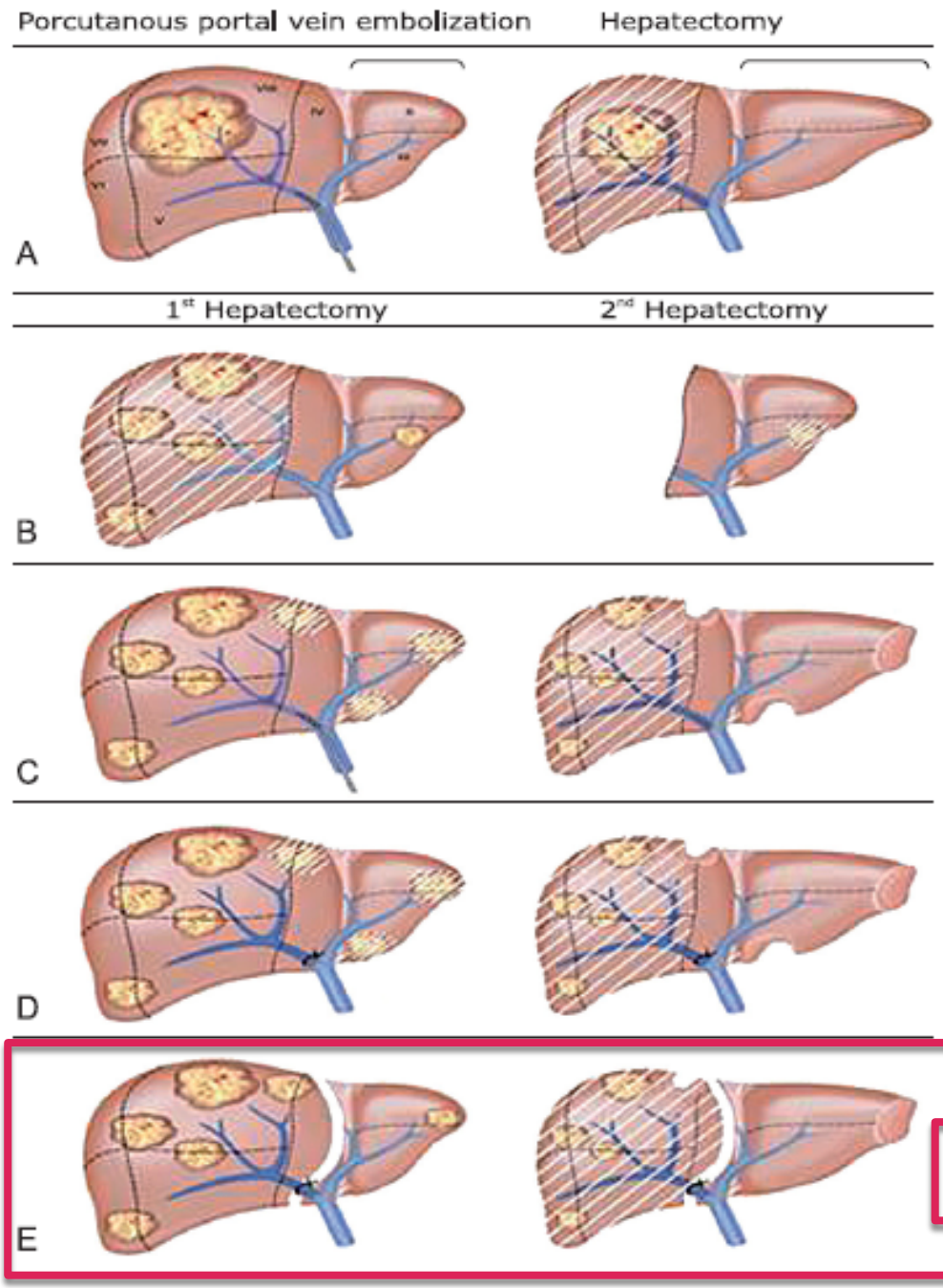
CB-IHPBA 2017
VIII CONGRESSO BRASILEIRO DE CIRURGIA DO FÍGADO, PÂNCREAS E VIAS BILIARES
7 a 9 de setembro de 2017
Centro de Eventos do
Hotel Plaza São Rafael
Porto Alegre - RS

Estratificação de risco como critério de indicação de ALPPS "ALPPS Risk score"

Orlando Jorge M. Torres
Professor Titular e Chefe do Serviço de
Cirurgia do Aparelho Digestivo
Universidade Federal do Maranhão - UFMA



Romic B, et al. Acta Chir Croat 2016;13:15-20

Original article

During liver regeneration following right portal embolization the growth rate of liver metastases is more rapid than that of the liver parenchyma

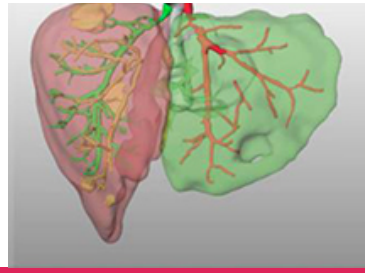
D. Elias, T. de Baere, A. Roche, M. Ducreux, J. Leclere and P. Lasser

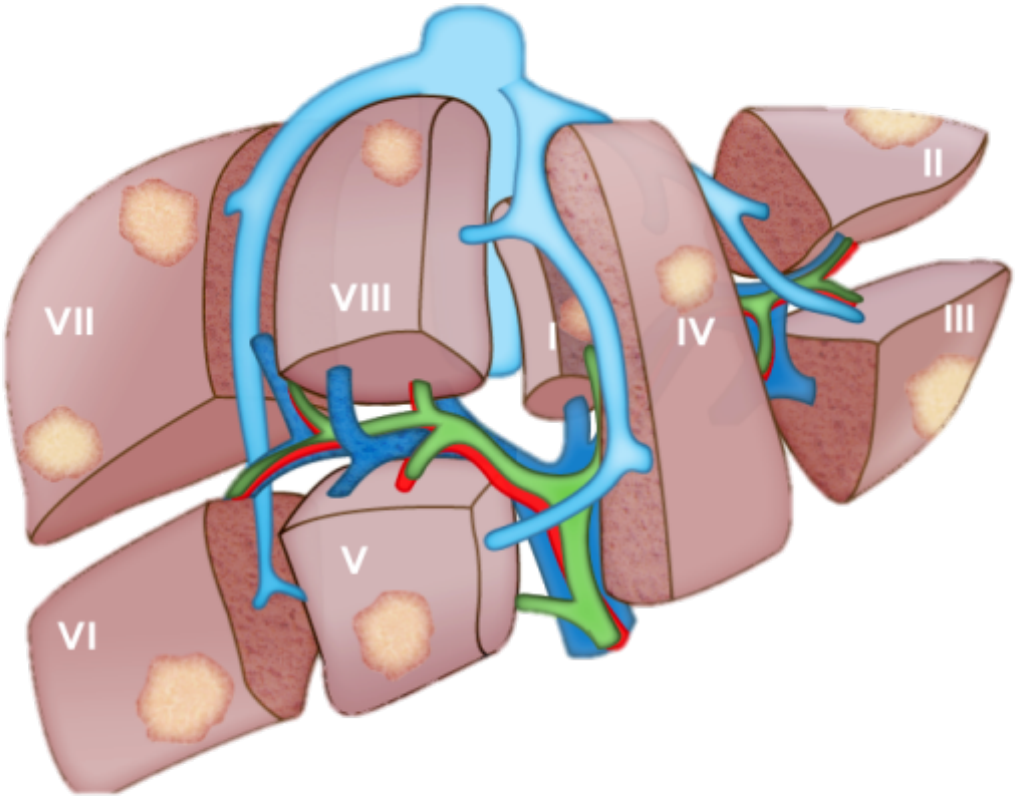
Departments of Surgical Oncology and Interventional Radiology, Institut Gustave Roussy, Rue Camille Desmoulins, 94805 Villejuif Cedex, France
Correspondence to: Dr D. Elias

- Liver volume – 59-127%
- Tumor volume – 60-970%

Elias D, et al. Br J Surg 1999;86:784-8

ALPPS





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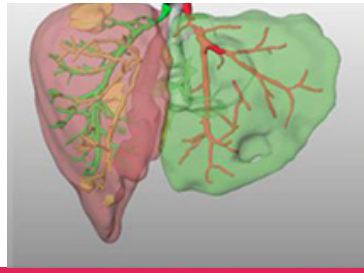

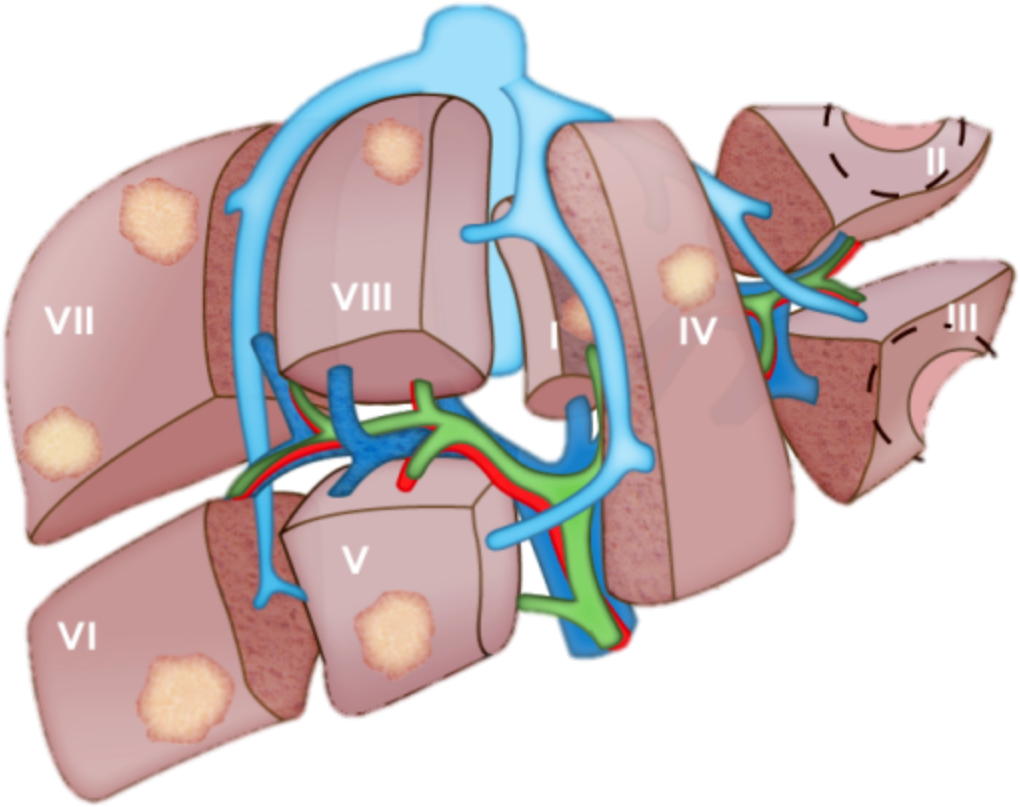

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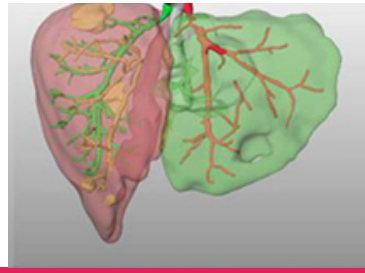

