GDP *versus* DPT

Orlando Jorge M. Torres
Professor Titular e Chefe do Serviço de
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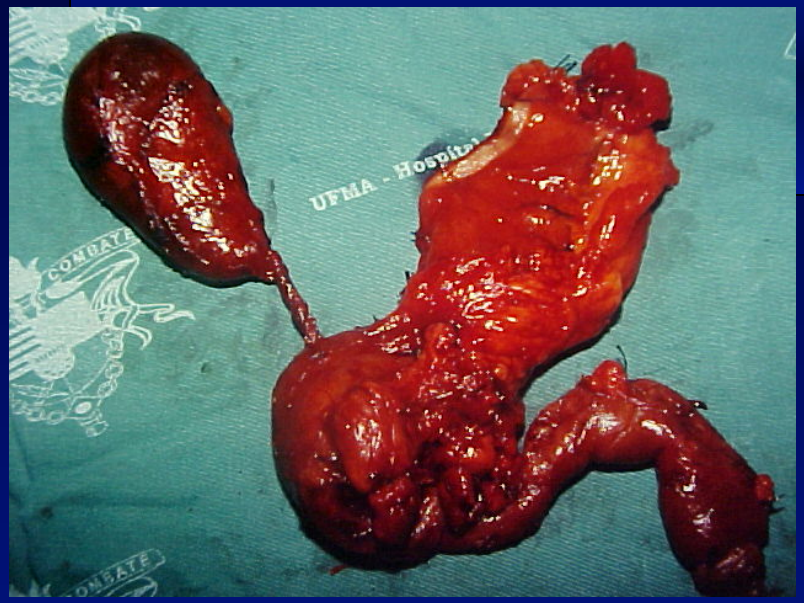
Universidade Federal do Maranhão - UFMA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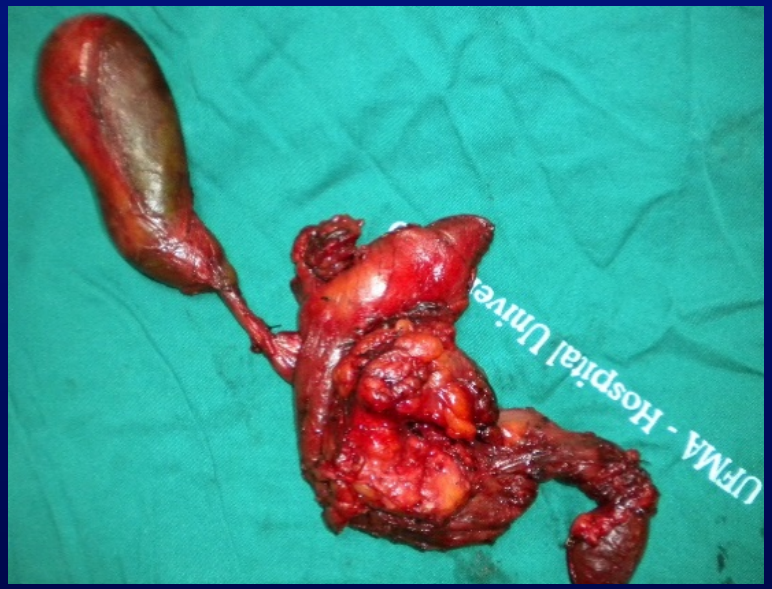
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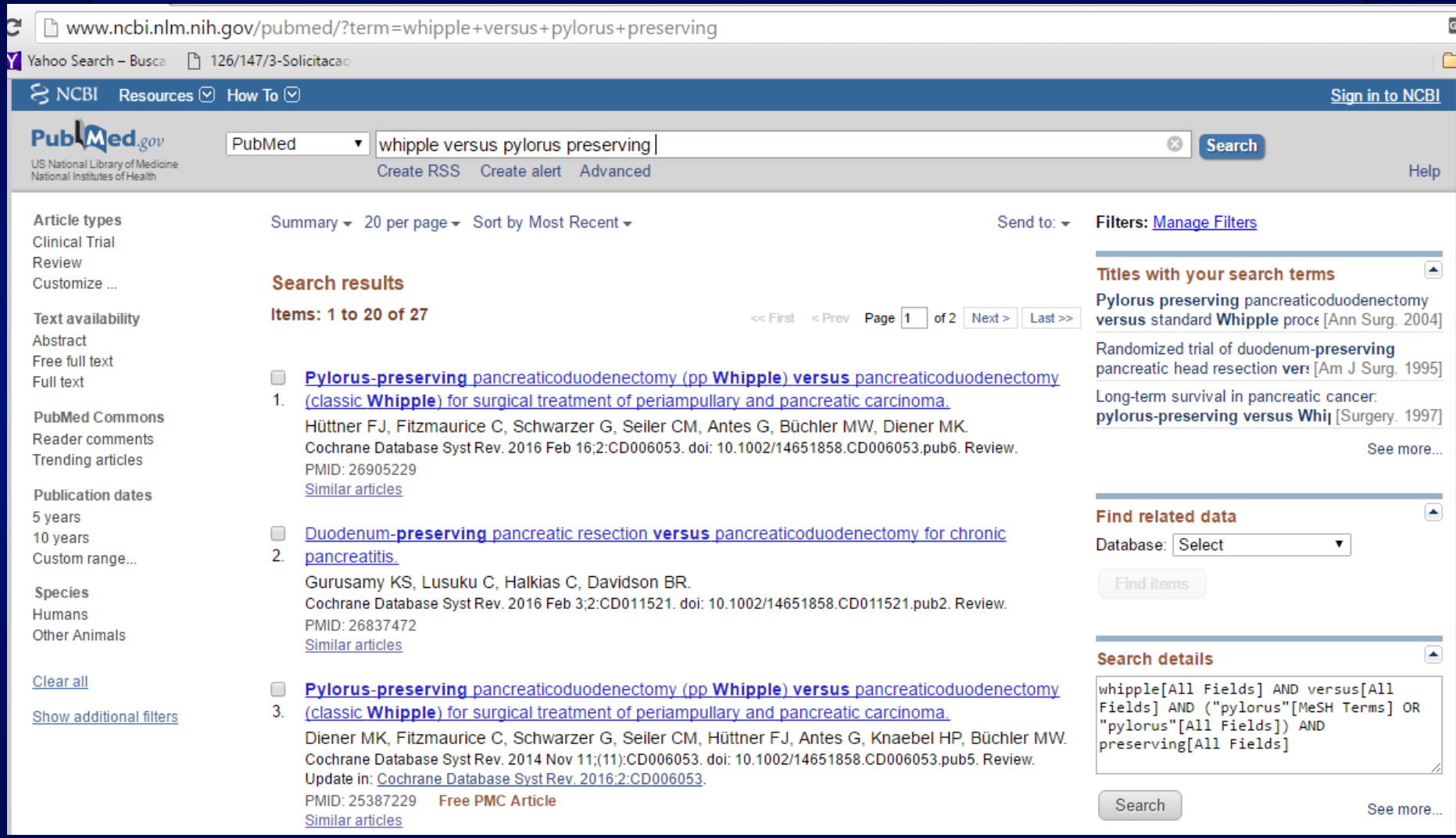
