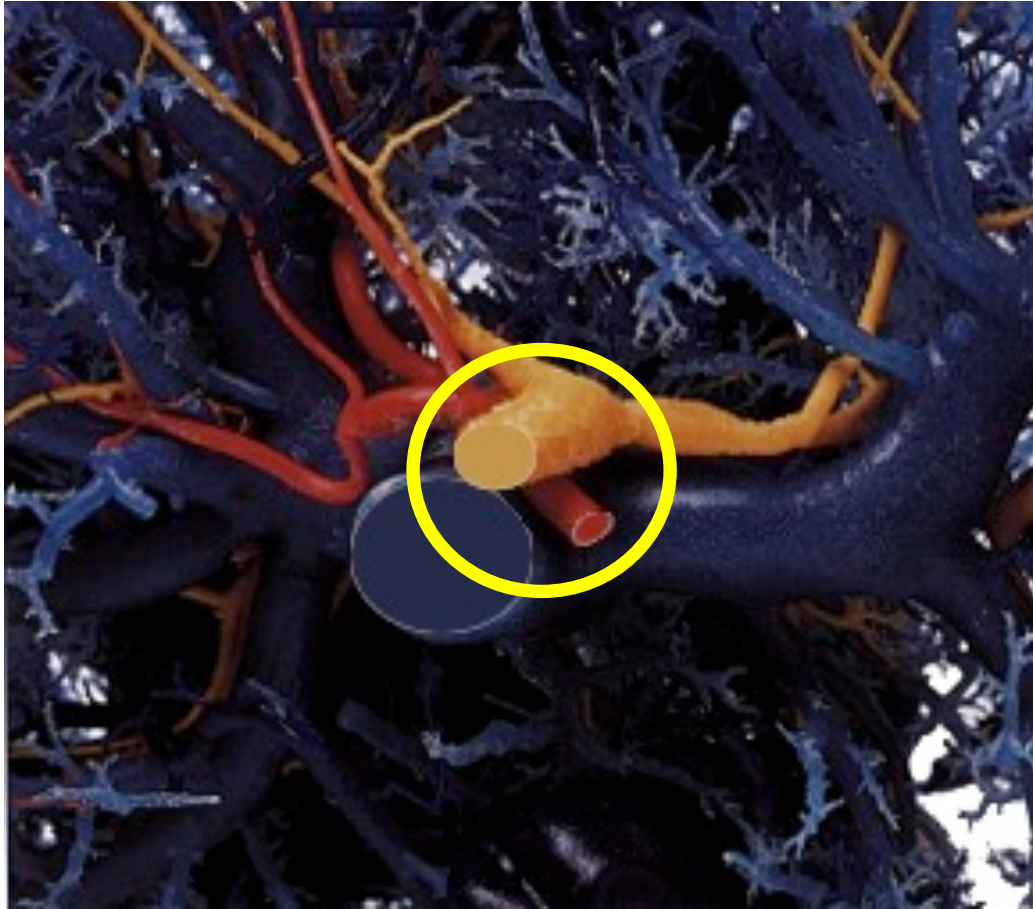


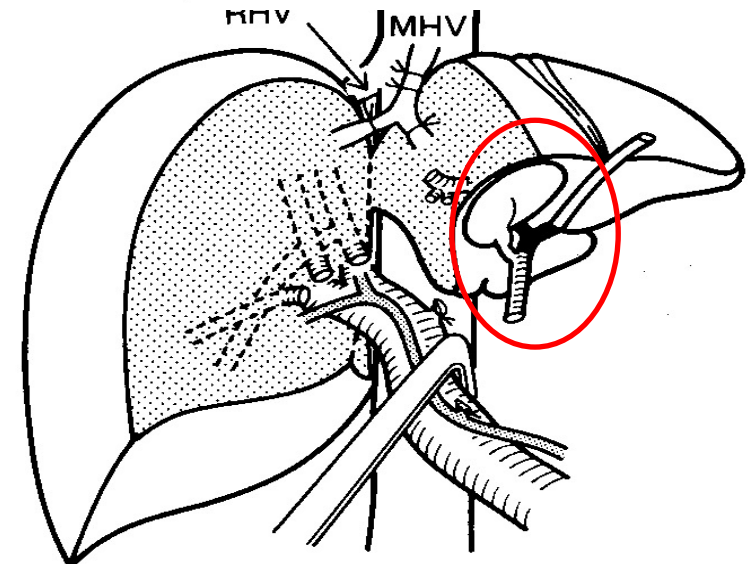
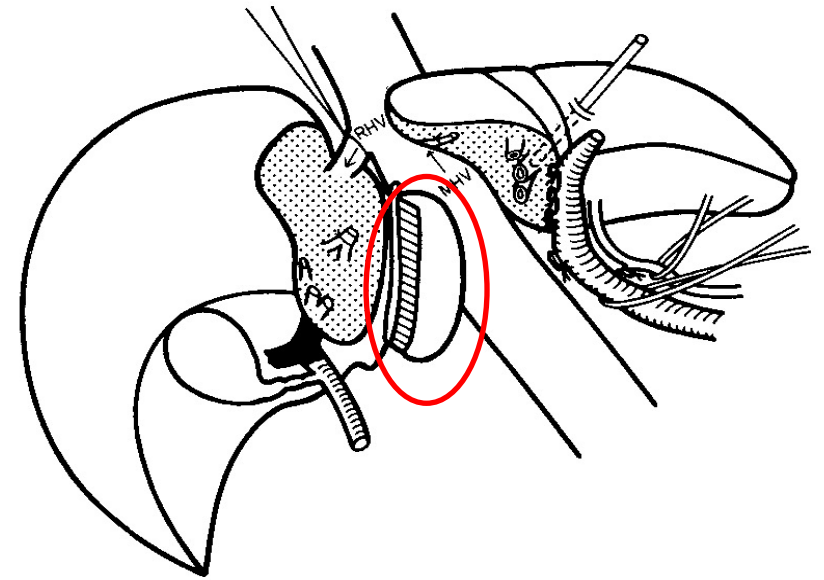
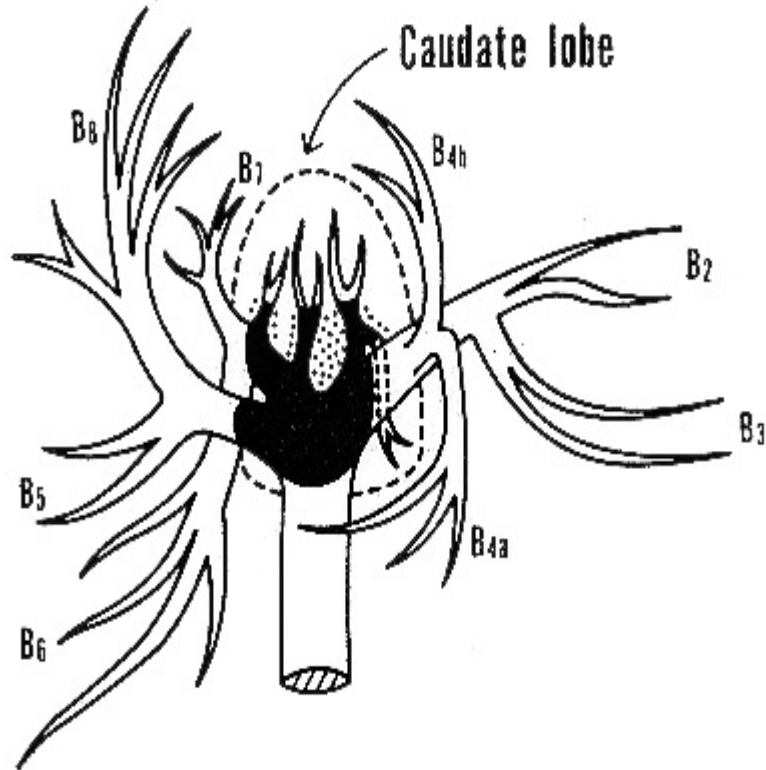
FIGURE 5. Survival according to surgical procedure in patients with nodular or infiltrating hilar cholangiocarcinoma who tolerated surgery and did not have pM1 disease. *By log rank test.

Type 1: Pourquoi?



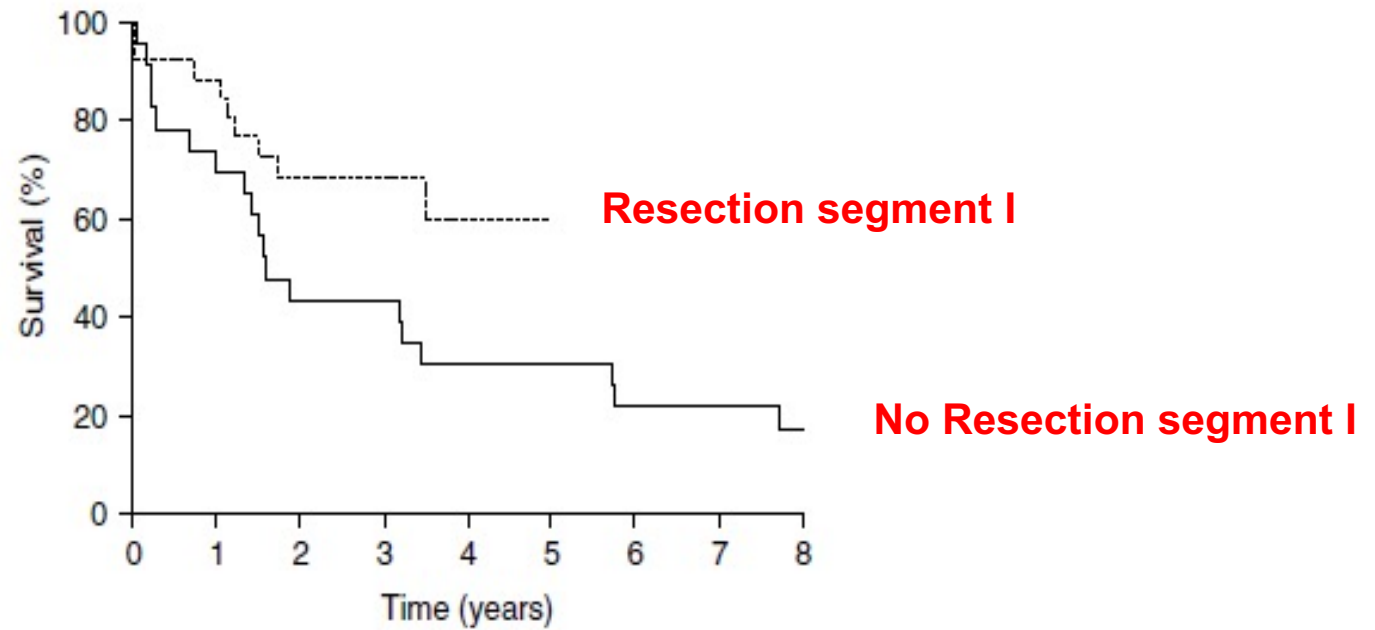
- **Envahissement artériel hépatique : 5%**
- **Distance tumeur-adventice < 1mm: 74%**

Type 2 ou 3



The importance of complete excision of the caudate lobe in resection of hilar cholangiocarcinoma

SANDER DINANT¹, MICHAEL F. GERHARDS², OLIVIER R. C. BUSCH¹,
HUGO OBERTOP¹, DIRK J. GOUMA¹ & THOMAS M. VAN GULIK¹



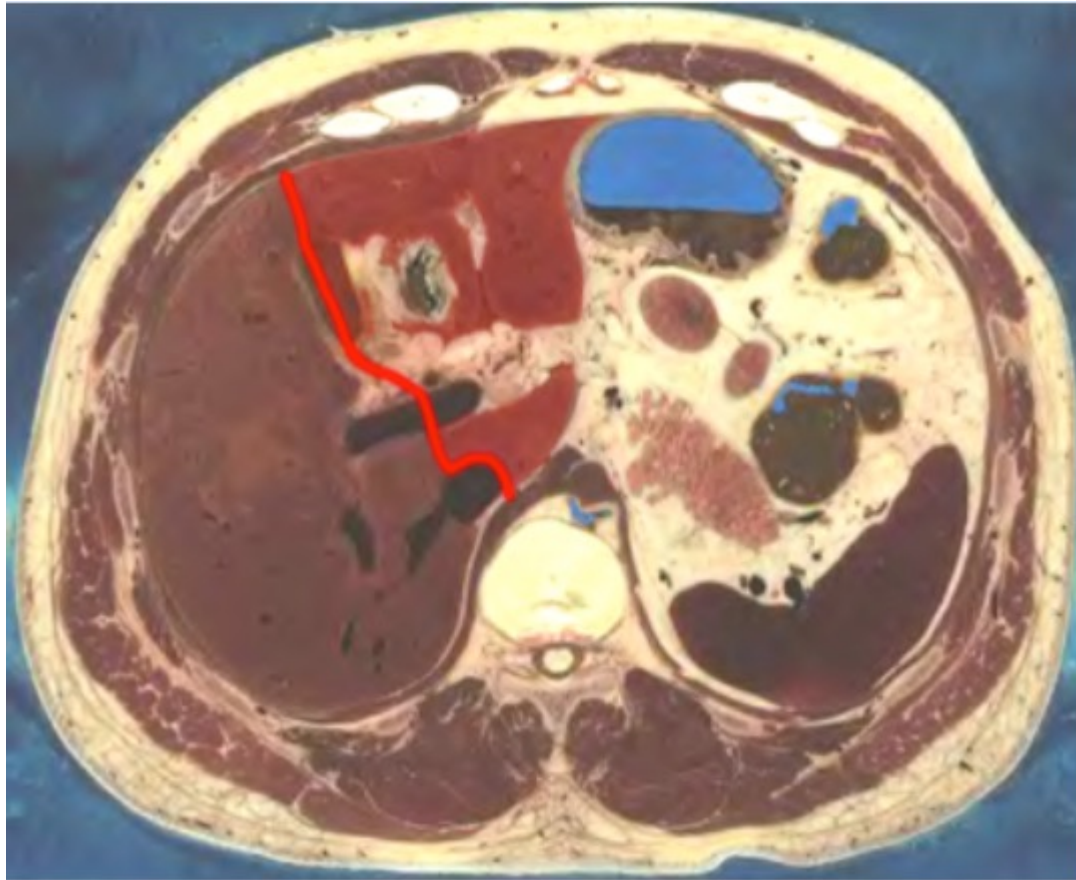
Number at risk

Time (years)	0	1	2	3	4	5	6	7	8
1993–1998	–	–	–	–	–	–	–	–	–
1998–2003	–	2	8	15	17	–	–	–	–

