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LA CHIRURGIA DEL TUMORE DEL PANCREAS

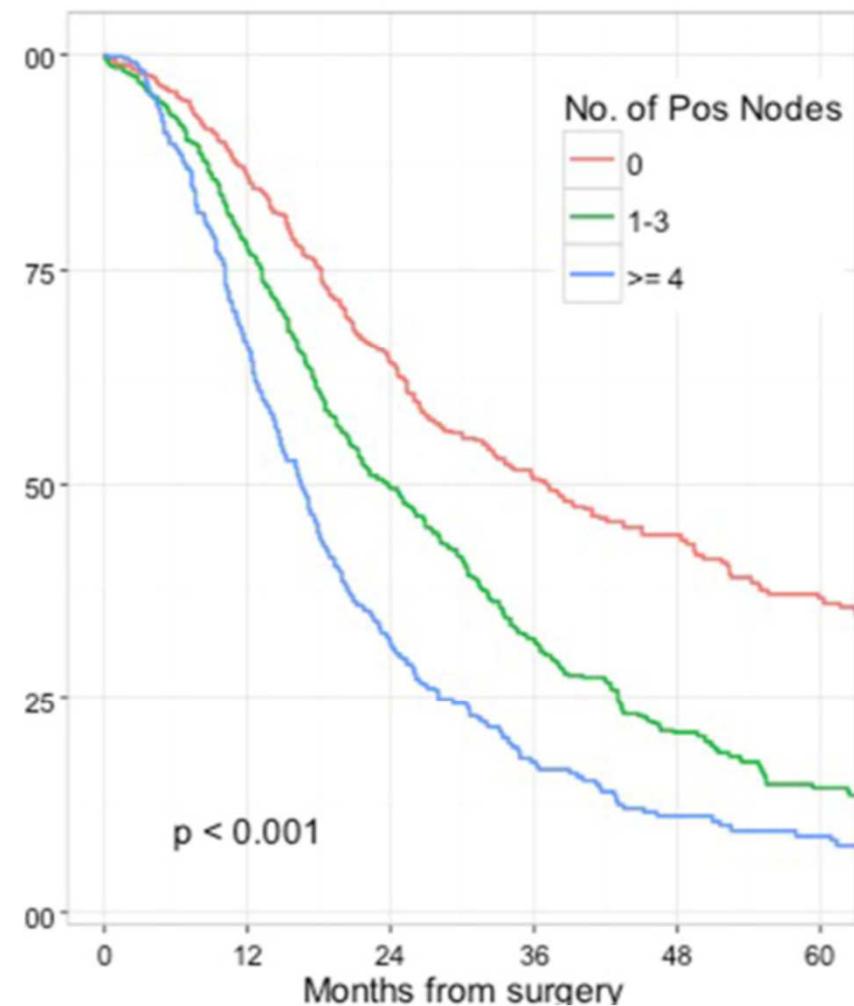
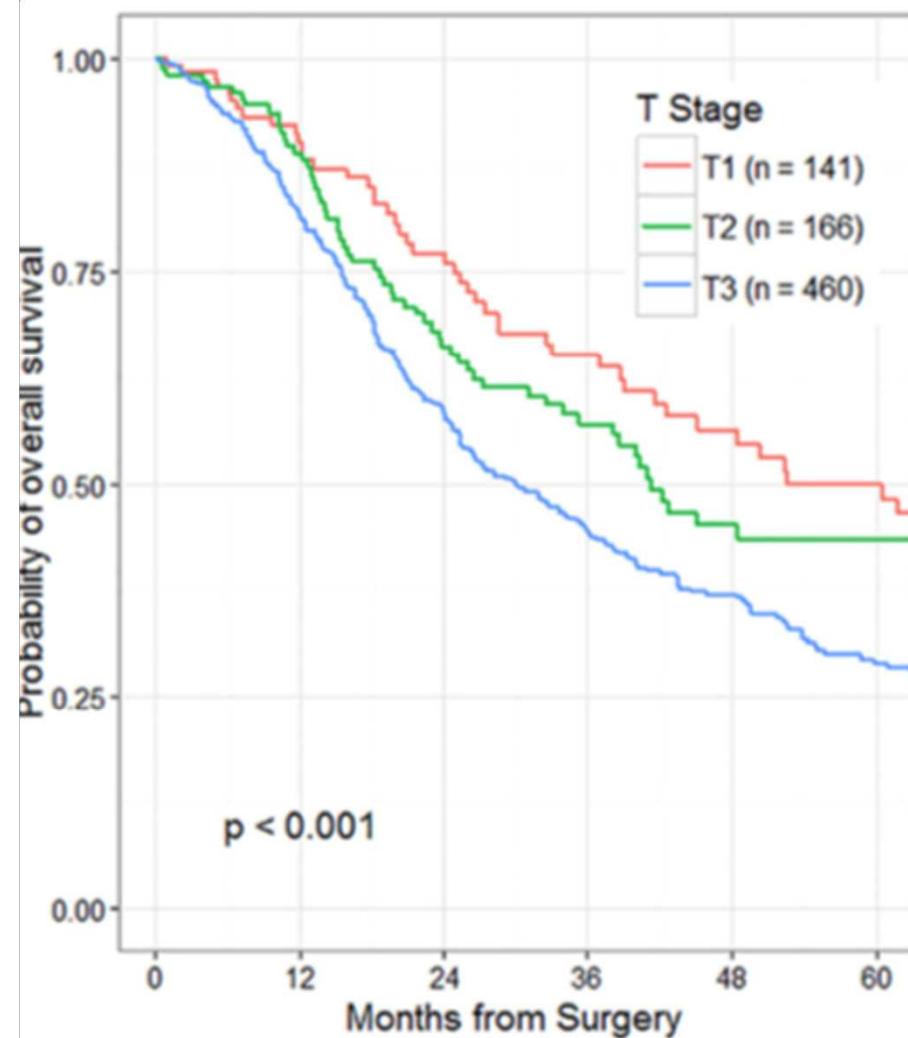
Dott. M. Garatti, Dott. A. Manzoni



- ***Surgery is the only potentially curative treatment***
- ***Intervento solo per 15-20% dei pazienti***
- Candidati all'intervento
- Correzione dell'ittero
- Descrizione degli interventi
- Take home messages



Surgery is the only potentially curative treatment



Pazienti metastatici sono esclusi(eccezioni??)

Radical surgery of oligometastatic pancreatic cancer

T. Hackert ^a, W. Niesen ^a, U. Hinz, C. Tjaden, O. Strobel, A. Ulrich,
C.W. Michalski, M.W. Büchler*

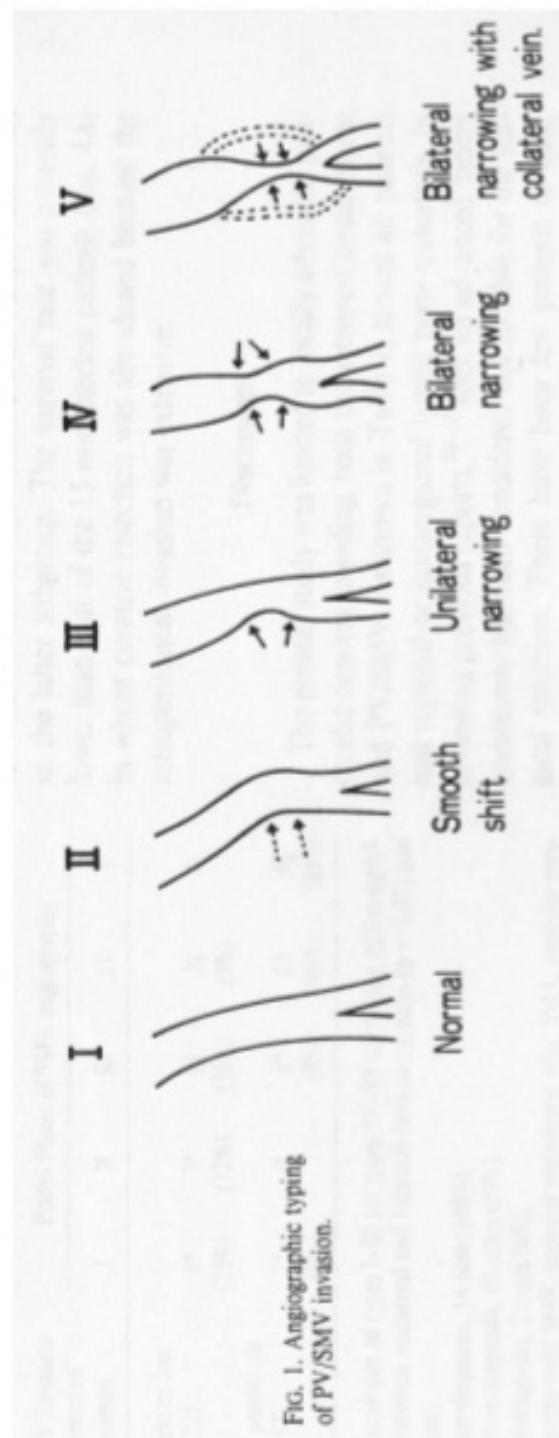
Pazienti Border line resectable

Pazienti con malattia limitata all'organo



Anatomy	NCCN 2014	AHPBA/SSAT/SSO	MD Anderson Cancer Center	ISGPS	ACTO
Superior mesenteric vein/portal vein	Involvement with distortion/narrowing and/or occlusion amenable to reconstruction	Abutment, encasement, or short-segment occlusion amenable to reconstruction	Involvement with distortion/narrowing and/or occlusion amenable to reconstruction	Involvement with tumor-vessel interface $\geq 180^\circ$ and/or occlusion amenable to reconstruction	Involvement with tumor-vessel interface $\geq 180^\circ$ and/or occlusion amenable to reconstruction
Superior mesenteric artery	Abutment ($\leq 180^\circ$)	Abutment ($\leq 180^\circ$)	Abutment ($\leq 180^\circ$)	Abutment ($\leq 180^\circ$)	Abutment ($\leq 180^\circ$)
Common hepatic artery	Abutment or short-segment encasement	Abutment or short-segment encasement	Short segment encasement/abutment	Abutment or short-segment encasement	Short-segment tumor-vessel interface (any degree) amenable to reconstruction
Celiac artery	No abutment or encasement	No abutment/encasement	No abutment or encasement	No abutment or encasement	Tumor-vessel interface $< 180^\circ$

NCCN, National Comprehensive Cancer Network; AHPBA/SSAT/SSO, American Hepato-Pancreato-Biliary Association/Society for Surgery of the Alimentary Tract/Society of Surgical Oncology; ISGPS, International Study Group of Pancreatic Surgery; ACTO, Alliance for Clinical Trials in Oncology.





MD. Anderson Cancer Centre

TYPE A

VESSELS

TYPE B

SUSPECTED METASTATIC DISEASE OR N1

TYPE C

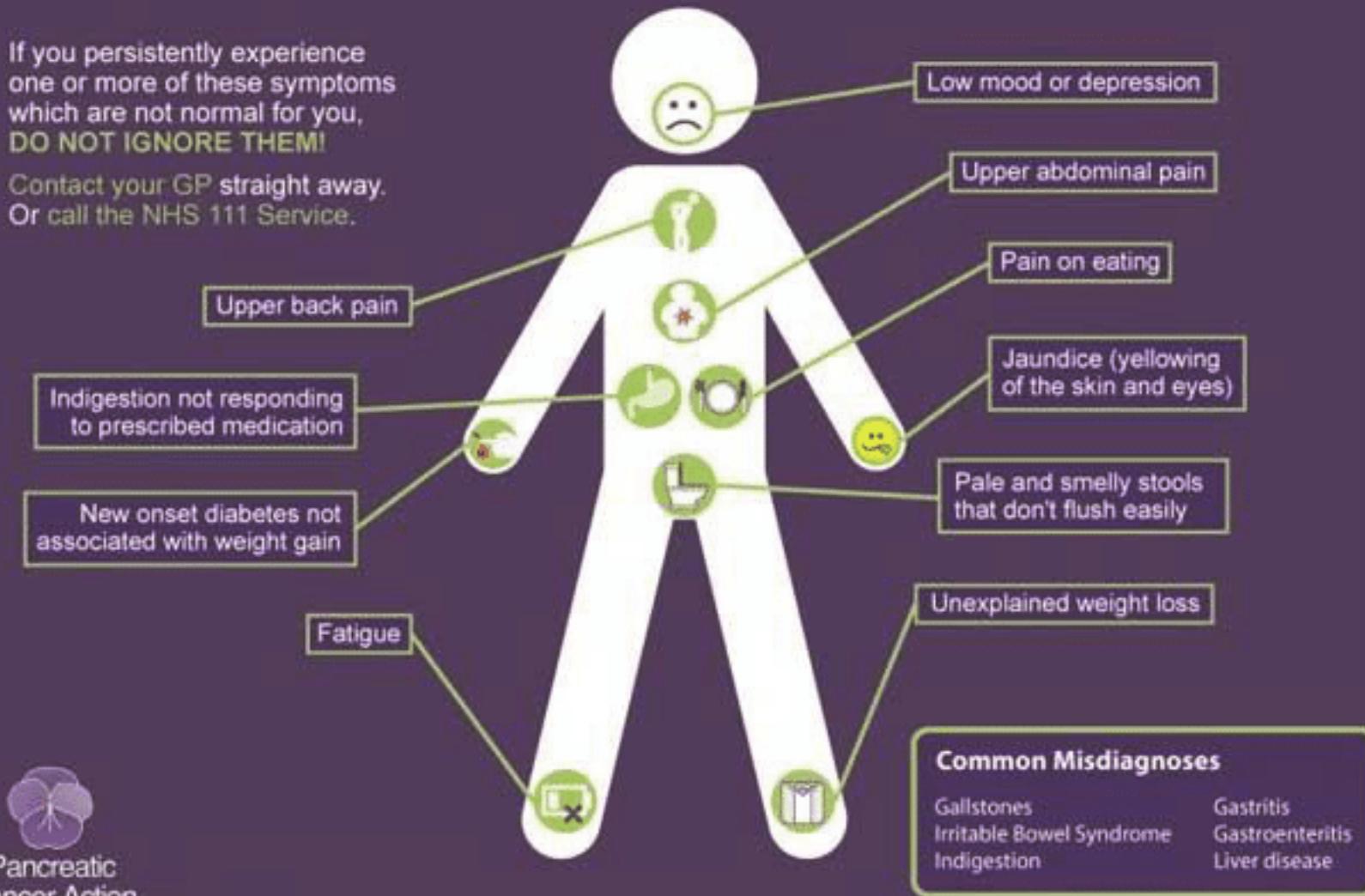
POOR PERFORMANCE DUE TO
REVERSIBLE CAUSES (MALNUTRITION,
ANOREXIA SEPSIS)



Symptoms of Pancreatic Cancer

If you persistently experience one or more of these symptoms which are not normal for you,
DO NOT IGNORE THEM!