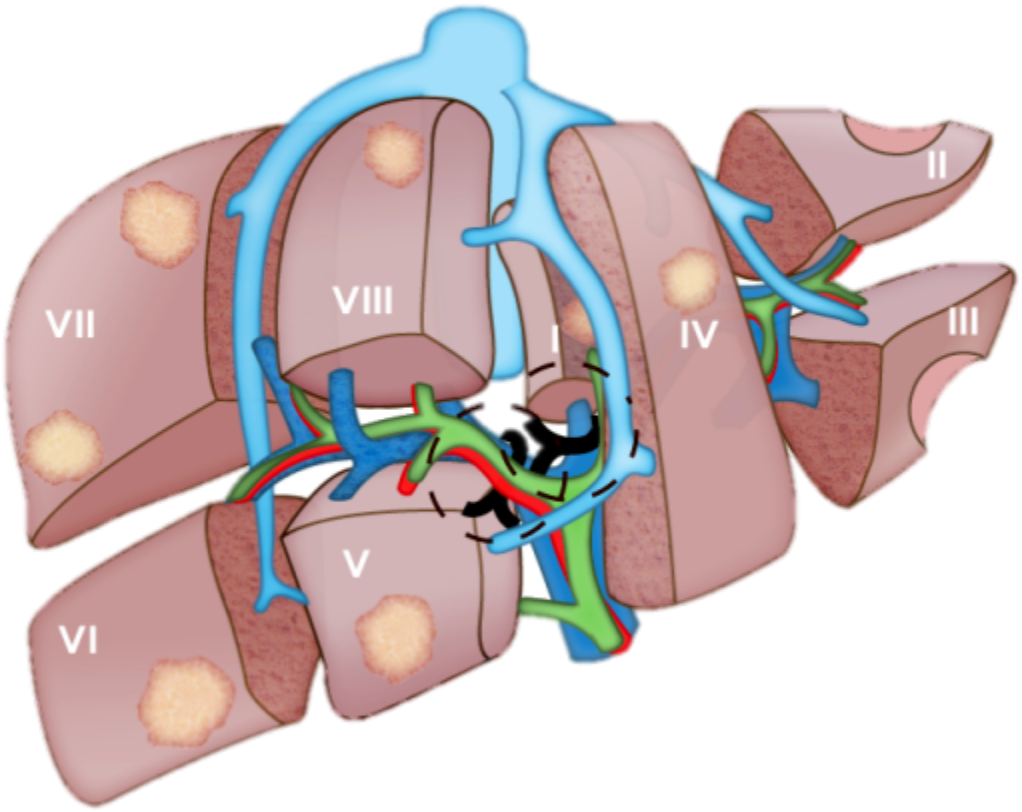

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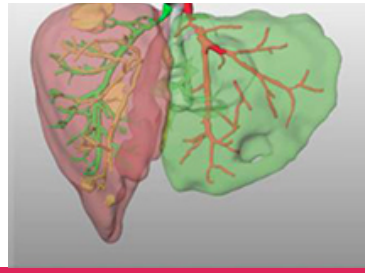

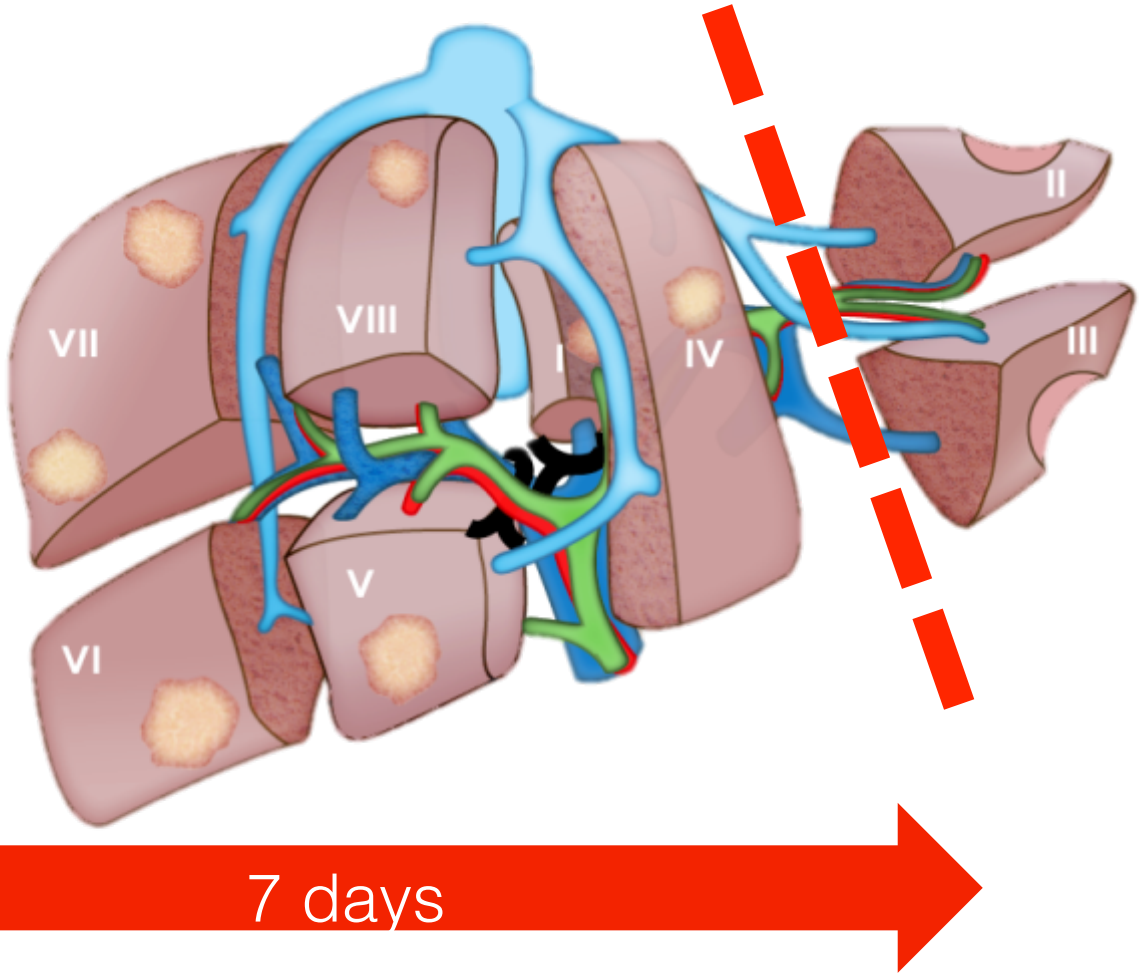

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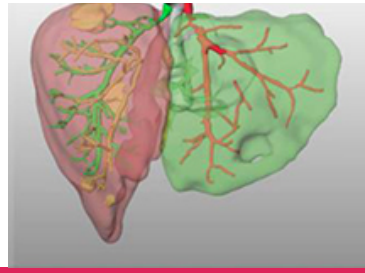

