

# MÁSTER EN HEPATOLOGÍA



**Asignatura: Trasplante Hepático**

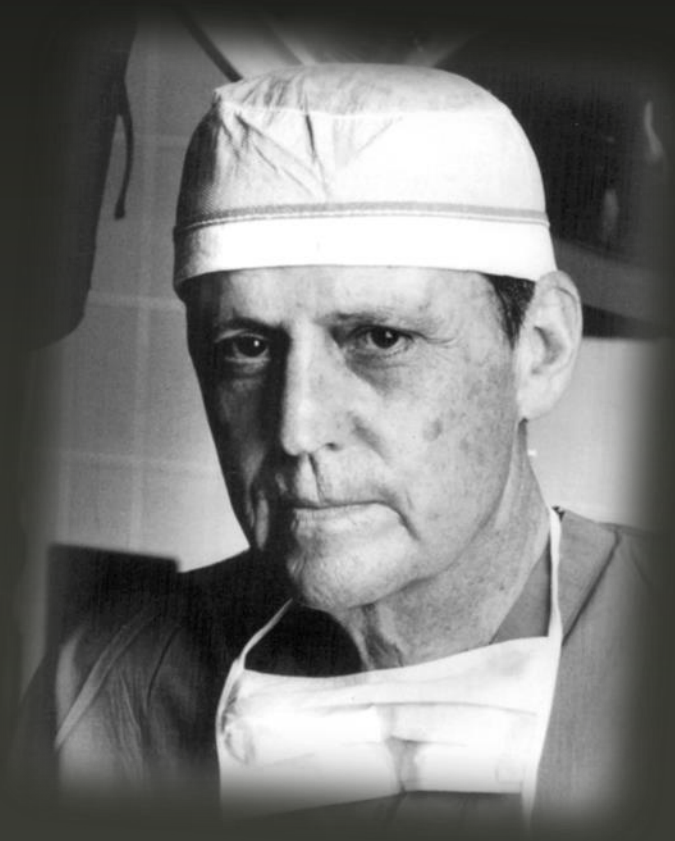
“¿Qué debe saber un hepatólogo de la técnica  
quirúrgica?  
Modalidades alternativas de donación”

Javier Nuño

Hospital Universitario Ramón y Cajal, Madrid



2014



# Trasplante Hepático en Europa

ELITA



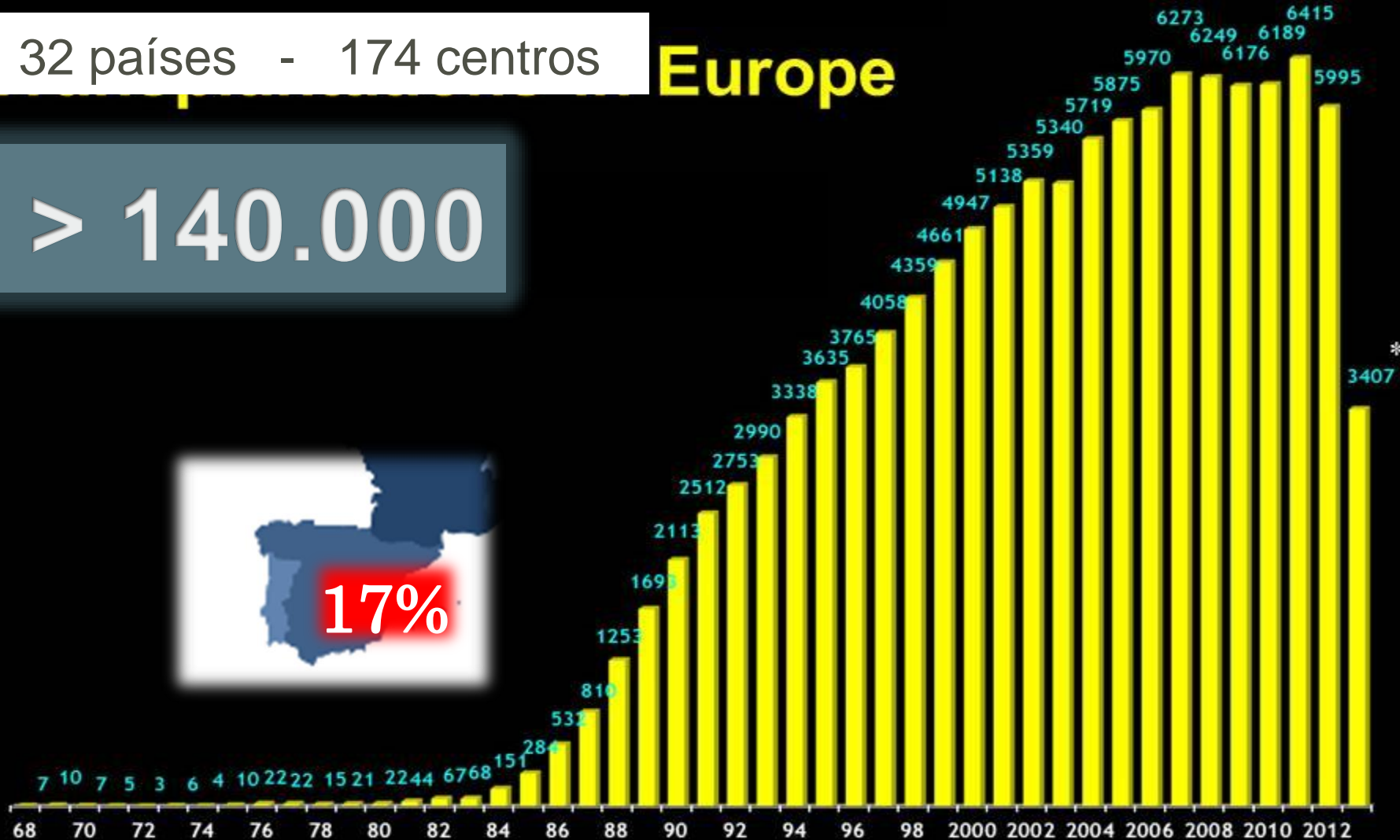
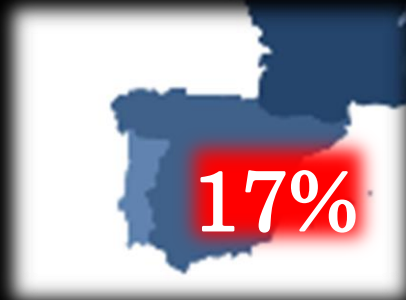
European  
Liver  
Transplant  
Registry

12/2013

32 países - 174 centros

## Europe

> 140.000



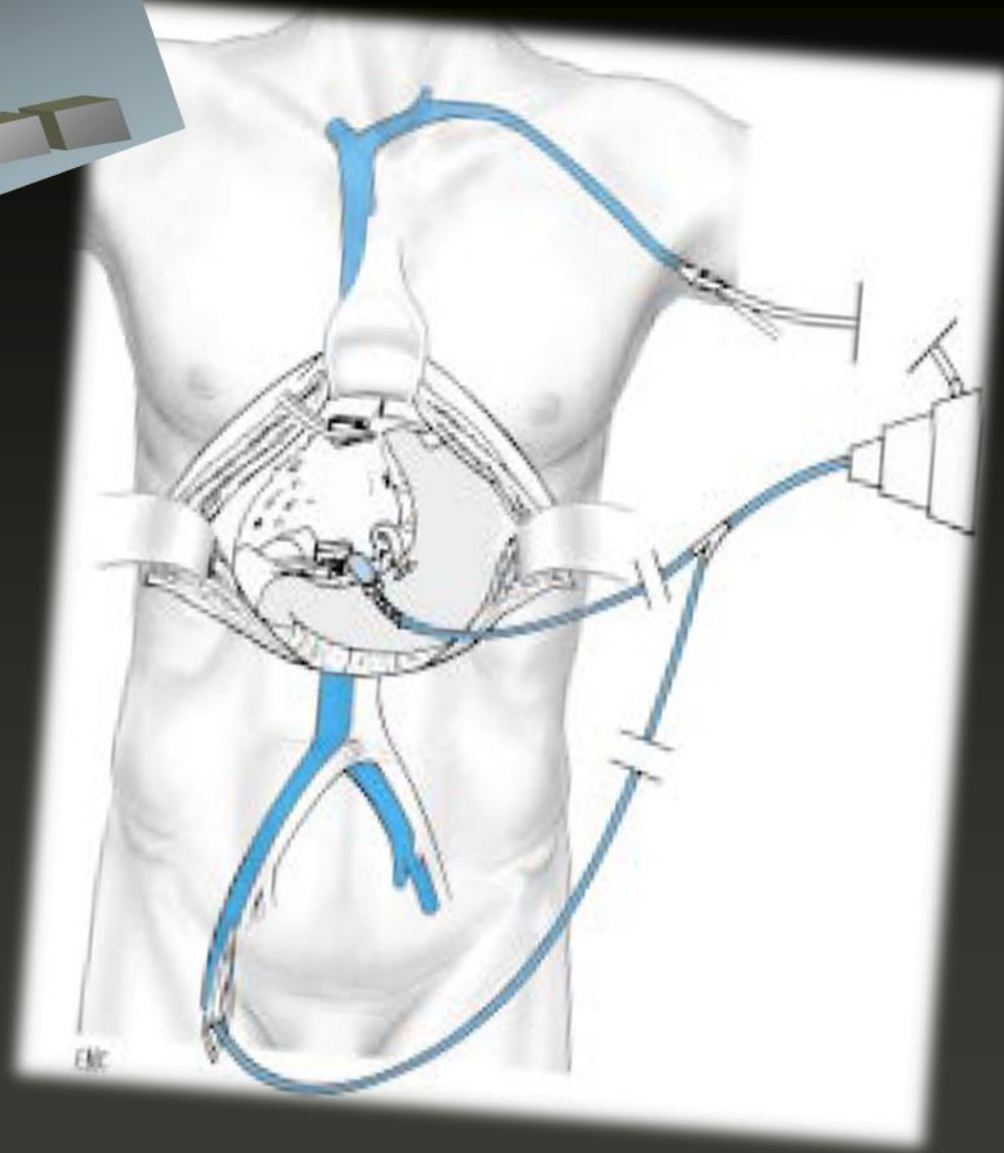
## **Review Article**

# The evolution of surgical techniques in clinical liver transplantation. A review

Polak WG, Peeters PMJG, Slooff MJH. The evolution of surgical techniques in clinical liver transplantation. A review.  
*Clin Transplant* 2009; 23: 546–564. © 2009 John Wiley & Sons A/S.