Contact your GP straight away.
Or call the NHS 111 Service.





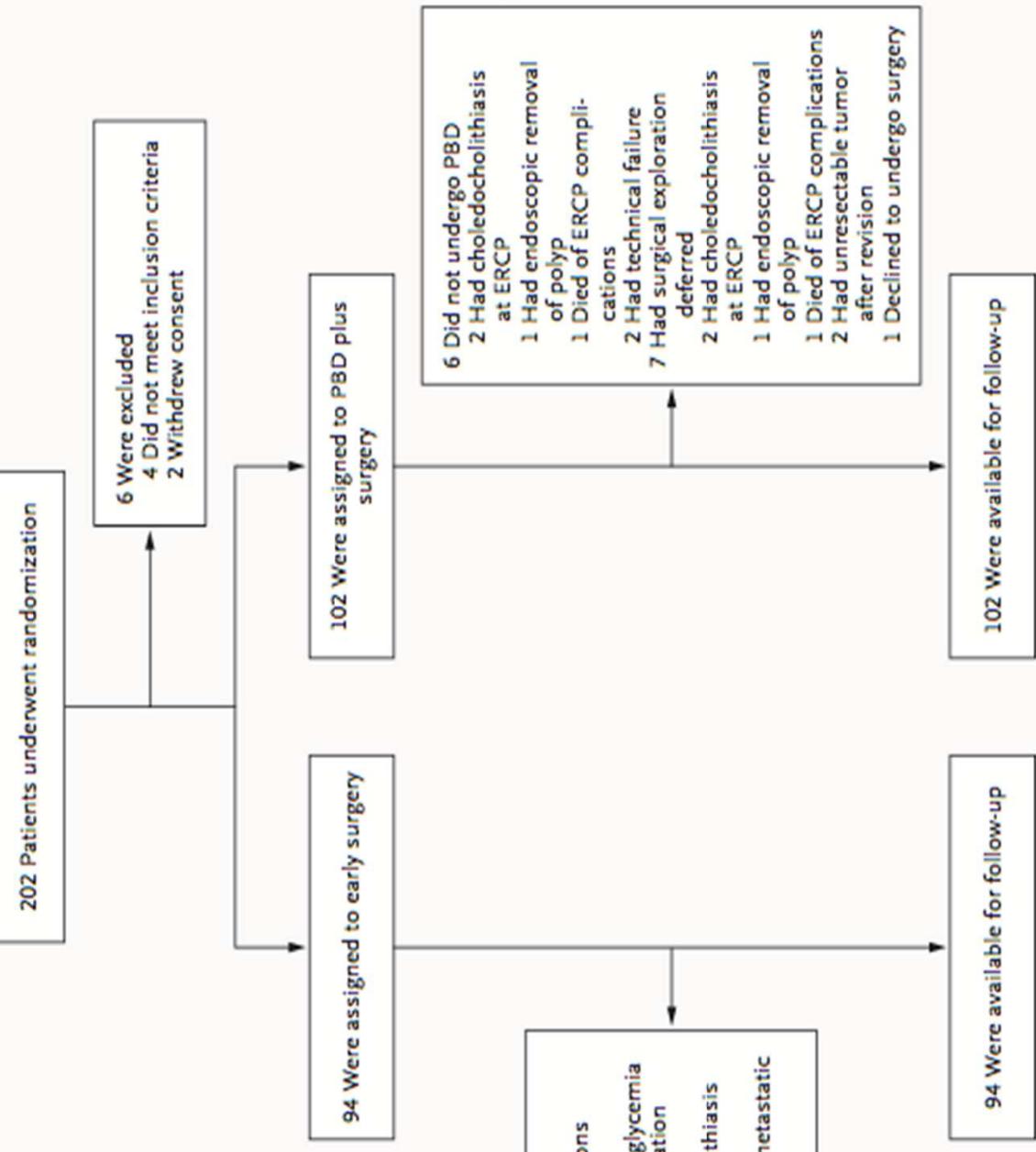
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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Preoperative Biliary Drainage for Cancer of the Head of the Pancreas

Niels A. van der Gaag, M.D., Erik A.J. Rauws, M.D., Ph.D.,
Casper H.J. van Eijck, M.D., Ph.D., Marco J. Bruno, M.D., Ph.D.,
Erwin van der Harst, M.D., Ph.D., Frank J.G.M. Kuppen, M.D., Ph.D.,
Josephus J.G.M. Gerritsen, M.D., Ph.D., Jan Willem Greve, M.D., Ph.D.,
Michael F. Gerhards, M.D., Ph.D., Ignace H.J.T. de Hingh, M.D., Ph.D.,
Jean H. Klinkenbijl, M.D., Ph.D., Chung Y. Nio, M.D.,
Steve M.M. de Castro, M.D., Ph.D., Olivier R.C. Busch, M.D., Ph.D.,
Thomas M. van Gulik, M.D., Ph.D., Patrick M.M. Bossuyt, Ph.D.,
and Dirk J. Gouma, M.D., Ph.D.*





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SURGERY FIRST IN 1 WEEK

BILIRUBIN > 14 EXCLUDED (mean bilirubin 150 microm/l, 8.7 mg%)



Related to surgery	
Any	35 (37)
Pancreaticojejunostomy leakage§	11 (12)
Grade A	1 (1)
Grade B	4 (4)
Grade C	6 (6)
Hemorrhage after pancreatectomy‡	4 (4)
Delayed gastric emptying	9 (10)
Biliary leakage	3 (3)
Gastrojejunostomy or duodenoejejunostomy leakage	2 (2)
Intraabdominal abscess	3 (3)
Wound infection	7 (7)
Portal-vein thrombosis	1 (1)
Pneumonia	5 (5)
Cholangitis	3 (3)
Myocardial infarction	0
Need for repeated laparotomy¶	13 (14)
	48 (47)
	8 (8)
	0
	4 (4)
	4 (4)
	2 (2)
	18 (18)
	1 (1)
	4 (4)
	2 (2)
	13 (13)
	0
	9 (9)
	3 (3)
	4 (4)
	12 (12)



Complication	Early Surgery (N = 94)	Preoperative Biliary Drainage (N = 102)
	no. (%)	no. (%)
Related to preoperative biliary drainage		
Any	2 (2)	47 (46)
Pancreatitis	0	7 (7)
Cholangitis†	2 (2)	27 (26)
Perforation	0	2 (2)
Hemorrhage after ERCP‡	0	2 (2)
Related to stent		
Occlusion	1 (1)	15 (15)
Need for exchange	2 (2)	31 (30)



OPEN

A Meta-Analysis of the Effect of Preoperative Biliary Stenting on Patients With Obstructive Jaundice

Chengyi Sun, MD, Guirong Yan, MM, Zhiming Li, ScD, and Chi-Meng Tzeng, PhD

Thus, we believe that preoperative biliary drainage should not be routinely applied. However, for patients with severe jaundice (serum bilirubin level >150 mm/L), concomitant cholangitis, or severe malnutrition and patients who need a relatively long preoperative assessment and wait for a relatively long time before the surgery, preoperative drainage may be selectively applied.³⁸ We suggest that the drainage time should >4 weeks, and metal stents should be used for drainage.



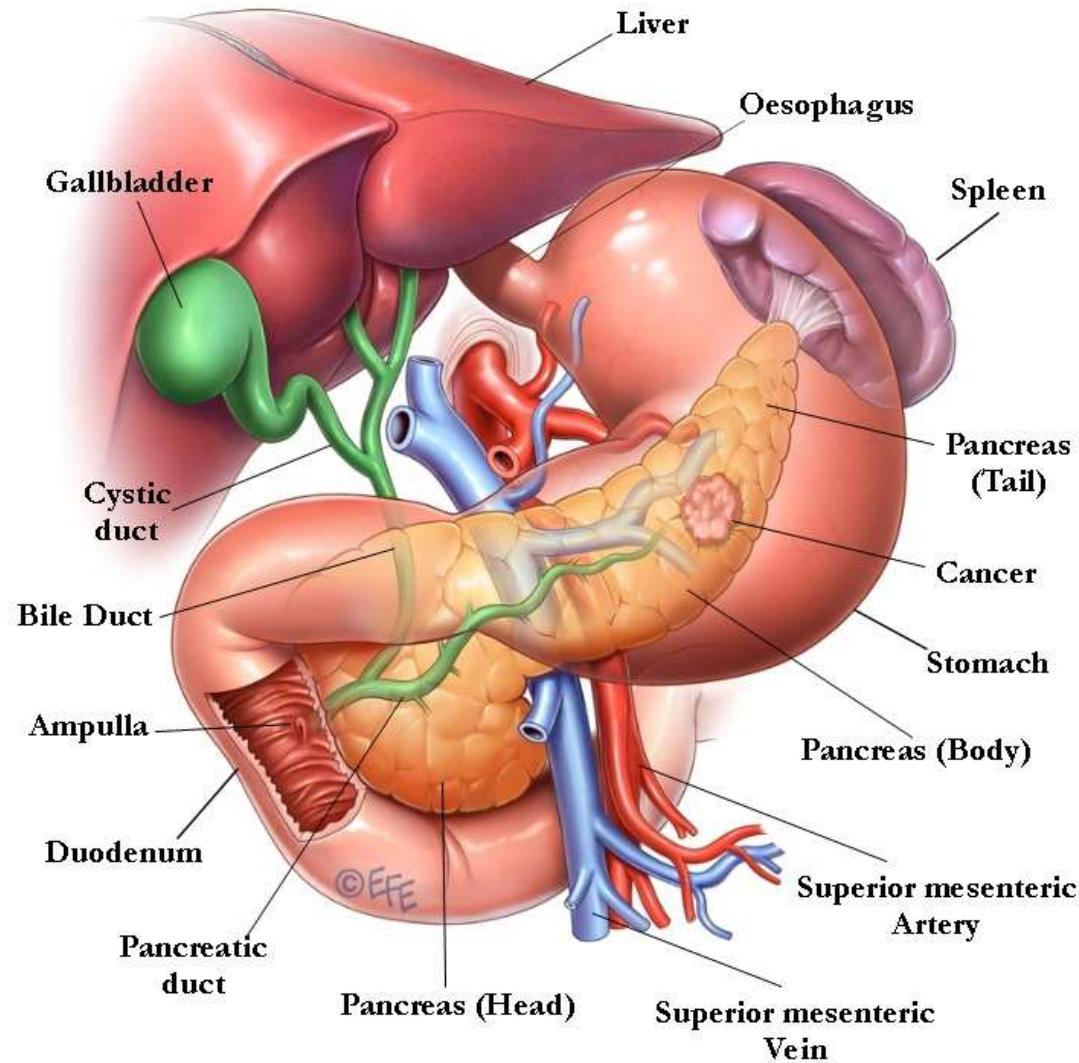
Systematic review and meta-analysis of metal versus plastic stents for preoperative biliary drainage in resectable periampullary or pancreatic head tumors

S. Crippa^a, R. Cirocchi^b, S. Partelli^a, M.C. Petrone^c, F. Muffatti^a,
C. Renzi^d, M. Falconi^{a,*}, P.G. Arcidiacono^c

Results: One RCT and four non-RCTs were selected, including 704 patients. Of these, 202 patients (29.5%) were treated with metal stents and 502 (70.5%) with plastic stents. The majority of patients (86.4%) had pancreatic cancer. The rate of endoscopic re-intervention after preoperative biliary drainage was significantly lower in the metal stent (3.4%) than in the plastic stent (14.8%) group ($p < 0.0001$). The rate of postoperative pancreatic fistula was significantly lower in the metal stent group as well (5.1% versus 11.8%, $p = 0.04$). The rate of post-operative surgical complications and of – post-operative mortality did not differ between the two groups.