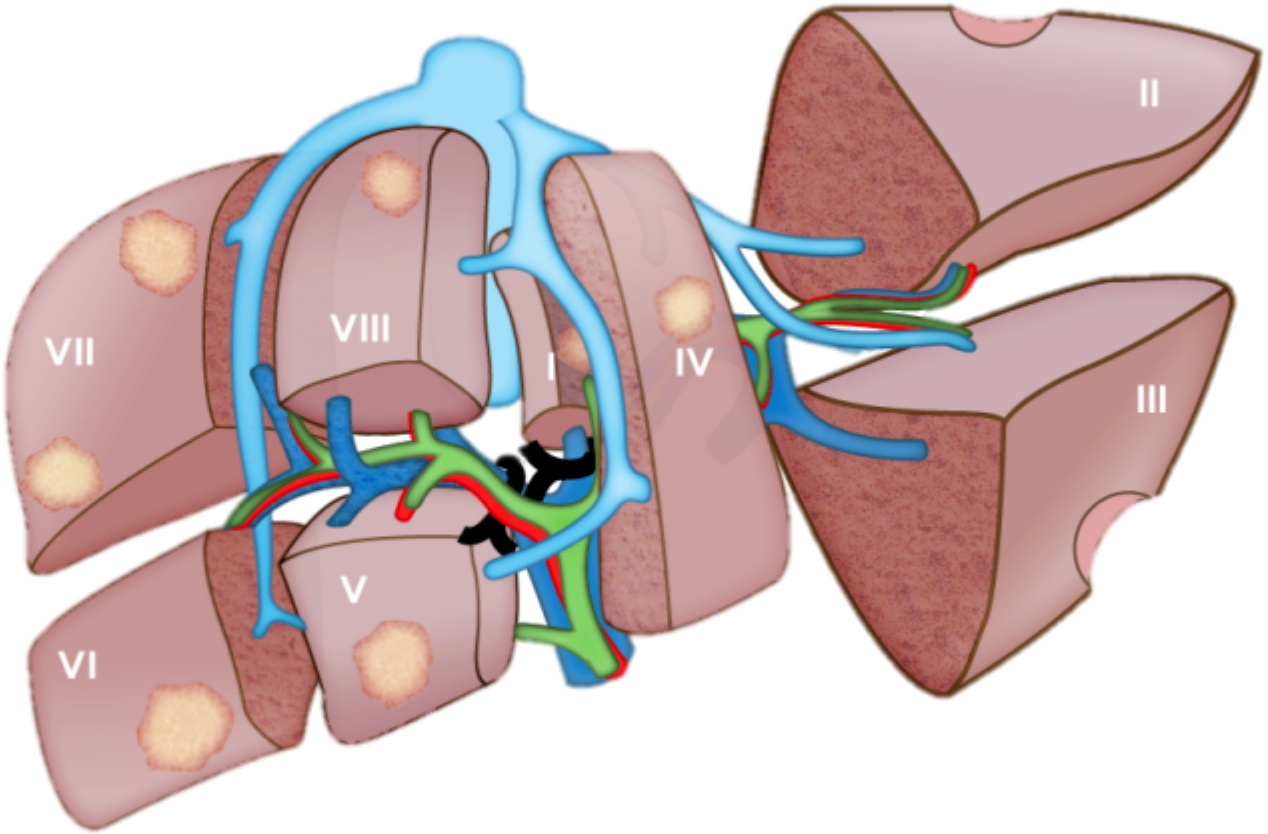

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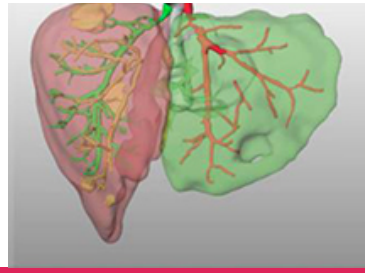
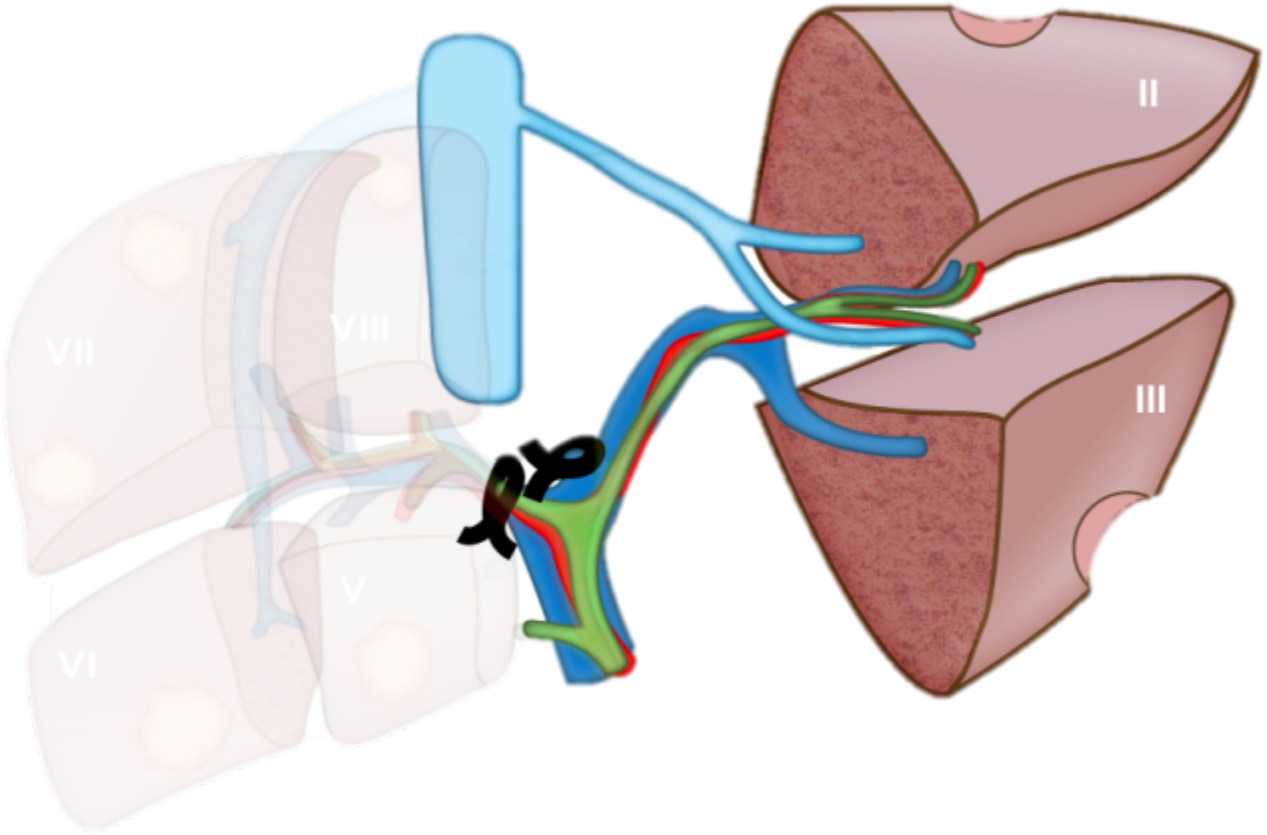
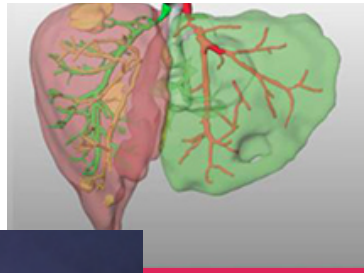
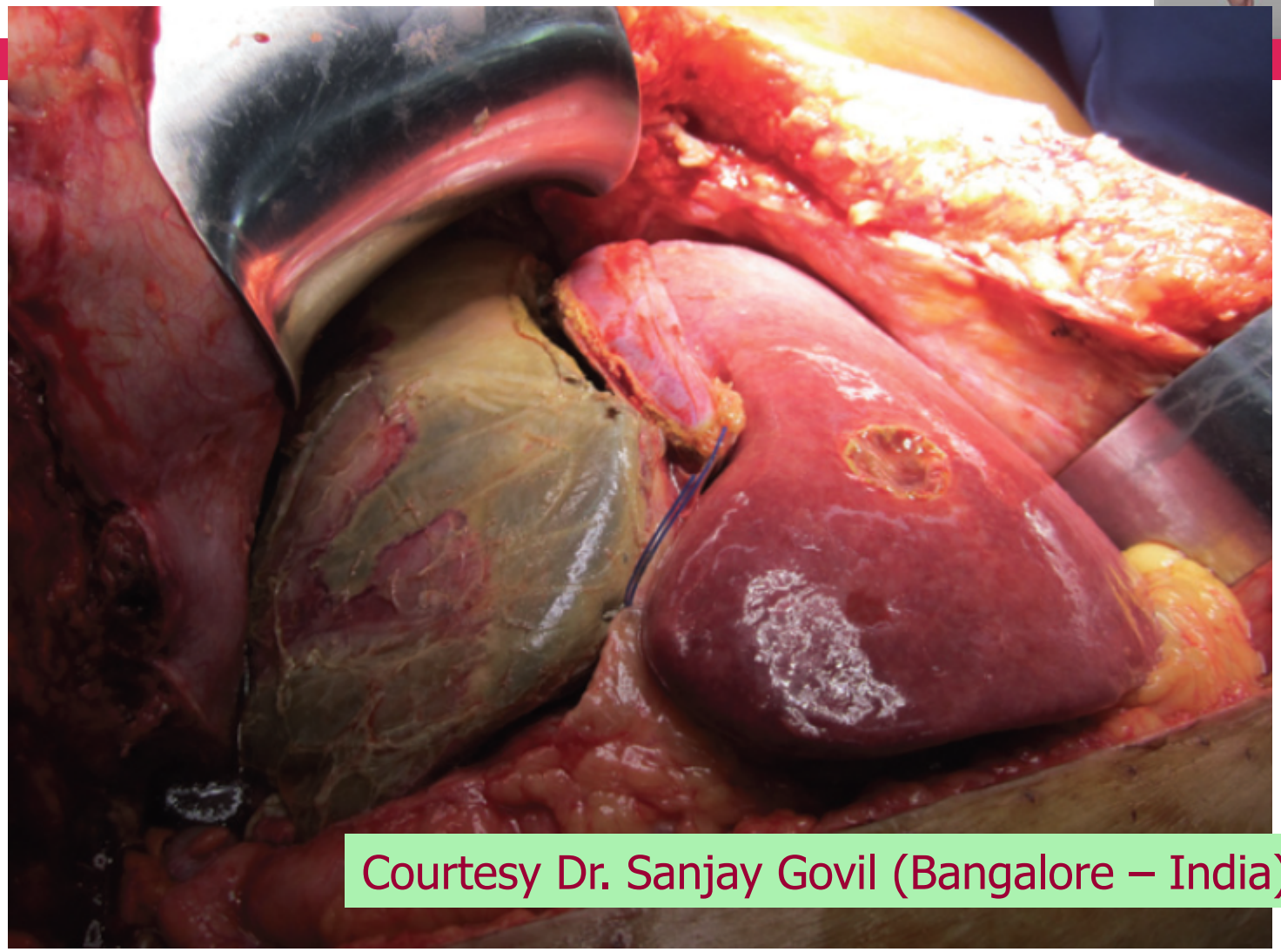
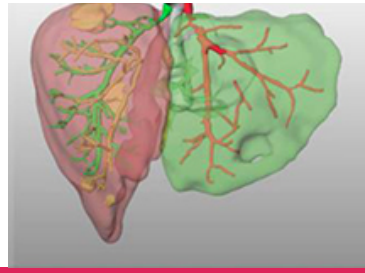








Courtesy Dr. Sanjay Govil (Bangalore – India)



EDITORIAL

Playing Play-Doh to Prevent Postoperative Liver Failure

The "ALPPS" approach

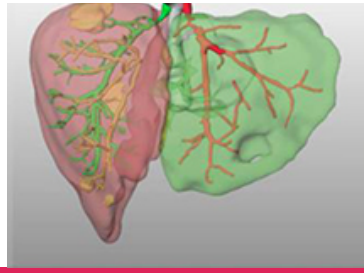
Eduardo de Santibañes, MD, PhD, and Pierre-Alain Clavien, MD, PhD†*

The safe removal of extensive tumor load in the liver has been one of the main focuses of laboratory and clinical research for hepato-biliary surgeons over the past 3 decades.[1] The first breakthrough is credited to Masatoshi Makuuchi, who in 1980s, introduced the concept of the portal vein embolization (PVE) of the right portal branch to induce hypertrophy of the left side of the liver, enabling a safer removal of large or multiple tumors, mostly located in the right hemiliver and segment IV[2]. This technique was rapidly adopted by many to prevent liver failure after a variety of extensive

Associating Liver Partition and Portal Vein Ligation for Staged Hepatectomy

Santibanes E, Clavien P. Ann Surg 2012;255:415-7

ALPPS



- Hipertrofia do RHF superior EVP/LVP. Possibilidade de ressecção R0
- Adequada estratificação da doença no 1º procedimento.
- Permite limpeza agressiva do RHF.
- Ressecção simultânea na primeira operação em doença sincrônica.
- O intervalo curto torna pouco provável a progressão tumoral.
- Na progressão tumoral no hemifígado doente, não há invasão por contiguidade.
- Alternativa naqueles que não alcançaram hipertrofia suficiente após a E/ LVP.

Ardiles V, et al. In Torres OJ. 2015. In press

ABCDDV/886

ABCD Arq Bras Cir Dig
2012;25(4):290-292

Technique

ASSOCIATING LIVER PARTITION AND PORTAL VEIN LIGATION FOR STAGED HEPATECTOMY (ALPPS): A NEW APPROACH IN LIVER RESECTIONS

Ligadura da veia porta associada à transecção para hepatectomia em dois estágios (ALPPS): uma nova abordagem nas ressecções hepáticas

Orlando Jorge Martins **TORRES**, José Maria Assunção **MORAES-JUNIOR**, Nádia Caroline Lima e **LIMA**, Anmara Moura **MORAES**

From the Department of Digestive Surgery, UDI Hospital, São Luis, MA, Brazil.