Wojciech G. Polak, Paul M.J.G. Peeters and Maarten J.H. Slooff  
Department of Surgery, Division of Hepatobiliary

80



**Bypass veno-venoso**



ELSEVIER

*Transplantation Proceedings*, 43, 1327–1333 (2011)

## Orthotopic Liver Transplantation Without Venovenous Bypass Using the Conventional and Piggyback Techniques

P.S. Vieira de Melo, L.E.C. Miranda, L.L. Batista, O.C.L.F. Neto, A.G. Amorim, B.D. Sabat, H.L.L. Cândido, L.C.L. Adeodato, R.S. Lemos, G.L. Carvalho, and C.M. Lacerda

Langenbeck's Arch Surg (2000) 385:350–356  
DOI 10.1007/s004230000149

ORIGINAL

U.J. Hesse  
F. Berrevoet  
R. Troisi  
P. Pattyn  
E. Mortier  
J. Decruyenaere  
B. de Hemptinne

**Hepato-venous  
liver transpl  
of the reci  
and veno-v**

two were eventually fatal. *Conclusion:* Preservation of the recipient's vena cava and LLC can reduce, but not avoid, the requirement for venovenous bypass. In orthotopic liver transplantation, postoperative hemorrhage, as measured by surgical revisions and requirement for blood products, is significantly reduced with LLC with and without bypass.

# Insertion and management of percutaneous veno-venous bypass cannula for liver transplantation: a reference for transplant anesthesiologists

Sakai T, Gligor S, Diulus J, McAfee R, Marsh JW, Planinsic RM.  
Insertion and management of percutaneous veno-venous bypass cannula for  
liver transplantation: a reference for transplant anesthesiologists.  
*Clin Transplant* 2010; 24: 585–591. © 2009 John Wiley & Sons A/S.

Tetsuro Sakai<sup>a</sup>, Silviu Gligor<sup>b\*</sup>,  
John Diulus<sup>c</sup>, Richard McAfee<sup>d</sup>,  
J. Wallis Marsh<sup>e</sup> and  
Raymond M. Planinsic<sup>f</sup>



# Veno-venous bypass versus none for liver transplantation (Review)



THE COCHRANE  
COLLABORATION®

Gurusamy KS, Koti R, Pamecha V, Davidson BR

*The Cochrane Library 2011, Issue 3*

## AUTHORS' CONCLUSIONS

### Implications for practice

There is **no evidence to support or refute the routine use** of veno-venous bypass in liver transplantation.

There is no evidence to prefer any particular technique of veno-venous bypass in liver transplantation. However, the open technique appears to **increase the operating time** without evidence of benefit over percutaneous approach.

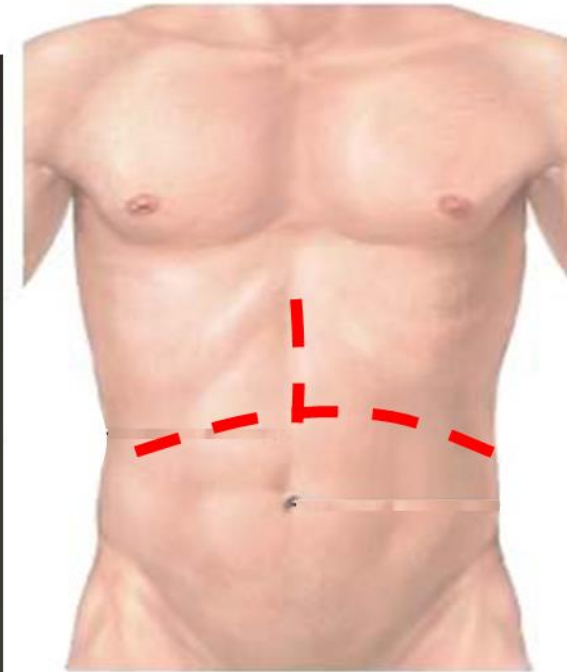
LETTER TO THE EDITOR

## Reducing the incidence of incisional hernia after liver transplantation

doi:10.1111/j.1432-2277.2009.00992.x

**Gastaca M, Valdivieso A, Ruiz P, de Urbina J**

Transpl Int 2010; 23(5):559-60



Cirugías  
previas



evolution of surgical techniques in  
cal liver transplantation. A review



ORIGINAL ARTICLE

HPB 2011, 13, 692–698

# Survey of adult liver transplantation techniques (SALT): an international study of current practices in deceased donor liver transplantation

Michael D. Kluger<sup>1,2</sup>, Riccardo Memeo<sup>2</sup>, Alexis Laurent<sup>2</sup>, Claude Tayar<sup>2</sup> & Daniel Cherqui<sup>1,2</sup>

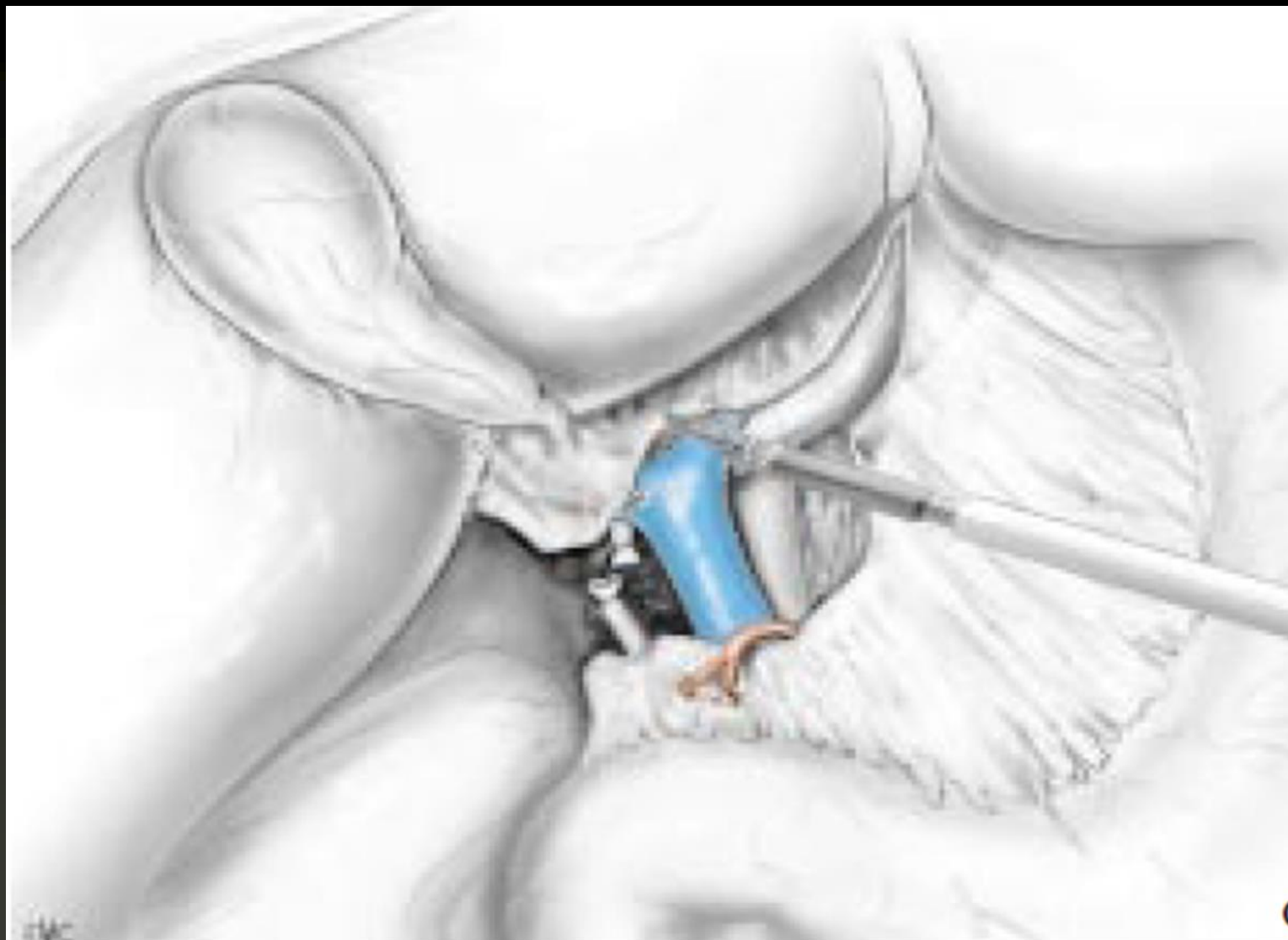
<sup>1</sup>Section of Hepatobiliary Surgery and Liver Transplantation, New York Presbyterian Hospital – Weill-Cornell Medical Center, New York, NY, USA,  
and <sup>2</sup>Department of Digestive and Hepatobiliary Surgery and Liver Transplantation, Hôpital Henri Mondor, Créteil, France