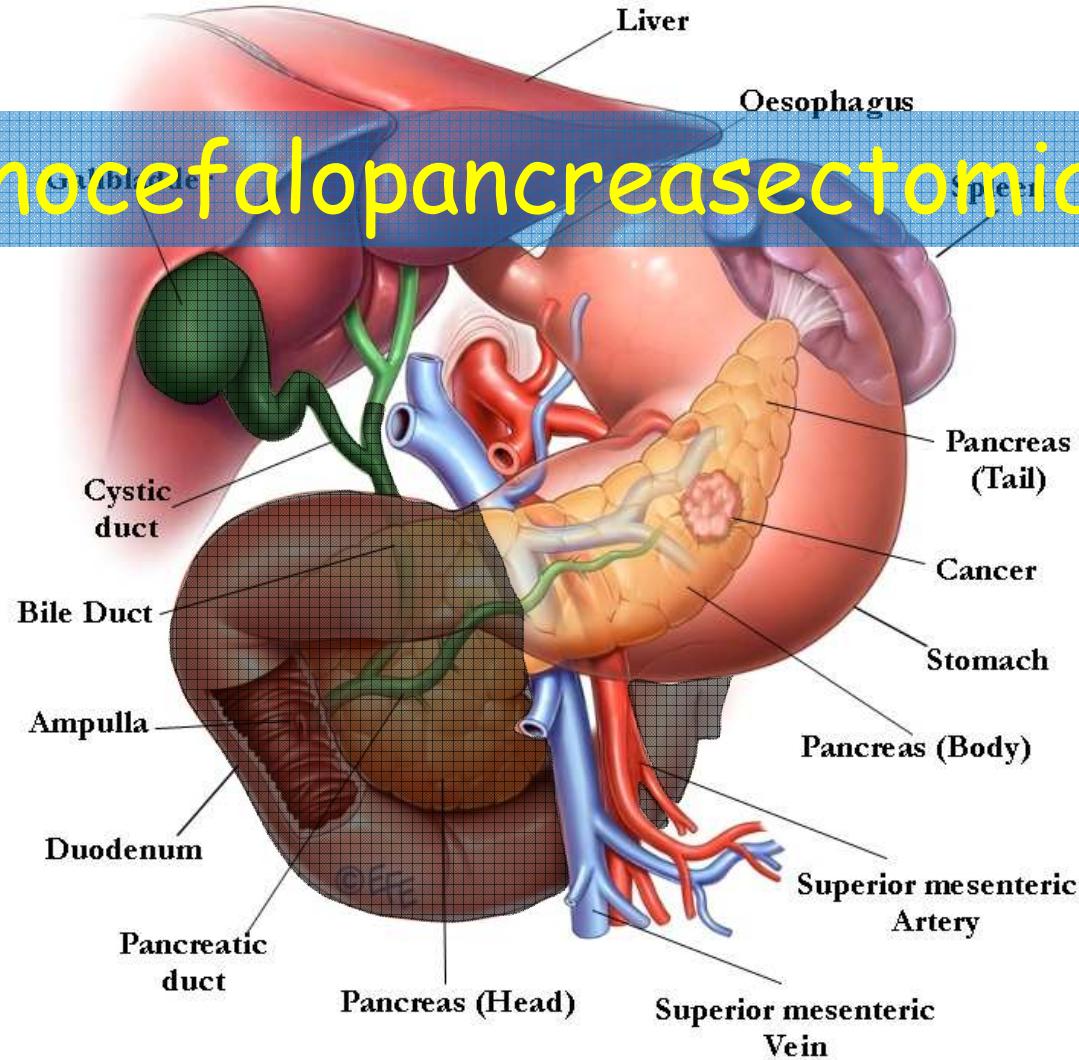
Resezioni Pancreatiche





Resezioni Pancreatiche

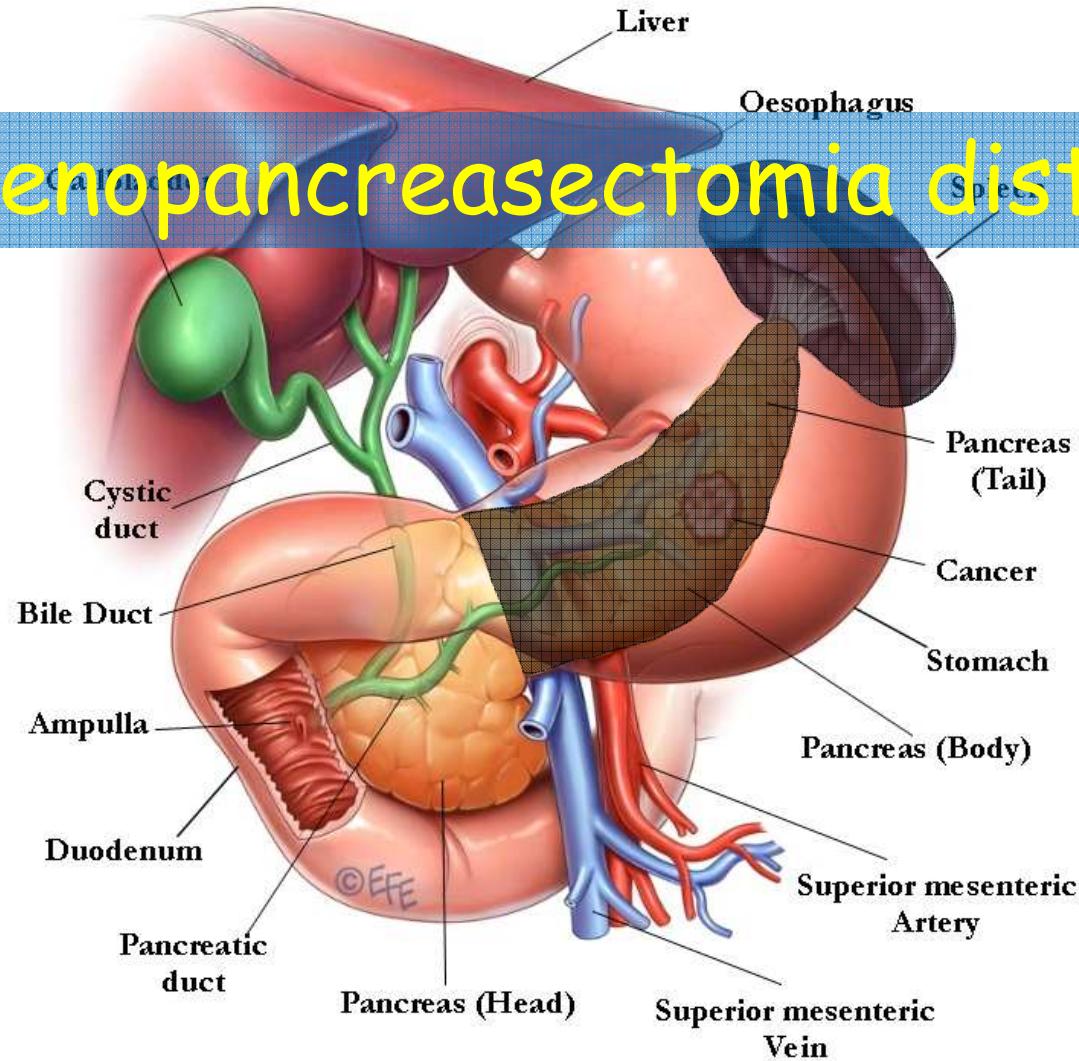
Duodenocefalopancreasectomia (DCP)