ABSTRACT – ***Background*** - Postoperative liver failure consequent to insufficiency of remnant liver is a feared complication in patients who underwent extensive liver

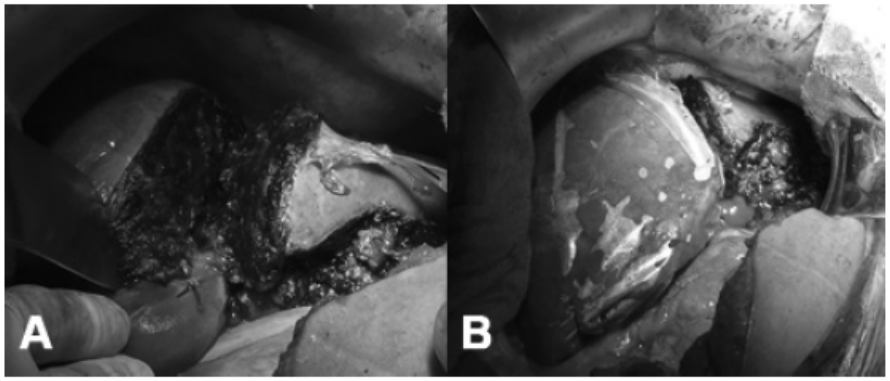


FIGURE 1 - A - Transection of the liver; B - protection with sterile bag

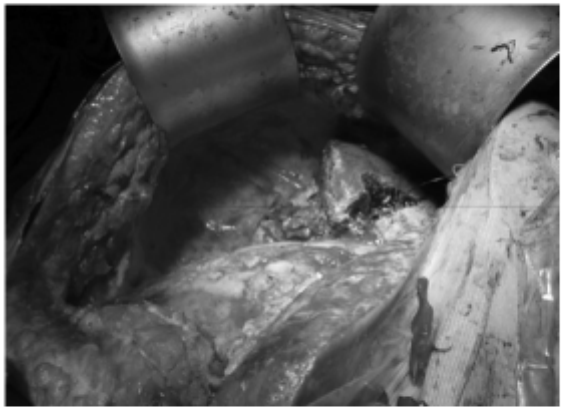
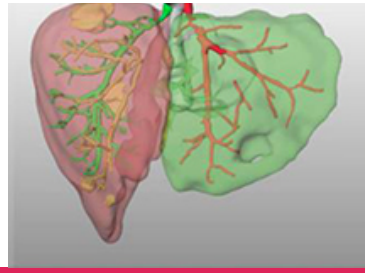


FIGURE 2 - Final aspect of the surgical procedure

Torres OJ, et al. Arq Bras Cir Dig 2012;25:290-2



Right Portal Vein Ligation Combined With In Situ Splitting Induces Rapid Left Lateral Liver Lobe Hypertrophy Enabling 2-Staged Extended Right Hepatic Resection in Small-for-Size Settings

Andreas A. Schnitzbauer, MD, Sven A. Lang, MD,* Holger Goessmann, MD,† Silvio Nadalin, MD,§ Janine Baumgart, MD,|| Stefan A. Farkas, MD,* Stefan Fichtner-Feigl, MD,* Thomas Lorf, MD,¶ Armin Goralcyk, MD,¶ Rüdiger Hörbelt, MD,# Alexander Kroemer, MD,* Martin Loss, MD,* Petra Rümmele, MD,‡ Marcus N. Scherer, MD,* Winfried Padberg, MD,# Alfred Königsrainer, MD,§ Hauke Lang, MD,|| Aiman Obed, MD,¶ and Hans J. Schlitt, MD**

ABCDDV/898

ABCD Arq Bras Cir Dig
2013;26(1):40-43

Original Article

ASSOCIATING LIVER PARTITION AND PORTAL VEIN LIGATION FOR STAGED HEPATECTOMY (ALPPS): THE BRAZILIAN EXPERIENCE

Ligadura da veia porta associada à bipartição do fígado para hepatectomia em dois estágios (ALPPS): experiência Brasileira

Orlando Jorge Martins **TORRES**[1], Eduardo de Souza Martins **FERNANDES**[2] Cassio Virgilio Cavalcante **OLIV**
Cristiano Xavier **LIMA**[4], Fabio Luiz **WAECHTER**[5], Jose Maria Assunção **MORAES-JUNIOR**[1],
Marcelo Moura **LINHARES**[6], Rinaldo Danese **PINTO**[7], Paulo **HERMAN**[8], Marcel Autran Cesar **MACHAD**

- 59 and 64% - Morbidity
- 12 and 12.8% - Mortality

TABLE 108D.1 Degree of Hypertrophy After Stage 1 of ALPPS Procedure

Series	No. Patients	Interval Stage (mean days)	Degree of Hypertrophy (%)
Schnitzbauer et al, 2012	25	9	74
Knoefel et al, 2013	7	6	63
Li et al, 2013	9	13	87.20
Nadalin et al, 2014	15	10	87.2
Torres et al, 2013	39	14.1	83
Robles Campos et al, 2014	22*	7	61
Alvarez et al, 2015	30	6	89.7
Hernandez-Alejandro et al, 2015	14	8	93

*Associating liver tourniquet and portal ligation for staged hepatectomy (ALTPS).

ALPPS, Associating liver partition and portal vein ligation for staged hepatectomy.

Oldhafer KJ, et al. In Blumgart LH. 6th Edition, 2017

Table 1. Surgical outcomes of ALPPS

Studies	*n*	Overall morbidity (%)	Overall mortality (%)	Success complete resection (%)	Interval (d, mean/median)	FLR regeneration rate (%, mean/median)	R0 resection (%)
Schnitzbauer et al (2012)[3]	25	68	12	100	9	74	96
Sala et al (2012)[9]	10	40	0	100	7	82	100
Torres et al (2013)[10]	39	59	13	95	14	83	100
Li et al (2013)[11]	9	66	22	100	13	87	100
Ielpo et al (2013)[12]	6	50	17	100	15	110	/
Troja et al (2014)[13]	5	100	20	100	16.4	/	100
Oldhafer et al (2014)[14]	7	86	0	100	13	65	100
Nadalin et al (2014)[15]	15	67	29	100	13	87	87
Robles et al (2014)[16]	22	63	9	100	7	61	100
Schadde et al (2014)[17]	202	>grade 3a: 40 >grade 3b: 28	9	98	10	86	91
Kremer et al (2015)[18]	19	68	16	100	8	74	100
Hernandez-Alejandro et al (2015)[19]	14	36	0	100	8	93	86
Truant et al (2015)[20]	62	80.6	12.9	95	8	48	/
Alvarez et al (2015)[21]	30	53	6.6	97	6	89.7	93.1
Lang et al (2015)[22]	16	64	12.5	100	9	86	100
Vivarelli (2015)[23]	9	66.7	11.1	96	10.8	96	/
Chan et al (2016)[24]	13	15.3	7.7	100	8	53	100
Røsok et al (2016)[25]	36	92	0	100	6	67	71
Serenari et al (2016)[26]	50	54	20	96	/	/	/
Björnsson et al (2016)[27]	10	100	0	100	8	64.2	90

FLR: future liver remnant; ALPPS: associating liver partition and portal vein ligation for staged hepatectomy.

Lau WY, et al. Hepatobiliary Pancreat Dis Int 2017

ABCD Arq Bras Cir Dig
2016;29(3):173-179
DOI: /10.1590/0102-6720201600030011

Original Article

BRAZILIAN CONSENSUS FOR MULTIMODAL TREATMENT OF COLORECTAL LIVER METASTASES. MODULE 3: CONTROVERSIES AND UNRESECTABLE METASTASES

Consenso brasileiro de tratamento multidisciplinar de metástase hepática de origem colorretal
Módulo 3: Controvérsias e metástases irressecáveis

Orlando Jorge Martins **TORRES**[1,2,6], Márcio Carmona **MARQUES**[2,6], Fabio Nasser **SANTOS**[1], Igor Correia de **FARIAS**[2,6], Anelisa Kruschewsky **COUTINHO**[3], Cássio Virgílio Cavalcante de **OLIVEIRA**[1,4,5], Antonio Nocchi **KALIL**[1,2,4,6], Celso Abdon Lopes de **MELLO**[3], Jaime Arthur Pirola **KRUGER**[1,4,5,6], Gustavo dos Santos **FERNANDES**[3], Claudemiro **QUIREZE JR**[1,4,5,6], André M. **MURAD**[3], Milton José de **BARROS E SILVA**[3], Charles Edouard **ZURSTRASSEN**[*], Helano Carioca **FREITAS**[3], Marcelo Rocha **CRUZ**[3], Rui **WESCHENFELDER**[3], Marcelo Moura **LINHARES**[1,4,5,6], Leonaldson dos Santos **CASTRO**[1,2,6], Charles **VOLLMER**[6], Elijah **DIXON**[6], Héber Salvador de Castro **RIBEIRO**[1,2,6], Felipe José Fernandez **COIMBRA**[1,2,5,6]

ALPPS

- Alternative for two-stage hepatectomy
- Rescue surgery – after PVE

Torres OJ, et al. Arq Bras Cir Dig 2016;29 (3):173-9

ABCDDV/898

ABCD Arq Bras Cir Dig
2013;26(1):40-43

Original Article

ASSOCIATING LIVER PARTITION AND PORTAL VEIN LIGATION FOR STAGED HEPATECTOMY (ALPPS): THE BRAZILIAN EXPERIENCE

Ligadura da veia porta associada à bipartição do fígado para hepatectomia em dois estágios (ALPPS): experiência Brasileira

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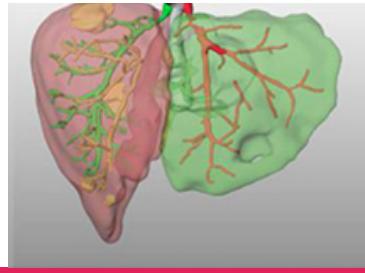
- Morbidity – 59%
- Cholangiocarcinoma
- Other:
  - Colectomy
  - Pancreatoduodenectomy
- Mortality – 12.8%

- Risk score

Torres OJ, et al. Arq Bras Cir Dig 2013;26:40-3



ORIGINAL ARTICLE

Associating Liver Partition and Portal Vein Ligation for Staged Hepatectomy Offers High Oncological Feasibility With Adequate Patient Safety

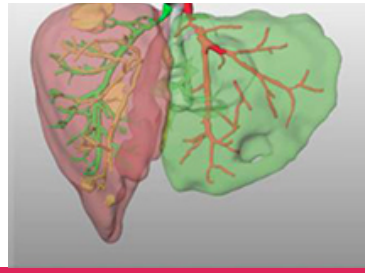
A Prospective Study at a Single Center

Fernando A. Alvarez, MD, Victoria Ardiles, MD, Martin de Santibañes, MD, Juan Pekolj, MD, PhD, and Eduardo de Santibañes, MD, PhD