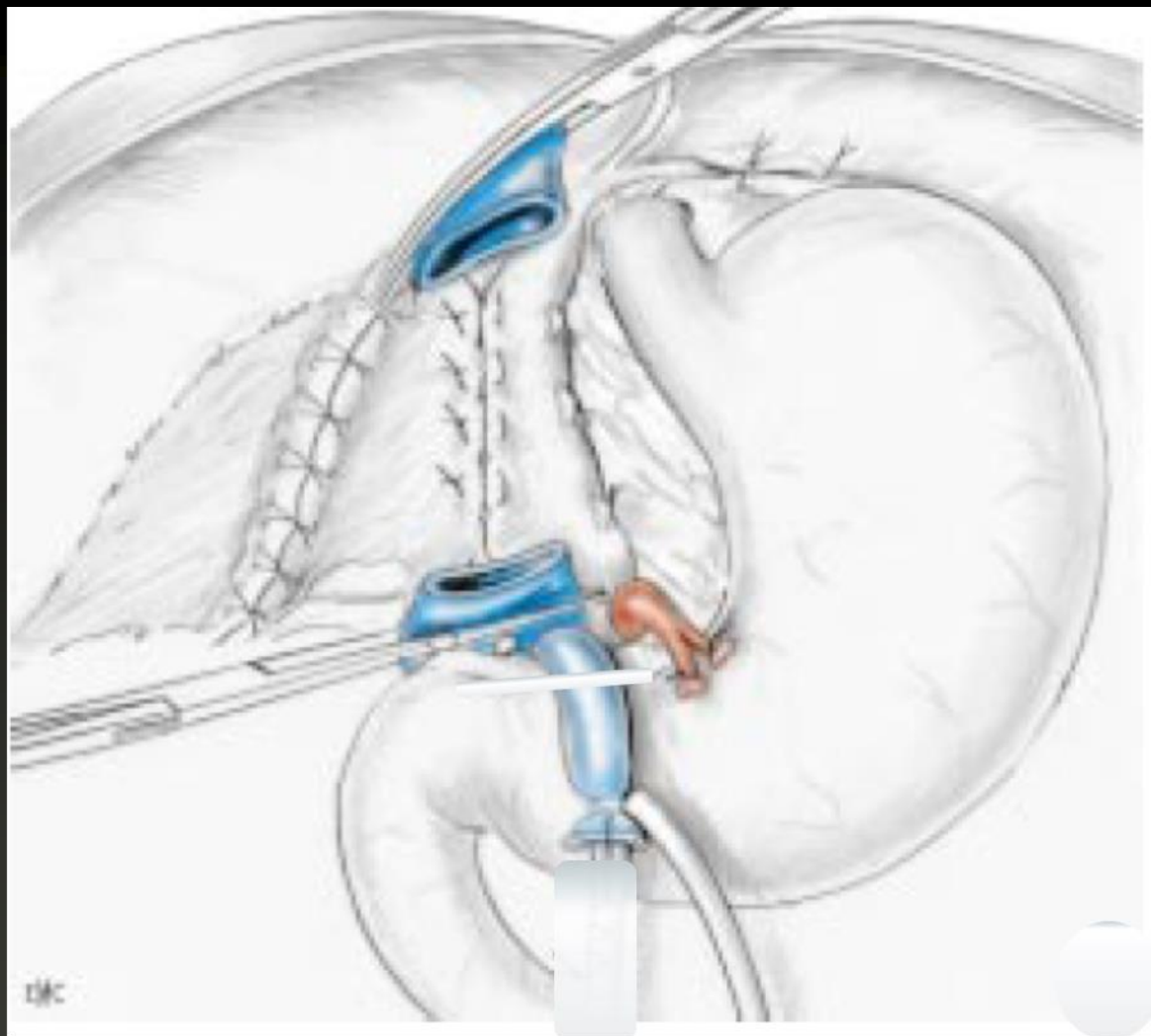
# Técnica Quirúrgica

- 1.- Laparotomía subcostal bilateral
- 2.- Disección del hilio hepático y de la triada portal
- 3.- Disección de la vena cava infrahepática
- 4.- Disección de la vena cava suprahepática
- 5.- Hepatectomía con / sin preservación de V. Cava
- 6.- Anastomosis vasculares
- 7.- Anastomosis biliar