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1. Pylorus-preserving pancreaticoduodenectomy (pp Whipple) versus pancreaticoduodenectomy (classic Whipple) for surgical treatment of periampullary and pancreatic carcinoma.
Hüttner FJ, Fitzmaurice C, Schwarzer G, Seiler CM, Antes G, Büchler MW, Diener MK.
Cochrane Database Syst Rev. 2016 Feb 16;2:CD006053. doi: 10.1002/14651858.CD006053.pub6. Review.
PMID: 26905229
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Cochrane Database Syst Rev. 2014 Nov 11;(11):CD006053. doi: 10.1002/14651858.CD006053.pub5. Review.
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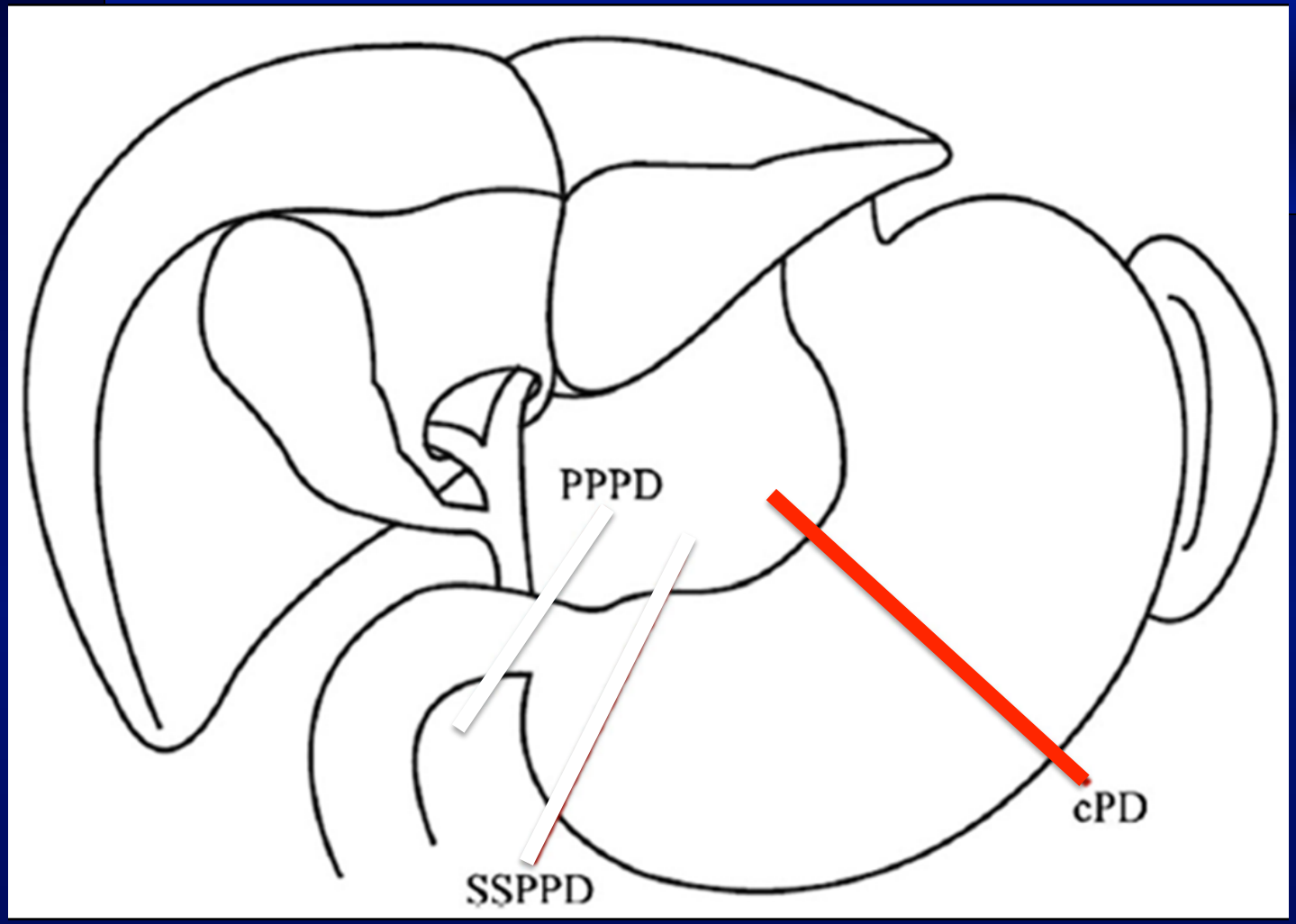