- 53% Morbidity
- 6.6% Mortality

Alvarez FA, et al. Ann Surg 2014

ALPPS Registry



PAPER OF THE 21ST ANNUAL ESA MEETING

Early Survival and Safety of ALPPS

First Report of the International ALPPS Registry

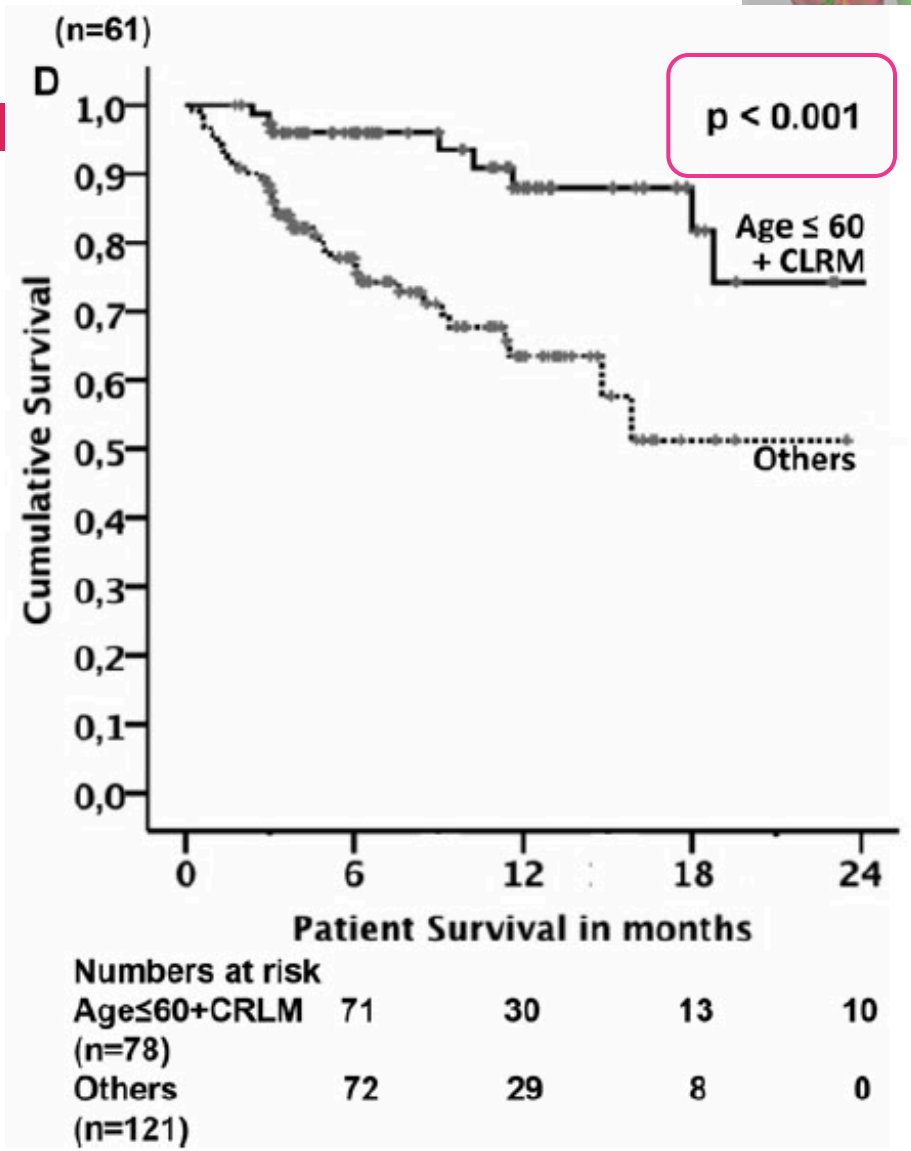
Erik Schadde, MD, FACS, Victoria Ardiles, MD,† Ricardo Robles-Campos, MD,‡ Massimo Malago, MD, FACS,§ Marcel Machado, MD,¶ Roberto Hernandez-Alejandro, MD,‖ Olivier Soubrane, MD,** Andreas A. Schnitzbauer, MD,†† Dimitri Raptis, MD,* Christoph Tschuor, MD,* Henrik Petrowsky, MD, FACS,* Eduardo De Santibanes, MD, PhD, FACS,† and Pierre-Alain Clavien, MD, PhD, FACS*§§; On behalf of the ALPPS Registry Group*

- 40 % Morbidity
- 9 % Mortality

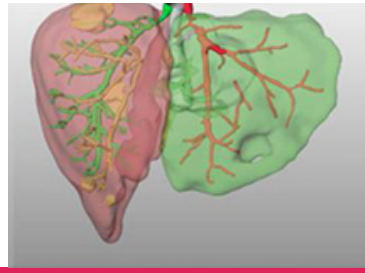
Schadde E, et al. Ann Surg 2014;260:829-38

ALPPS Registry

- Risk score



Schadde E, et al. Ann Surg 2014;260:829-38

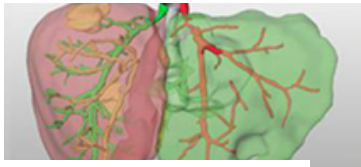


Can we improve the morbidity and mortality associated with the associating liver partition with portal vein ligation for staged hepatectomy (ALPPS) procedure in the management of colorectal liver metastases?

Roberto Hernandez-Alejandro, MD,[a] Kimberly A. Bertens, MD, MPH,[a] Karen Pineda-Solis, MD,[a] *and* Kristopher P. Croome, MD, MS,[a,b] *London, Ontario, Canada, and Rochester, MN*

- 36 % Morbidity
- 0 % Mortality

Hernandez-Alejandro R, et al. Surgery 2014



J Gastrointest Canc
DOI 10.1007/s12029-015-9691-6

MGMT. OF COMPLEX CASES IN GI ONCOLOGY

High Mortality Rates After ALPPS: the Devil Is the Indication

Paulo Herman · Jaime Arthur Pirola Krüger · Marcos Vinícius Perini · Fabrício Ferreira Coelho · Ivan Cecconello

❑ 0 % Mortality

Table 1 Operative results

	Gender, age, date of first OR	Diagnosis	Indication for ALPPS	Time between first and second OR (days)	Time from second OR to discharge (days)	Complications	FLR hypertrophy (%)
Case 1	M 48 17/11/11	MCRC	Multiple mets and small FLR	7	20	Liver failure Pulmonary sepsis	81
Case 2	M 58 16/02/12	MCRC	Multiple mets and intraoperative decision	7	6	None	78
Case 3	M 58 23/05/12	iCCC	Proximity to the hepatic vein and small FLR	7	8	None	82
Case 4	M 58 07/11/12	MCRC	Multiple mets and small FLR	7	7	None	75
Case 5	F 38 10/04/13	MCRC	Multiple mets and small FLR	7	7		67
Case 6	M 52 17/06/13	MCRC	Multiple mets and small FLR	8	30	Biliary fistula Hepatic insufficiency	37
Case 7	F 55 15/11/13	MCRC	Multiple mets and small FLR	14	8	None	61

Herman P, et al. J Gastroint Cancer. 2015

ABCDDV/1112

ABCD Arq Bras Cir Dig
2015;28(3):155-156
DOI: /10.1590/S0102-67202015000300001

Editorial

ALPPS: PAST, PRESENT AND FUTURE

ALPPS: passado, presente e futuro

Orlando Jorge M **TORRES**[1], Eduardo S M **FERNANDES**[2], Paulo **HERMAN**[3]

[1]Universidade Federal do Maranhão (Federal University of Maranhão), São Luís, MA; [2] Hospital Adventista Silvestre, Rio de Janeiro, RJ, Brazil; [3]Universidade de São Paulo (University of São Paulo), São Paulo, SP, Brazil.

Complete tumor resection in the liver is the only chance to obtain long-term survival in patients with hepatic tumor or metastasis from other primary cancers. In patients with a large load of tumor within the liver, multiple strategies have been employed to improve resection, especially when a small liver remnant is expected. Staged hepatectomies, in

- ❑ Discutir em reunião multidisciplinar
- ❑ Remanescente < 30%
- ❑ Resgate após falha na embolização de veia porta
- ❑ Evitar em colangiocarcinoma
- ❑ Reduzir morbidade e mortalidade

❑ Risk score

Torres OJ, et al. Arq Bras Cir Dig 2015;28:155-6

International Journal of Surgery Case Reports 26 (2016) 113–117

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journal homepage: www.casereports.com

The ALPPS procedure for hepatocellular carcinoma larger than 10 centimeters

Orlando Jorge M. Torres*, Rodrigo Rodrigues Vasques, Thiago Henrique S. Silva, Miguel Eugenio L. Castelo-Branco, Camila Cristina S. Torres

Department of Digestive Surgery, Federal University of Maranhão, São Luiz, MA, Brazil

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ABSTRACT

INTRODUCTION: The only means of achieving long-term survival in hepatocellular carcinoma is complete tumor resection or liver transplantation. Patients with large hepatocellular carcinomas are currently

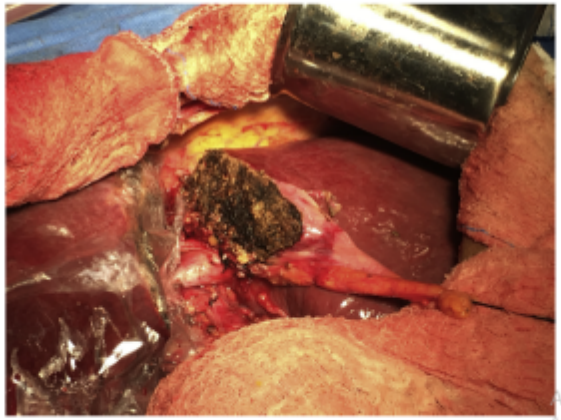


Fig. 2. ALPPS first procedure with plastic bag.

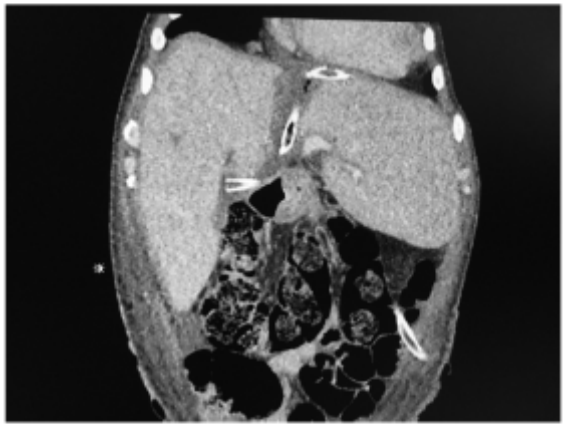


Fig. 3. CT 15 days after the first procedure.