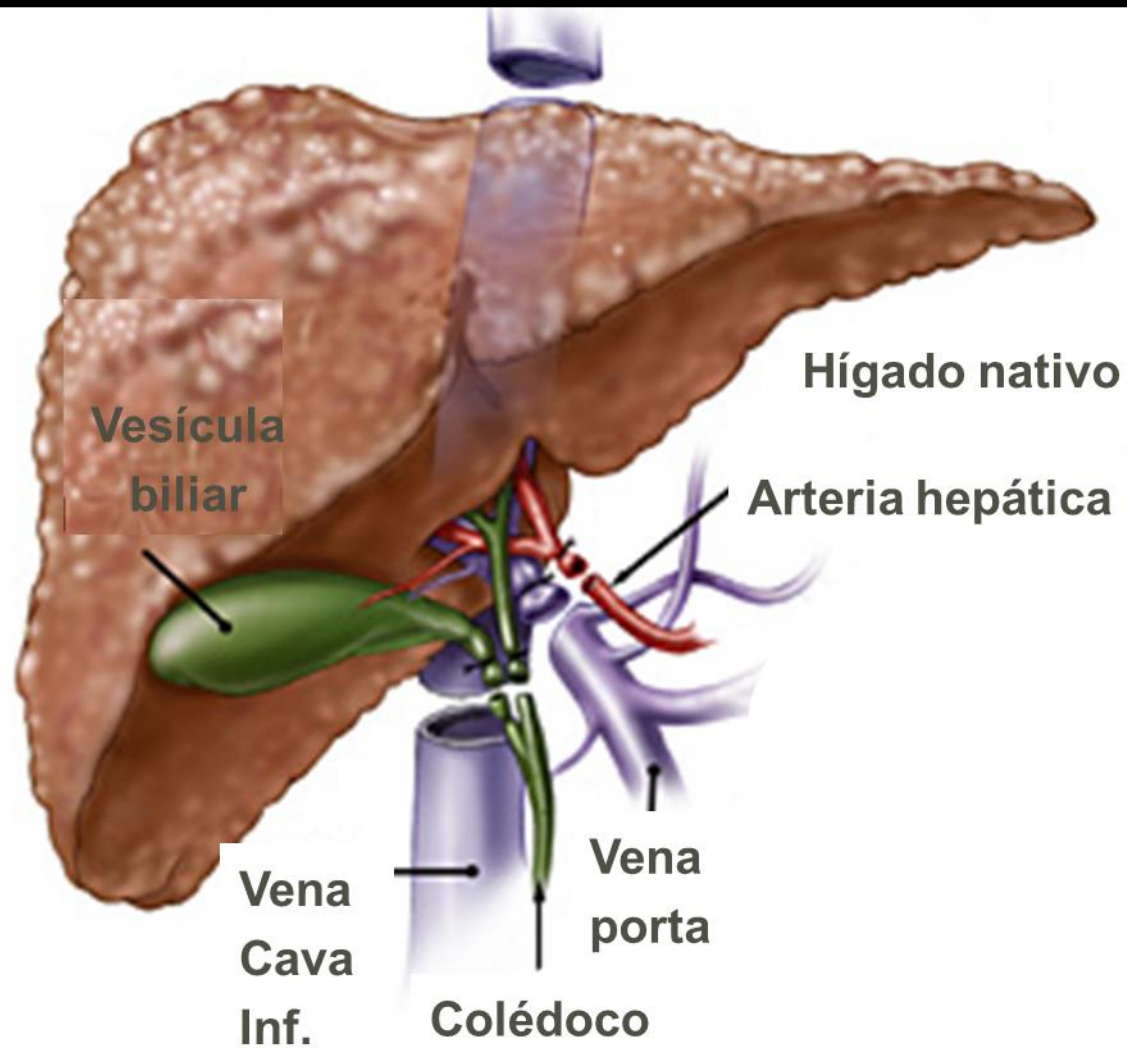


**Dissección hiliar**

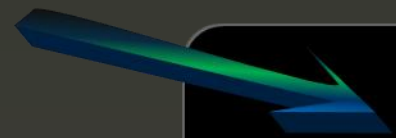
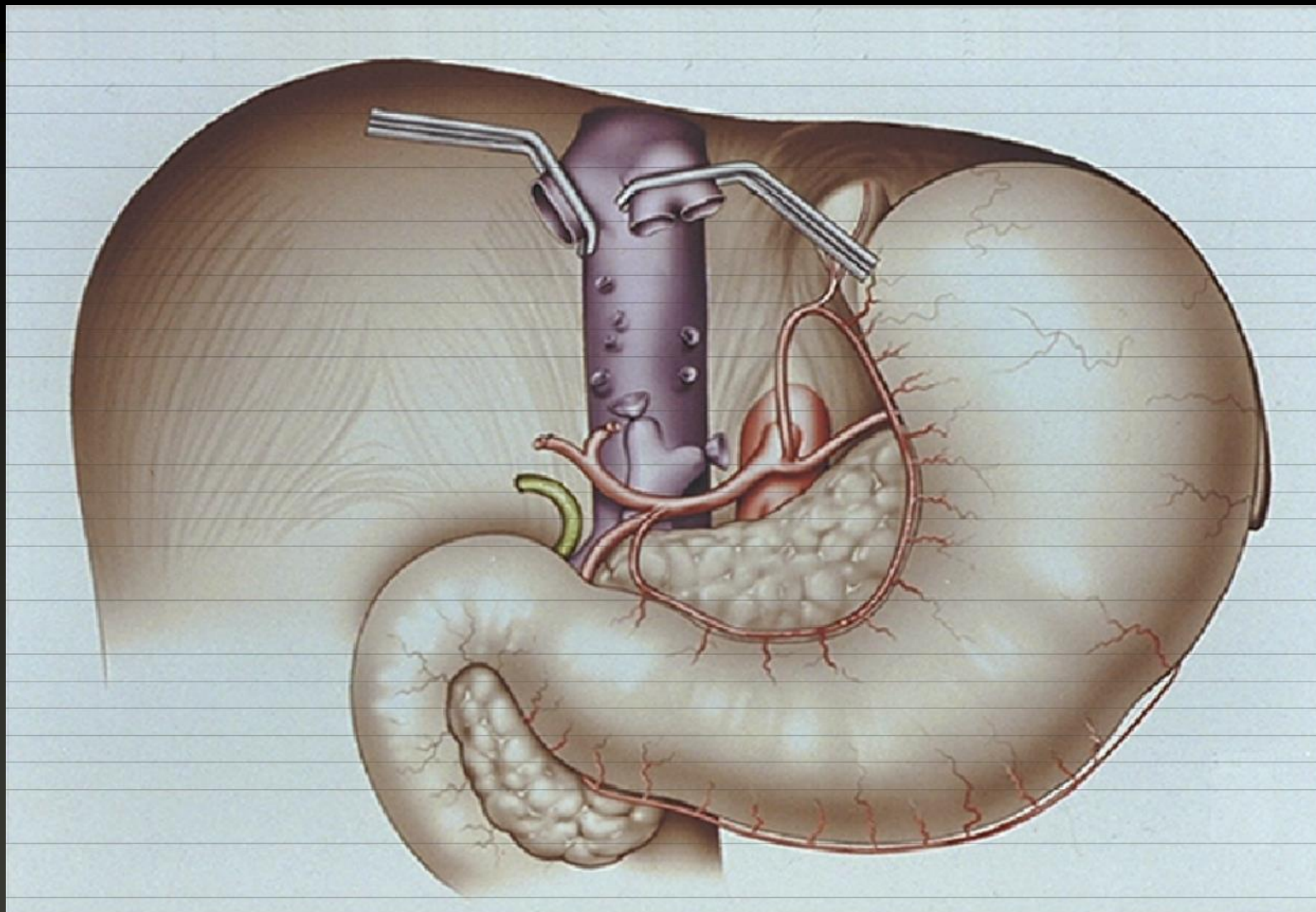