Resezioni Pancreatiche

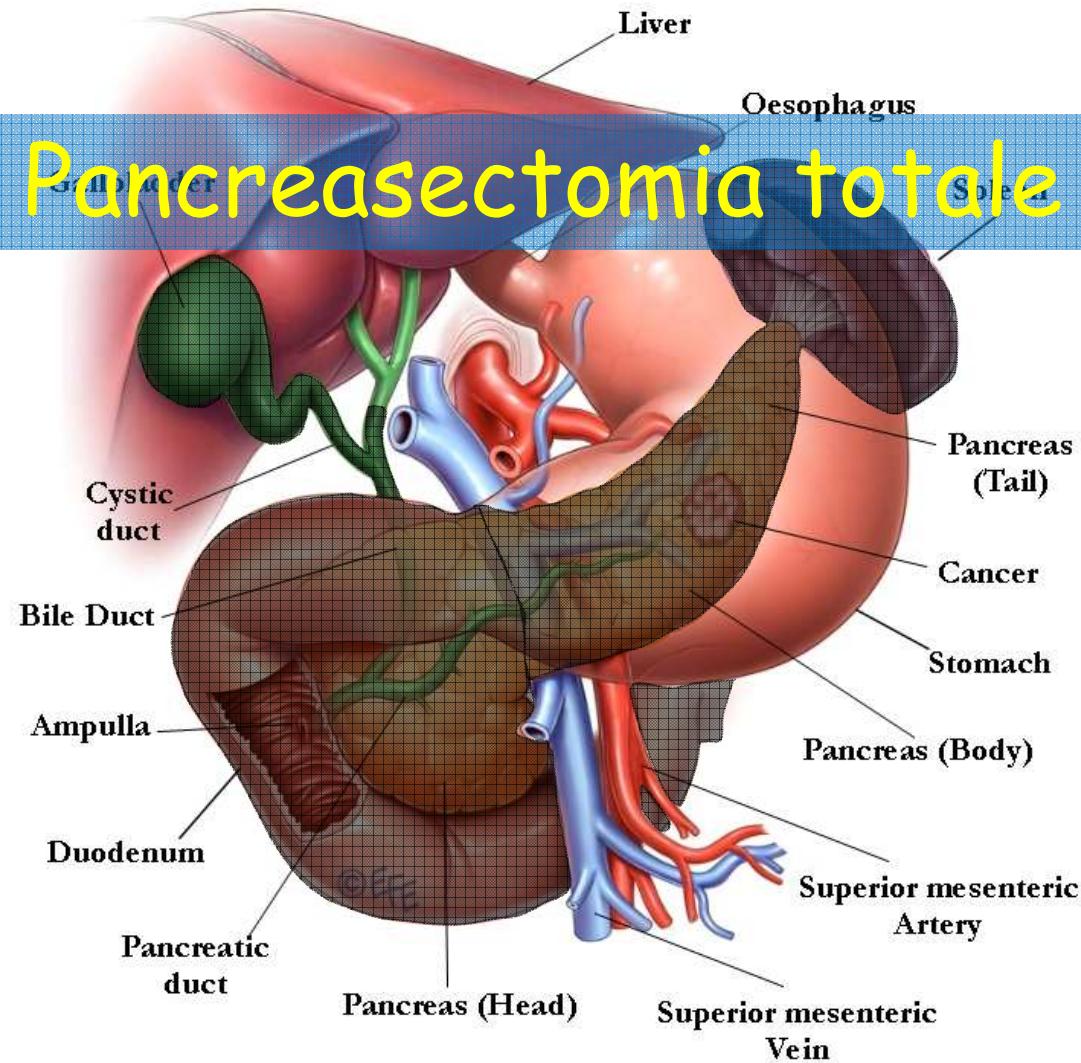
Splenopancreatectomia distale





Resezioni Pancreatiche

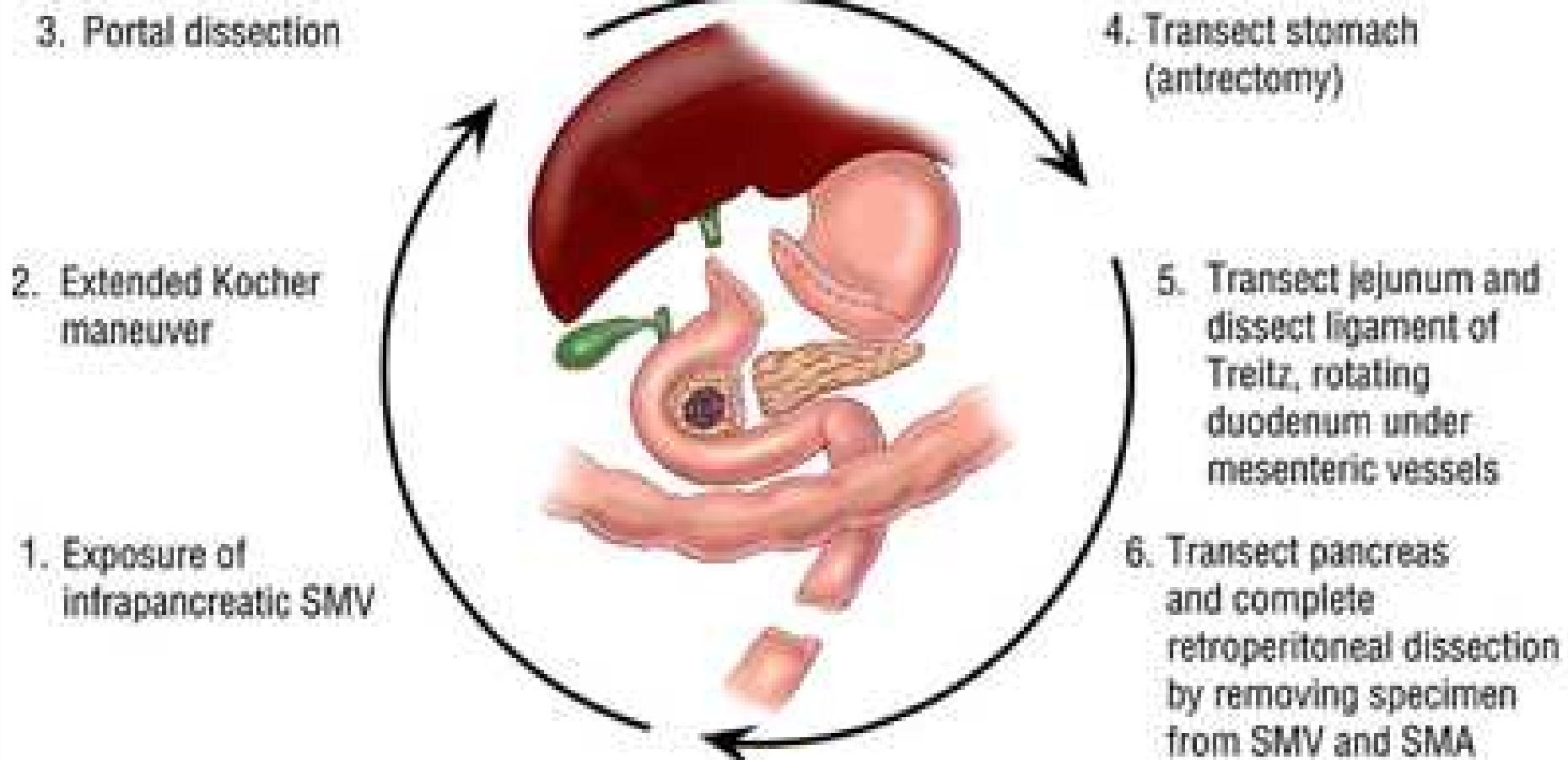
Pancreatectomia totale





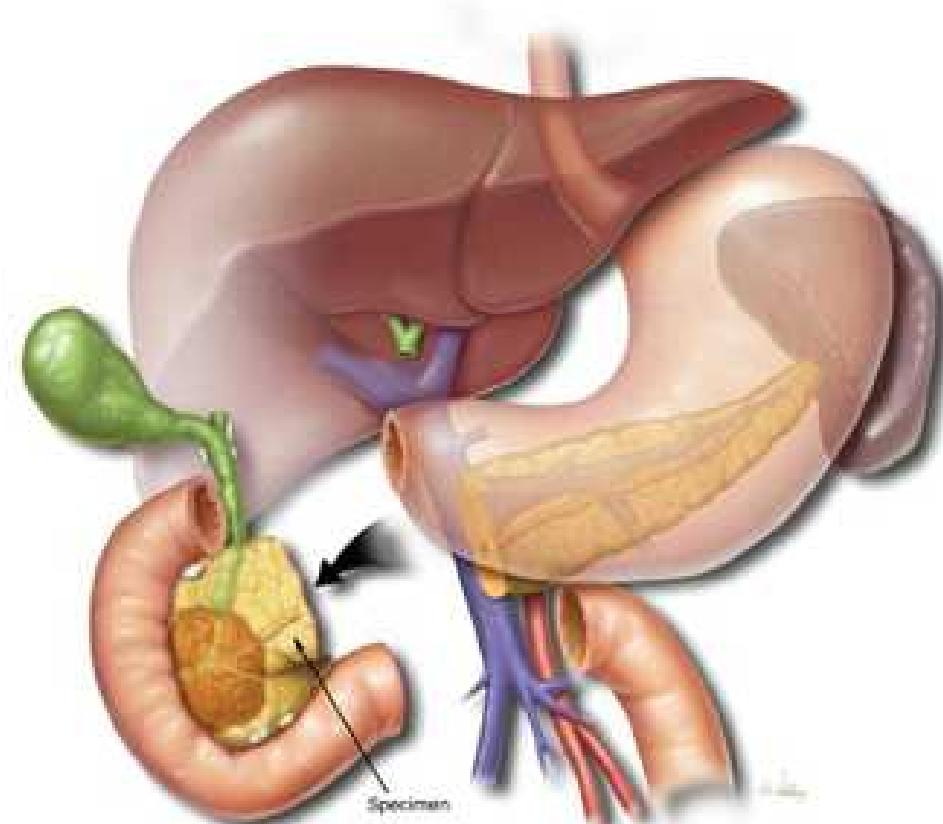
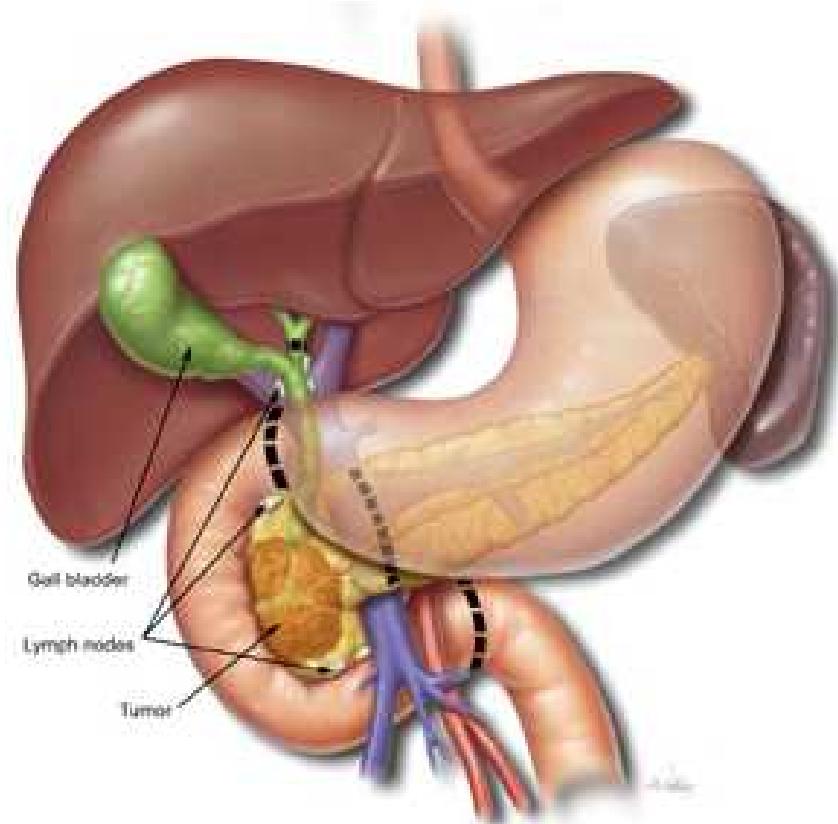
Duodenocefalopancreasectomia (DCP)

Pancreaticoduodenectomy



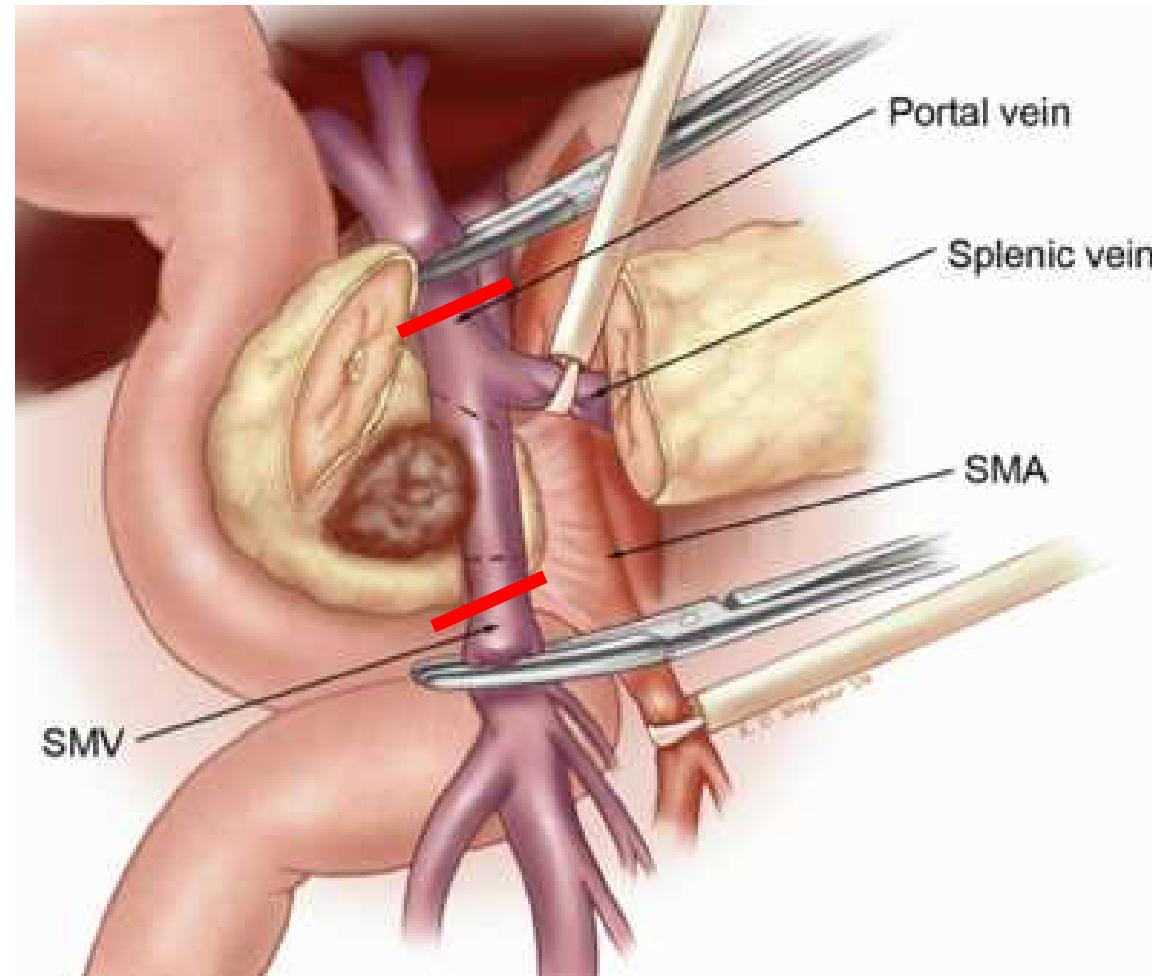


FASE DEMOLITIVA





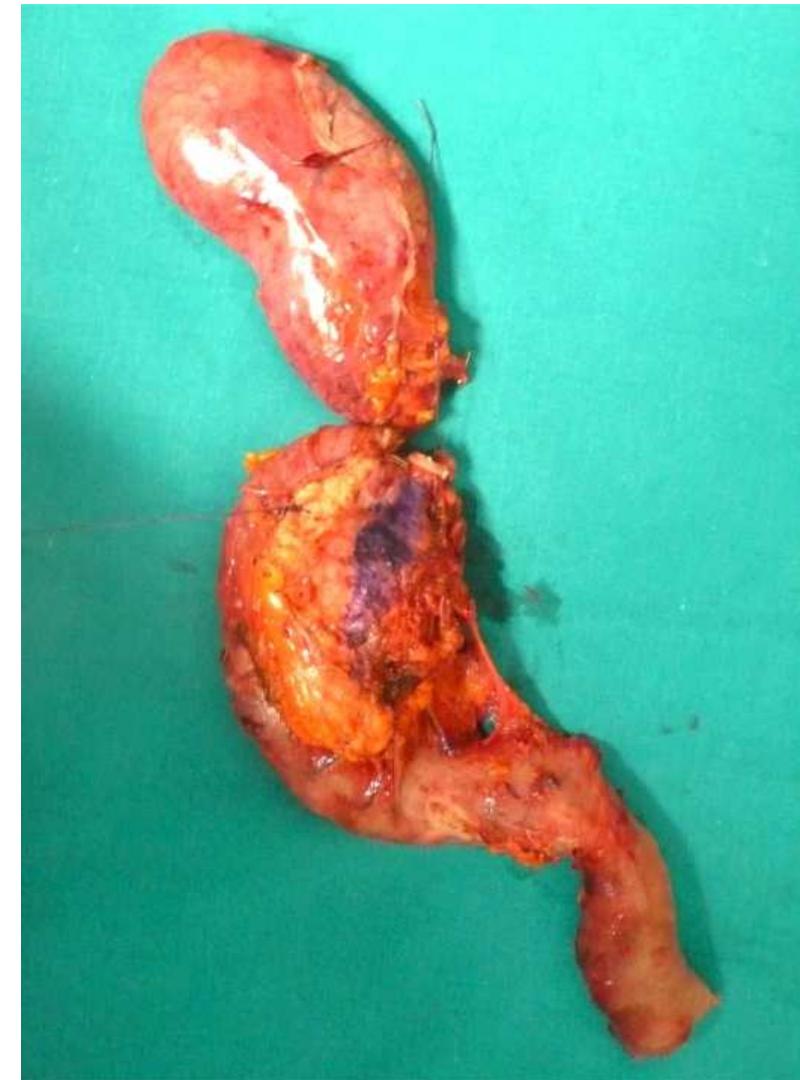
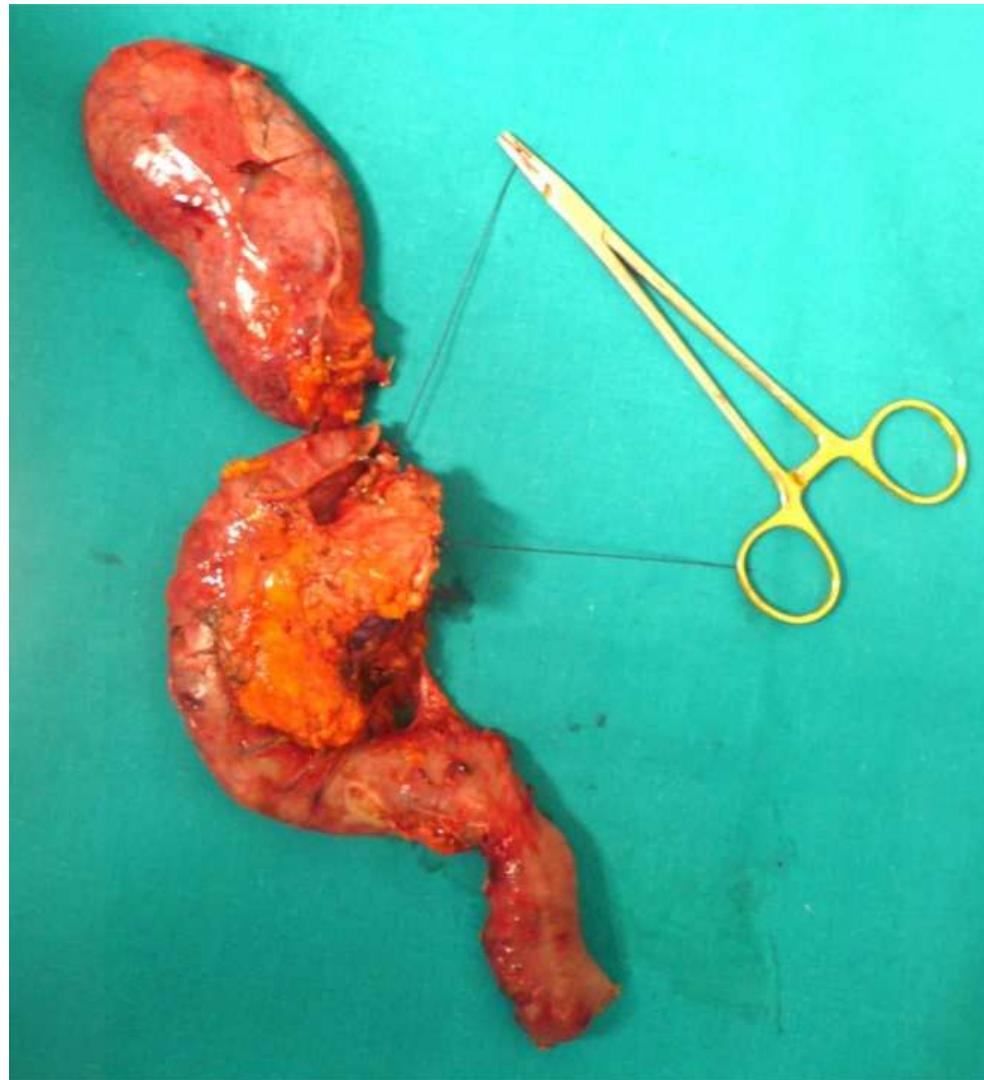
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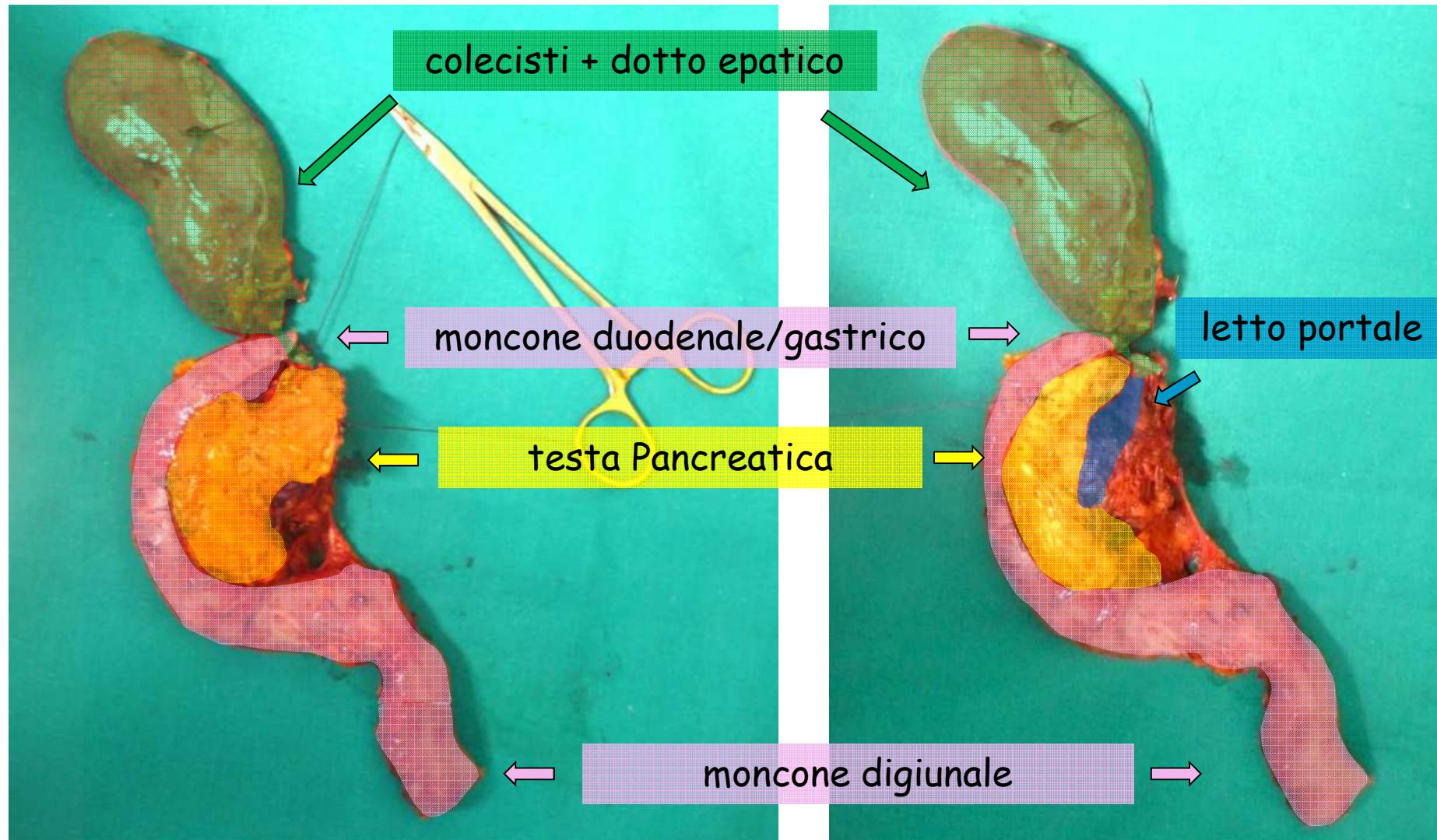
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Duodenocefalopancreasectomia (DCP)