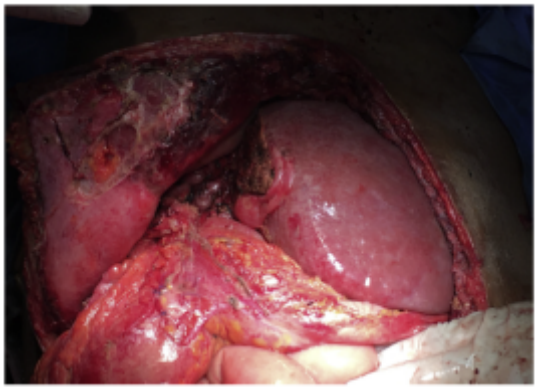
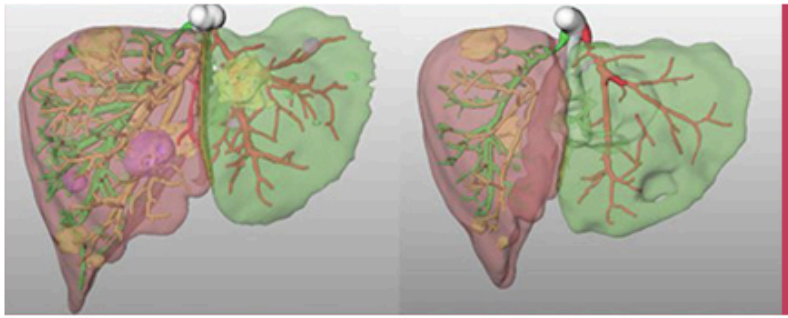


Fig. 4. Final aspect of the liver remnant.



1 st International Consensus Meeting on ALPPS

February 27th and 28th 2015, Hamburg, Germany

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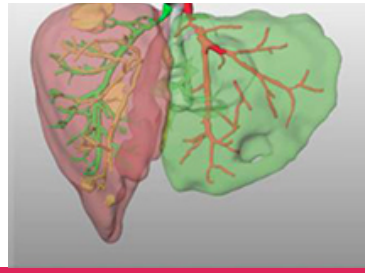
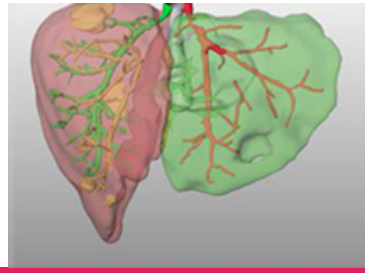


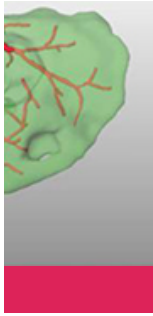
Torres OJ, Herman P, Enne M, Machado M, Fernandes E. Hamburg 2015

INDICAÇÕES/SELEÇÃO



- Metástase hepática colo-retal extensa
- ALPPS de resgate (fracasso da EVP)
- Doença bilobar (contra-indicação para EVP)
- Extensão tumoral inesperada
- Remanescente hepático < 30% (ou < 0,5% do peso corporal)
- Hepatectomia direita ampliada
- Necessidade de grande hipertrofia
- Idade ≤ 60 anos
- Margem do tumor próximo ao remanescente

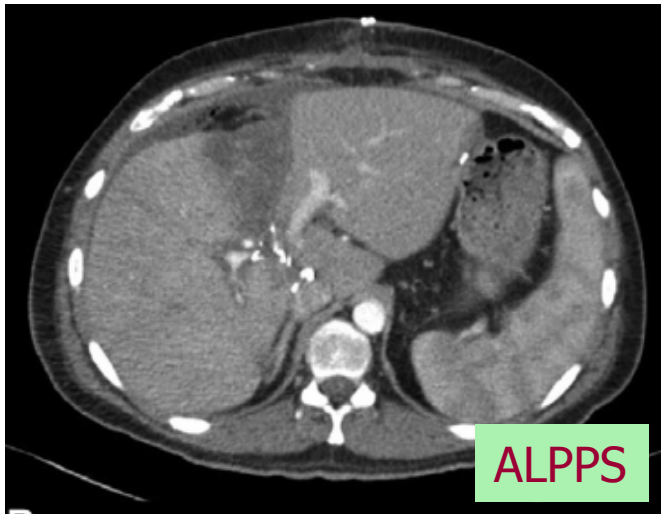
Ardiles V, et al. In Torres OJ. 2015. In press

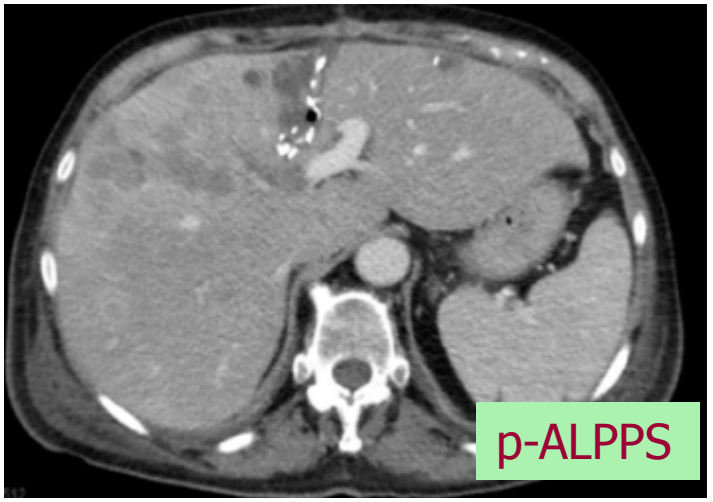


Is Partial-ALPPS Safer Than ALPPS?

A Single-Center Experience

Henrik Petrowsky, MD, FACS, Georg Györi, MD,* Michelle de Oliveira, MD, FACS,* Mickaël Lesurtel, MD, PhD,* and Pierre-Alain Clavien, MD, PhD, FACS†*





- 50- 80% transecção
- Nível das veias hepáticas
- Utilizar abordagem anterior
- Tumor localizado dentro ou próximo da linha de transecção

Petrowsky H, et al. Ann Surg 2015;261:e90-e92

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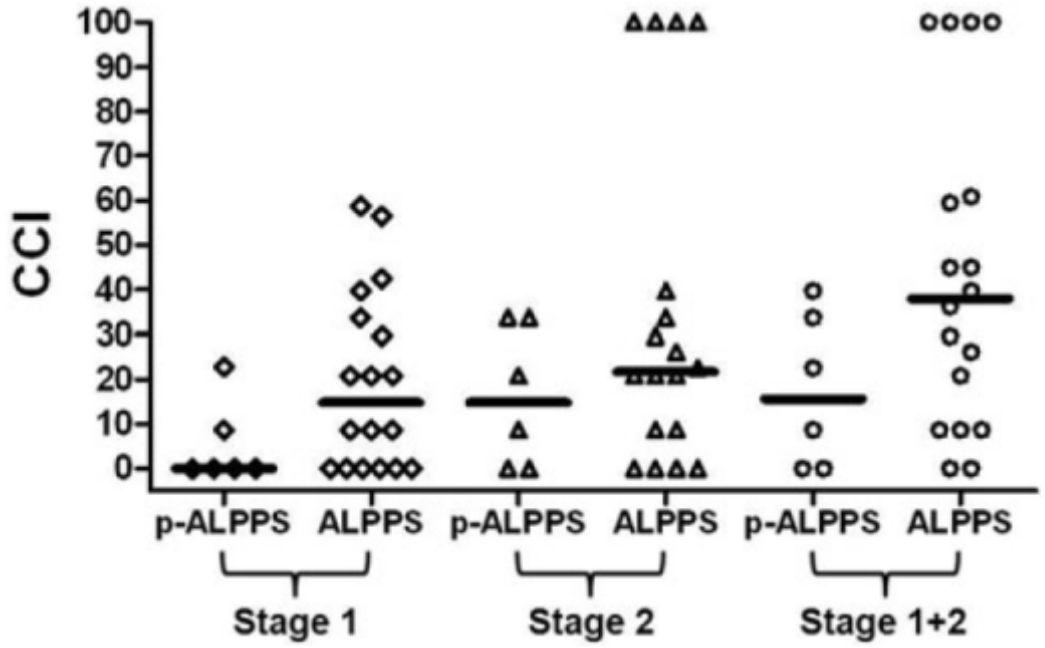

Petrowsky H, et al. Ann Surg 2015;261:e90-e92

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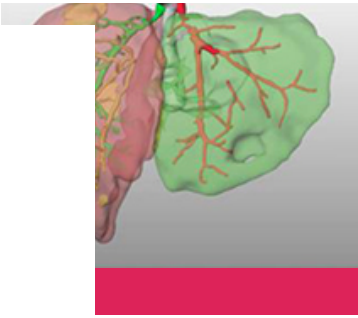
	p-ALPPS (%)	ALPPS (%)
Hipertrophy	60	61
Severe complications	0	33
Mortality	0	22