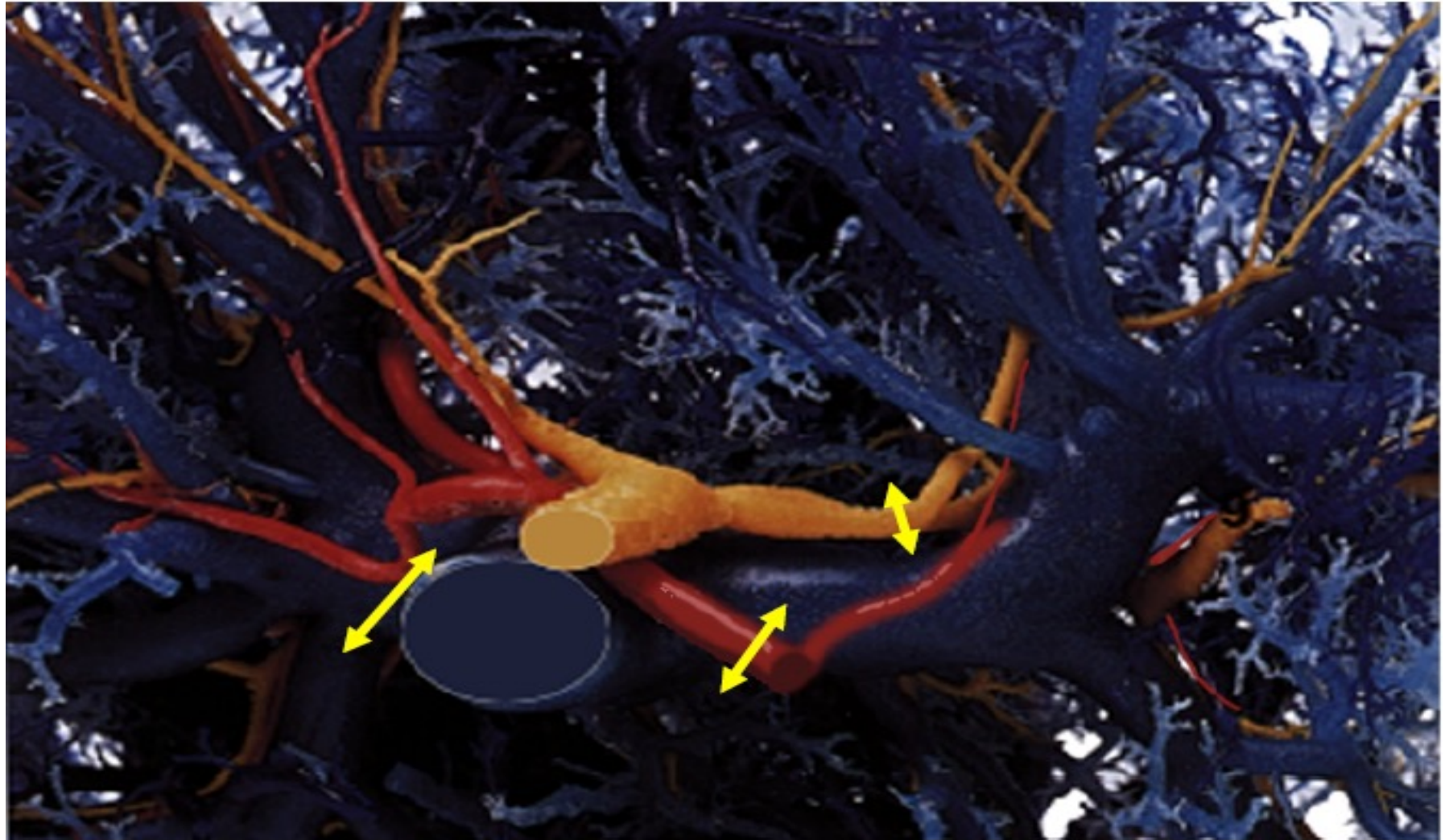
Type II ou III gauche



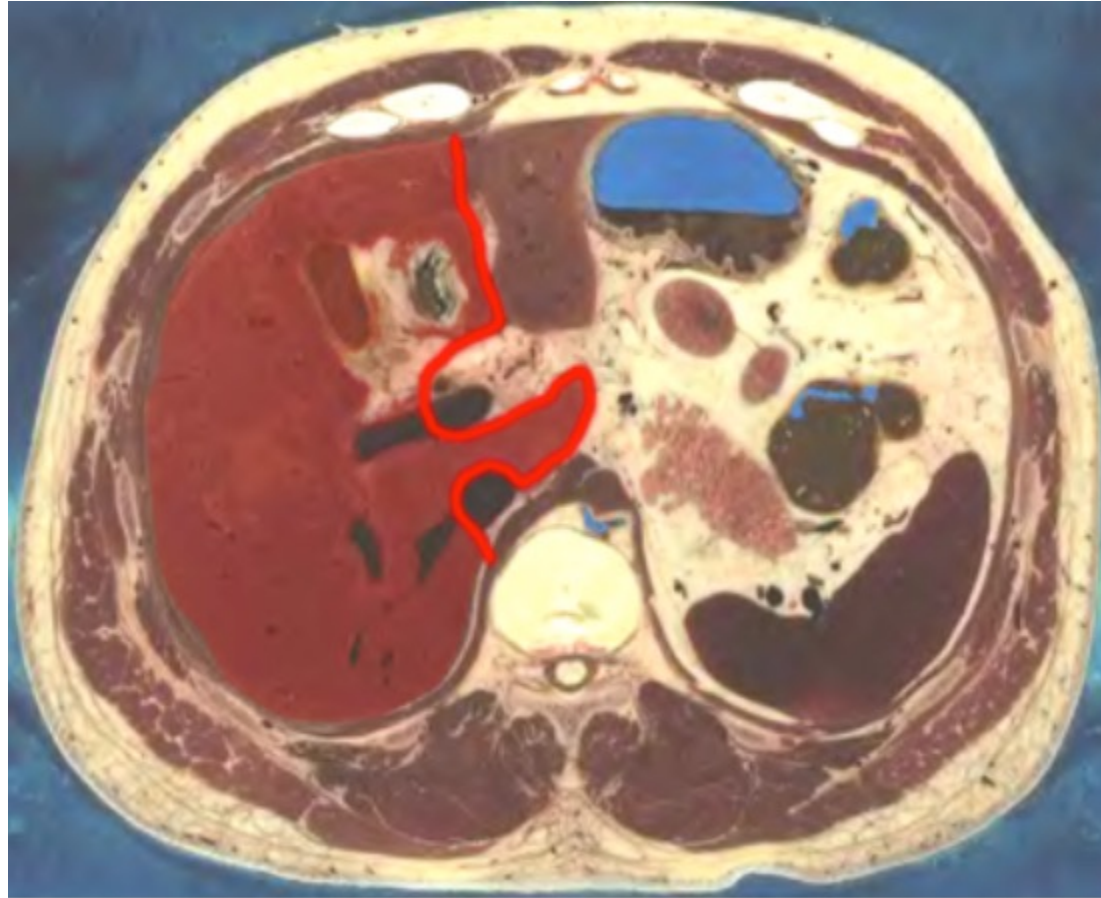
Type II ou III gauche



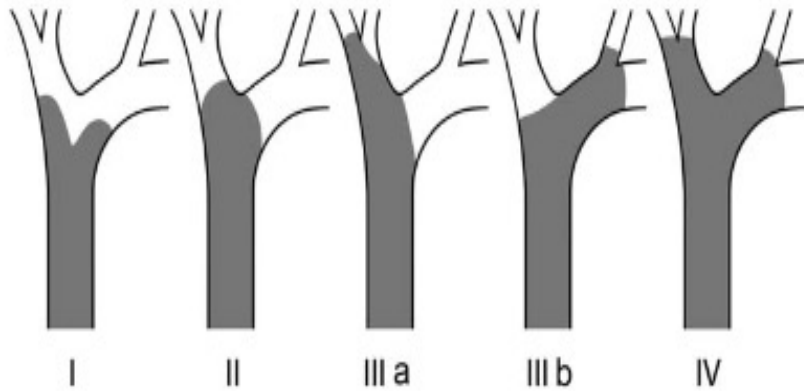
Type III droit



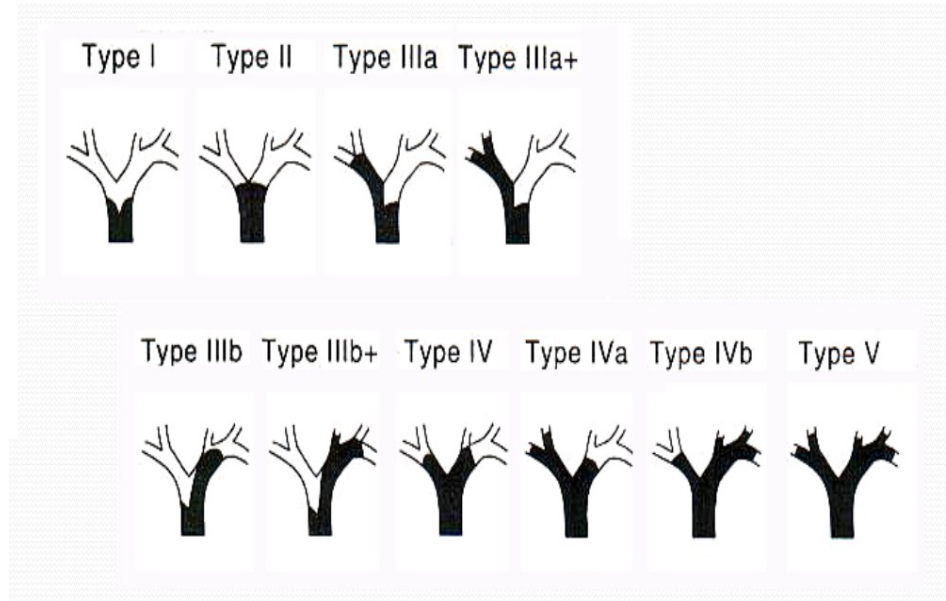
Type III droit



Type IV

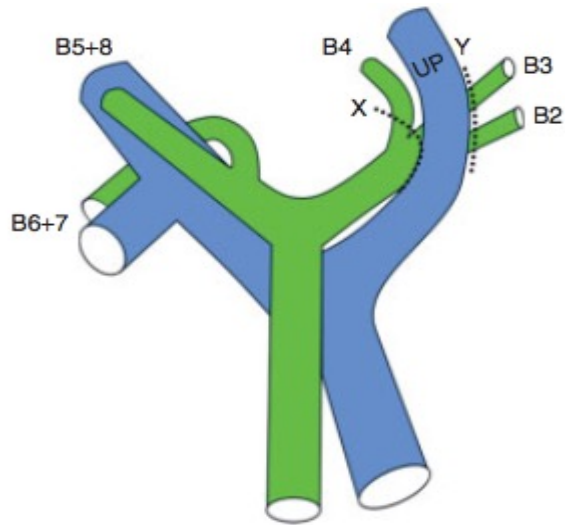


Bismuth-Corlette



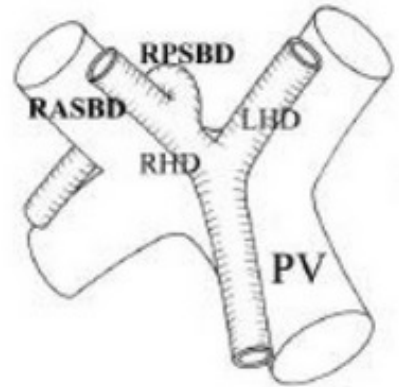
Classification Japonaise

Type IV

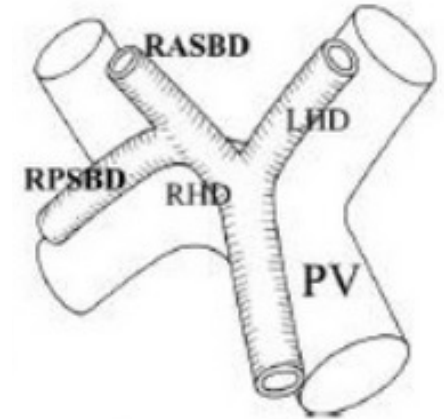


a Schematic of RH and A-RT

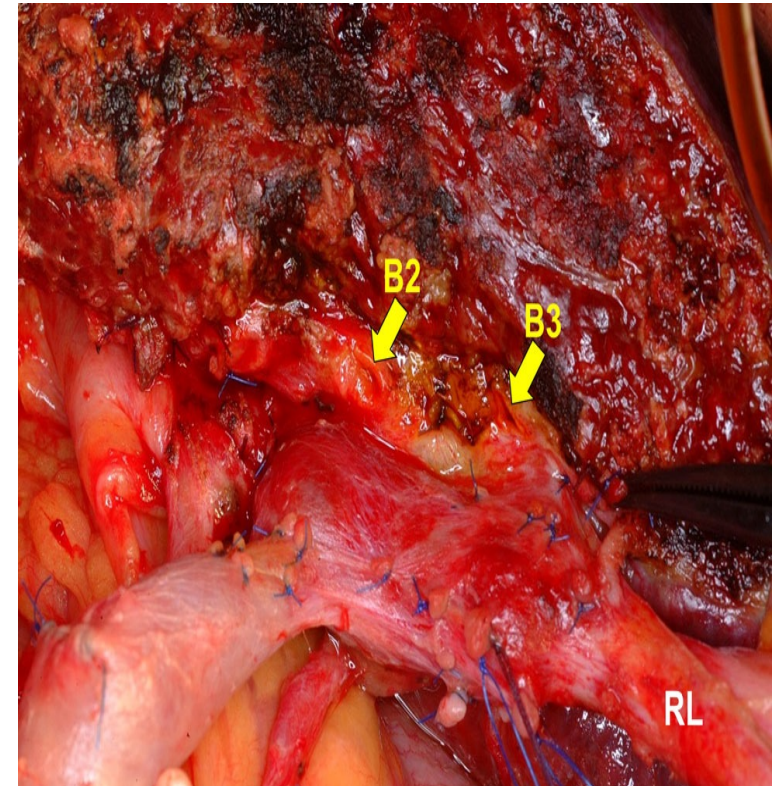
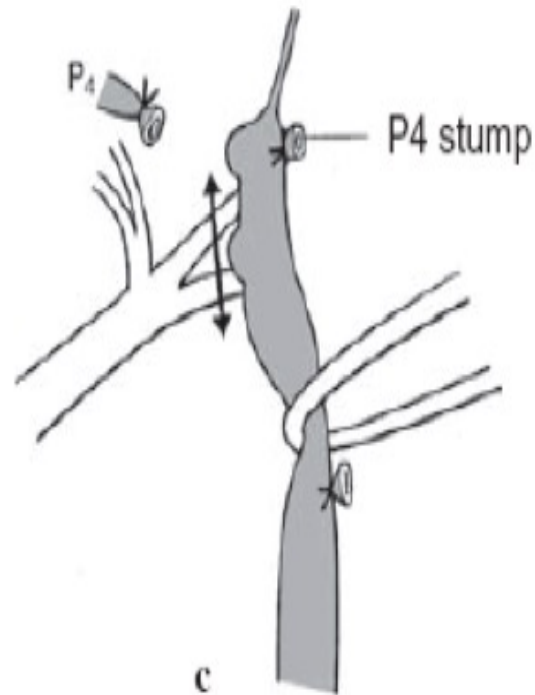
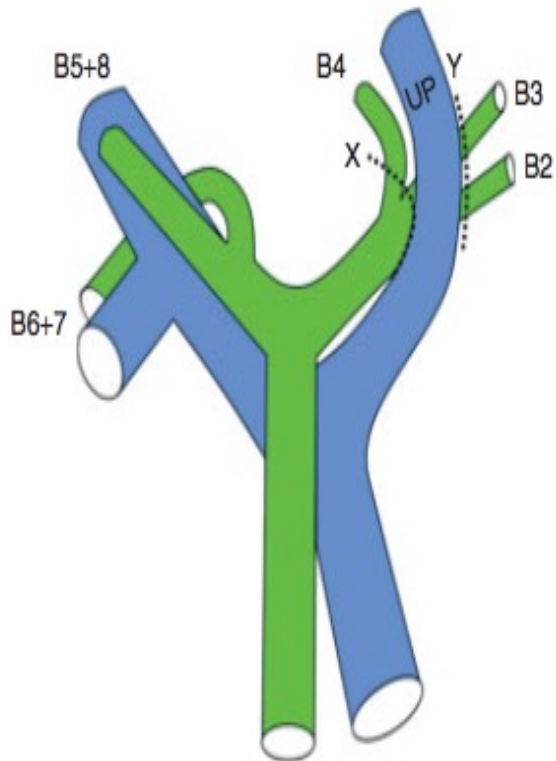
Supraportal type



Infraportal type

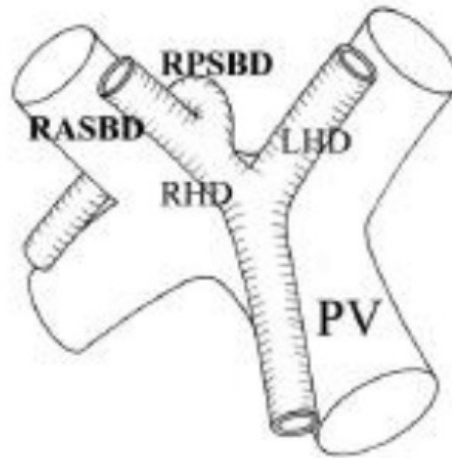
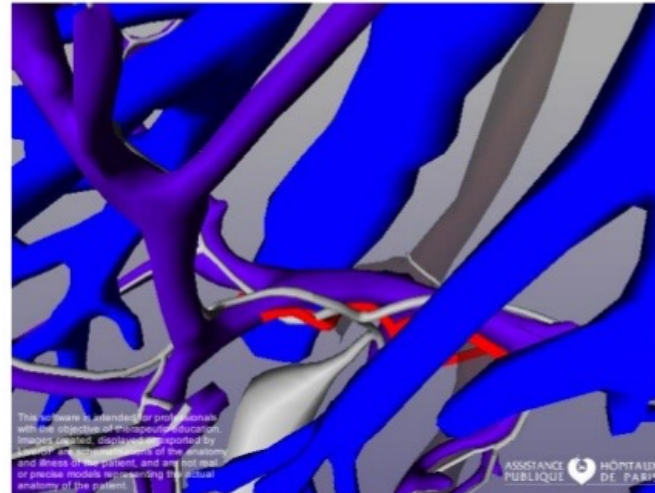
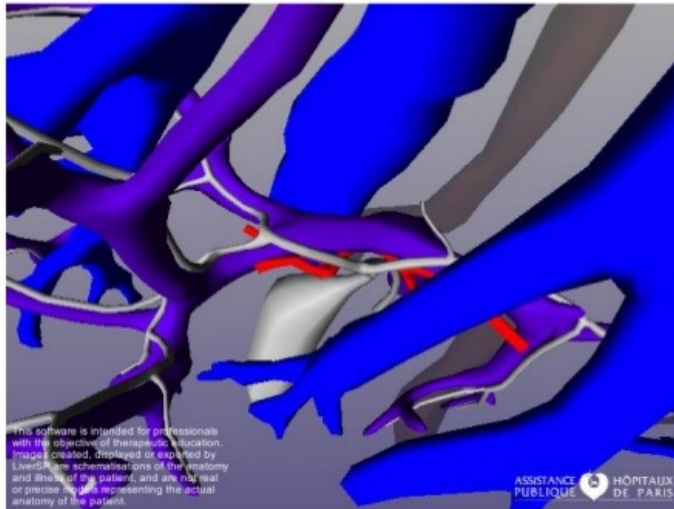