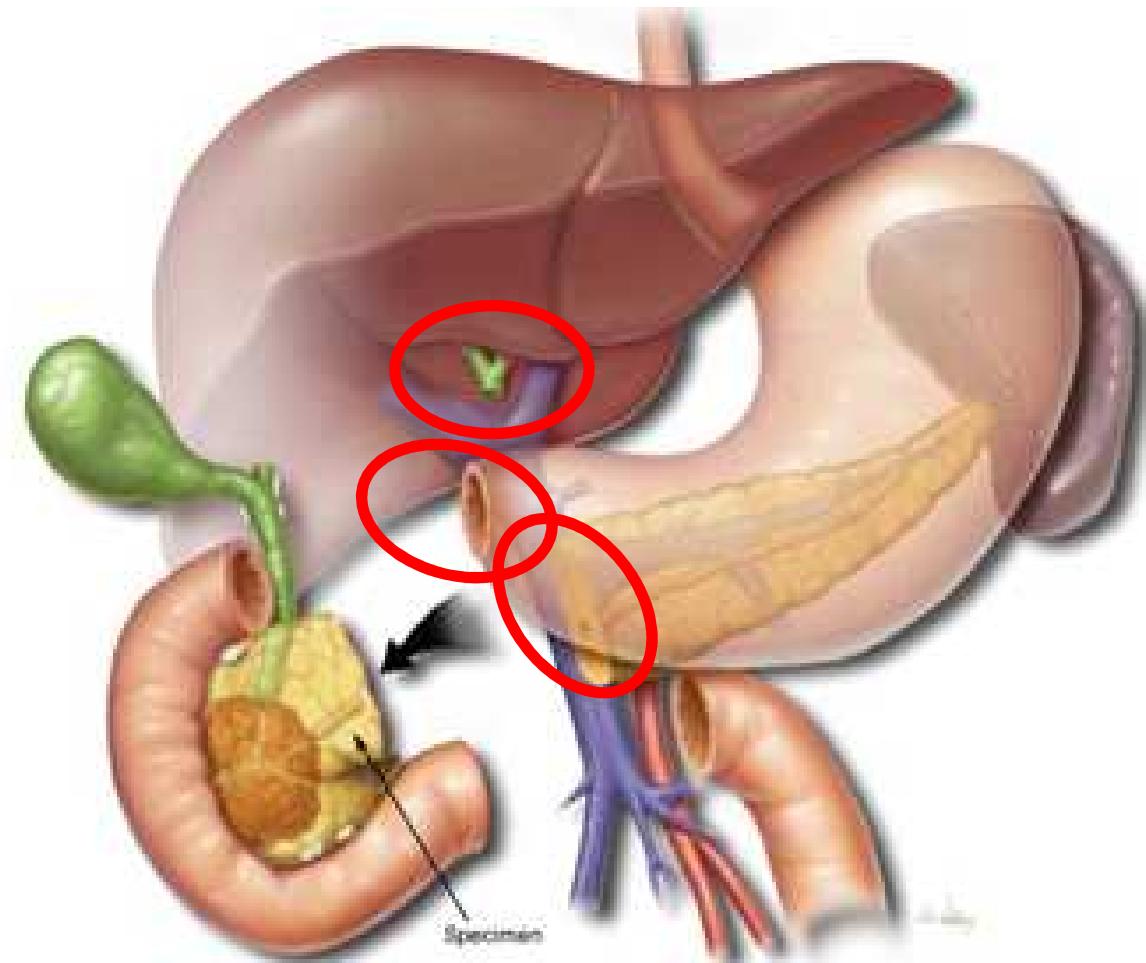


Duodenocefalopancreasectomia (DCP)



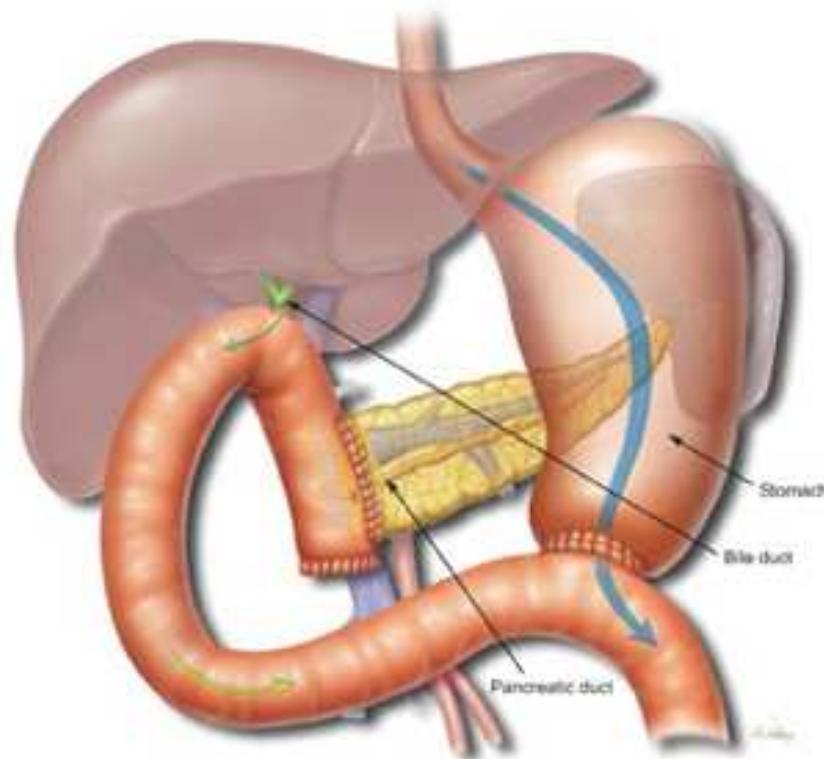


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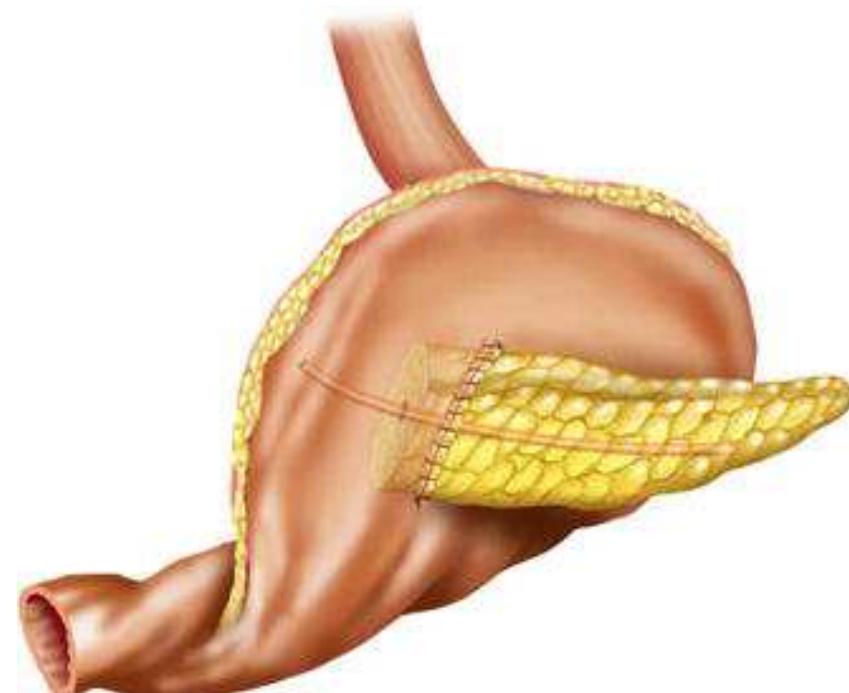




FASE RICOSTRUTTIVA



Pancreo-digunoanastomosi



Pancreo-gastroanastomosi



Duodenocefalopancreasectomia (DCP)

Author	N°Patients	Outcome
Yeo	73PG/72PJ	No difference fistula rate
Bassi	69PG/82PJ	No difference fistula rate, less biliary fistula and abdominal collection in Pg
Duffas	81PG/68PJ	No difference in intrabdominal complication or fistula rate
Fernandez-Cruz	108 pts	Fistula rate 4% in Pg vs 18% Pj
Wellner	59PG/57PJ	No difference fistula rate, DGE or bleeding. Shorter operation in Pg
Topal	162PG/167PJ	Fistula rate 8% in Pg vs 18.9% in Pj
Figueras	65PG/58PJ	Rate and severity lower with Pg
El Nakeeb	45PG/45PJ	Non difference in fistula rate
“Recopanc “	171PG/149PJ	No difference in grade B,C fistula, >grade A and B bleeding in Pg. Less experienced surgeon better with Pg



Duodenocefalopancreasectomia (DCP)



Cochrane Database of Systematic Reviews

Cochrane Database of Systematic Reviews 2017, Issue 9. Art. No.: CD012257.

DOI: 10.1002/14651858.CD012257.pub2.

Pancreaticojejunostomy versus pancreaticogastrostomy reconstruction for the prevention of postoperative pancreatic fistula following pancreaticoduodenectomy (Review)

Cheng Y, Briarava M, Lai M, Wang X, Tu B, Cheng N, Gong J, Yuan Y, Pilati P, Mocellin S

Our findings suggest that there is no reliable evidence supporting the use of one surgical procedure over the other (PJ or PG) to reconstruct the pancreatic stump following pancreatectomy.



Pancreatic anastomosis after pancreatoduodenectomy: A position statement by the International Study Group of Pancreatic Surgery (ISGPS)

Shailesh V. Shrikhande, MD,^a Masillamany Sivasanker, MD,^a Charles M. Vollmer, MD,^b
Helmut Friess, MD,^c Marc G. Besselink, MD,^d Abe Fingerhut, MD,^e Charles J. Yeo, MD,^f
Carlos Fernandez-delCastillo, MD,^g Christos Dervenis, MD,^h Christopher Halloran, MD,ⁱ
Dirk J. Gouma, MD,^d Dejan Radenkovic, MD,^j Horacio J. Asbun, MD,^k John P. Neoptolemos, MD,ⁱ
Jakob R. Izbicki, MD,^l Keith D. Lillemoe, MD,^g Kevin C. Conlon, MD,^m
Laureano Fernandez-Cruz, MD,ⁿ Marco Montorsi, MD,^o Max Bockhorn, MD,^l Mustapha Adham, MD,^p
Richard Charnley, MD,^q Ross Carter, MD,^r Thilo Hackert, MD,^s Werner Hartwig, MD,^t Yi Miao, MD,^u
Michael Sarr, MD,^v Claudio Bassi, MD,^w and Markus W. Büchler, MD,^s for the International Study
Group of Pancreatic Surgery (ISGPS) Mumbai, India, Philadelphia, PA, Munich, Hamburg, and
Heidelberg, Germany, Amsterdam, The Netherlands, Graz, Austria, Boston, MA, Athens, Greece, Liverpool,
Newcastle upon Tyne, and Glasgow, United Kingdom, Belgrade, Serbia, Jacksonville, FL, Dublin, Ireland,
Barcelona, Spain, Lyon, France, Nanjing, P.R. China, Rochester, MN, and Verona and Milan, Italy

Surgery
Volume 161, Number 5

Duodenocefalopancreasectomia (DCP)

<i>Variables</i>	<i>Literature review summary data</i>	<i>Level of evidence (1 to 5) and evidence-based recommendation recommendation (A to D)</i>	<i>ISGPS recommendation (Strong, Moderate, Weak)</i>	<i>Justification</i>
PG vs PJ	PG apparently seems advantageous over PJ although varied heterogeneity seen in existing RCTs	Level 1B Grade B	Moderate	High level of heterogeneity observed in evidence.

A consistent practice of a standardized technique may be a potential strategy to decrease the rate of CR-POPFs for surgeons early in their career; but experienced surgeons at high-volume centers can have lower POPF rates performing a variety of techniques in diverse situations ([Table II](#)).