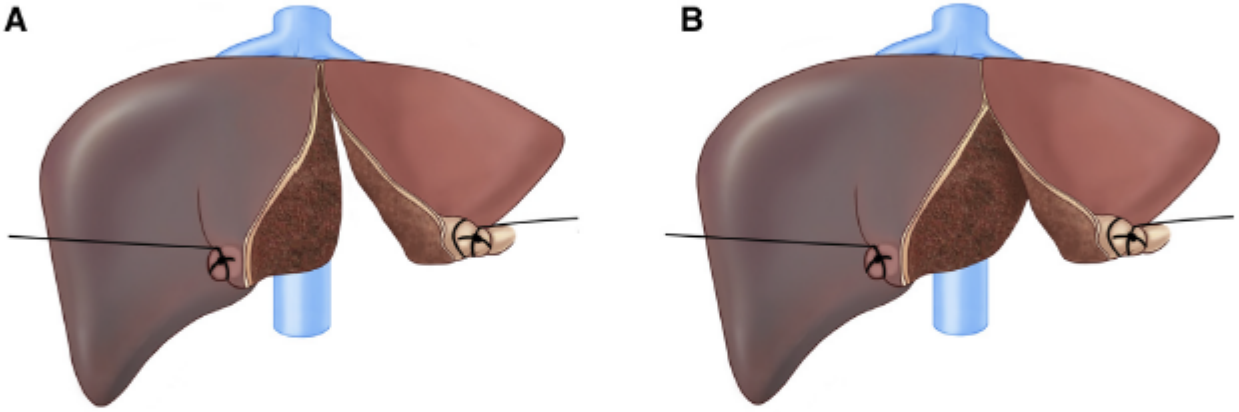
❑Risco

Petrowsky H, et al. Ann Surg 2015;261:e90-e92

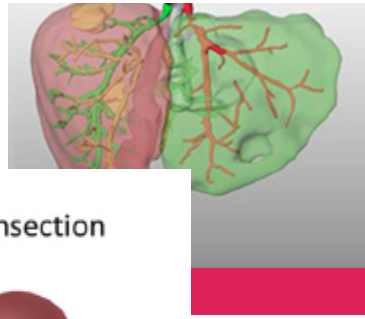


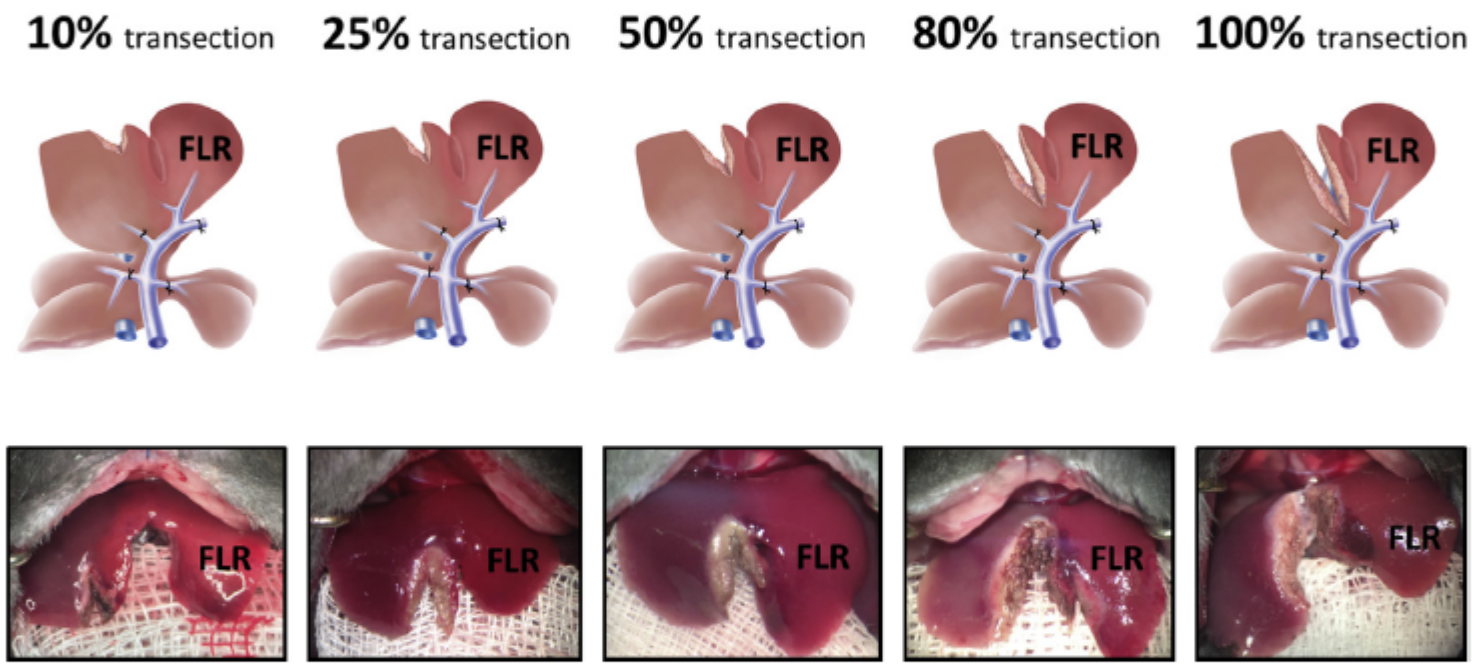
How much liver needs to be transected in ALPPS? A translational study investigating the concept of less invasiveness

Michael Linecker, MD,[a,†] Patryk Kambakamba, MD,[a,†] Cäcilia S. Reiner, MD,[b] Thi Dan Linh Nguyen-Kim, MD,[b] Gregor A. Stavrou, MD,[c,d] Robert M. Jenner, MD,[c] Karl J. Oldhafer, MD,[c,d] Bergthor Björnsson, MD, PhD,[e] Andrea Schlegel, MD,[a] Georg Györi, MD,[a] Marcel André Schneider, MD,[a] Mickael Lesurtel, MD, PhD,[a,f] Pierre-Alain Clavien, MD, PhD,[a] *and* Henrik Petrowsky, MD,[a] *Zurich, Switzerland, Hamburg, Germany, and Linköping, Sweden*



Linecker M, et al. Surgery 2016





- ≥ 50%
- Less invasive surgery

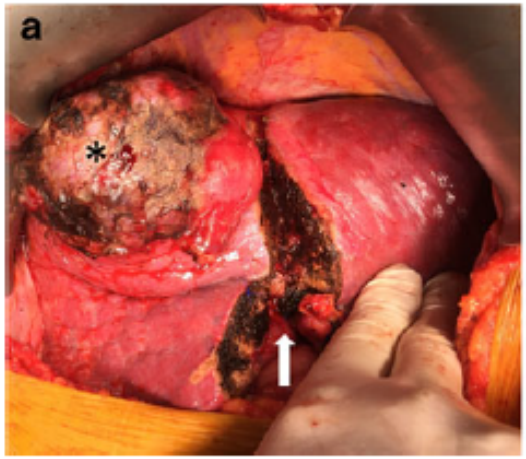
Linecker M, et al. Surgery 2016

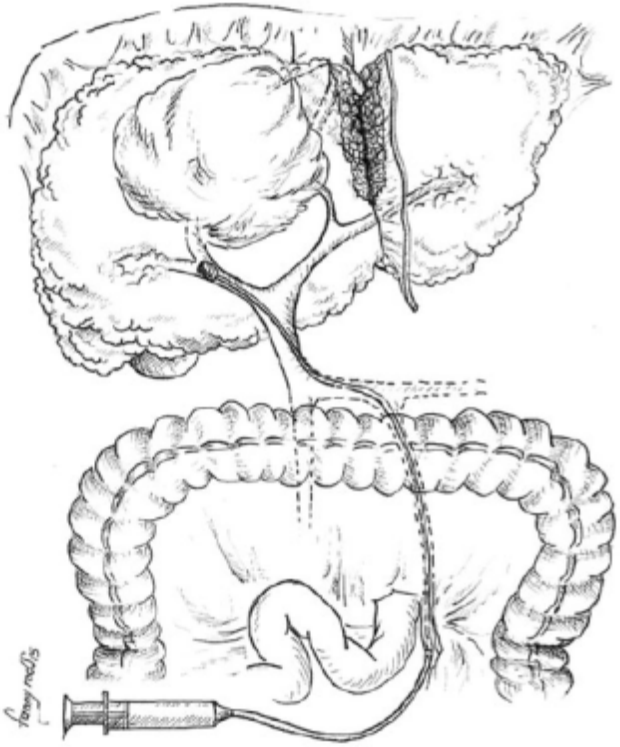
Langenbecks Arch Surg
DOI 10.1007/s00423-016-1424-1

HOW-I-DO-IT ARTICLES

Inverting the ALPPS paradigm by minimizing first stage impact: the Mini-ALPPS technique

Eduardo de Santibañes[1,2] · Fernando A. Alvarez[1] · Victoria Ardiles[1] · Juan Pekolj[1] · Martin de Santibañes[1]





de Santibanes E, et al. Langenbecks Arch Surg 2016

Langenbecks Arch Surg
DOI 10.1007/s00423-016-1424-1

HOW-I-DO-IT ARTICLES

Inverting the ALPPS paradigm by minimizing first stage impact: the Mini-ALPPS technique

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Table 1 Patients characteristics and volumetric data

Patient	Sex	Age	Diagnosis	Preop chemotherapy (cycles)	Hepatectomy type	FLR/TLV (%) pre	FLR pre (cc)	FLR post (cc)	Hypertrophy (%)	KGR (cc/day)	Interval (days)[a]
1	Female	66	HCC	–	RTS	40	510	778	52.5	26.8	10
2	Female	71	CRLM	FOLFOX (6)	RTS + FLR clean-up	23	235	420	78.7	12.3	15
3	Female	44	CRLM	FOLFOX + BEV (6)	RTS + FLR clean-up	27	300	427	70	9.8	13
4	Male	61	CRLM	FOLFOX (4)/ FOLFIRI + BEV (3)	RH + FLR clean-up	28	530	792	49.4	43.6	6

HCC hepatocellular carcinoma, *CRLM* colorectal liver metastases, *BEV* bevacizumab, *RTS* right trisectionectomy, *RH* right hepatectomy, *FLR* future liver remnant, *KGR* Kinetic growth rate

[a] Internal between the first stage and the last volumetric evaluation before the second stage

de Santibanes E, et al. Langenbecks Arch Surg 2016

The ALPPS Risk Score

Avoiding Futile Use of ALPPS

Michael Linecker, MD, Gregor A. Stavrou, MD,†‡ Karl J. Oldhafer, MD,†‡ Robert M. Jenner, MD,†*
Burkhardt Seifert, PhD,§ Georg Lurje, MD,¶ Jan Bednarsch, MD,¶ Ulf Neumann, MD,¶
*Ivan Capobianco, MD,|| Silvio Nadalin, MD,|| Ricardo Robles-Campos, MD,***
*Eduardo de Santibañes, MD, PhD, FACS,†† Massimo Malagó, MD,‡‡ Mickael Lesurtel, MD, PhD,**
Pierre-Alain Clavien, MD, PhD, FACS, and Henrik Petrowsky, MD, FACS**

Objectives: To create a prediction model identifying futile outcome in

Conclusions: Both models have an excellent prediction to assess the individual risk of futile outcome after ALPPS surgery and can be used to avoid

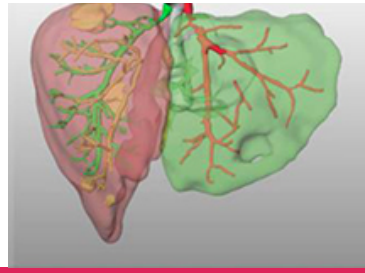
Linecker M, et al. Ann Surg 2016;264:763-71