Type IVa

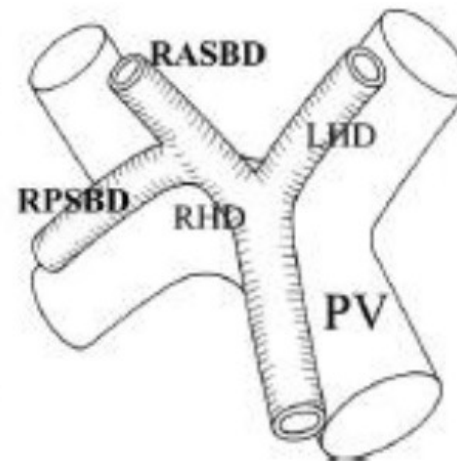


a Schematic of RH and A-RT

Type IVb



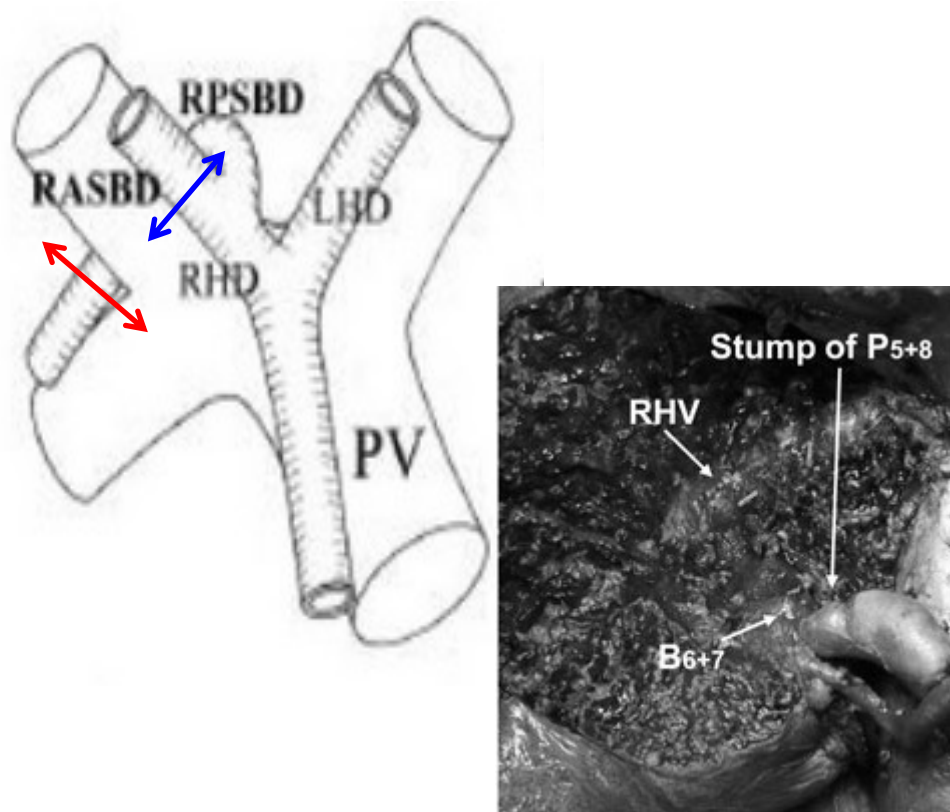
Supraportale (85% des cas)



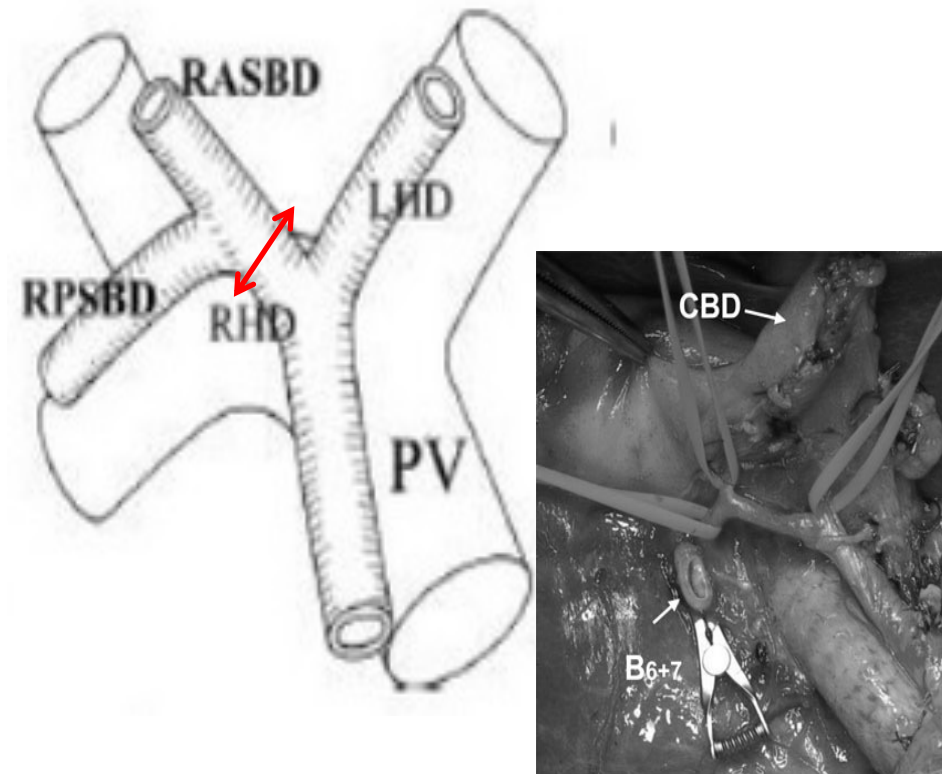
Infraportale (15% des cas)

Type IVb

Supraportal type



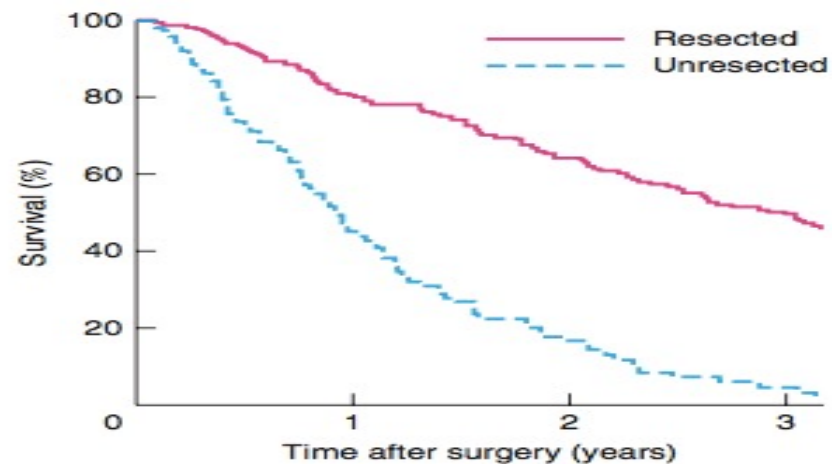
Infraportal type



Type IV

Surgical resection for Bismuth IV perihilar cholangiocarcinoma

Patient (n)	Stade IVB	Stade IVA	Résection Majeur	Résection vasculaire	RO résection	R1 résection	*Lnf+
216 (332)	33 (15%)	183 (85%)	153 (71%)	131 (60%)	156 (72%)	52 (24%)	127 (59%)

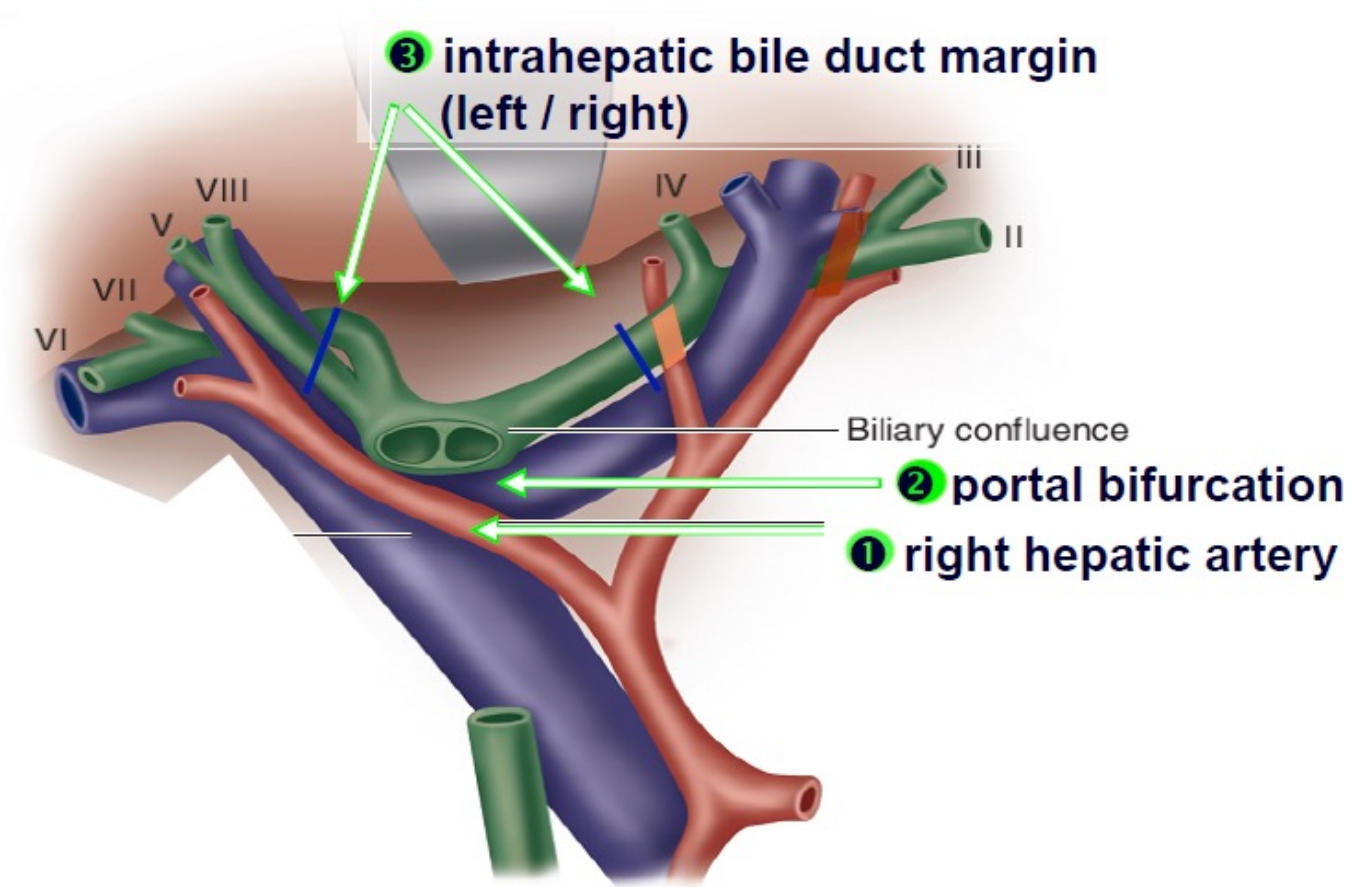


R0-resection in hilar cholangiocarcinoma

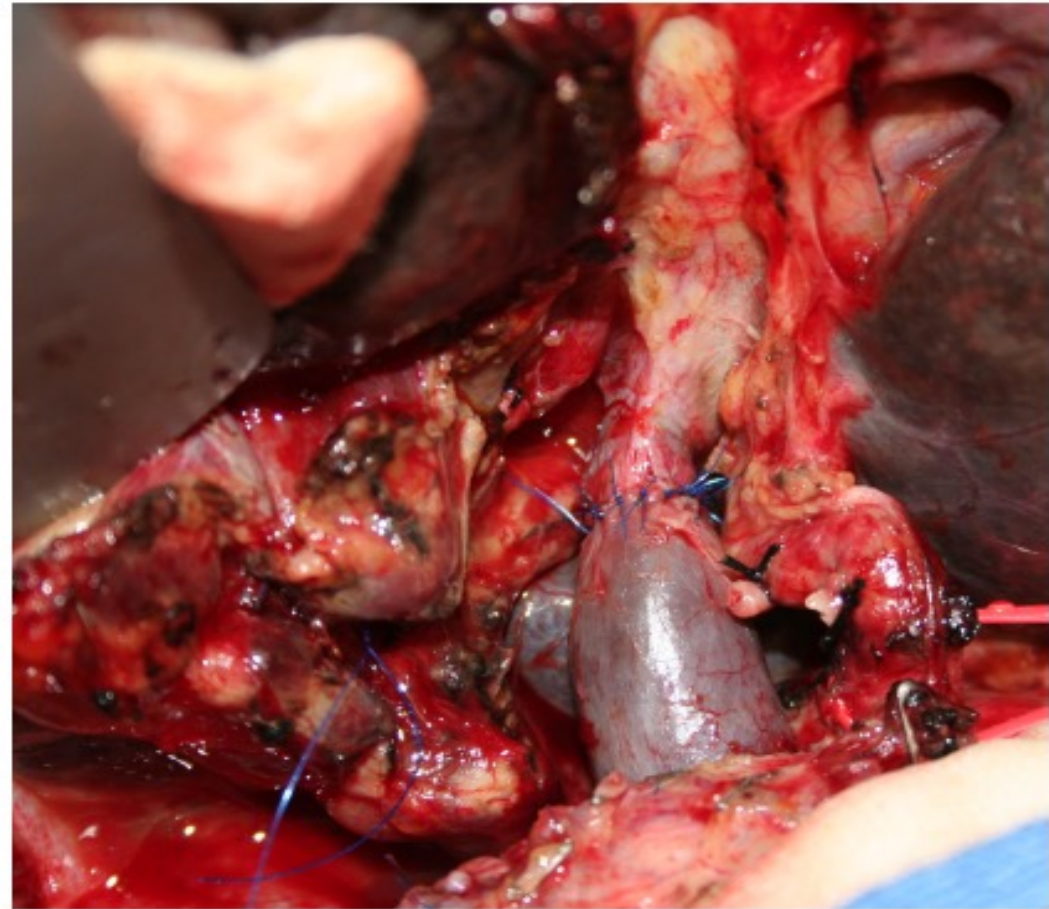
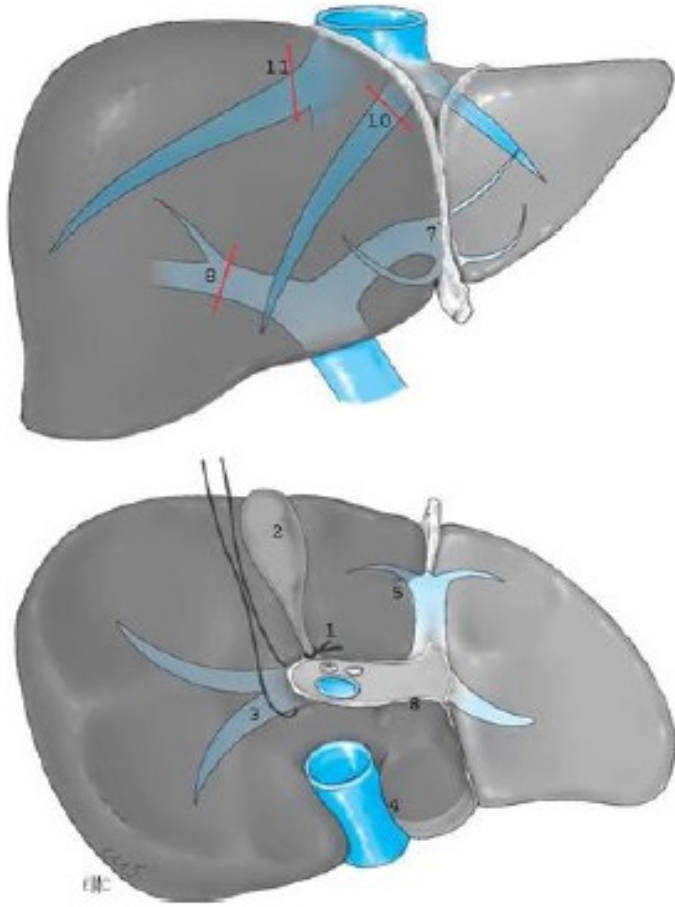
Reference	Period	Volume, resected /y	R0 resection, %	pN1, %
Jarnagin ⁵	1991–2000	8.0	78	24
Capussotti ⁶	1988–2001	2.6	89	39
Kawarada ⁷	1976–2000	3.5	64	—
Seyama ⁸	1989–2001	4.5	64	52
Kawasaki ⁹	1990–2001	6.6	68	44
Kondo ¹⁰	1999–2002	10.0	95	38
IJitsma ¹¹	1986–2001	2.6	64	38
Hemming ¹²	1997–2004	6.6	80	21
Sano ¹³	2000–2004	20.4	61	—
DeOliveira ¹⁴	1973–2004	5.4	19	28 ?
Miyazaki ¹⁵	1981–2004	6.7	63	48
Lee ¹⁶	2001–2008	37.8	71	24
Gulik ¹⁷	1988–2003	6.2	31	—
Young ¹⁸	1994–2008	5.5	46	57
Saxena ¹⁹	1992–2009	2.3	64	29
Cannon ²⁰	1992–2010	3.1	63	15

~ 20 – 40 % R1-resections !