Dr. Allen Whipple
1881-1963.

1935

1º Whipple clássica (cPD)

Whipple AO. N Engl J Med 1942;226:515-18.

OPERAÇÃO DE WHIPPLE

- Dumping
- Diarréia
- Dispepsia

Traverso LW, Longmire WP. Surg Gynecol Obstet 1978;146:959.

Preservation of the Pylorus in Pancreaticoduodenectomy

A Follow-up Evaluation

L. WILLIAM TRAVERSO, M.D., WILLIAM P. LONGMIRE, JR., M.D.

From the Department of Surgery, UCLA School of Medicine, Los Angeles, California

We have previously reported our efforts to minimize post-gastrectomy symptoms in two patients with benign disease who

Traverso LW, Longmire WP. Ann Surg 1980;192:306-9.

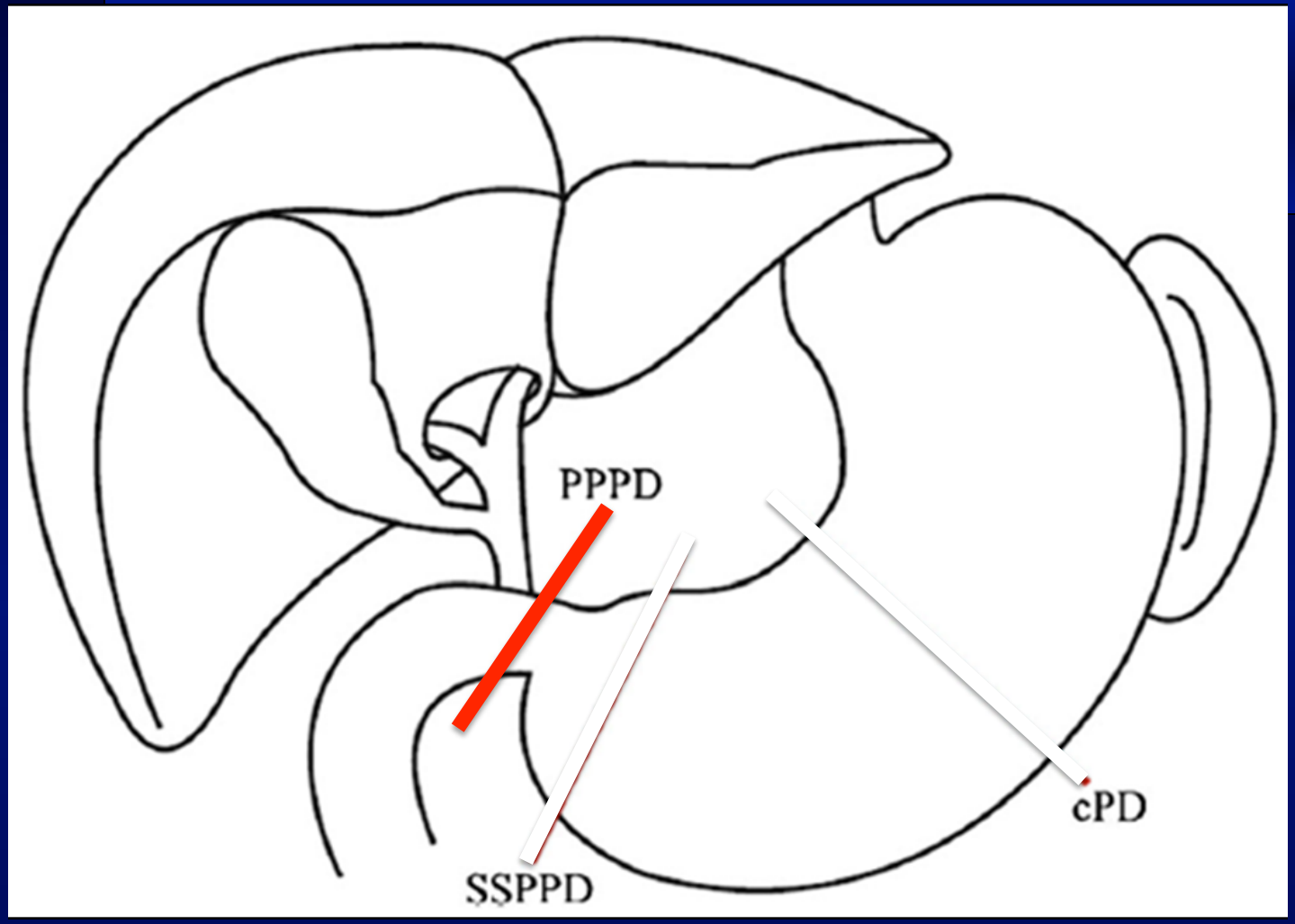
DURING PANCREATICODUODENECTOMY for pancreatic cancer, a 50–70% gastrectomy with or without truncal vagotomy is customarily performed to prevent marginal ulcer from developing at the gastrojejunostomy and to provide an adequate pancreatic tumor resection. However, removal of the pylorus during pancreaticoduodenectomy for benign disease may needlessly predispose the patient to postgastrectomy symptoms of dumping, diarrhea, or dyspepsia.

Traverso LW, Longmire WP. Ann Surg 1980;192:306-9.

Materials and Methods

In the two-year period between 1977 and 1979, 18 patients underwent pancreaticoduodenectomy (four total pancreatectomies) with preservation of the pylorus for chronic pancreatitis or for early periampullary carcinoma. Eight patients were available for evaluation from two months to one year postoperation.