Duodenocefalopancreasectomia (DCP)

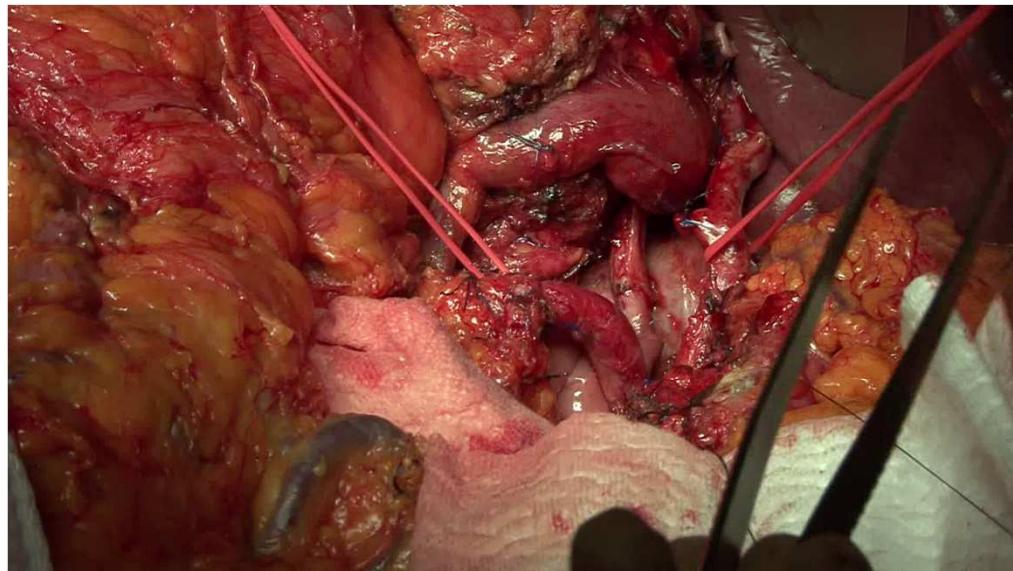
Open vs mini-invasiva





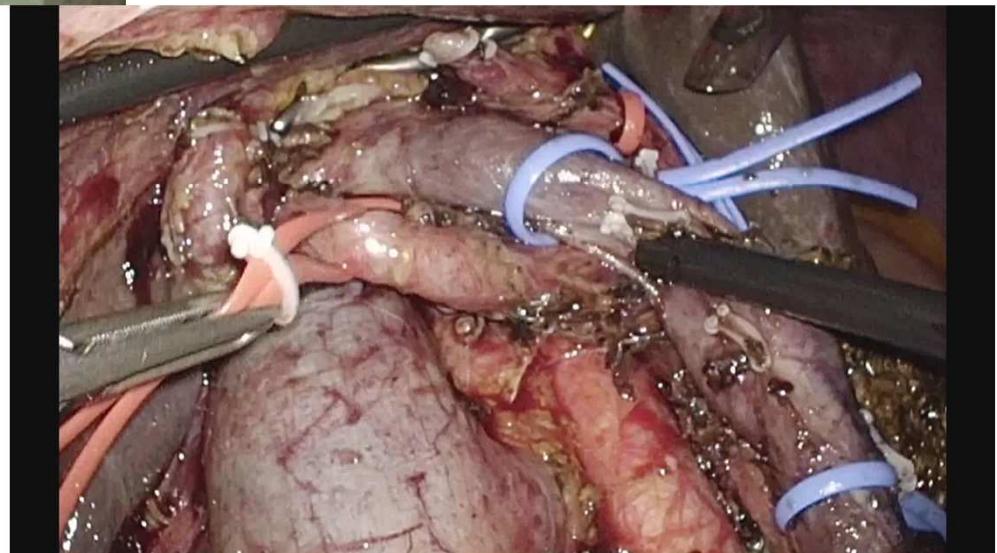
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Duodenocefalopancreasectomia (DCP)



← Open

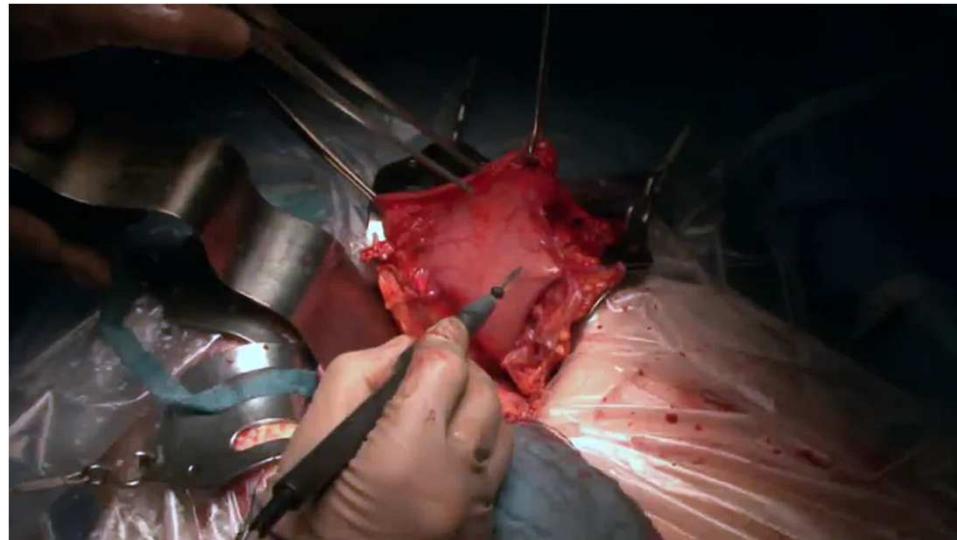
Laparoscopia →





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Duodenocefalopancreasectomia (DCP)



← Open

Laparoscopia →



ORIGINAL ARTICLE

Minimally invasive pancreaticoduodenectomy

Michael L. Kendrick¹, Jony van Hilst², Ugo Boggi³, Thijs de Rooij², R. Matthew Walsh⁴, Herbert J. Zeh⁵, Steven J. Hughes⁶, Yoshiharu Nakamura⁷, Charles M. Vollmer⁸, David A. Kooby⁹, Horacio J. Asbun¹⁰ & the Minimally Invasive Pancreatic Resection Organizing Committee

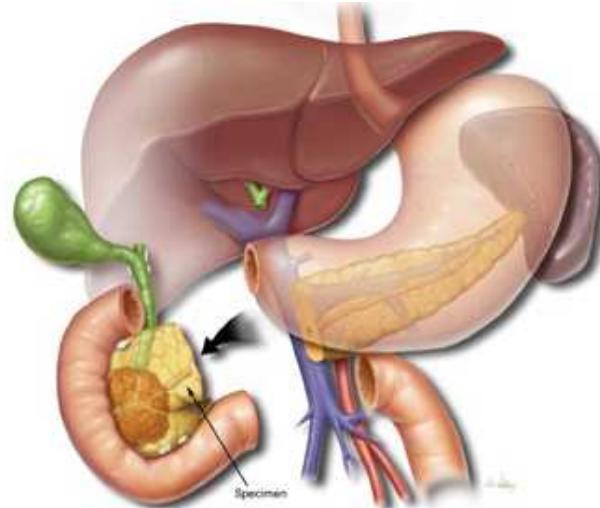
¹Mayo Clinic, Rochester, MN, USA, ²Academic Medical Center, Amsterdam, The Netherlands, ³University of Pisa, Pisa, Italy, ⁴Cleveland Clinic, Cleveland, OH, ⁵University of Pittsburgh, Pittsburgh, PA, ⁶University of Florida, Gainesville, FL, USA, ⁷Nippon Medical School, Tokyo, Japan, ⁸University of Pennsylvania, Philadelphia, PA, ⁹Emory University, Atlanta, GA, and ¹⁰Mayo Clinic, Jacksonville, FL, USA

HPB 2017, 19, 215–224

Conclusion: MIPD appears to provide similar perioperative and oncologic outcomes in selected patients, when performed at experienced, high-volume centers. Its overall role in pancreaticoduodenectomy needs to be better defined. Improved training opportunities, registry participation and prospective evaluation are needed.



Duodenocefalopancreasectomia (DCP)

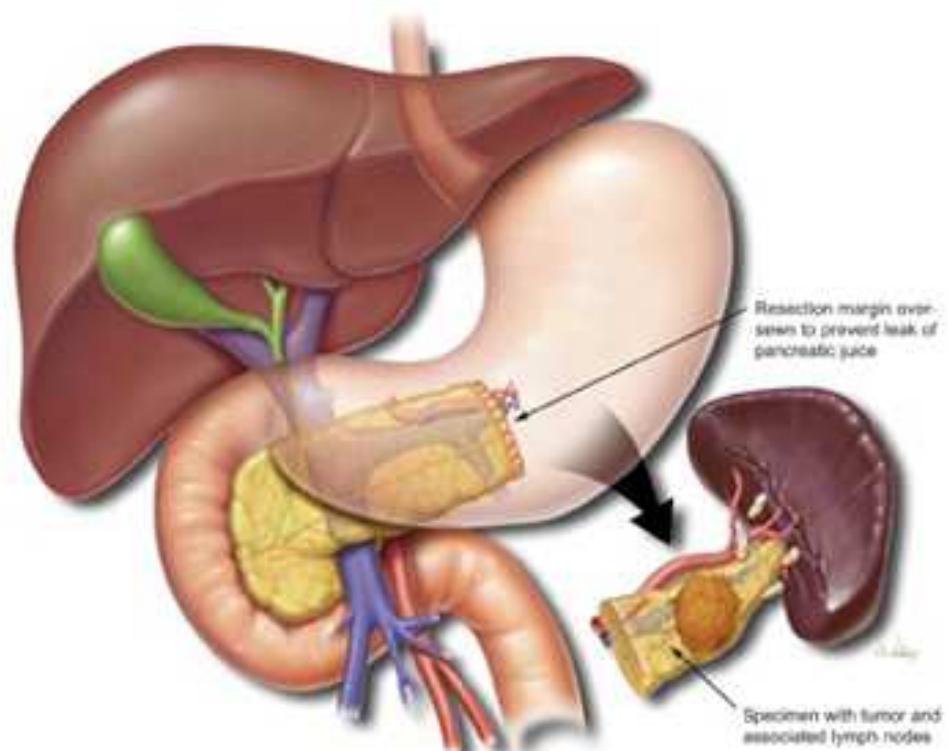
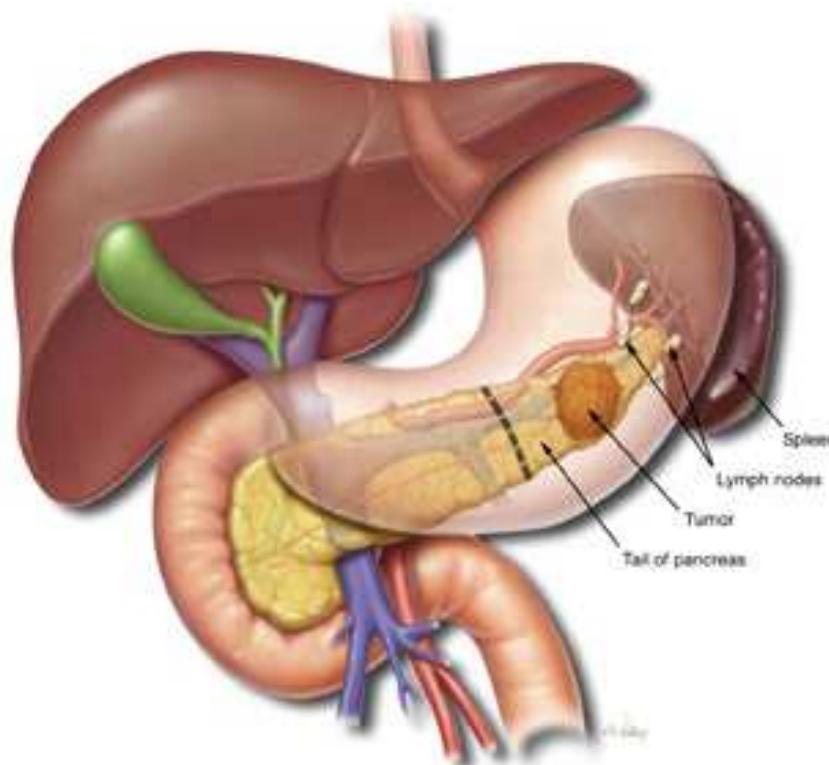


- ✓ Intervento complesso con alta probabilità di complicanze peri ed intraoperatorie
- ✓ A lungo termine attenzione allo stato di nutrizione (rischio diarree; insufficienza pancreatico esocrina; diabete)