R1: Facteurs limitants



Augmenter le taux de R0 (1): Berlin concept

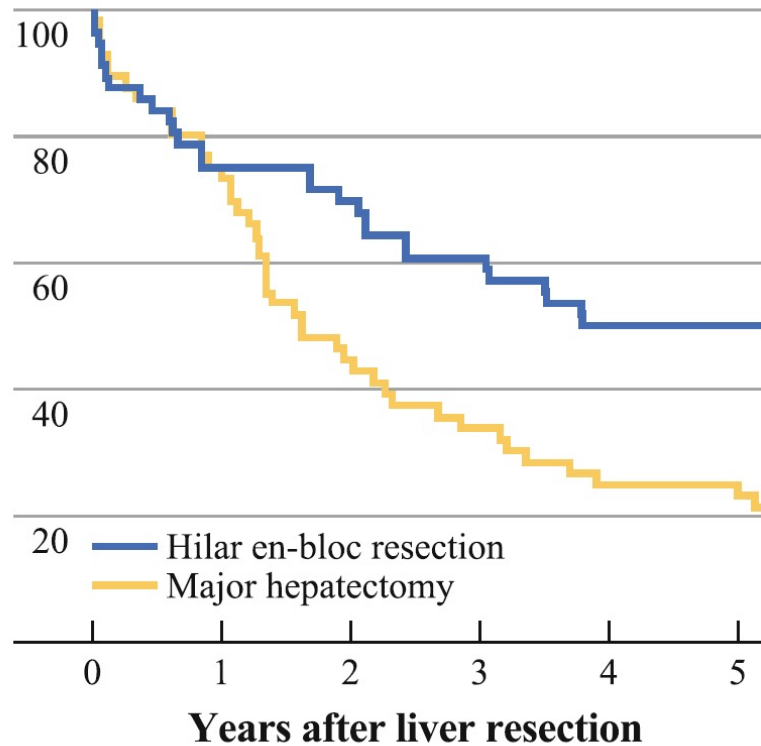


No touch : aucune dissection hilaire, résection systématique de la veine porte

Augmenter le taux de R0 (1)

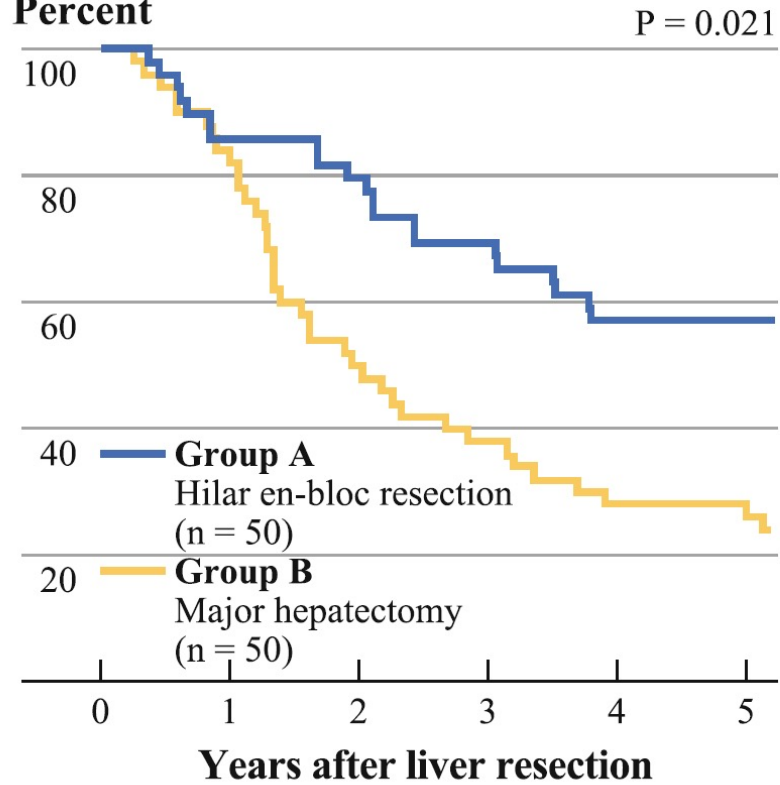
(a) Overall patient survival

Percent

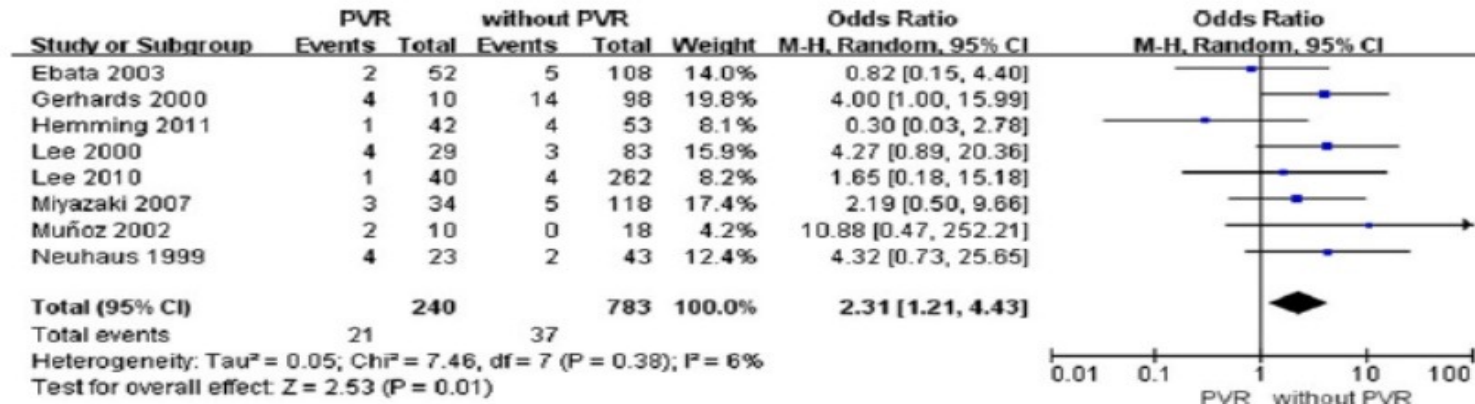


(b) Patient survival of the study cohort
 (n = 100, perioperative mortality excluded)

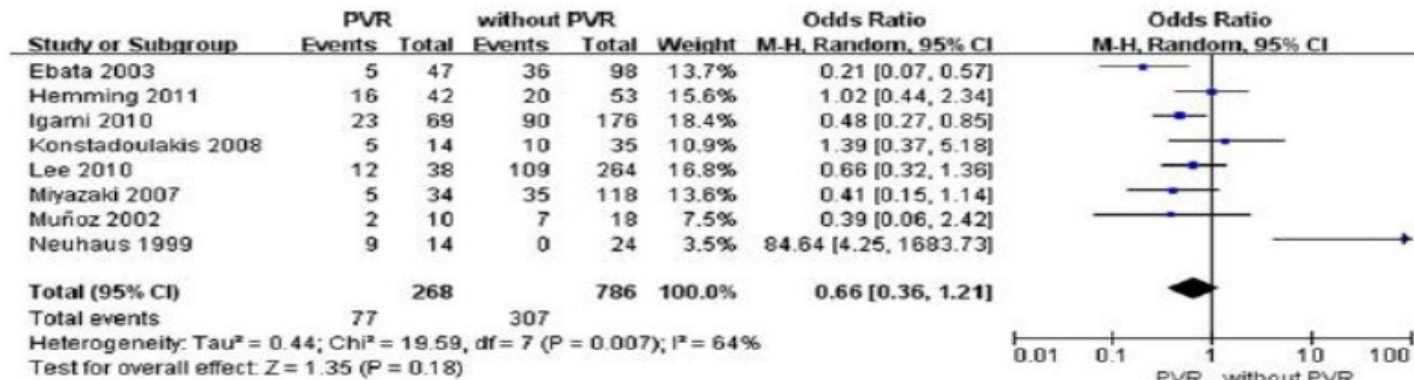
Percent



No touch mais...

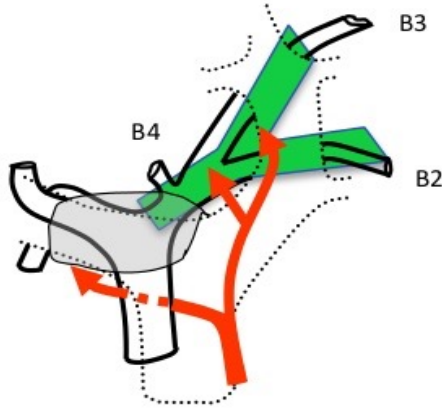


Augmente significativement la mortalité...



Pas d'impact évident sur la survie à 5 ans...

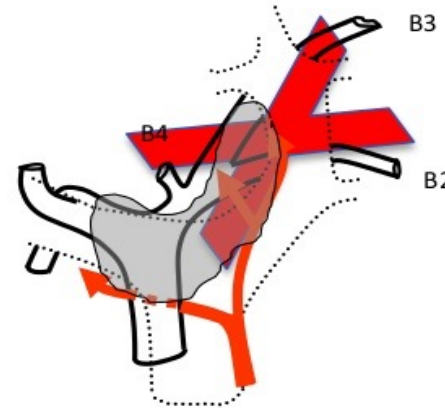
Augmenter le taux de R0 (2): Nagoya Concept



Right sided
Bismuth II, IIIb et IV

AHG jamais infiltrée

Hépatectomie D élargie au S1 + S4b
Reconstructions Artérielle peu fréquentes

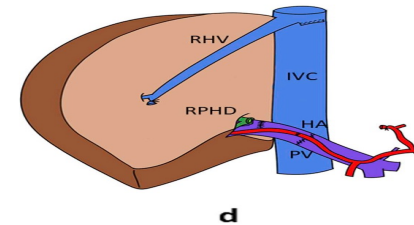
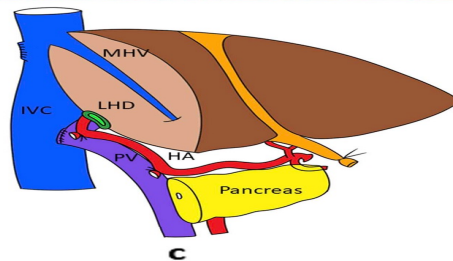
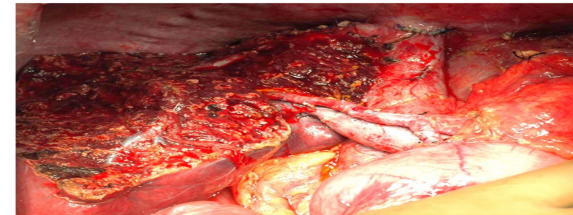
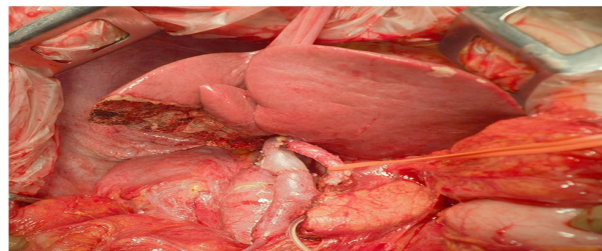
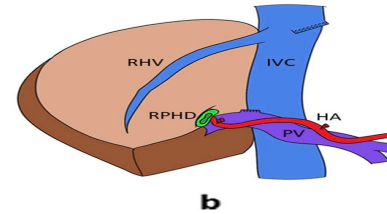
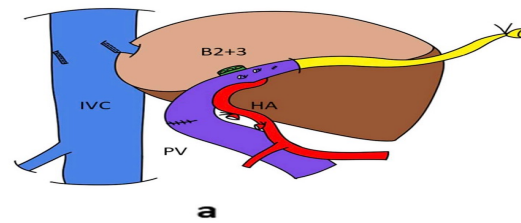
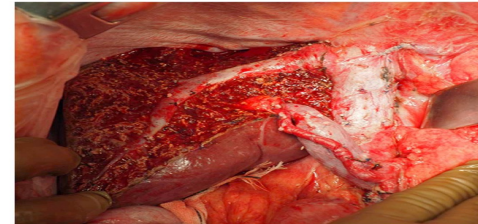
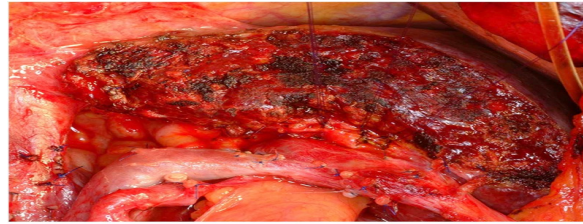


Left sided
Bismuth IIIa, IV

AHD infiltrée

Hépatectomie G élargie au SAD
Reconstructions Artérielles fréquentes

Augmenter le taux de R0 (2): Nagoya Concept

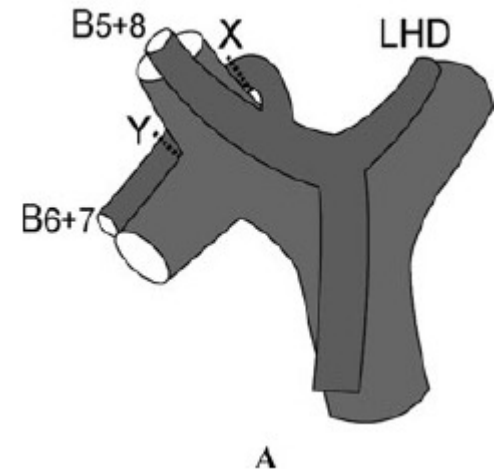


Augmenter le taux de R0 (2)

Clinical Significance of Left Trisectionectomy for Perihilar Cholangiocarcinoma

An Appraisal and Comparison With Left Hepatectomy

	Left Hepatectomy (n = 115)	Left Trisectionectomy (n = 86)	P
Stage			<0.001
I/II	26 (22.6)	4 (4.7)	
III A/III B	23 (20.0)	2 (2.3)	
IV A	46 (40.0)	73 (84.8)	
IV B	20 (17.4)	7 (8.1)	



Augmenter le taux de R0 (2)

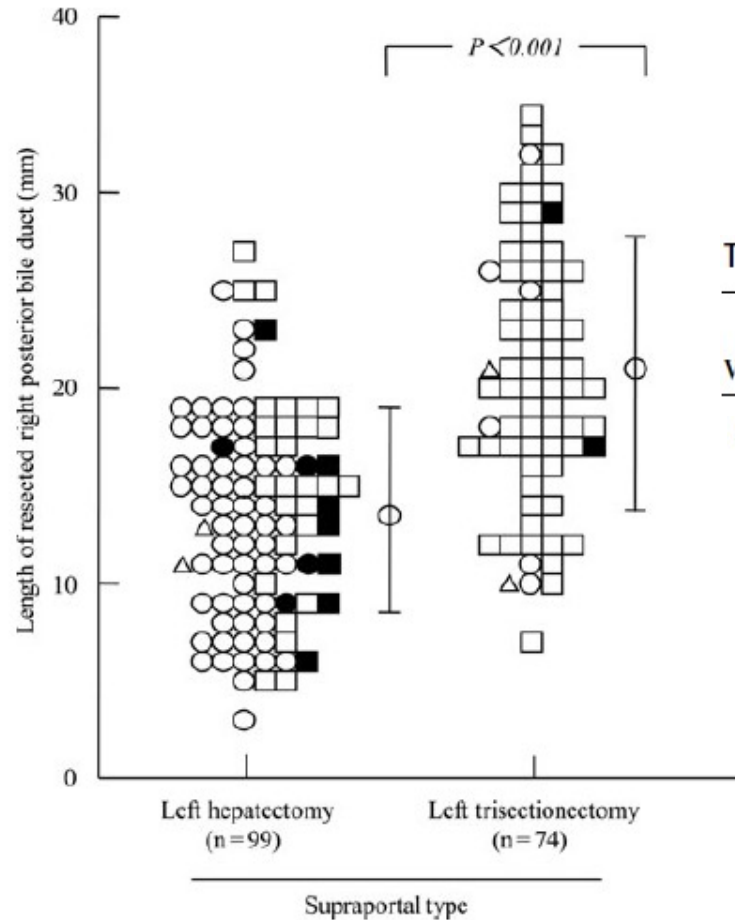


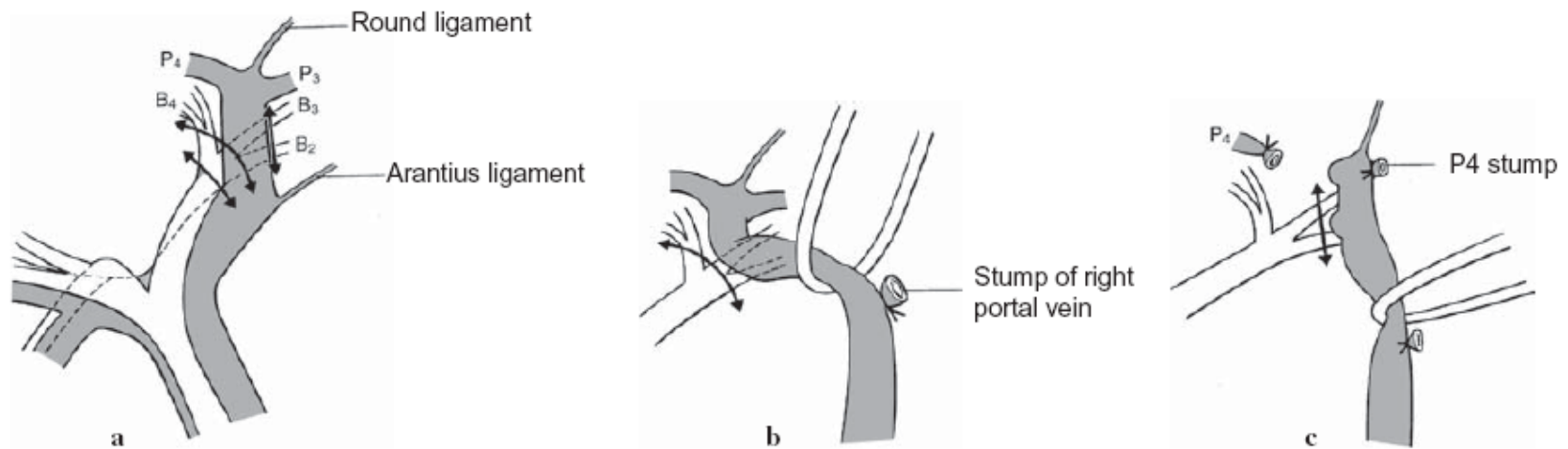
TABLE 3. Survival Analysis

Variable	n	Survival (%)		Univariate <i>P</i>	Multivariate	
		3-year	5-year		Relative Risk (95% CI)	<i>P</i>
<i>R</i>						
0	154	50.5	42.3	0.002	1.00	0.049
1 or 2	45	25.4	7.9			