**Técnica clásica**

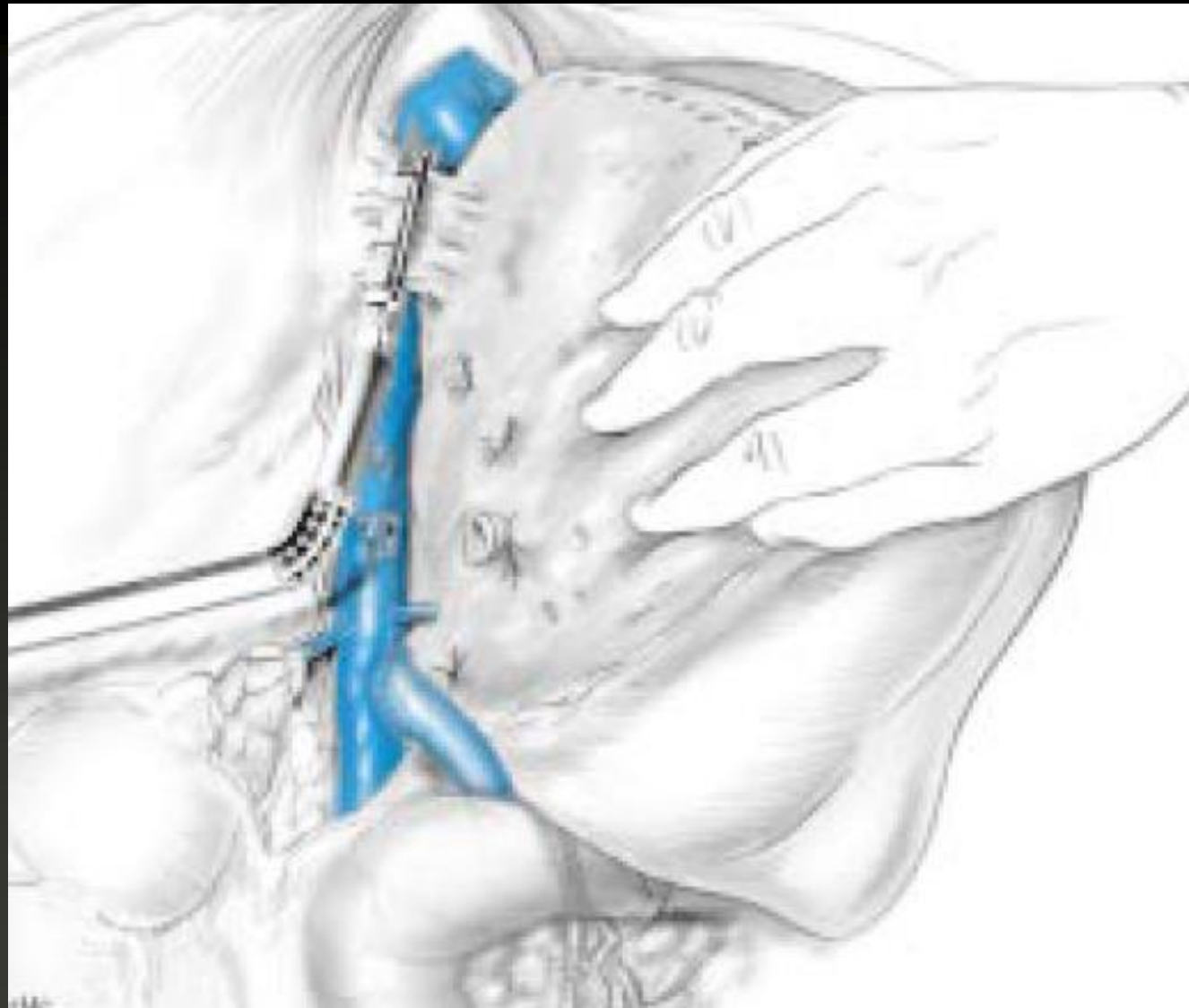




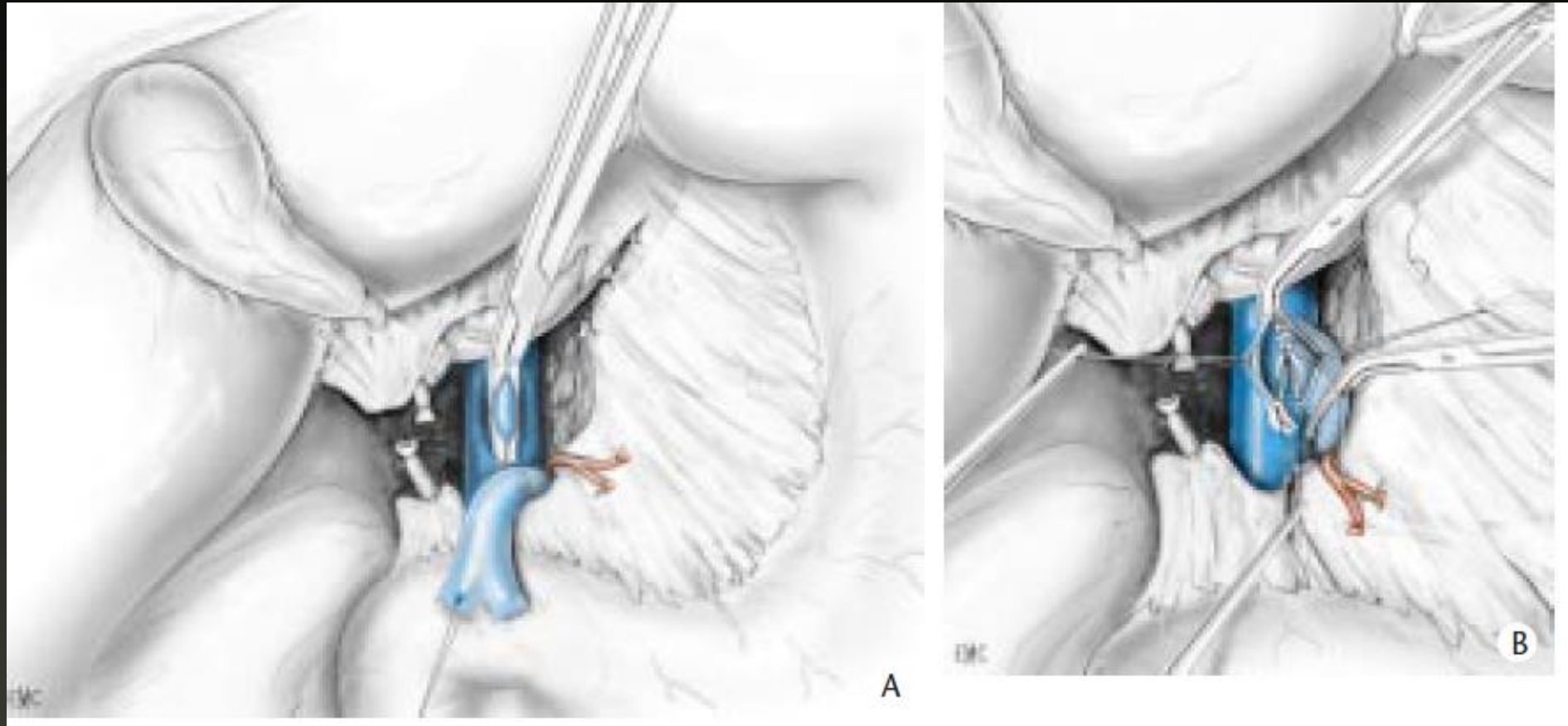
Técnica clásica



Piggyback



**Preservación de v. cava**



# Anastomosis porto-cava

# Liver Transplantation with Preservation of the Inferior Vena Cava: Lessons Learned through 2,000 Cases

David M Levi, MD, FACS, MCh

LIVER TRANSPLANTATION 15:466-474, 2009

ORIGINAL ARTICLE

## A Single-Center Experience of 500 Liver Transplants Using the Modified Piggyback Technique by Belghiti

Arianeb Mehrabi, Zhoobin A. Mood, Hamidreza Fonouni, Arash Kashfi, Norbert Hillebrand, Sascha A. Müller, Jens Encke, Markus W. Büchler, and Jan Schmidt  
Department of General, Visceral, and Transplantation Surgery, University of Heidelberg, Heidelberg, Germany

ORIGINAL ARTICLE

## **Temporary intraoperative porto-caval shunt: useless or beneficial in piggy back liver transplantation?**

Sebastian Pratschke,<sup>1</sup> Georgios Meimarakis,<sup>1</sup> Christiane L. Demant,<sup>1</sup> Reinhart Zachoval,<sup>3</sup> Michael P. Manns,<sup>2</sup> and Wolfgang R. J. Schaefer,<sup>1</sup>

LIVER TRANSPLANTATION 14:1414-1419, 2008

REVIEW

## **Temporary Portocaval Shunt in Orthotopic Liver Transplantation: Need for a Standardized Approach?**

**Diego Davila, Adam Bartlett, and Nigel Heaton**

*King's College London School of Medicine at Denmark Hill, Institute of Liver Studies, King's College Hospital, Denmark Hill, Camberwell, London, United Kingdom*

[Intervention Review]

## Techniques of flushing and reperfusion for liver transplantation

Kurinchi Selvan Gurusamy<sup>1</sup>, Prashant Naik<sup>2</sup>, Mahmoud Abu-Amara<sup>3</sup>, Barry Fuller<sup>3</sup>, Brian R Davidson<sup>1</sup>

<sup>1</sup>Department of Surgery, Royal Free Campus, UCL Medical School, London, UK. <sup>2</sup>HPB & Liver Transplant Surgery, 8 South, Royal Free Hospital, London, UK. <sup>3</sup>University Department of Surgery, Royal Free Hospital and University College School of Medicine, London, UK

Contact address: Kurinchi Selvan Gurusamy, Department of Surgery, Royal Free Campus, UCL Medical School, Royal Free Hospital,, Pond Street, London, NW3 2QG, UK. [kurinchi2k@hotmail.com](mailto:kurinchi2k@hotmail.com).

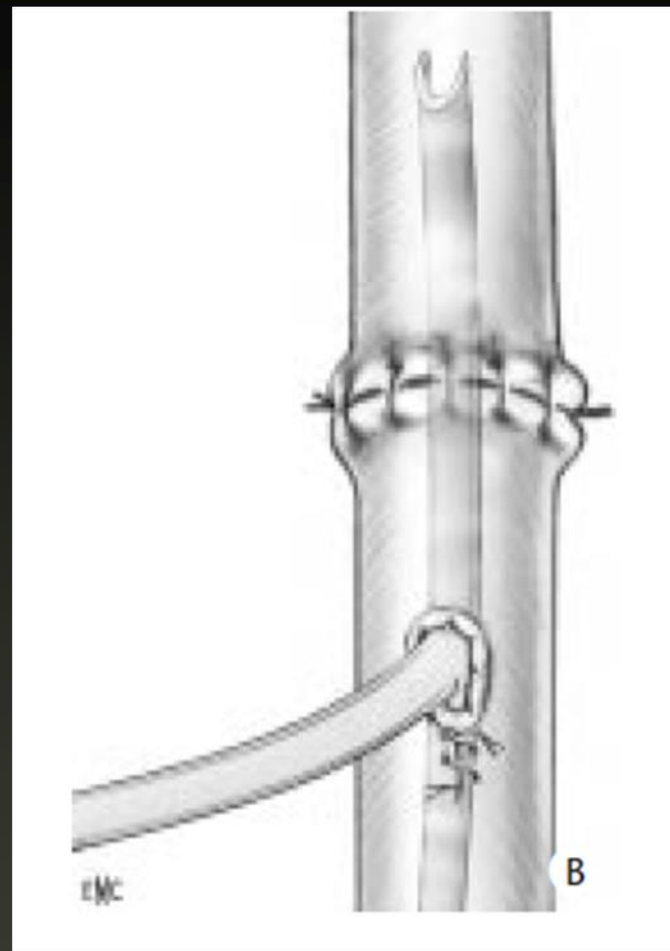
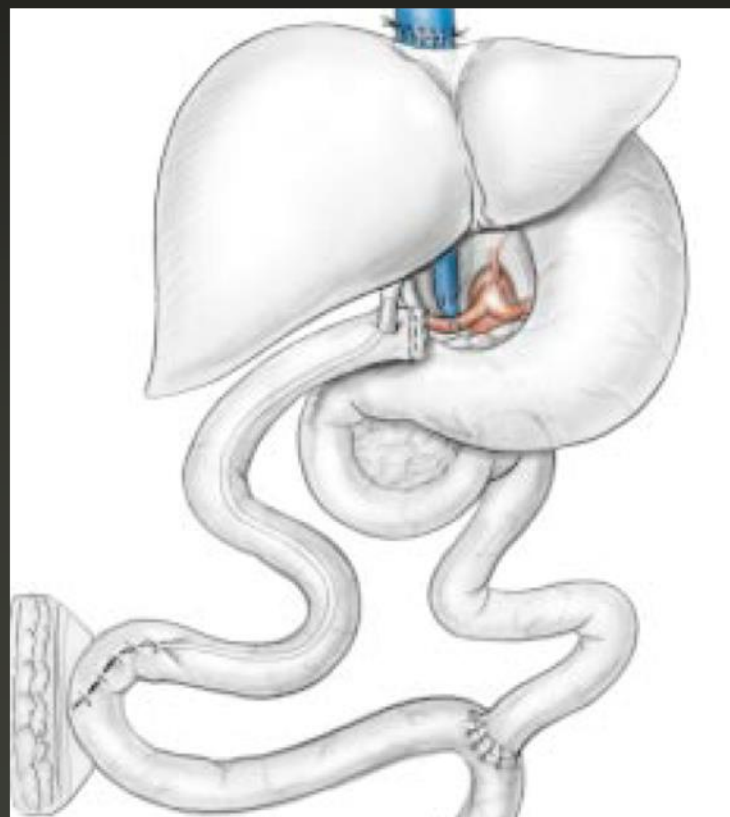
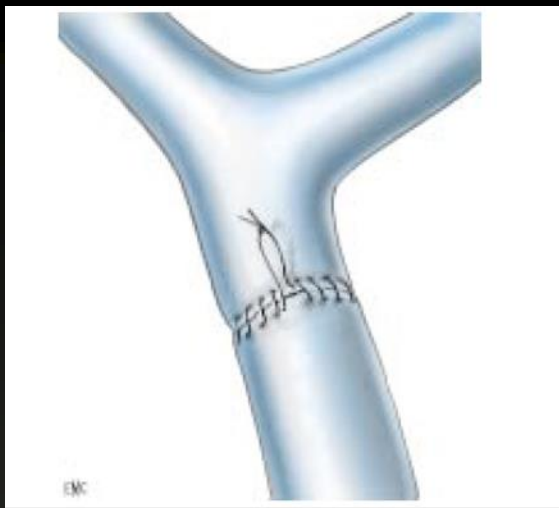
**Editorial group:** Cochrane Hepato-Biliary Group.

**Publication status and date:** New, published in Issue 3, 2012.

**Review content assessed as up-to-date:** 3 December 2011.

**Citation:** Gurusamy KS, Naik P, Abu-Amara M, Fuller B, Davidson BR. Techniques of flushing and reperfusion for liver transplantation. *Cochrane Database of Systematic Reviews* 2012, Issue 3. Art. No.: CD007512. DOI: 10.1002/14651858.CD007512.pub2.

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# T-tube or no T-tube for bile duct anastomosis in orthotopic liver transplantation

## Effectiveness of T-tube versus no T-tube in orthotopic liver transplantation

Ajith K. Sankarankutty, Enio D. Mente, Nathalia M. Cardoso, et al.