Splenopancreasectomia distale

FASE DEMOLITIVA



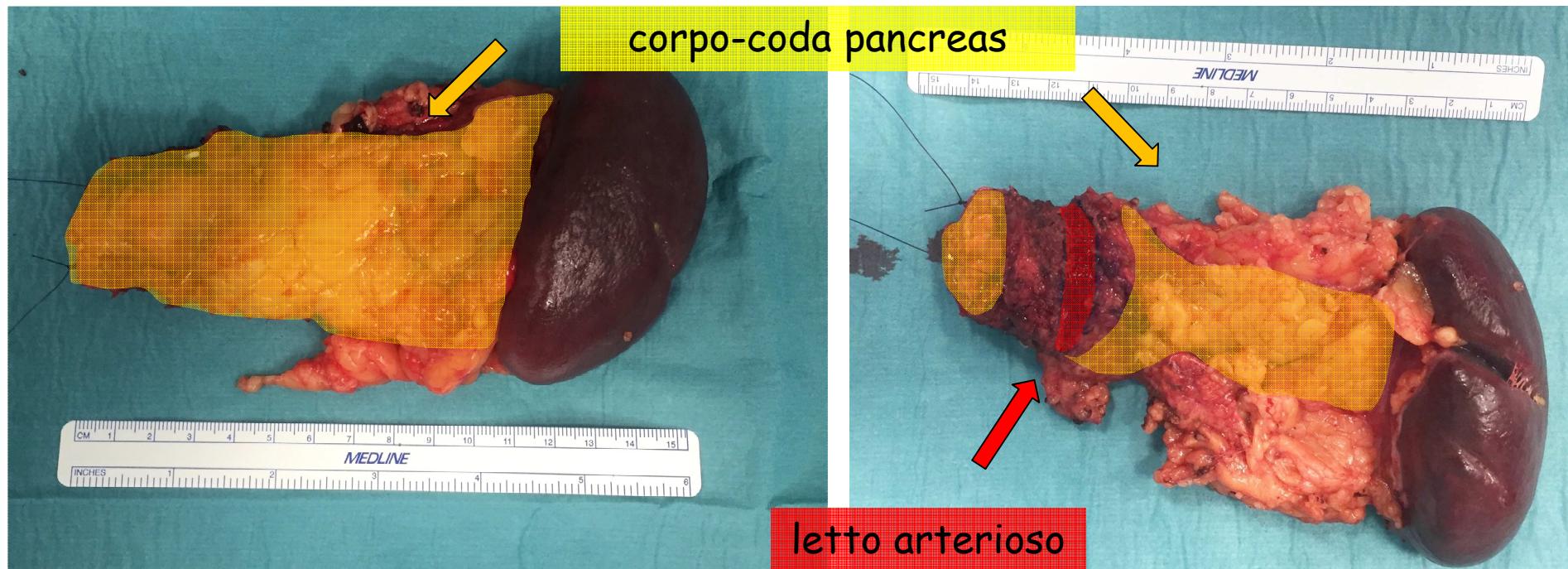


Splenopancreasectomy distale



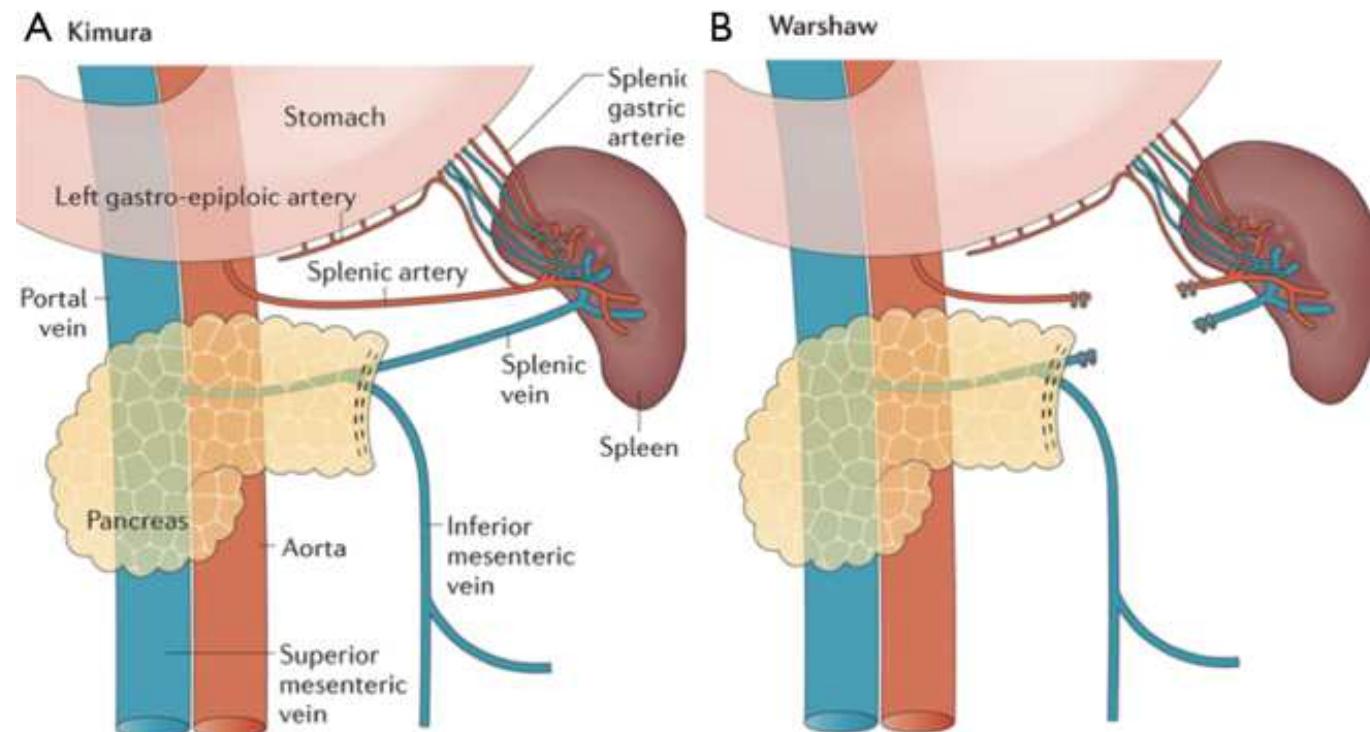


Splenopancreasectomia distale





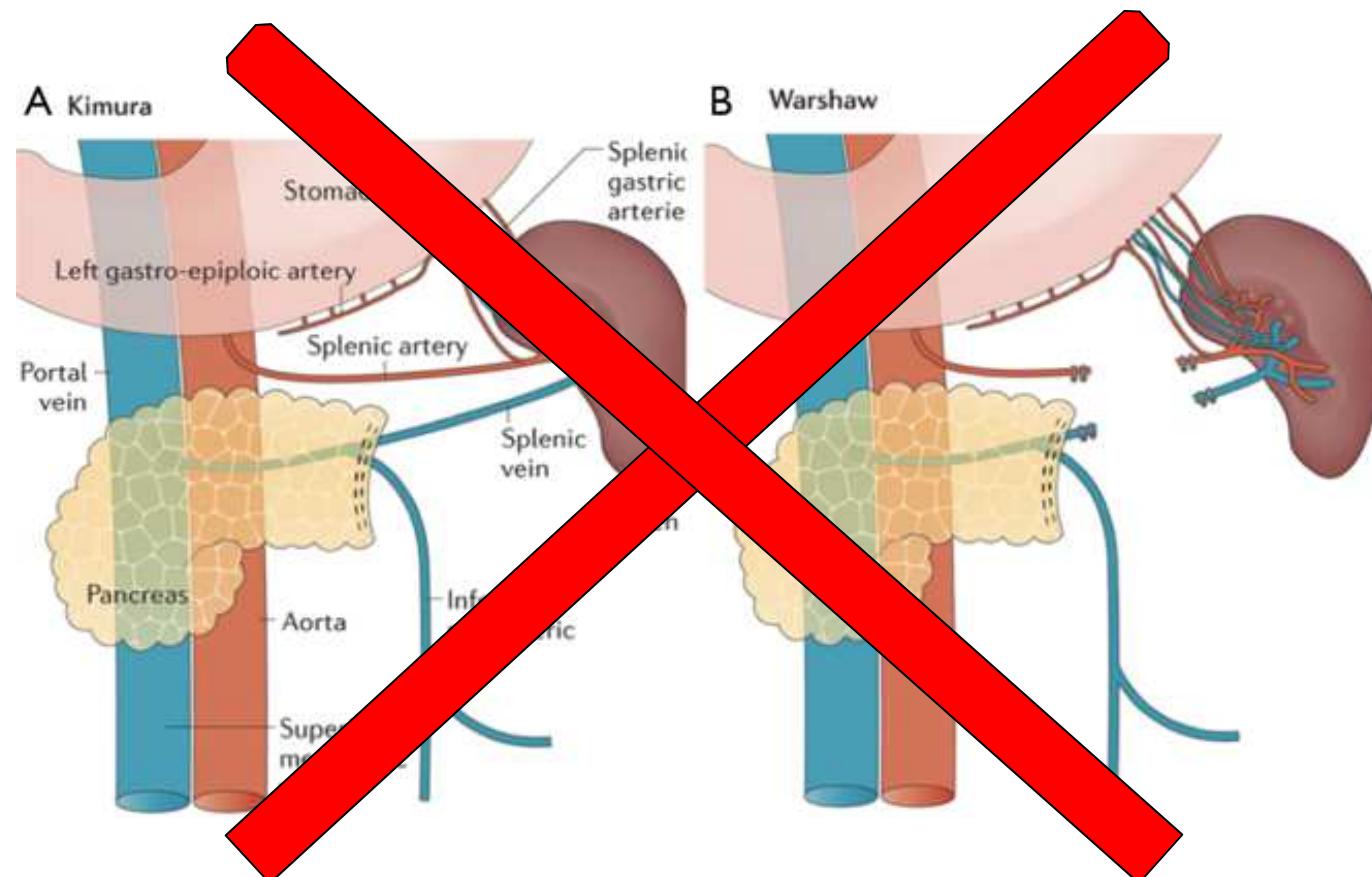
Spleen preserving???????





Splenopancreatectomia distale

Spleen preserving???????





Consensus

Definition of a standard lymphadenectomy in surgery for pancreatic ductal adenocarcinoma: A consensus statement by the International Study Group on Pancreatic Surgery (ISGPS)

Johanna A. M. G. Tol, MD,^a Dirk J. Gouma, MD,^a Claudio Bassi, MD,^b Christos Dervenis, MD,^c Marco Montorsi, MD,^d Mustapha Adham, MD,^e Ake Andrén-Sandberg, MD,^f Horacio J. Asbun, MD,^g Maximilian Bockhorn, MD,^h Markus W. Büchler, MD,ⁱ Kevin C. Conlon, MD,^j Laureano Fernández-Cruz, MD,^k Abe Fingerhut, MD,^{l,m} Helmut Friess, MD,ⁿ Werner Hartwig, MD,ⁱ Jakob R. Izicki, MD,^h Keith D. Lillemoe, MD,^o Miroslav N. Milicevic, MD,^p John P. Neoptolemos, MD,^q Shailesh V. Shrikhande, MD,^r Charles M. Vollmer, MD,^s Charles J. Yeo, MD,^t and Richard M. Charnley, MD,^u for the International Study Group on Pancreatic Surgery, Amsterdam, The Netherlands, Verona and Milan, Italy, Athens, Greece, Lyon, France, Stockholm, Sweden, Jacksonville, FL, Hamburg, Heidelberg, and Munich, Germany, Dublin, Ireland, Barcelona, Spain, Graz, Austria, Boston, MA, Belgrade, Serbia, Liverpool and Newcastle upon Tyne, UK, Mumbai, India, and Philadelphia, PA

Surgery
September 2014

Consensus statement. Standard lymphadenectomy during pancreatectomy for patients with pancreatic ductal adenocarcinoma in the body or tail includes Ln's in stations 10 in the hilum of the spleen, 11 along the splenic artery, and 18 along the inferior border of the body and tail of the pancreas. Ln station 9 is only suggested to be included in the resection when tumors are confined to the area of the body of the pancreas (Fig 5).

Members of the consensus conference also agreed that in patients undergoing left-sided pancreatectomy for malignant neoplasms, splenectomy is indicated to ensure adequate excision of the primary tumor and Ln's. The lack of consensus and no available level I evidence on the benefit of extending the resection weakens this consensus statement.



Pattern di recidiva dell'adenocarcinoma pancreatico

25%	liver only
24%	local only
19%	local & distant
15%	multiple
15%	lung only
3%	other (bone etc..)

Groot, et al. Ann. Surg
2017, Mar 23



Pattern di recidiva dell'adenocarcinoma pancreatico

25%	liver only
24%	local only
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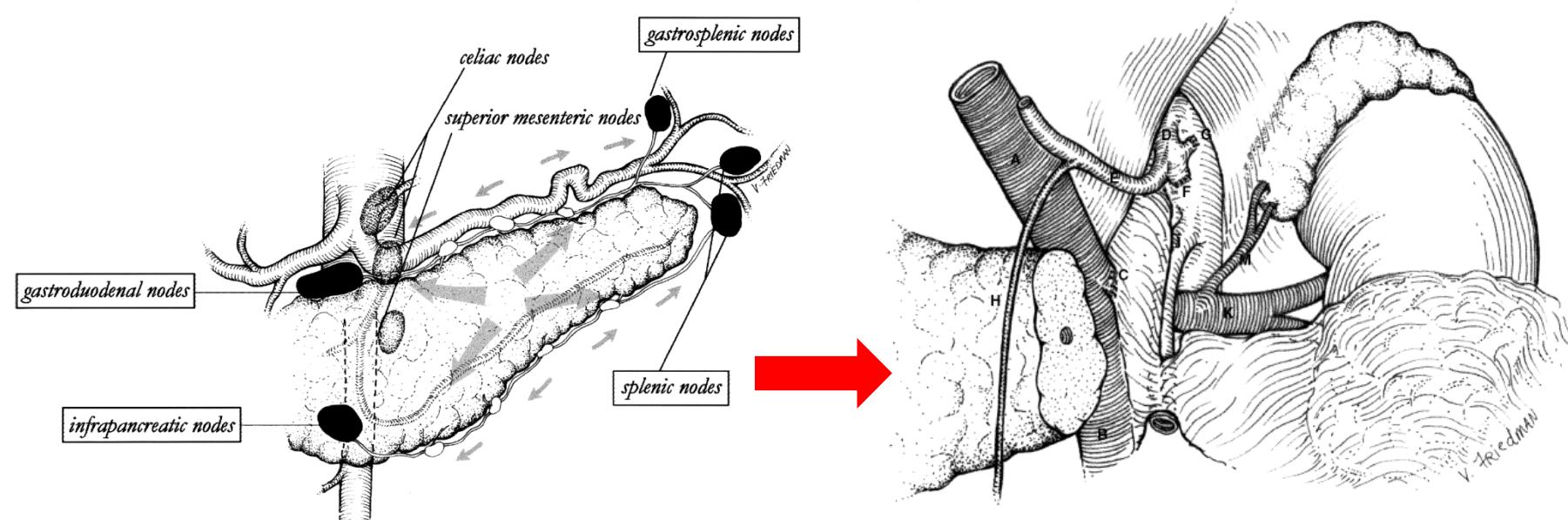
Groot, et al. Ann. Surg
2017, Mar 23



Radical antegrade modular pancreatosplenectomy

Steven M. Strasberg, MD, Jeffrey A. Drebin, MD, PhD, and David Linehan, MD, St. Louis, Mo

(Surgery 2003;133:521-7.)