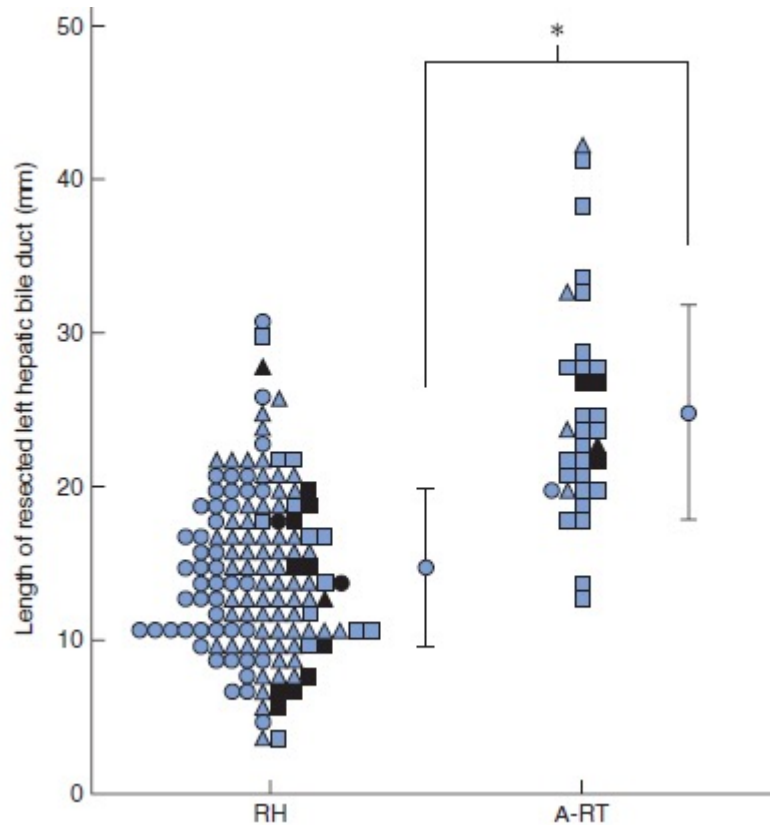
Augmenter le taux de R0 (2)

Role of anatomical right hepatic trisectionectomy for perihilar cholangiocarcinoma

N. Matsumoto¹, T. Ebata¹, Y. Yokoyama¹, T. Igami¹, G. Sugawara¹, Y. Shimoyama² and M. Nagino¹



Augmenter le taux de R0 (2)



who had A-RT was 84, 42 and 27 per cent. These survival rates were no different between the two groups ($P = 0.187$), despite the presence of more advanced disease in the A-RT group (*Table 1*).

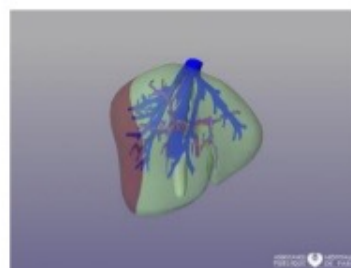
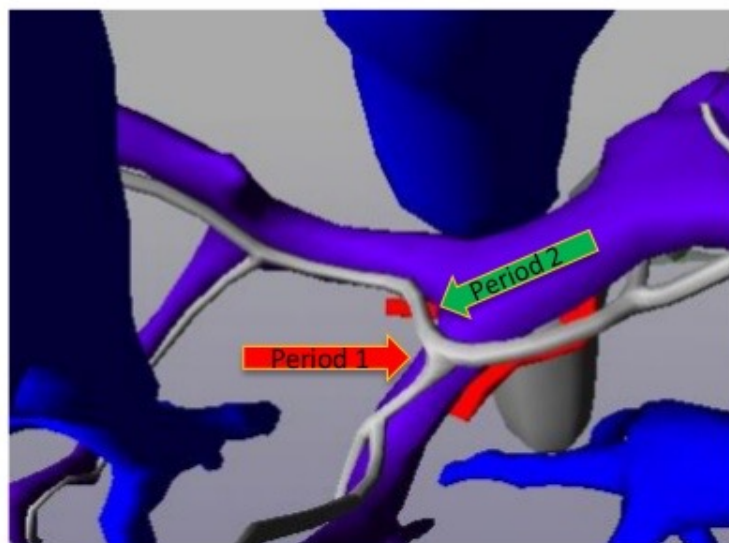
Surgical Strategy for Hilar Cholangiocarcinoma of the Left-Side Predominance

Current Role of Left Trisectionectomy

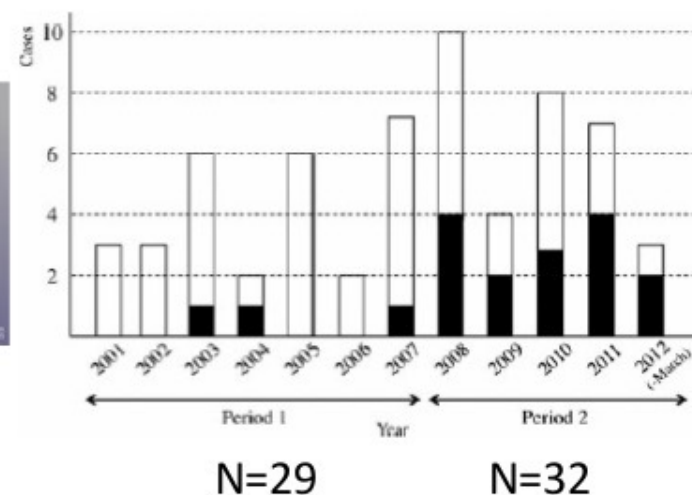
Isamu Hosokawa, MD, Hiroaki Shimizu, MD, Hiroyuki Yoshidome, MD, Masayuki Ohtsuka, MD, Atsushi Kato, MD, Hideyuki Yoshitomi, MD, and Masaru Miyazaki, MD



Annals of Surgery • Volume 259, Number 6, June 2014



2001 – 20012 : 61 patients



Period 1 : 3/29 (10%) d'hépatectomie gauche étendue 5/8/1
 Period 2 : 15/32 (46%) d'hépatectomie gauche étendue 5/8/1

TABLE 5. Length of Tumor Free-Margin for Bile Ducts

	Period 1 (2001–2007, n = 29)		Period 2 (2008–2012, n = 32)	
	LH (n = 26)	LTS (n = 3)	LH (n = 17)	LTS (n = 15)
Proximal side				
Negative ductal margin	17	2	15	13
<u>Wide ductal margin (≥ 5 mm)*</u>	4	1	10	11
Narrow ductal margin (< 5 mm)	13	1	5	2
Distal side				
Negative ductal margin	23	2	16	14
Wide ductal margin (≥ 5 mm)	20	2	14	14
Narrow ductal margin (< 5 mm)	3	0	2	0

*The wide proximal ductal margin ratio was significantly higher in period 2 (21/28, 75.0%), as compared with that in period 1 (5/19, 26.3%) ($P < 0.05$).

TABLE 7. Surgical Morbidity and Mortality

	Period 1 (2001–2007, n = 29)		Period 2 (2008–2012, n = 32)	
	LH (n = 26)	LTS (n = 3)	LH (n = 17)	LTS (n = 15)
Morbidity	13 (50.0%)	2 (66.7%)	8 (47.1%)	8 (53.3%)
Hyperbilirubinemia	2	0	0	1
Bile leak from liver stump	2	0	4	4
Intra-abdominal abscess	4	0	2	1
Bilioenteric anastomosis leakage	5	1	4	1
Wound infection	4	1	3	0
Pleural effusion	5	1	3	2
Sepsis	3	0	2	1
Pneumonia	3	0	1	0
Rupture of pseudoaneurysm	1	0	0	0
Mortality	2 (7.7%)	0 (0)	0 (0)	0 (0)

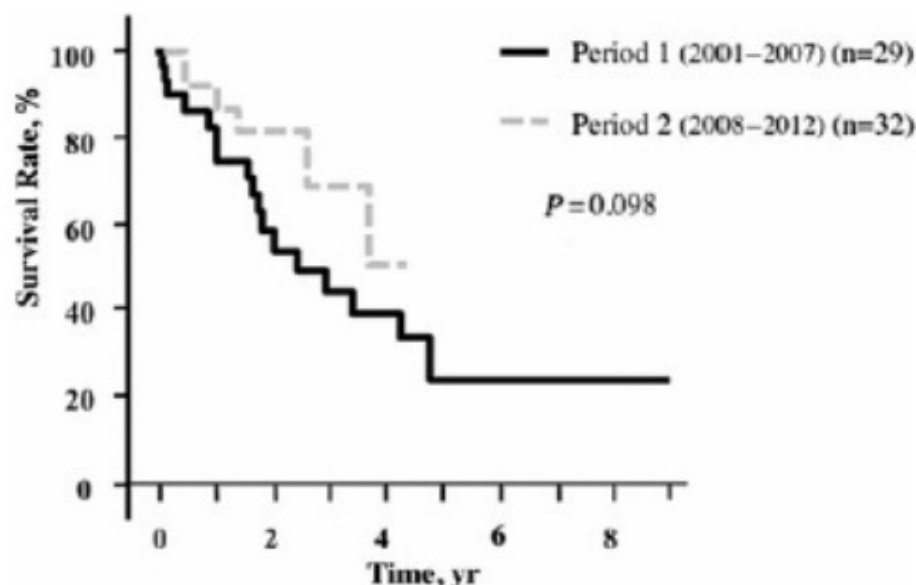


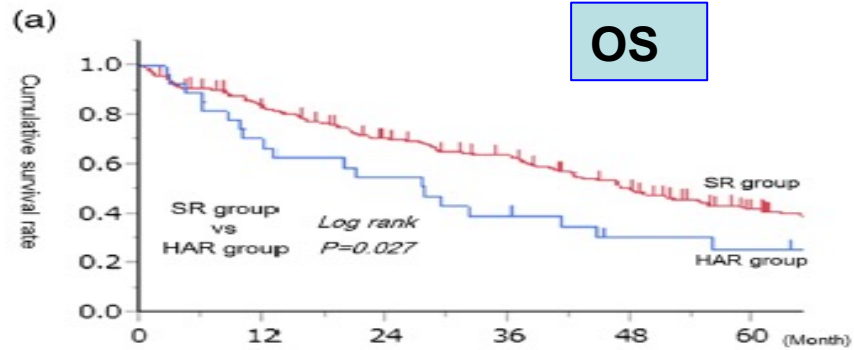
FIGURE 5. Survival after left-sided hepatectomy for hilar cholangiocarcinoma according to the operative period.

CONCLUSIONS

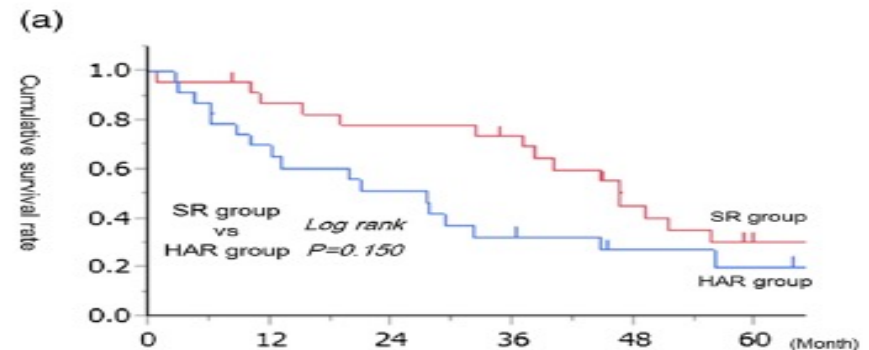
Our recent strategy for HC of left-side predominance improved proximal ductal margin status, without affecting postoperative mortality, probably leading to better survival after surgery. Therefore, LTS should be aggressively performed in patients with good hepatic functional reserve, even if the tumors are possibly resectable by LH.

Augmenter le taux de R0 (2)

OS

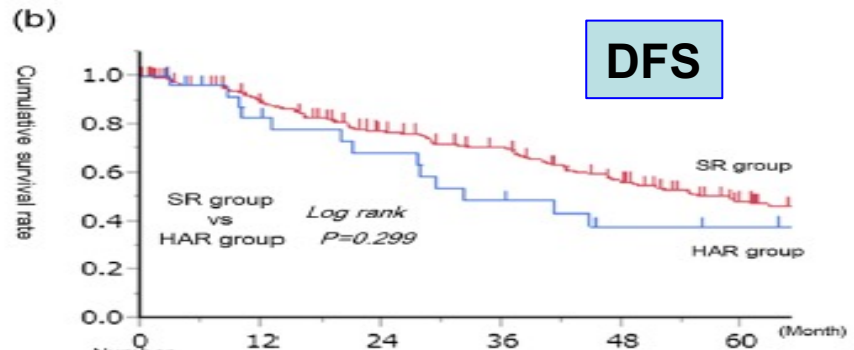


	0	12	24	36	48	60 (Month)
SR group	181	144	97	48		
HAR group	28	17	10	5		

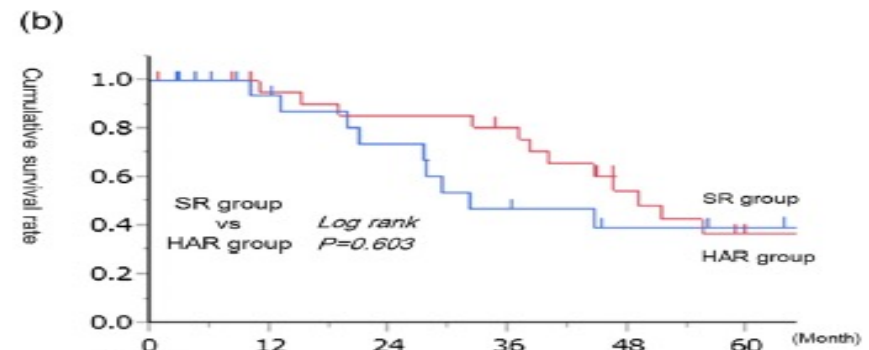


	0	12	24	36	48	60 (Month)
SR group	24	20	16	4		
HAR group	24	14	7	3		

DFS



	0	12	24	36	48	60 (Month)
SR group	181	145	97	48		
HAR group	28	17	10	5		



	0	12	24	36	48	60 (Month)
SR group	24	20	16	4		
HAR group	24	14	7	3		

Propensity score

Augmenter le taux de R0 (2)

Résection simultanée artérielle et portale

TABLE 3. Morbidity and Mortality in 50 Study Patients

Without complication	23	(46.0%)
With complications	27	(54.0%)
Intra-abdominal abscess	13	
Wound infection	9	
Bile leakage from liver stump	9	
Liver failure	7	
Bacteremia	3	
Leakage of hepaticojejunostomy	3	
Intra-abdominal bleeding	2	
Leakage of pancreaticojejunostomy	1	
Portal thrombus	1	
Relaparotomy	5	(10.0%)
Mortality	1	(2.0%)

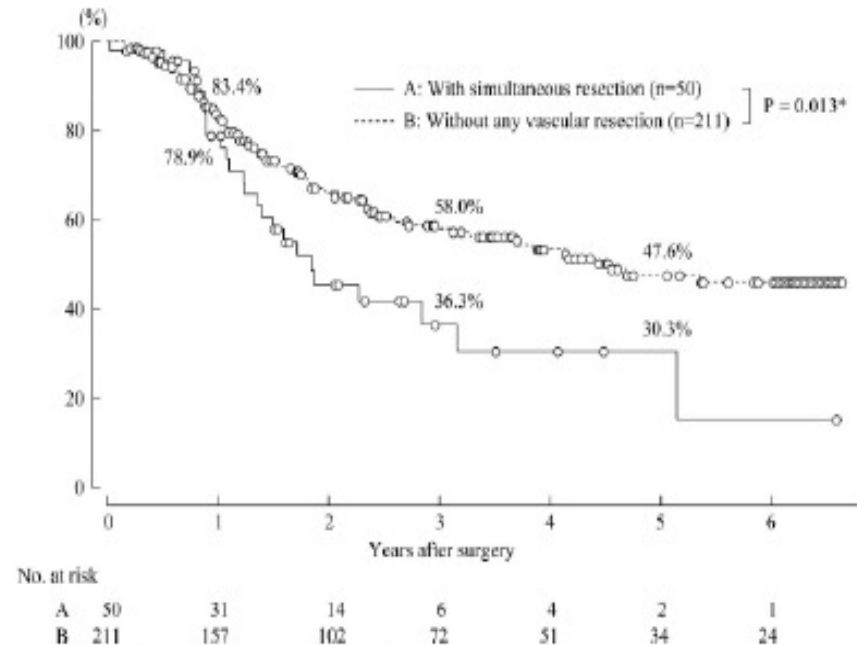
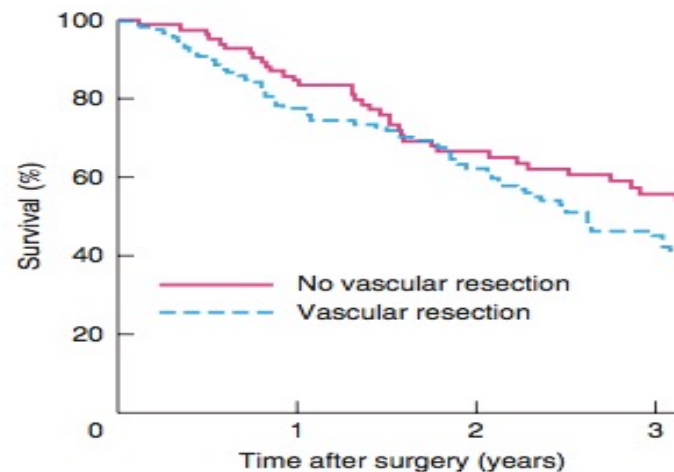


FIGURE 6. Survival for the 50 study patients and the 211 patients with perihilar cholangiocarcinoma who underwent resection without vascular resection at the same period. *A log-rank test.