Integrated Liver Transplant Unit, Division of Digestive Tract Surgery, Hospital de São Paulo, Universidade de São Paulo, Brazil

### RANDOMIZED CONTROLLED TRIAL

## T-tube or No T-tube in Cadaveric Orthotopic Liver Transplantation: The Eternal Dilemma

### *Results of a Prospective and Randomized Clinical Trial*

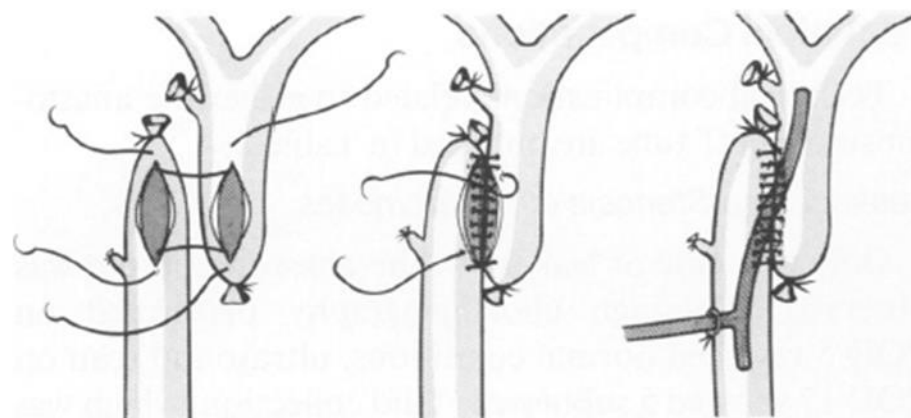
Rafael López-Andújar, MD, PhD,\* Eva Montalvá Orón, MD, PhD,\* Andrés Frangi Carregnato, MD,\*  
Fabio Vergara Suárez, MD,\* Angel Moya Herraiz, MD, PhD,\* Fernando San Juan Rodríguez, MD,\*  
Juan José Vila Carbó, MD, PhD,\* Eugenia Pareja Ibars, MD, PhD,\* Javier Escrig Sos, MD, PhD,†  
Angel Rubín Suárez, MD,‡ Martín Prieto Castillo, MD, PhD,‡ José Mir Pallardó, MD, PhD,\*  
and Manuel De Juan Burgueño, MD, PhD\*

# Technique and Results of Biliary Reconstruction Using Side-to-Side Choledochocholedochostomy in 300 Orthotopic Liver Transplants

Peter Neuhaus, M.D., Ph.D., Gerhard Blumhardt, M.D., Wolf O. Bechstein, M.D.,  
Rudolf Steffen, M.D., Klaus-Peter Platz, M.D., and Heinrich Koc

Vol. 219 • No. 4

*From the Department of Surgery, Free University of Berlin, Un  
Berlin, Germany*



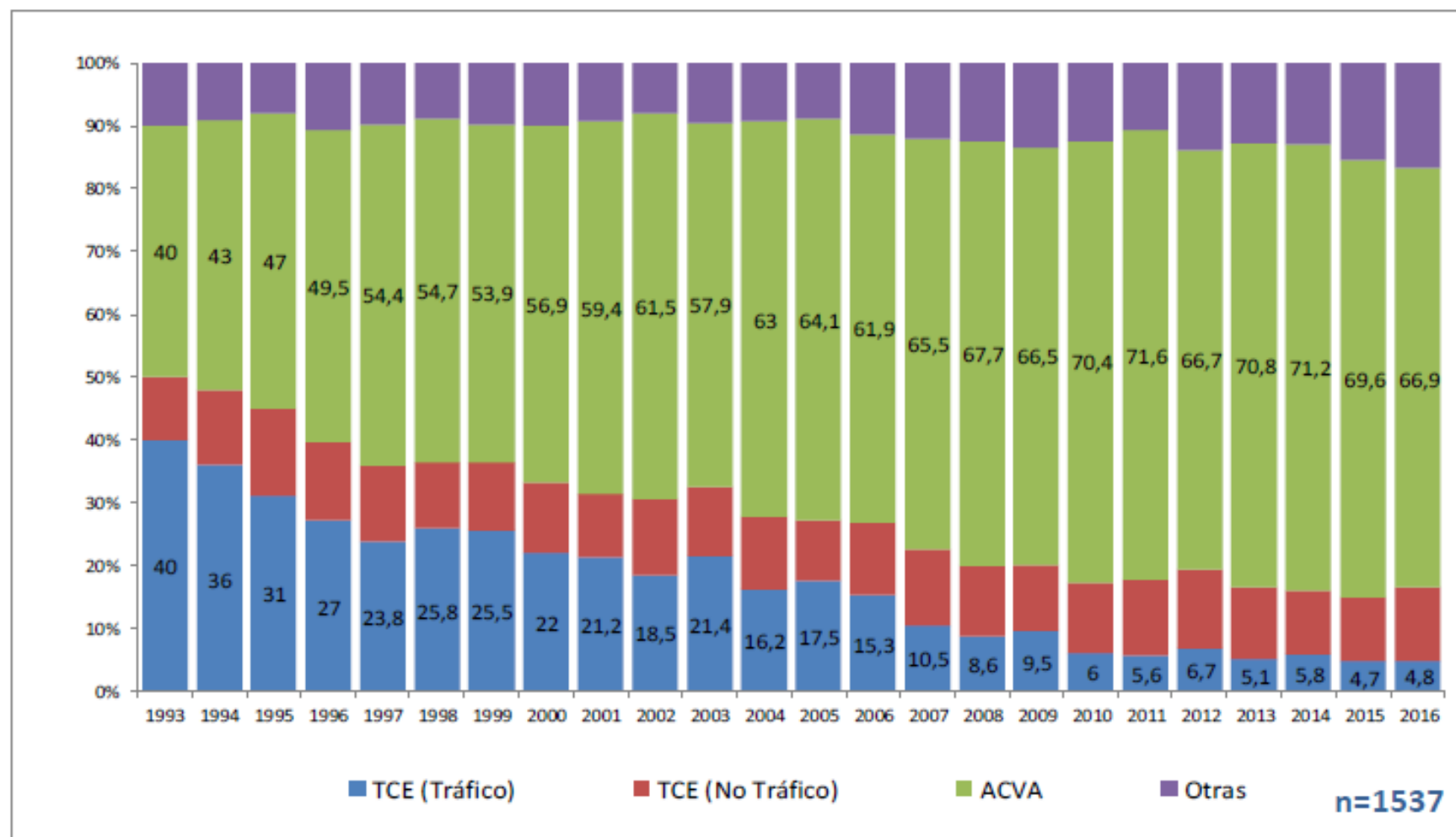
**Figure 1.** Operative steps of the side-to-side choledochocholedochostomy.

Biliary Reconstruction Using a Side-to-Side  
Choledochocholedochostomy With or Without T-Tube in  
Deceased Donor Liver Transplantation  
A Prospective Randomized Trial

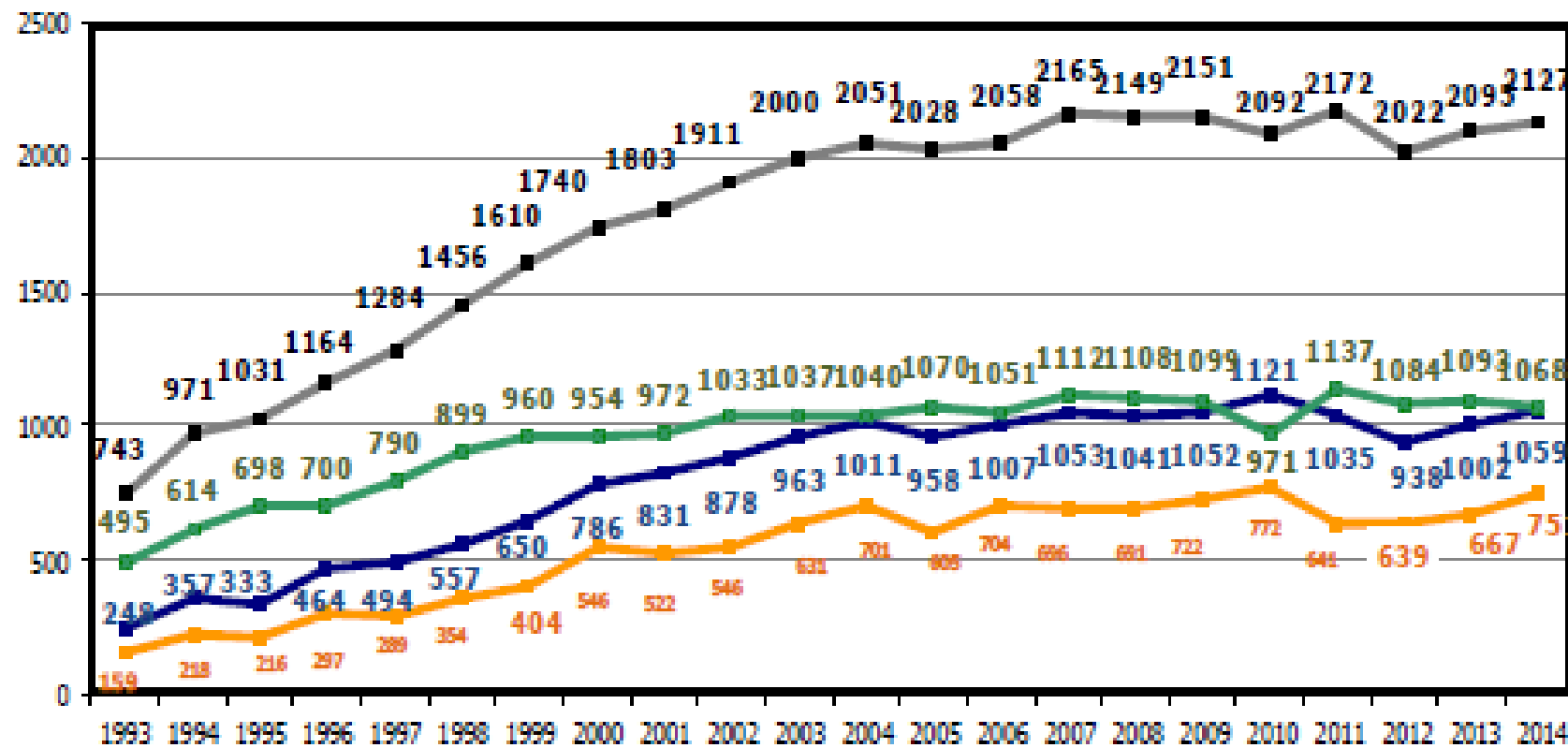
*Sascha Weiss, MD, Sven-Ch Schmidt, MD, Frank Ulrich, MD, Andreas Pascher, MD, PhD,  
Guido Schumacher, MD, PhD, Martin Stockmann, MD, PhD, Gero Puhl, MD, PhD,  
Olaf Guckelberger, MD, PhD, Ulf P. Neumann, MD, PhD, Johann Pratschke, MD, PhD,  
and Peter Neuhaus, MD, PhD*