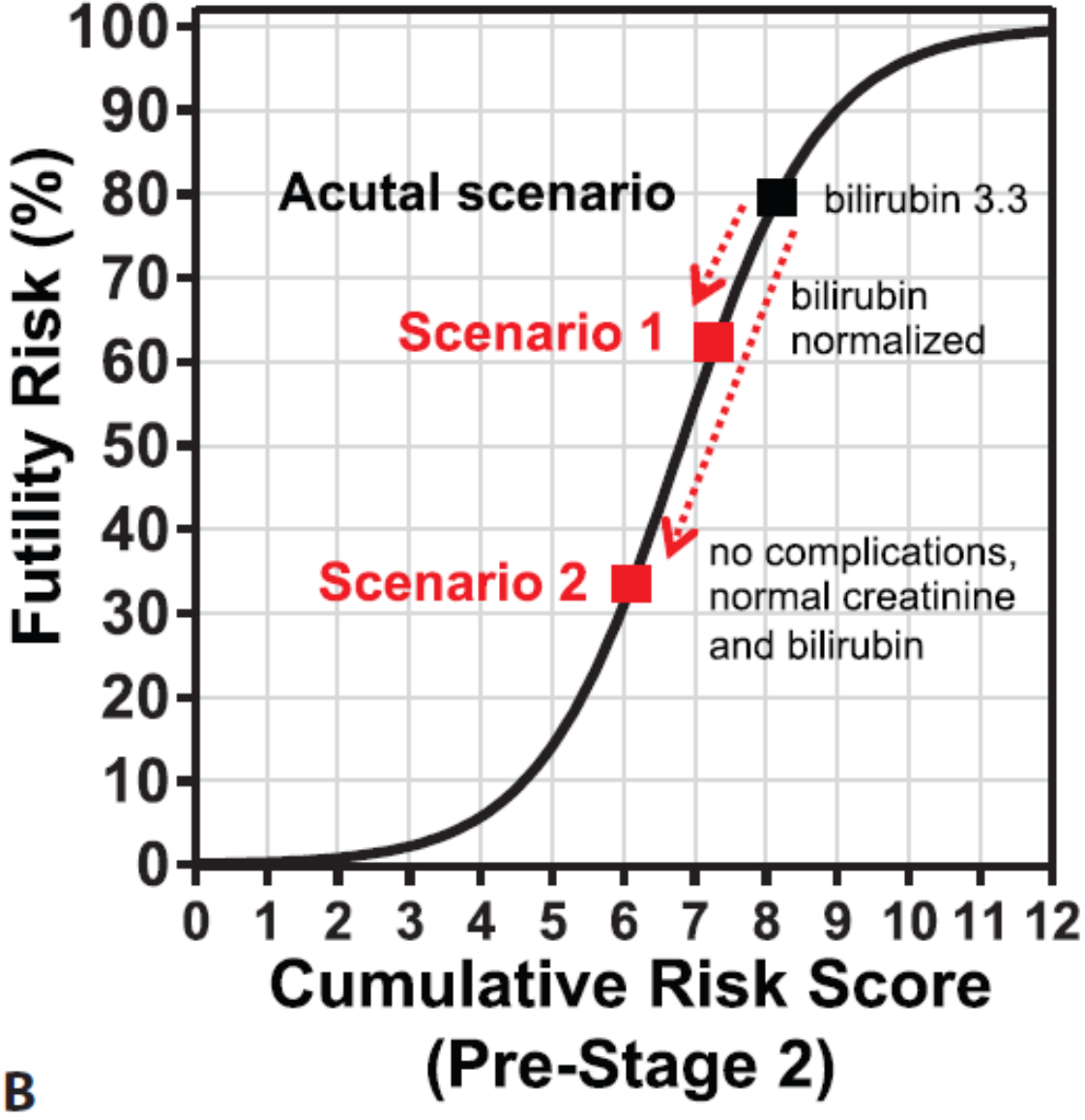
TABLE 3. Risk Modeling

	Risk Points	Regression Coefficient	Odds Ratio (95% CI)	P
Pre-stage 1 variables*				
Tumor type†				
CRLM (reference)	0	0.000	1.000	
Non-CRLM/nonbiliary	1	0.655	1.925 (0.808–4.585)	0.139
Biliary	2	1.326	3.767 (1.800–7.882)	<0.001
Age ≥67 yr	3	1.735	5.668 (2.843–11.30)	<0.001
Intercept pre-stage 1		−5.3		
Pre-stage 2 variables‡				
Pre-stage 1 score, per point	0.66	0.665	1.925 (1.527–2.426)	<0.001
Interstage complications ≥3b	1.2	1.209	3.350 (1.280–8.769)	0.014
Pre-stage 2 bilirubin§	1.5	1.496	4.439 (1.699–11.60)	0.002
Pre-stage 2 creatinine‖	1.7	1.696	5.454 (1.606–18.52)	0.007
Intercept pre-stage 2		−6.8		

- Pre-stage I
  - Biliary surgery (Cholangiocarcinoma)
  - Age ≥ 67 yr
- Pre-stage II
  - Complications ≥ 3b
  - Bilirubin
  - Creatinine

Linecker M, et al. Ann Surg 2016;264:763-71





B

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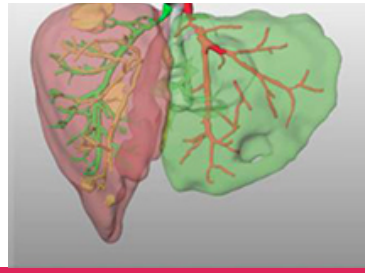
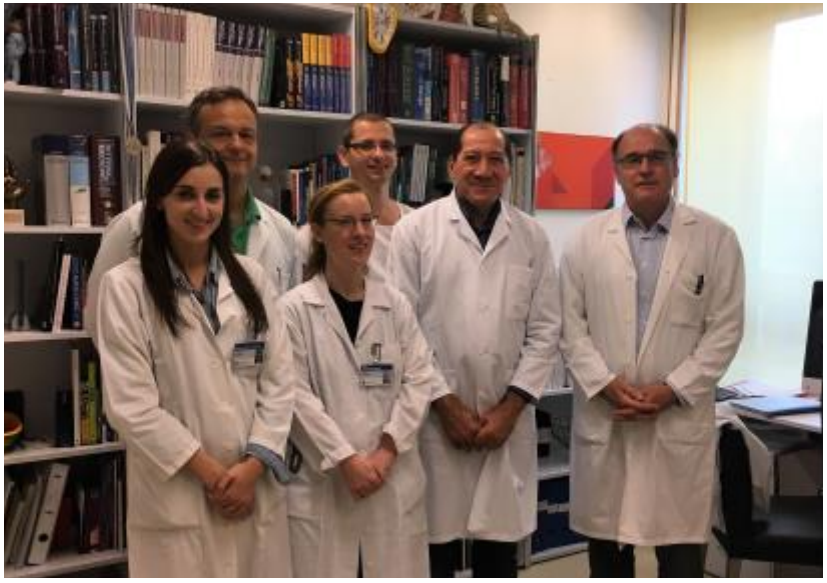


Risk	Score
5%	3.9
10%	4.7
20%	5.5
50%	6.9

Linecker M, et al. Ann Surg 2016;264:763-71


ALPES SUÍÇOS



12th Biennial E-AHPBA Congress 2017
European-African Hepato Pancreato Biliary Association
23 May – 26 May, 2017

Liver surgery: Clinical
FP26.08

Performance Validation of the ALPPS Risk Model

M. Linecker[1], P. Kambakamba[1], A. Schlegel[2], P. Muiesan[2], I. Capobianco[3], S. Nadalin[3], O. Torres[4], A. Mehrabi[5], G.A. Stavrou[6, 7], K.J. Oldhafer[6, 7], G. Lurje[8], U. Neumann[8], R. Robles-Campos[9], R. Hernandez-Alejandro[10, 11], M. Malago[12], E. De Santibanes[13], P.-A. Clavien[1], H. Petrowsky[1]
[1]University Hospital Zurich, Department of Surgery and Transplantation, Zurich, Switzerland, [2]University Hospitals Birmingham NHS Foundation Trust, Liver Unit, Queen Elizabeth Hospital Birmingham, Birmingham, United Kingdom, [3]University Hospital Tübingen, Department for General, Visceral and Transplant Surgery, Tübingen, Germany, [4]Universidade Federal do Maranhão, Department of Surgery, Sao Luis-MA, Brazil, [5]University of Heidelberg, Department of General, Visceral, and Transplantation Surgery, Heidelberg, Germany, [6]Asklepios Hospital Barmbek, Department of General and Abdominal Surgery, Hamburg, Germany, [7]Semmelweis University Budapest, Campus Hamburg, Germany, [8]University Hospital Aachen, RWTH Aachen, Department of General, Visceral and Transplantation Surgery, Aachen, Germany, [9]Virgen de la Arrixaca Clinic and University Hospital, Department of Surgery and Liver and Pancreas Transplantation, Murci, Spain, [10]London Health Sciences Centre, Department of Surgery, Division of HPB Surgery and Liver Transplantation, London, Ontario, Canada, [11]University of Rochester, Division of Transplantation, Hepatobiliary Surgery, Rochester, United States, [12]University College London, Royal Free Hospitals, Department of HPB- and Liver Transplantation Surgery, London, United Kingdom, [13]Italian Hospital Buenos Aires, Department of Surgery, Division of HPB Surgery, Liver Transplant Unit, Buenos Aires, Argentina

- Autores de 8 países (1 Brasileiro)
- Estratégia para tornar o procedimento mais seguro

Linecker M, et al. E-AHPBA 2017

ABCDDV/898

ABCD Arq Bras Cir Dig
2013;26(1):40-43

Original Article

ASSOCIATING LIVER PARTITION AND PORTAL VEIN LIGATION FOR STAGED HEPATECTOMY (ALPPS): THE BRAZILIAN EXPERIENCE

Ligadura da veia porta associada à bipartição do fígado para hepatectomia em dois estágios (ALPPS): experiência Brasileira

Orlando Jorge Martins **TORRES**[1], Eduardo de Souza Martins **FERNANDES**[2] Cassio Virgilio Cavalcante **OLIVEIRA**[3], Cristiano Xavier **LIMA**[4], Fabio Luiz **WAECHTER**[5], Jose Maria Assunção **MORAES-JUNIOR**[1], Marcelo Moura **LINHARES**[6], Rinaldo Danese **PINTO**[7], Paulo **HERMAN**[8], Marcel Autran Cesar **MACHADO**[9]

- 83 yr
- Sarcoma
- Additional surgery:
  - Colectomy
  - Pancreatoduodenectomy

- 12.8 % Mortality

Torres OJ, et al. Arq Bras Cir Dig 2013;26:40-3

ABCD Arq Bras Cir Dig
2013;26(1):40-43

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- High risk score
- 4 patients

TABLE 1 - Complications after ALPPS approach

Complications	n	%
Surgical site infection	8	20.5
Ascites	5	12.8
Biliary fistula	4	10.2
Pneumonia	4	10.2
Abdominal hernia	4	10.2
Sepsis	3	7.7
Acute renal failure	2	5.1
Bile duct injury	1	2.5
Hepatic artery thrombosis	1	2.5
Acute liver failure	1	2.5
Others	9	23.0

Torres OJ, et al. Arq Bras Cir Dig 2013;26:40-3


"Por do sol na lagoa azul"
Lençóis Maranhenses
Obrigado!