Augmenter le taux de R0 (2)

Surgical resection for Bismuth IV perihilar cholangiocarcinoma

Patient (n)	Stade IVB	Stade IVA	Résection Majeur	Résection vasculaire	R0 résection	R1 résection	*Lnf+
216 (332)	33 (15%)	183 (85%)	153 (71%)	131 (60%)	156 (72%)	52 (24%)	127 (59%)



Evolution of Surgical Treatment for Perihilar Cholangiocarcinoma

A Single-Center 34-Year Review of 574 Consecutive Resections

Masato Nagino, MD, PhD,* Tomoki Ebata, MD, PhD,* Yukihiro Yokoyama, MD, PhD,* Tsuyoshi Igami, MD, PhD,* Gen Sugawara, MD, PhD,* Yu Takahashi, MD, PhD,* and Yuji Nimura, MD, PhD†

TABLE 3. Univariate and Multivariate Analyses for Mortality

Variables	No. Patients	Mortality (%)	Univariate, <i>P</i>	Multivariate	
				Risk Ratio (95% Confidence Interval)	<i>P</i>
Age, y			0.658		
<65	279	12 (4.3)			
≥65	295	15 (5.1)			
Sex			0.532		
Female	193	7 (3.6)			
Male	381	20 (5.2)			
Jaundice on admission			0.281		
Absent	165	5 (3.0)			
Present	409	22 (5.4)			
Preoperative cholangitis			<0.001		0.031
Absent	464	15 (3.2)		1	
Present	110	12 (10.9)		2.53 (1.09–5.90)	
Liver function (ICGK)*			<0.001		0.003
≥0.140	390	9 (2.3)		1	
<0.140	168	18 (10.7)		3.68 (1.56–8.67)	
Extent of liver resection			0.428		
<50%	239	9 (3.8)			
≥50%	335	18 (5.4)			
Combined PD			0.142		
Absent	500	21 (4.2)			
Present	74	6 (8.1)			
Combined PV and/or HA			0.201		
Absent	344	13 (3.8)			
Present	230	14 (6.1)			
Operative time, h			0.002		
<10	224	3 (1.3)			
≥10	350	24 (6.9)			
Blood loss, mL			<0.001		0.043
<2500	386	9 (2.3)		1	
≥2500	188	18 (9.6)		2.62 (1.03–6.66)	

Augmenter le taux de R0 (2)

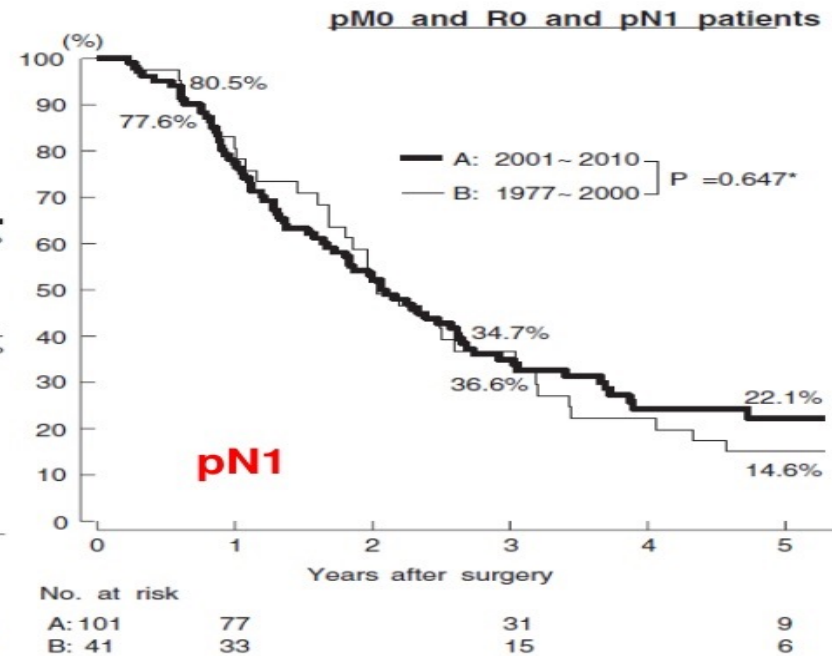
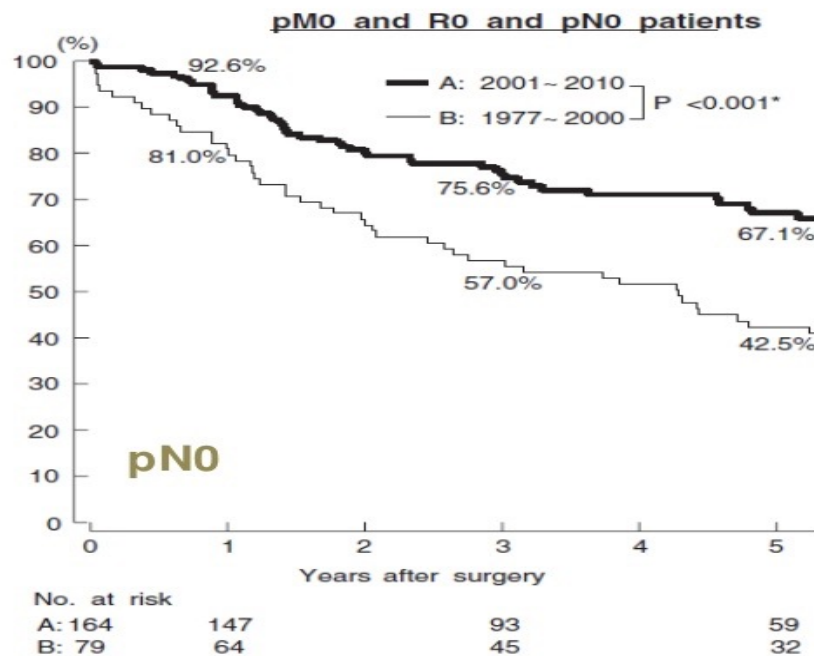
Reference	Period	Resected, N	Volume, resected /y	Surgical Procedure, %				Bismuth Type IV, %	pN1, %	R0 resection, %	Mortality, %	5-Year Survival, %	
				Hx	PV	HA	PD					All	R0
Jamagin ⁵	1991–2000	80	8.0	78	11	0	3	—	24	78	10.0	27	—
Capussotti ⁶	1988–2001	36	2.6	89	14	3	0	0	39	89	2.8	27	29
Kawarada ⁷	1976–2000	87	3.5	75	8	0	3	—	—	64	2.3‡	26	—
Seyama ⁸	1989–2001	58	4.5	100	16	0	16	28	52	64	0	40	46
Kawasaki ⁹	1990–2001	79	6.6	96	6	3	16	47	44	68	1.3	—	40
Kondo ¹⁰	1999–2002	40	10.0	78	20	20	18	15	38	95	0	—	—
Ijitsma ¹¹	1986–2001	42	2.6	100	17	9	0	—	38	64	11.9	22	—
Hemming ¹²	1997–2004	53	6.6	98	43	6	8	5	21	80	9.4	35	45
Sano ¹³	2000–2004	102	20.4	100	22	5	7	—	—	61	0	44	—
DeOliveira ¹⁴	1973–2004	173	5.4	20	0	0	0	—	28 ?	19	5.4	10	30
Miyazaki ¹⁵	1981–2004	161	6.7	88	25	6	4	—	48	63	6.8	—	36
Lee ¹⁶	2001–2008	302	37.8	89	13	2	2	17	24	71	1.7	33	47
Gulik ¹⁷	1988–2003	99	6.2	38	18	0	0	—	—	31	10	20,* 33‡	—
Young ¹⁸	1994–2008	83	5.5	93	39	10	2	—	57	46	7.2	20	33
Saxena ¹⁹	1992–2009	42	2.3	100	26	0	0	2	29	64	2.4	24	—
Cannon ²⁰	1992–2010	59	3.1	83	—	—	—	—	15	63	5.1‡	<20	—
This study	1977–2000	188	7.8	93	31	3	12	41	50	75	10.1	23	30
	2001–2005	168	33.6	98	35	15	12	—	—	—	3.0	—	—
	2006–2010	218	43.6	99	41	21	15	48	48	78	1.4	38	45

Evolution of Surgical Treatment for Perihilar Cholangiocarcinoma

A Single-Center 34-Year Review of 574 Consecutive Resections

Masato Nagino, MD, PhD,* Tomoki Ebata, MD, PhD,* Yukihiro Yokoyama, MD, PhD,* Tsuyoshi Igami, MD, PhD,†
Gen Sugawara, MD, PhD,* Yu Takahashi, MD, PhD,* and Yuji Nimura, MD, PhD†

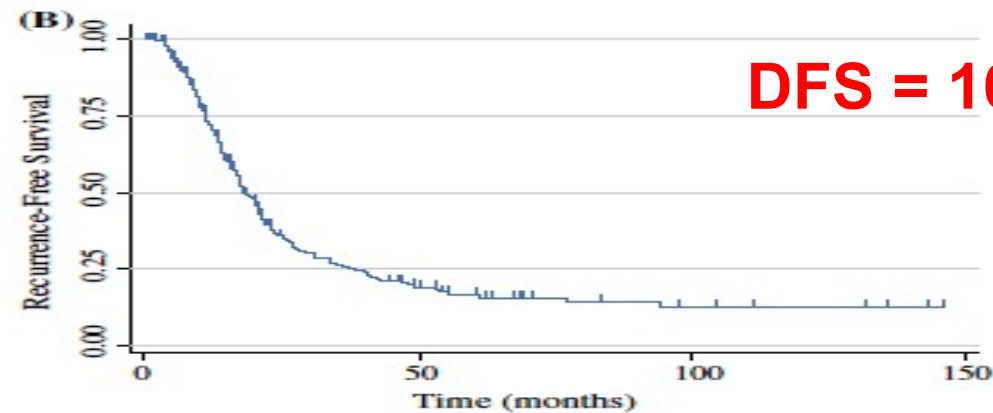
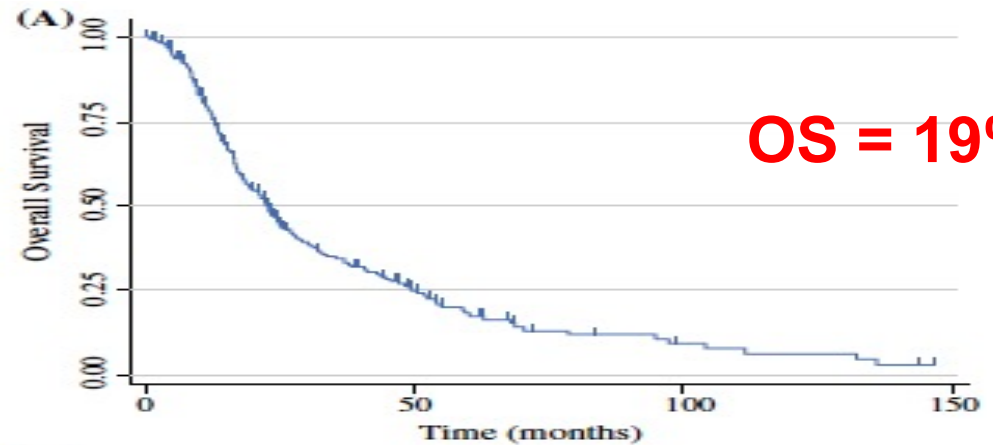
Des marges R0 chez des patients N0



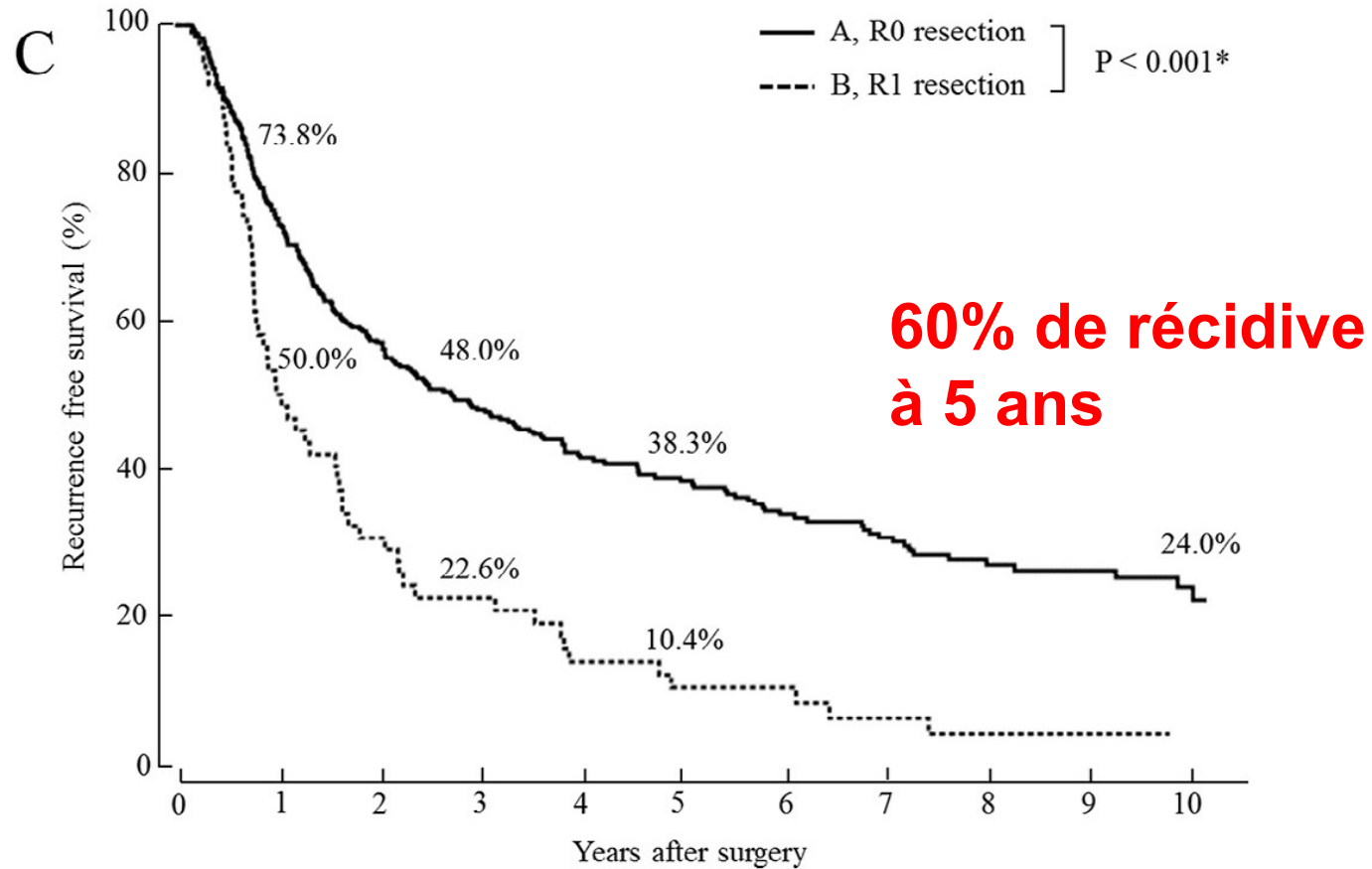
Survie à 5 ans

Actual 5-Year Survivors After Surgical Resection of Hilar Cholangiocarcinoma

Thuy B. Tran, MD¹, Cecilia G. Ethun, MD², Timothy M. Pawlik, MD, MPH, PhD^{3,4}, Carl Schmidt, MD⁴, Eliza W. Beal, MD⁴, Ryan C. Fields, MD⁵, Bradley Krasnick, MD⁵, Sharon M. Weber, MD⁶, Ahmed Salem, MD⁶, Robert C. G. Martin, MD⁷, Charles R. Scoggins, MD⁷, Perry Shen, MD⁸, Harveshp D. Mogal, MD⁸, Kamran Idrees, MD⁹, Chelsea A. Isom, MD⁹, Ioannis Hatzaras, MD¹⁰, Rivka Shenoy, MD¹⁰, Shishir K. Maithel, MD², and George A. Poultsides, MD, MS, FACS¹