*Condicionantes...*

## DONANTES DE HÍGADO: CAUSAS DE MUERTE



# EVOLUCIÓN LISTA DE ESPERA GLOBAL TRASPLANTE HEPÁTICO



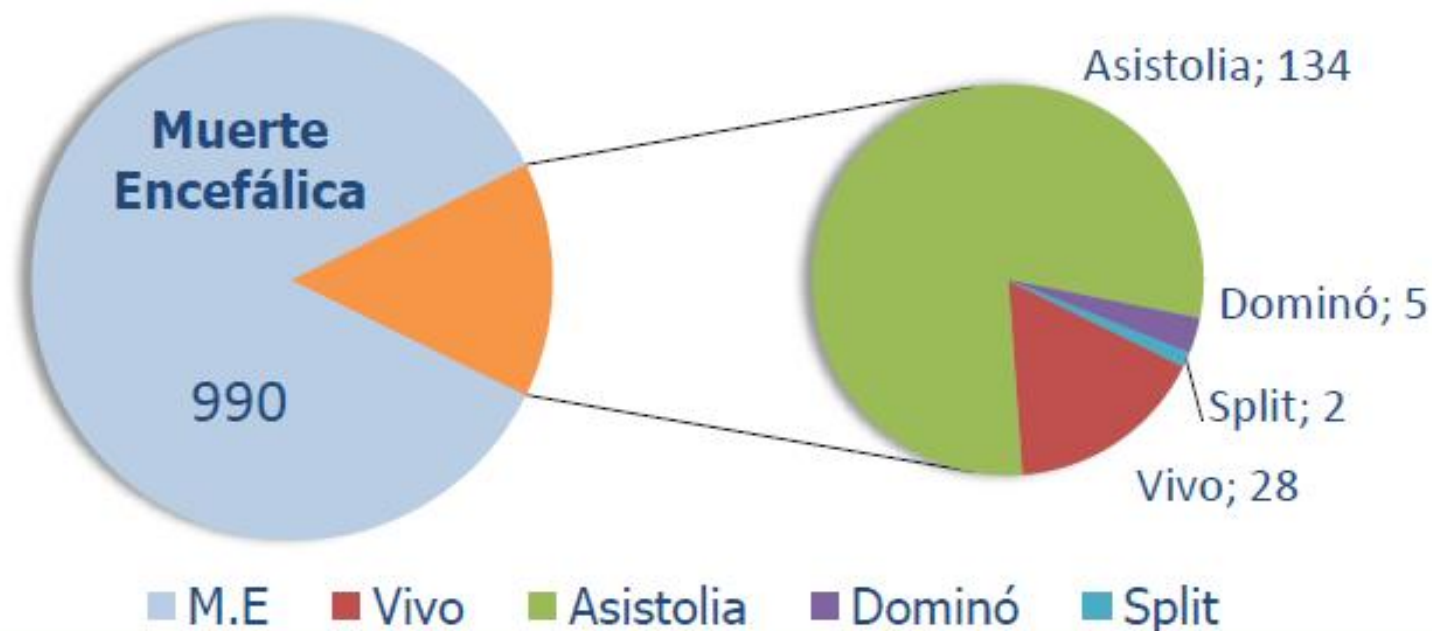
—■ FINAL LE    
 —■ DIFERENCIA LE-TX    
 —■ TRASPLANTE    
 —■ INDICACIONES

# replanteamientos



## Trasplante Hepático

### Actividad en España 2016 *(n=1159)*





# Protocolo de evaluación Donante Vivo





**Comité de Ética**

**Consentimiento Informado**

**Evaluación externa**

**Juzgado**



# TRASPLANTE DE DONANTE

*Hospitales Universitarios La Paz & Ramon y Cajal*

Morbilidad en el donante: 5%  
(Clavien grado III)