Migliore linfoadenectomia



Non solo per linfoadenectomia

Radical Antegrade Modular Pancreatosplenectomy Procedure for Adenocarcinoma of the Body and Tail of the Pancreas: Ability to Obtain Negative Tangential Margins

Steven M Strasberg, MD, FACS, David C Linehan, MD, FACS, William G Hawkins, MD

J Am Coll Surg 2007

R0 in 91% of cases

Comparison of Surgical Outcomes Between Radical Antegrade Modular Pancreatosplenectomy (RAMPS) and Standard Retrograde Pancreatosplenectomy (SPRS) for Left-Sided Pancreatic Cancer

Toshiya Abe¹ · Kenoki Ohuchida¹ · Yoshihiro Miyasaka¹ · Takao Ohtsuka¹ · Yoshinao Oda² · Masafumi Nakamura¹

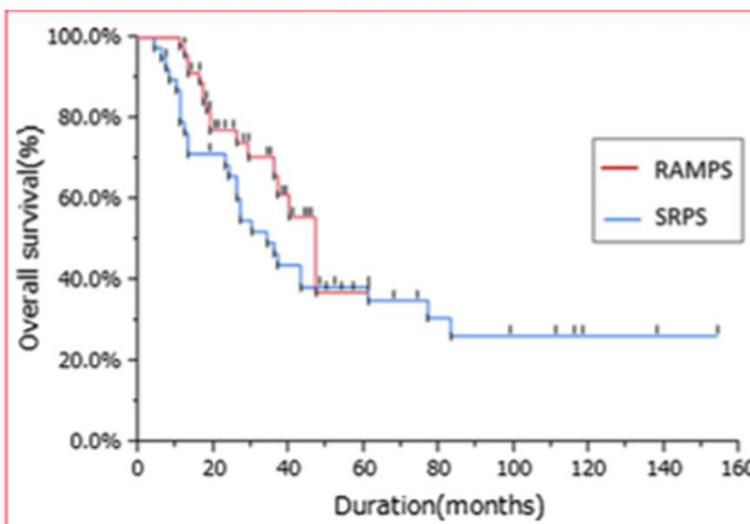


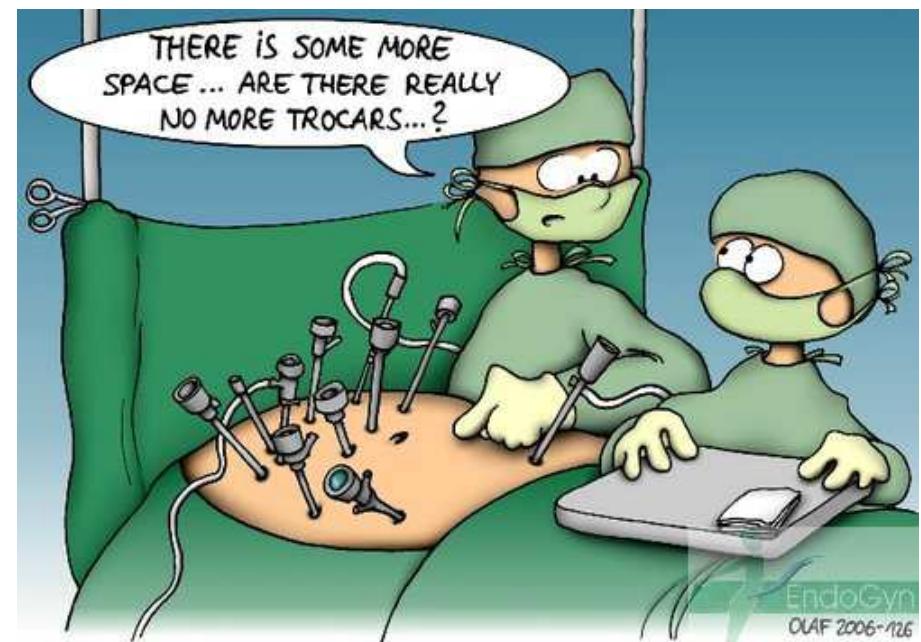
Fig. 1 Overall survival after SRPS and RAMPS for pancreas body and tail adenocarcinoma. In comparing the RAMPS and SRPS groups, RAMPS showed a tendency for improvement of the median survival times than SRPS (47 vs 34 months) ($P = 0.1920$)

World J Surg (2016) 40:2267–2275
DOI 10.1007/s00268-016-3526-x



Splenopancreasectomia distale

Open vs mini-invasiva





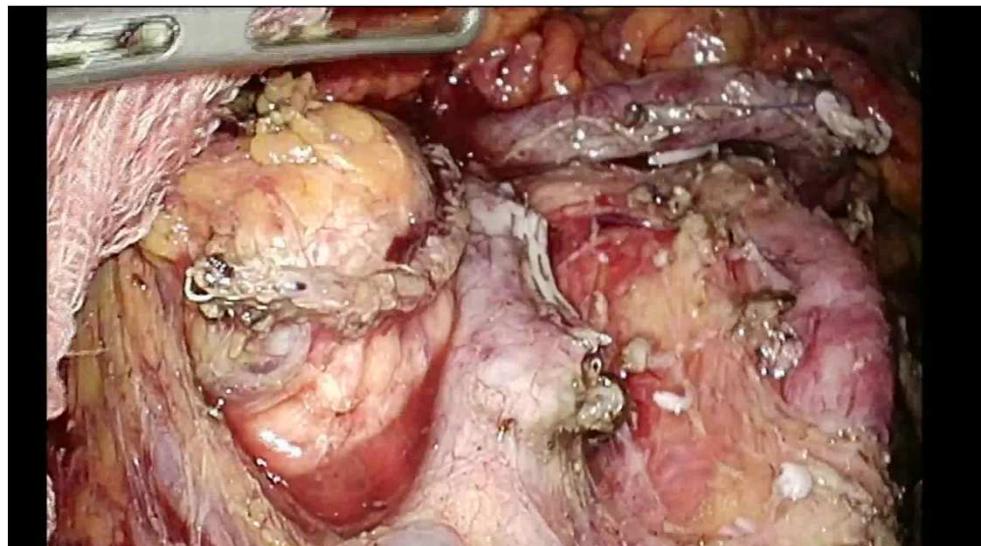
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Splenopancreasectomia distale



← Open

Laparoscopia →



ORIGINAL ARTICLE

Minimally Invasive versus Open Distal Pancreatectomy for Ductal Adenocarcinoma (DIPLOMA)

A Pan-European Propensity Score Matched Study

Annals of Surgery • Volume XX, Number XX, Month 2017

Conclusions: Comparable survival was seen after MIDP and ODP for PDAC, but the opposing differences in R0 resection rate, resection of Gerota's fascia, and lymph node retrieval strengthen the need for a randomized trial to confirm the oncological safety of MIDP.





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Distal pancreatectomy, minimally invasive or open, for malignancy (DIPLOMA) – a randomized controlled trial

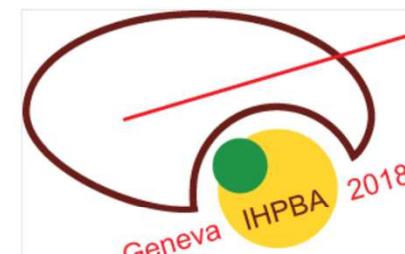
PROTOCOL SUMMARY:

Rationale: Several systematic reviews have suggested superior outcomes after minimally invasive distal pancreatectomy (MIDP) as compared to open distal pancreatectomy (ODP) for benign and pre-malignant disease. In the literature and in a recent pan-European survey, about one third of pancreatic surgeons expressed concerns specifically regarding the oncologic safety (i.e. radical resection, lymph node retrieval and survival) of MIDP in pancreatic cancer. Most surgeons stated that a randomised trial assessing oncologic safety in MIDP vs ODP for pancreatic cancer is needed.

Objective: To compare MIDP with ODP regarding radical resection rate for pancreatic ductal adenocarcinoma (PDAC) in the pancreatic body or tail.

Study design: A pan-European, randomised controlled, multicentre, patient-blinded non-inferiority trial. The protocol was designed according to the SPIRIT guidelines¹.

Events:



13th IHPBA World Congress
September 3 - September 7

5th DIPLOMA trial meeting
September 3 - September 7



Splenopancreasectomy distale



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name

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Foundation

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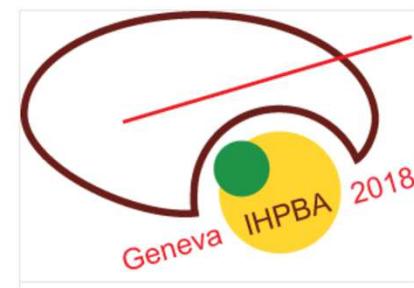
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Events:



13th IHPBA World Congress

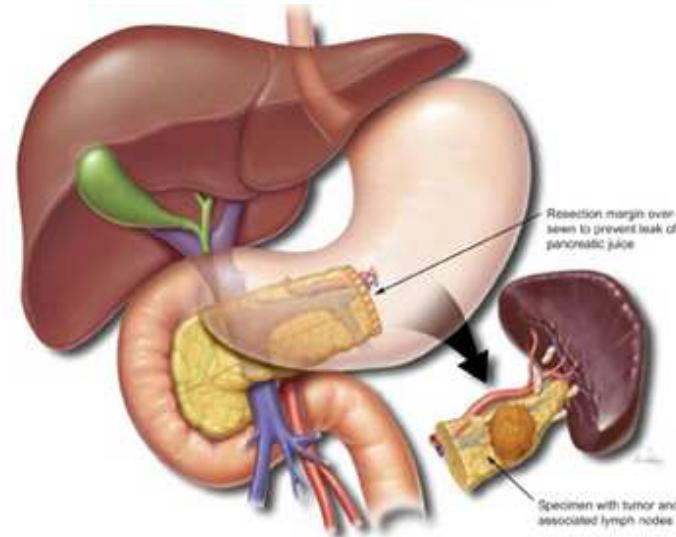
September 3 - September 7

5th DIPLOMA trial meeting

September 3 - September 7



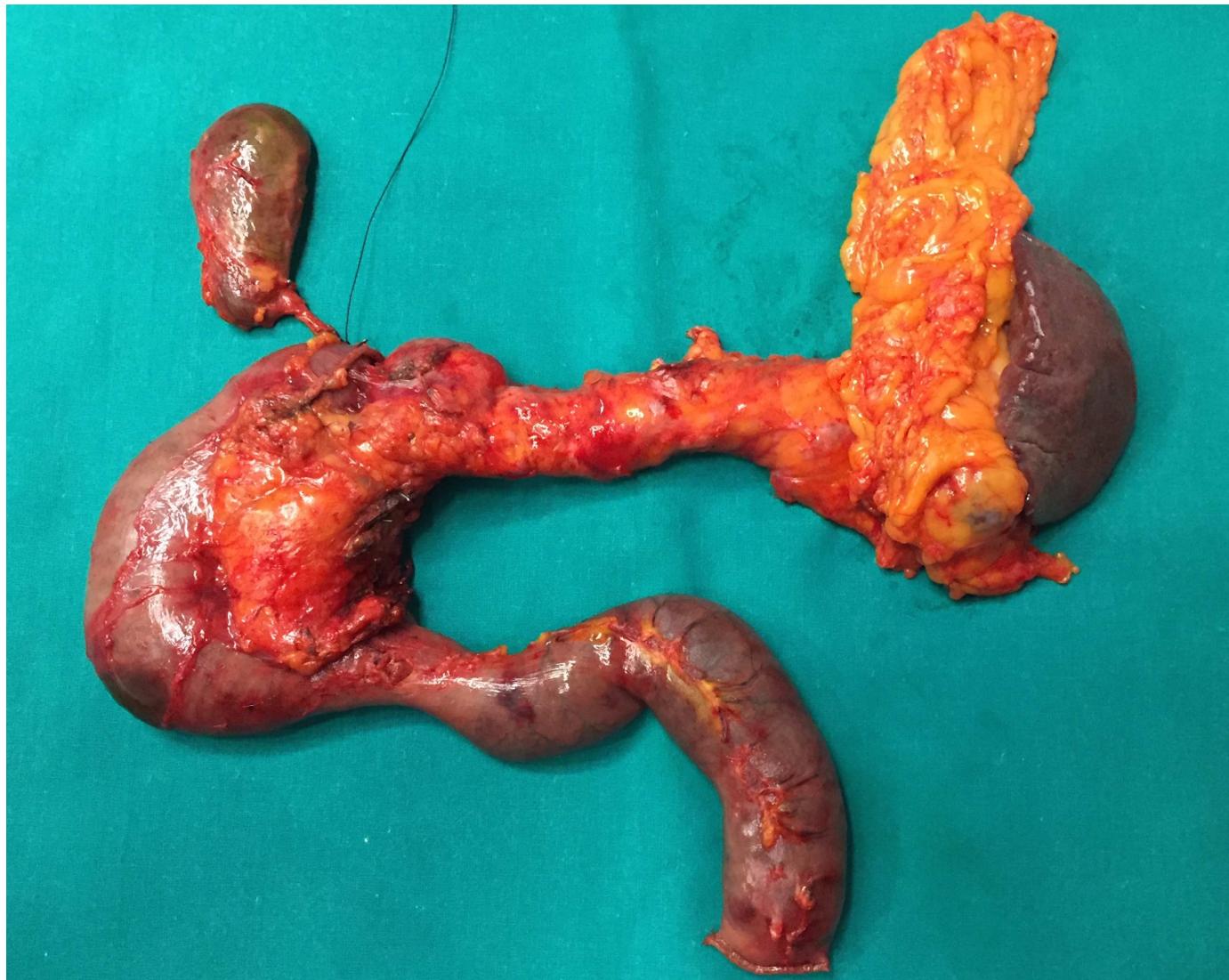
Splenopancreasectomia distale



- ✓ Intervento meno complesso della DCP ma a maggior rischio di fistola
- ✓ Splenectomia → protocolli vaccinali (haemophilus; meningococco; pneumococco; anti-influenzale)
- ✓ Nuova comparsa/peggioramento diabete
- ✓ Minor rischio di insufficienza pancreatico esocrina
- ✓ Diarree (RAMPS)



Pancreasectomia totale





Pancreasectomia totale





FONDAZIONE
POLIAMBULANZA
Istituto Ospedaliero

Grazie per l'attenzione

LIVE SURGERY²

6 JUNE 2018

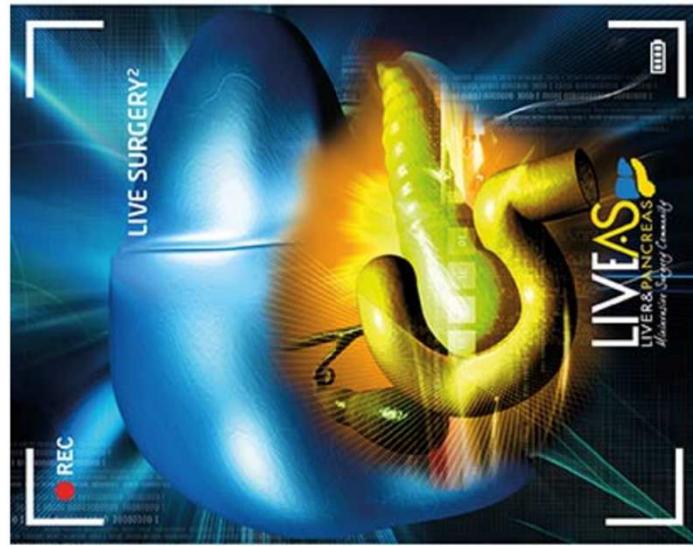


10.00 am -3.00 pm CET

Ultrasound guided laparoscopic liver resection



Mini-invasive pancreatic resection for cancer



Dr. Alessandro Ferrero
Chief of General and Oncological
Surgery, Mauriziano Hospital
Torino – Italy



Dr. Edoardo Rosso
Director of the Department
of General Surgery of the
Poliambulanza Foundation
Institute of Brescia.

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