Récidive après chirurgie R0



Récidive après chirurgie R0

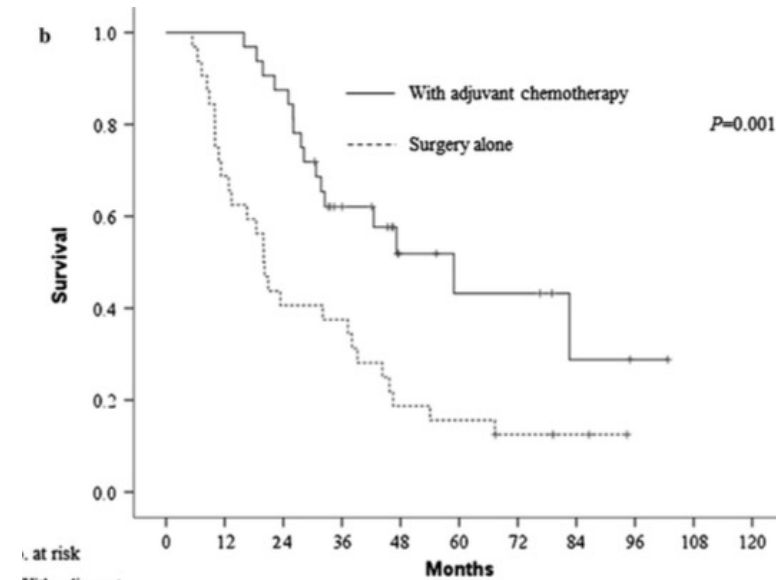
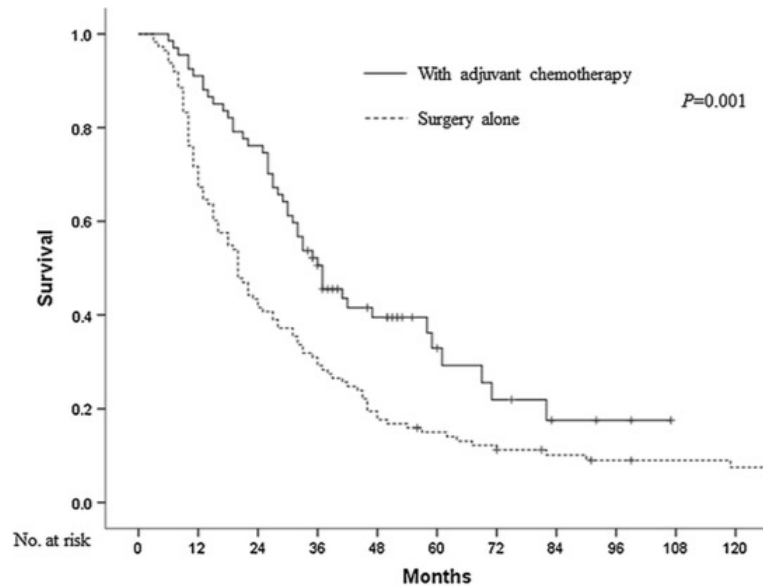
Univariable and multivariable analyses of recurrence-free survival in R0 resection patients (N= 340).

Variables	Patients, n	Recurrence-free survival		Univariable P-value	Multivariable	
		Median (y)	5 y. %		HR (95% CI)	P-value
Combined vascular resection				<0.001		
Absent	213	4.0	44.6			
Present	127	1.6	28.3			
Perioperative homologous blood transfusion				.005		
Absent	234	3.5	43.1			
Present	106	1.7	27.9			
Histopathologic classification				.017		
Papillary/Well	104	4.7	48.1			
Moderately/Poorly	236	2.1	34.2			
Microscopic lymphatic invasion				<.001		
Absent	108	5.5	51.9			
Present	232	2.1	32.1			
Microscopic venous invasion				<.001		.001
Absent	209	4.7	48.9		1.00 (reference)	
Present	131	1.5	21.3		1.57 (1.19-2.07)	
Microscopic perineural invasion				.007		
Absent	54	6.9	59.6			
Present	286	2.2	34.4			
Lymph node metastasis				<.001		<.001
Absent	207	5.7	53.6		1.00 (reference)	
Present	133	1.3	15.1		2.49 (1.89-3.28)	
Adjuvant chemotherapy				0.118		
Absent	265	3.0	41.4			
Present	75	2.2	27.0			

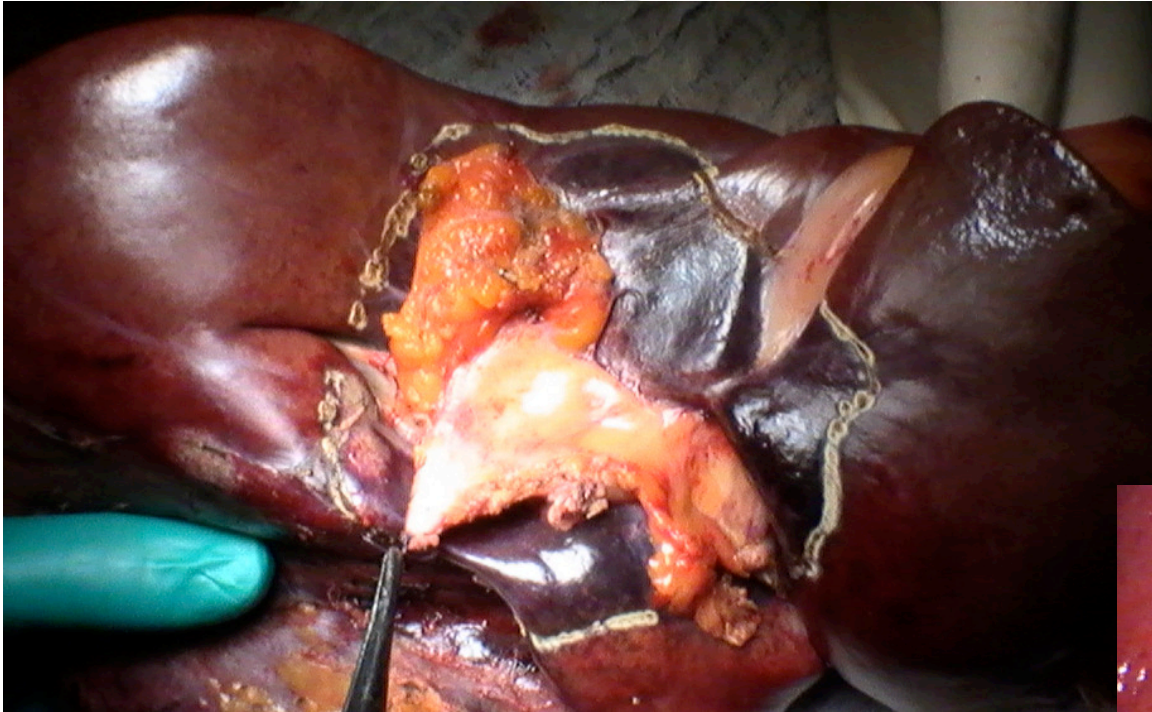
Chimiothérapie adjuvante

Adjuvant gemcitabine monotherapy for resectable perihilar cholangiocarcinoma with lymph node involvement: a propensity score matching analysis

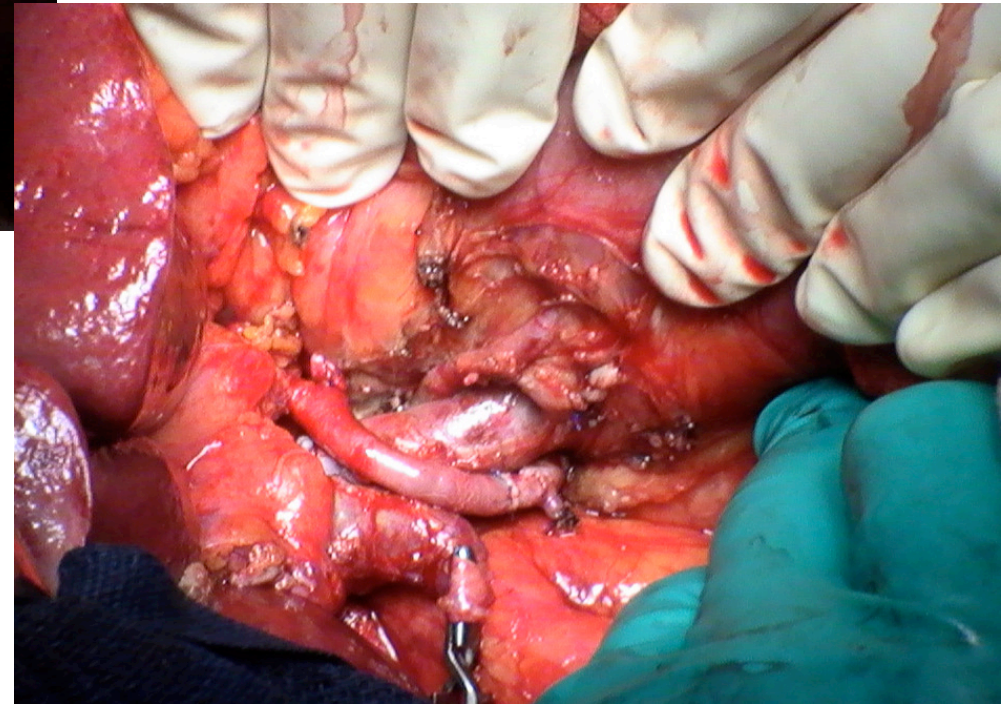
Takashi Mizuno¹ · Tomoki Ebata¹ · Yukihiro Yokoyama¹ · Tsuyoshi Igami¹ · Gen Sugawara¹ · Junpei Yamaguchi¹ · Masato Nagino¹



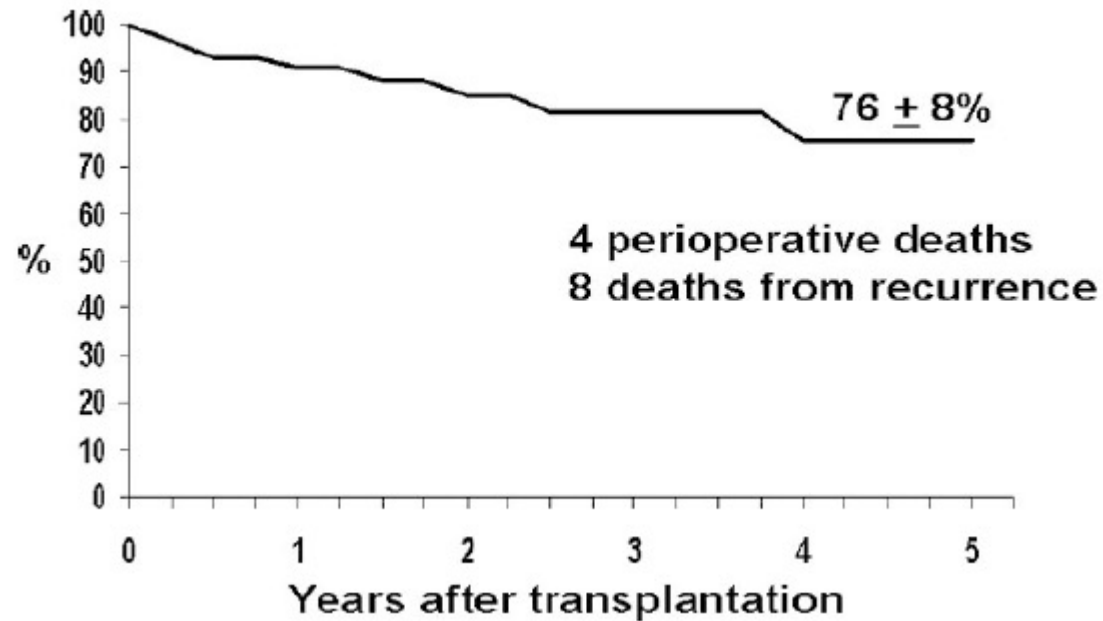
Transplantation hépatique



Age < 50 ans
Cholangite sclérosante
CA19-9 < Nle
Pas de masse tumorale
Stérilisation tumorale
N0M0