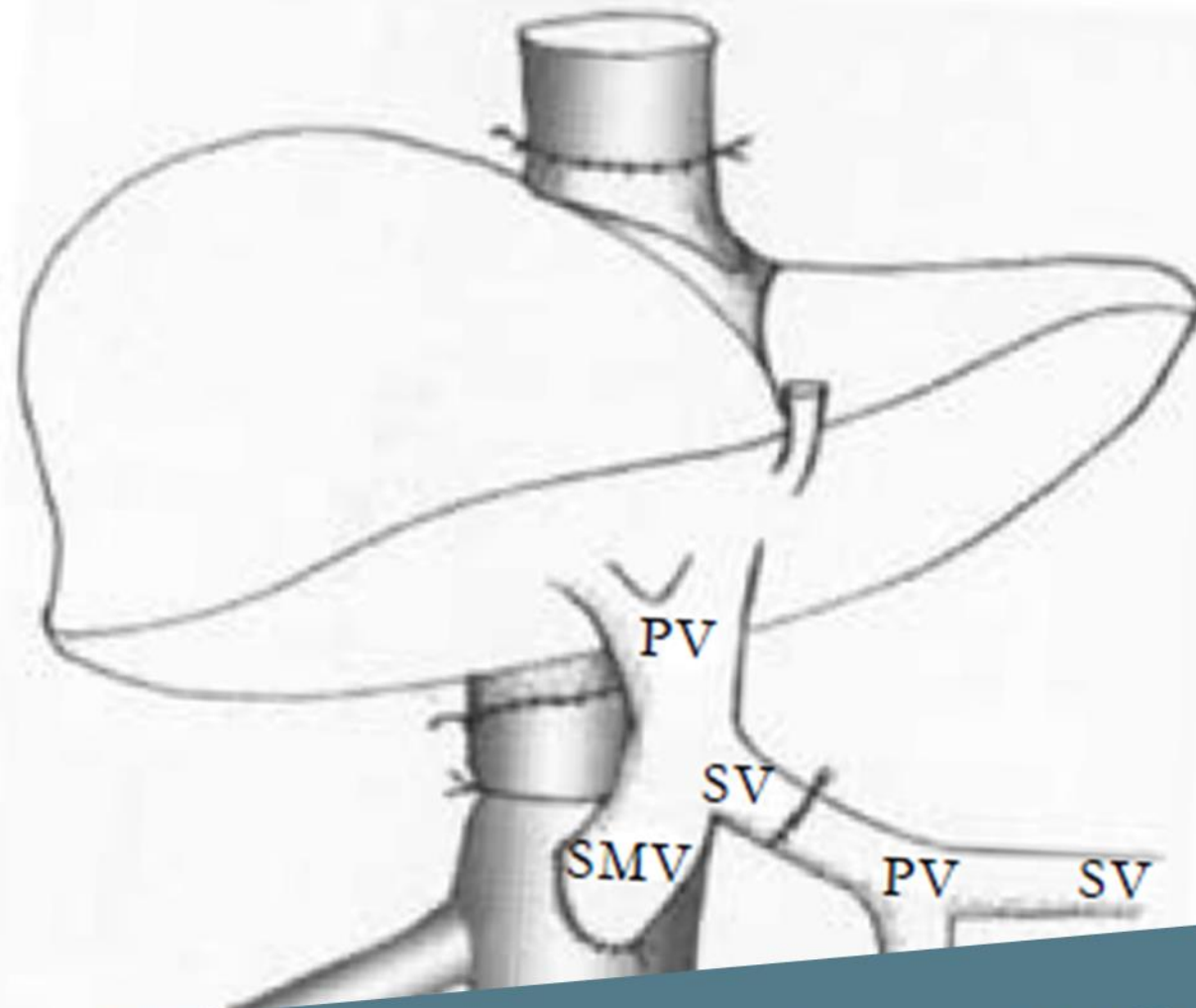
## Supervivencia del enfermo



## Supervivencia del injerto



181 TH



Hemitransposición cavo-portal

# Anastomosis reno-portal



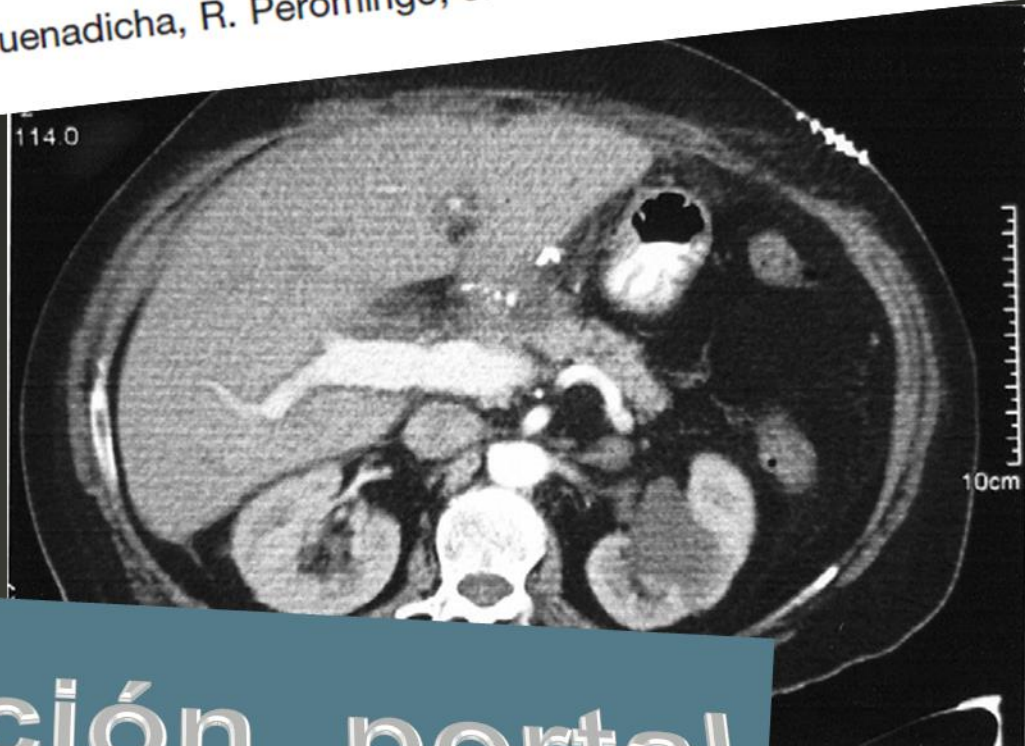
# Arterialización portal

*Transplantation Proceedings*, 43, 755–757 (2011)



## **Portal Vein Arterialization in Liver Transplantation: An Option to Restore Arterial Flow: A Case Report**

G. Housari, J. Nuño, P. Calero, A. López-Buenadicha, R. Peromingo, J. Díe-Trill, and P. López-Hervás



**Arterialización portal**



## Auxiliary partial orthotopic liver transplantation (APOLT) for fulminant hepatic failure: first successful case report

G. Gubernatis, R. Pichlmayr, J. Kemnitz



THA parcial ortotópico

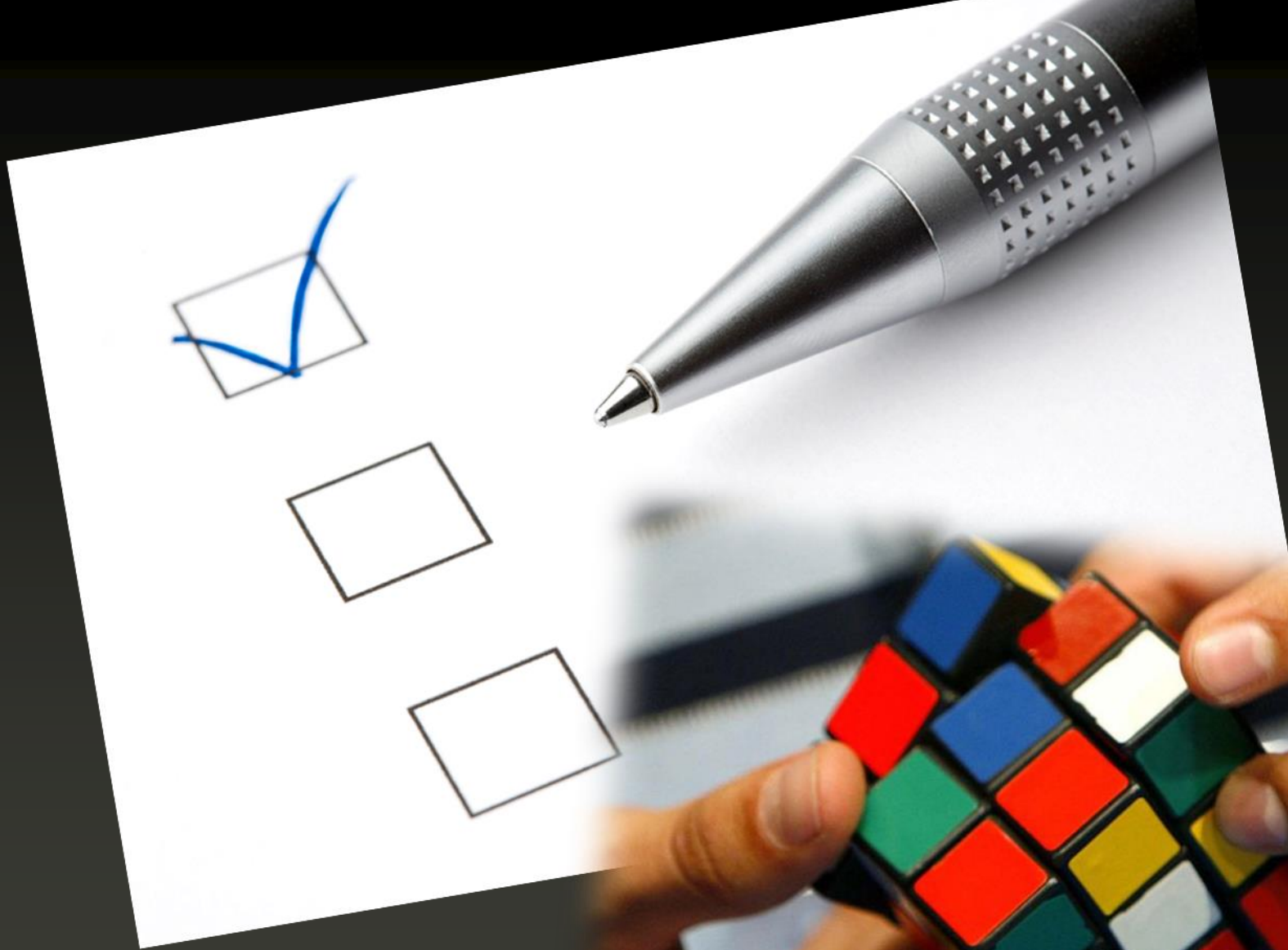


# Auxiliary Heterotopic Liver Transplantation With Portal Vein Arterialization for Fulminant Hepatic Failure

*Carlos Margarit,\* Itxarone Bilbao,\* Ramón Charco,\* José Luis Lázaro,\* Ernest Hidalgo,\* Elena Allende,† and Enrique Murio\**

*Liver Transplanta*





TIPO DE INJERTO	GRUPO EDAD RECEPTOR					TOTAL
	0-2 a	3-15 a	16-39 a	40-59 a	≥60 a	
Cadáver	232 (42.5%)	410 (75.1%)	2034 (98.2%)	9655 (98.3%)	4221 (96.3%)	16552 (95.3%)
Dominó	-	-	1	30 (0.3%)	76 (1.7%)	107 (0.6%)
Split	70 (12.8%)	31 (5.7%)	10 (0.5%)	44 (0.4%)	40 (0.9%)	195 (1.1%)
Vivo	103 (18.9%)	18 (3.3%)	13 (0.6%)	81 (0.8%)	42 (1%)	257 (1.5%)
Reducido	141 (25.8%)	87 (15.9%)	13 (0.6)	11 (0.1%)	2	254 (1.5%)
TOTAL	546 (100%)	546 (100%)	2071 (100%)	9821 (100%)	4381 (100%)	17365 (100%)



## Total Hepatectomy and Liver Transplantation as a Two-Stage Procedure for Toxic Liver: Case Reports

... A. Moraes-Junior, R. Hidalgo, M.P.V.C. Zurstrassen, I.K. Lima, H.S. Novais, and R.C. Afonso

# Recipient Splenic Artery Utilization for Arterial Re-Anastomosis in Living Donor Liver Transplantation: Single-Center Experience

Turgut Piskin<sup>1</sup>, Tolga Demirbas<sup>2</sup>, Levent Yalcin<sup>3</sup>, Onur Yaprak<sup>2</sup>, Murat Dayangac<sup>2</sup>, Necdet Guler<sup>2</sup>, Fusun Bulutcu<sup>4</sup>, Yildirim Yuzer<sup>2</sup> and Yavuz M. ...

LIVER TRANSPLANTATION 19:667-668, 2013

Case Report

LETTER TO THE EDITORS

### Liver Transplantation and Splenic Artery Steal Syndrome: The Diagnosis Should Be Established



ELSEVIER

## **Portal Vein Arterialization for Liver Transplantation With Extensive Portomesenteric Vein Thrombosis: A Case Report**

S. Nivatvongs, B. Sirijindakul, and B. Nontasoot

Transplantation Proceedings, 43, 755-757 (2011)



ELSEVIER

## **Portal Vein Arterialization in Liver Transplantation: An Option to Restore Arterial Flow: A Case Report**

G. Housari, J. Nuño, P. Calero, A. López-Buenadicha, R. Peromingo, J. Díe-Trill, and P. López-Hervás



**Muchas gracias !**



# MÁSTER EN HEPATOLOGÍA



UAM  
Universidad Autónoma  
de Madrid



Universidad  
de Alcalá