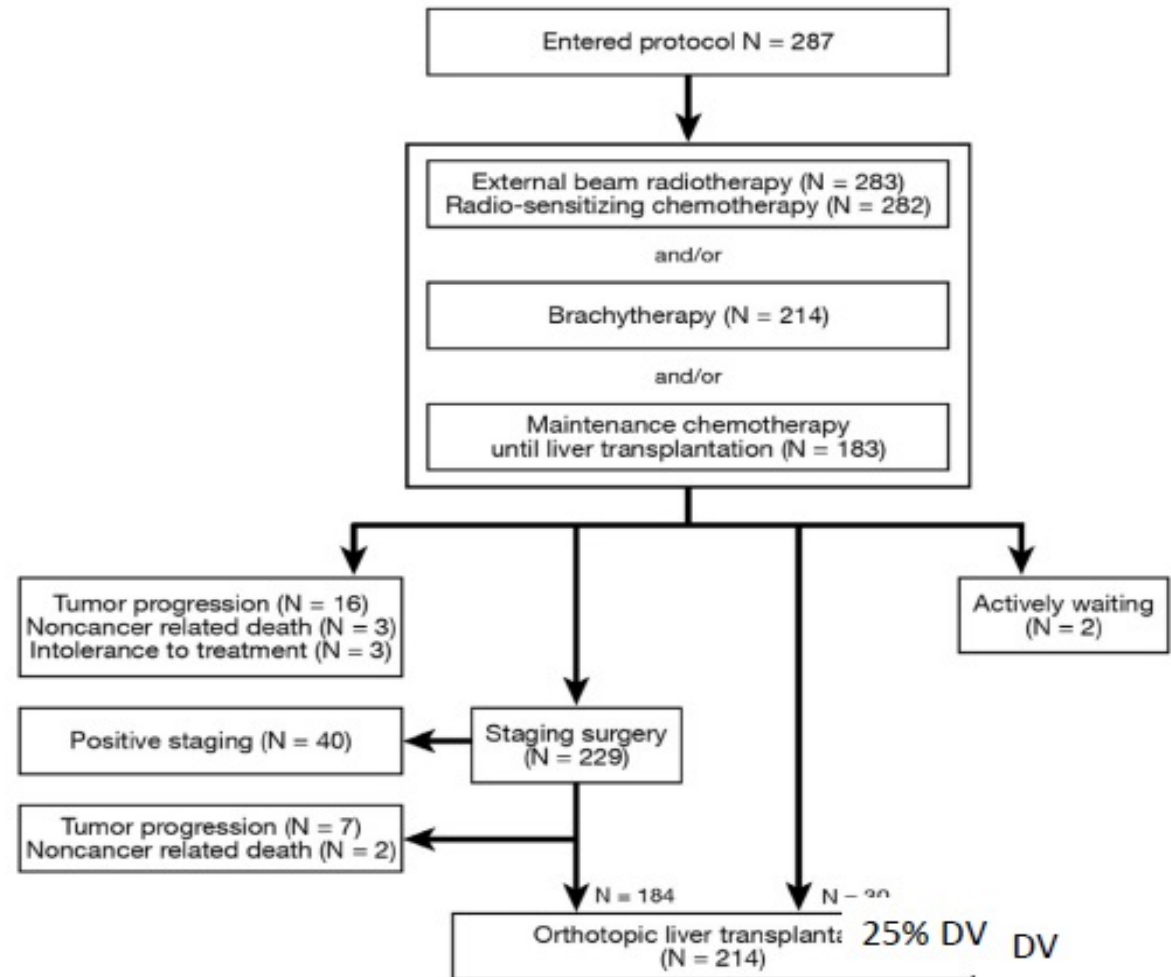


TH: Mayo Clinic

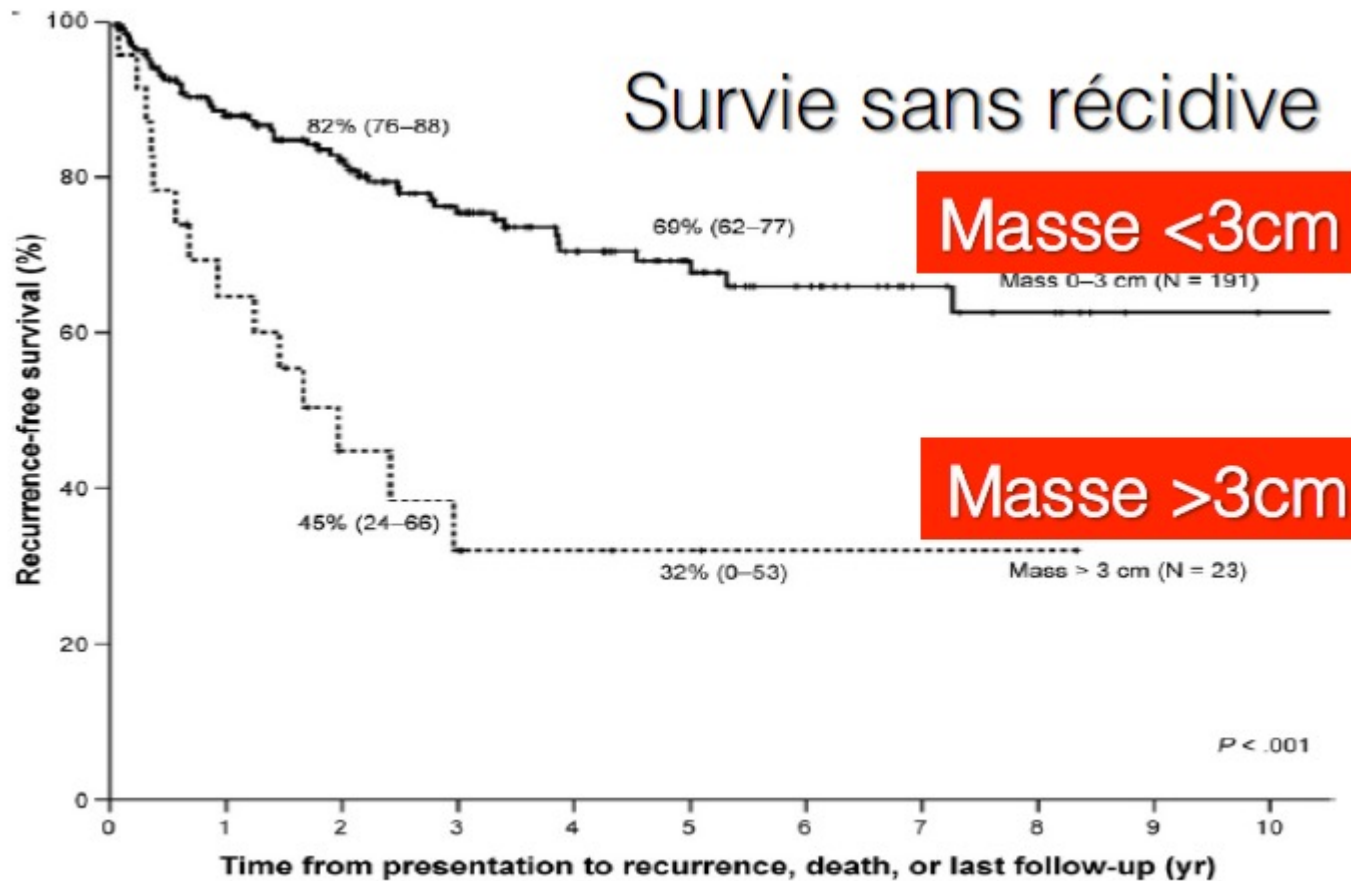


TH: Mayo Clinic

25%
Drop out



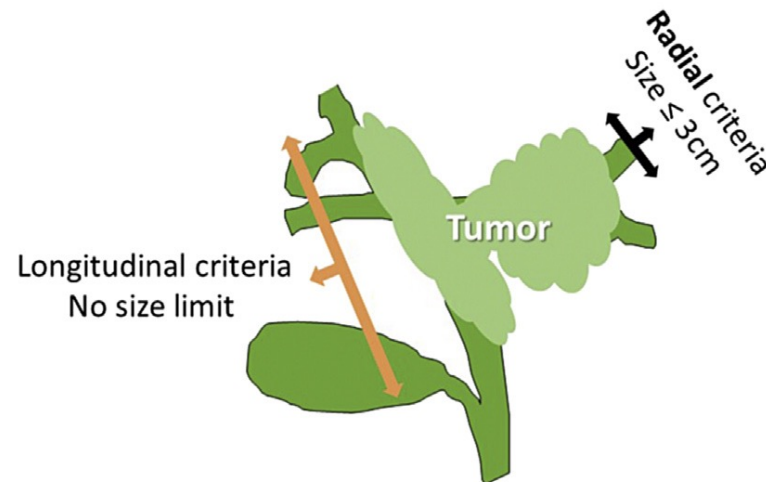
TH: Mayo Clinic



TH: Mayo Clinic

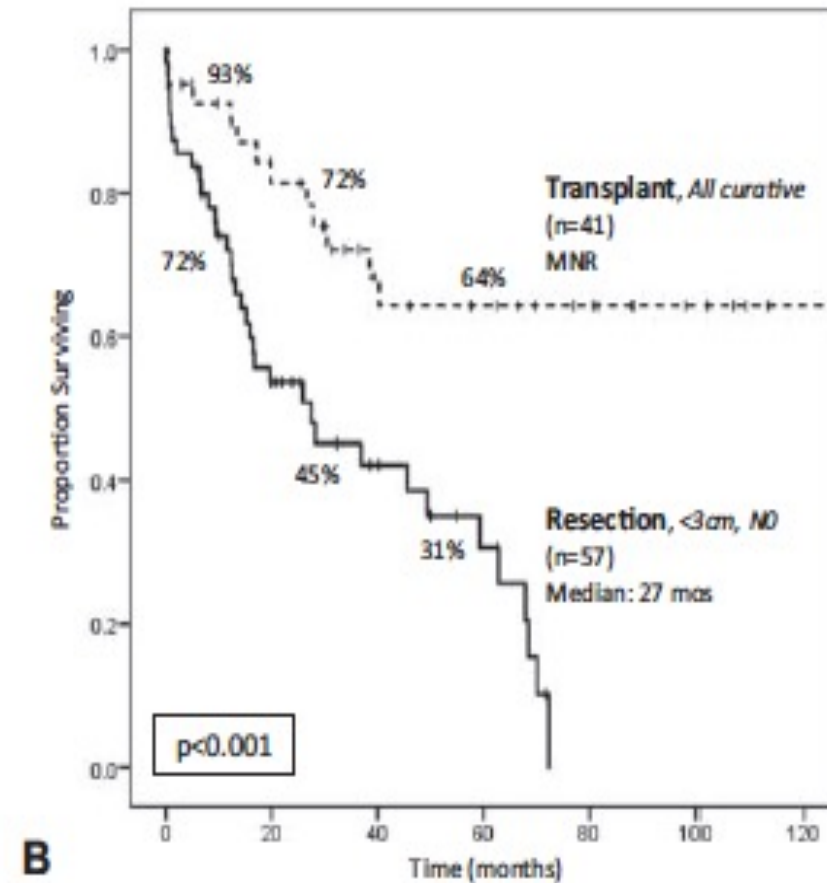
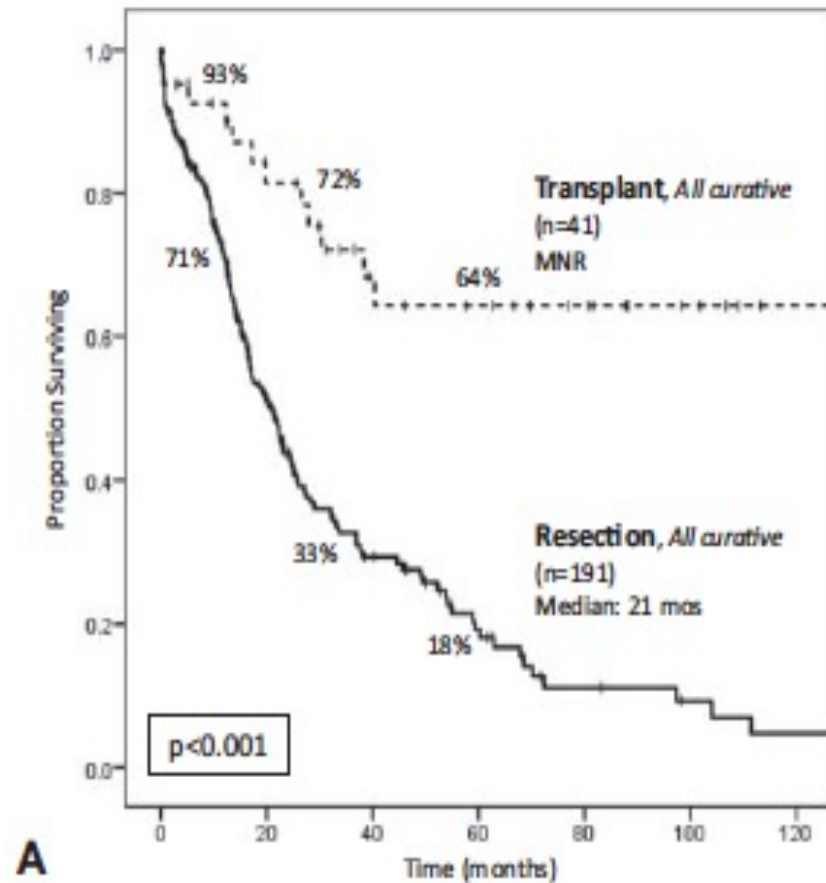
Table 1. Mayo clinic criteria for inclusion in the transplantation protocol for hilar cholangiocarcinoma [15–17].

Diagnosis	Pathologically confirmed hilar cholangiocarcinoma <i>or</i> CA19-9 >100 ng/ml in the presence of a radiographically malignant stricture
Tumor	Tumor size < 3 cm
Distant metastases	Absence of distant metastases on CT (and/or MRI) and isotope bone scan
Lymph node metastases	Negative EUS-FNA of regional lymph nodes <i>and</i> negative staging laparotomy/ hand-assisted-laparoscopy with biopsy of regional lymph nodes



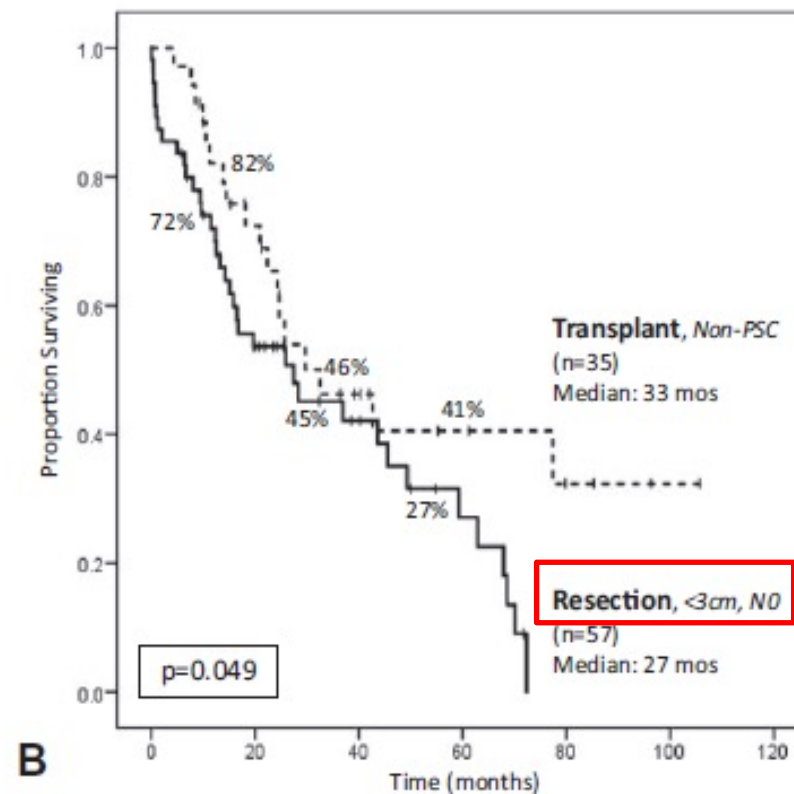
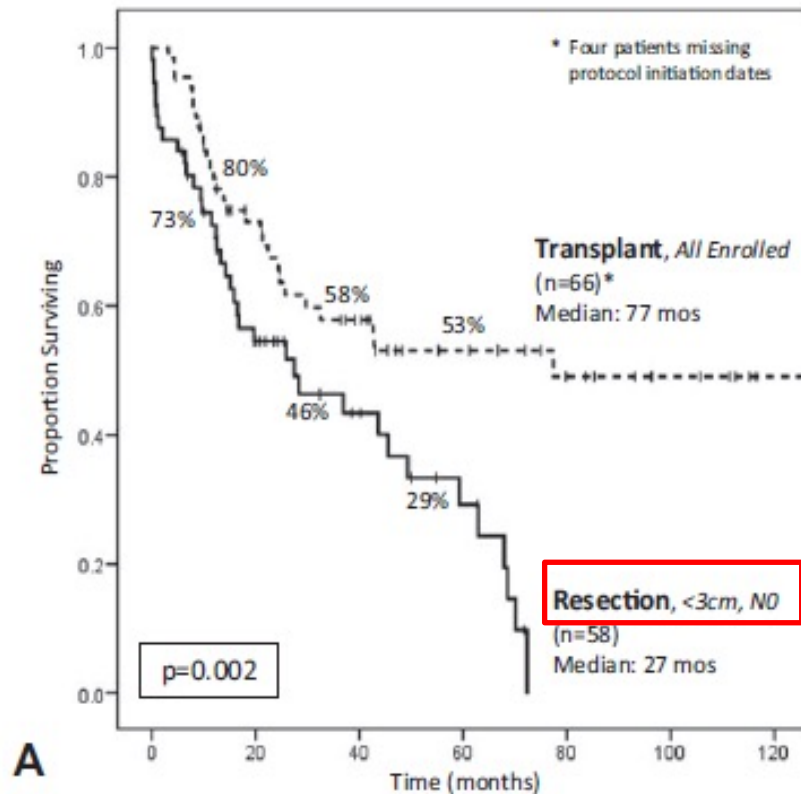
Transplantation Versus Resection for Hilar Cholangiocarcinoma

An Argument for Shifting Treatment Paradigms for Resectable Disease



Transplantation Versus Resection for Hilar Cholangiocarcinoma

An Argument for Shifting Treatment Paradigms for Resectable Disease



Pas de CSP

TH oui mais ?

Surgical Treatment of Perihilar Cholangiocarcinoma

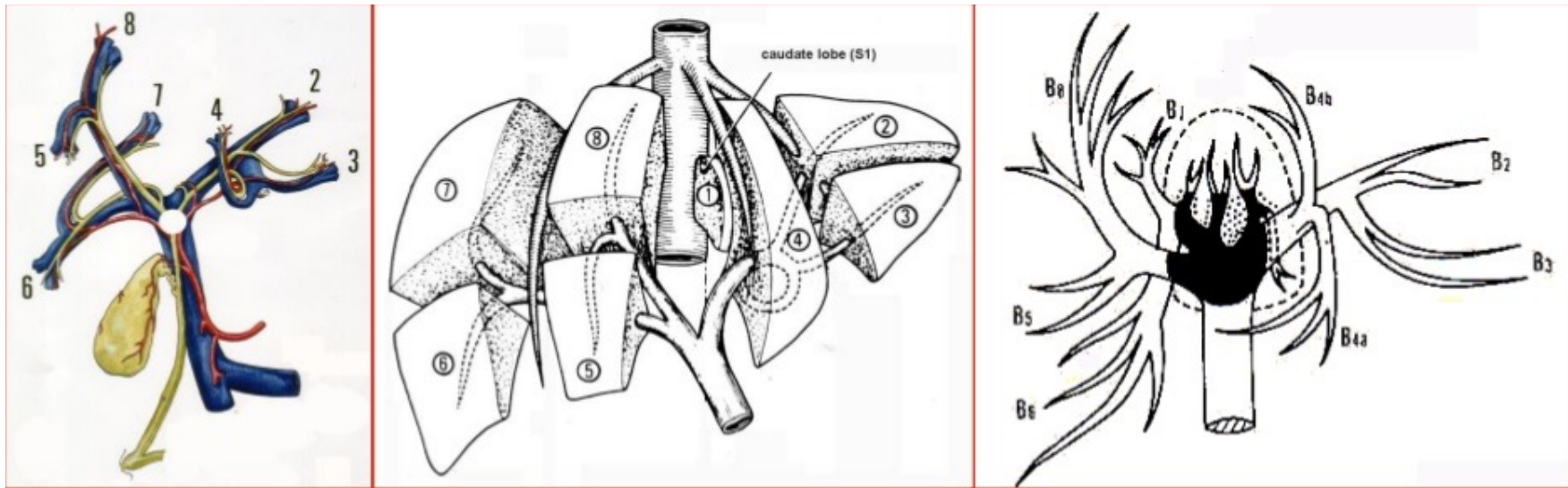
Resection or Transplant?

Masato Nagino, MD

- Mortalité 90 jours dans le bras chirurgie 12%
 - Pas de résection Vx
 - Pas de DPC associée
- Résection R0: 191 patients (N0++)
 - Survie à 5 ans: 18% (vs 67% au Japan ≈ TH non CSP)
- T < 3cm, No et non résécable !!!

Conclusion

- Orienter l'hépatectomie en fonction des chances d'être R0 en espérant que le malade soit N0
- Tjs avec segmentectomie 1



NIMURA (1990) : 98 % ; OGURA (1993) : 36 %
TASHIRO (1993) : 31 % ; SUGIURA (1994) : 32 %