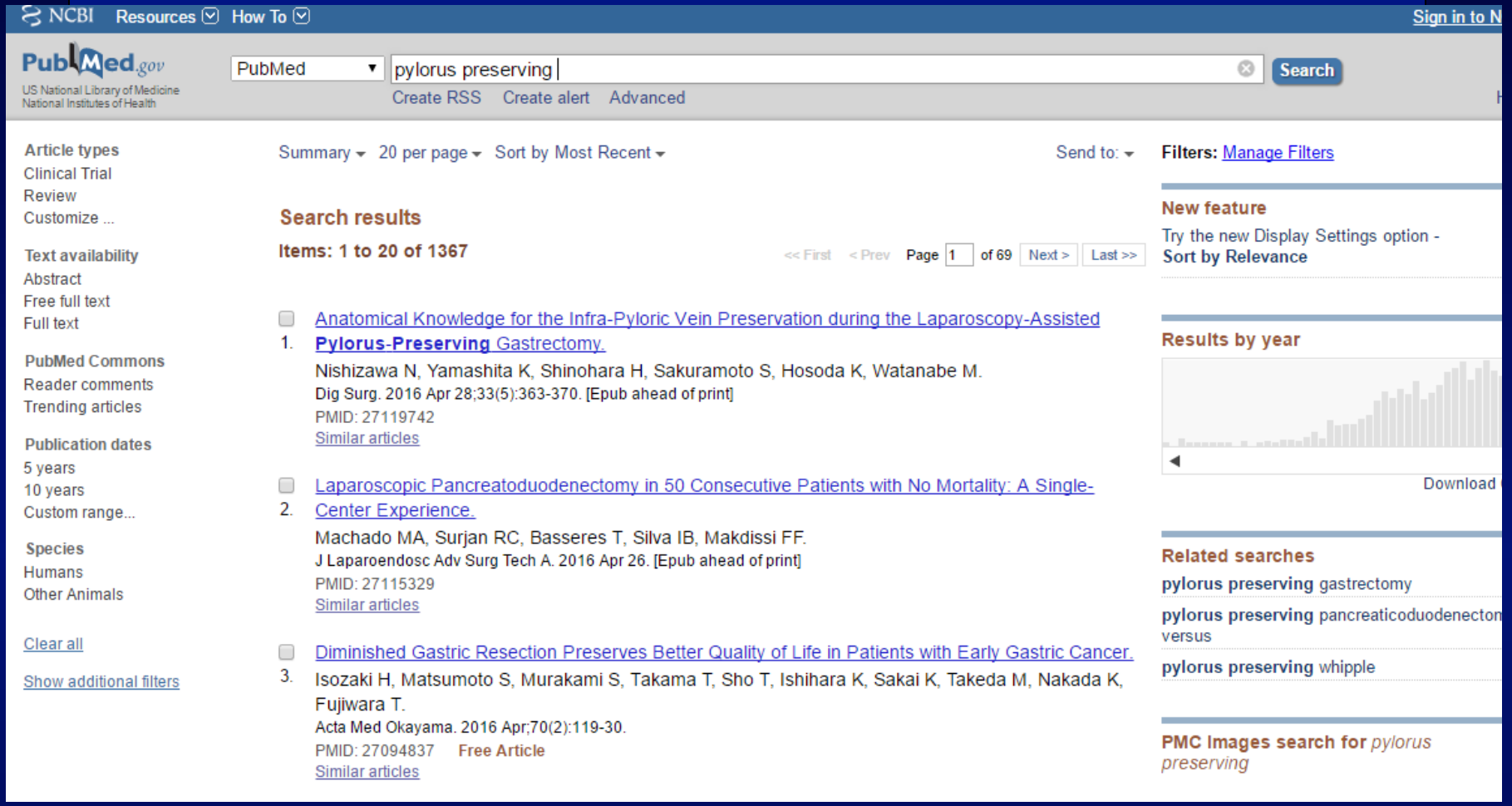
Traverso LW, Longmire WP. Ann Surg 1980;192:306-9.



1978

2º Preservação pilórica (PPPD)

Traverso LW, Longmire WP. Surg Gynecol Obstet 1978;146:959.



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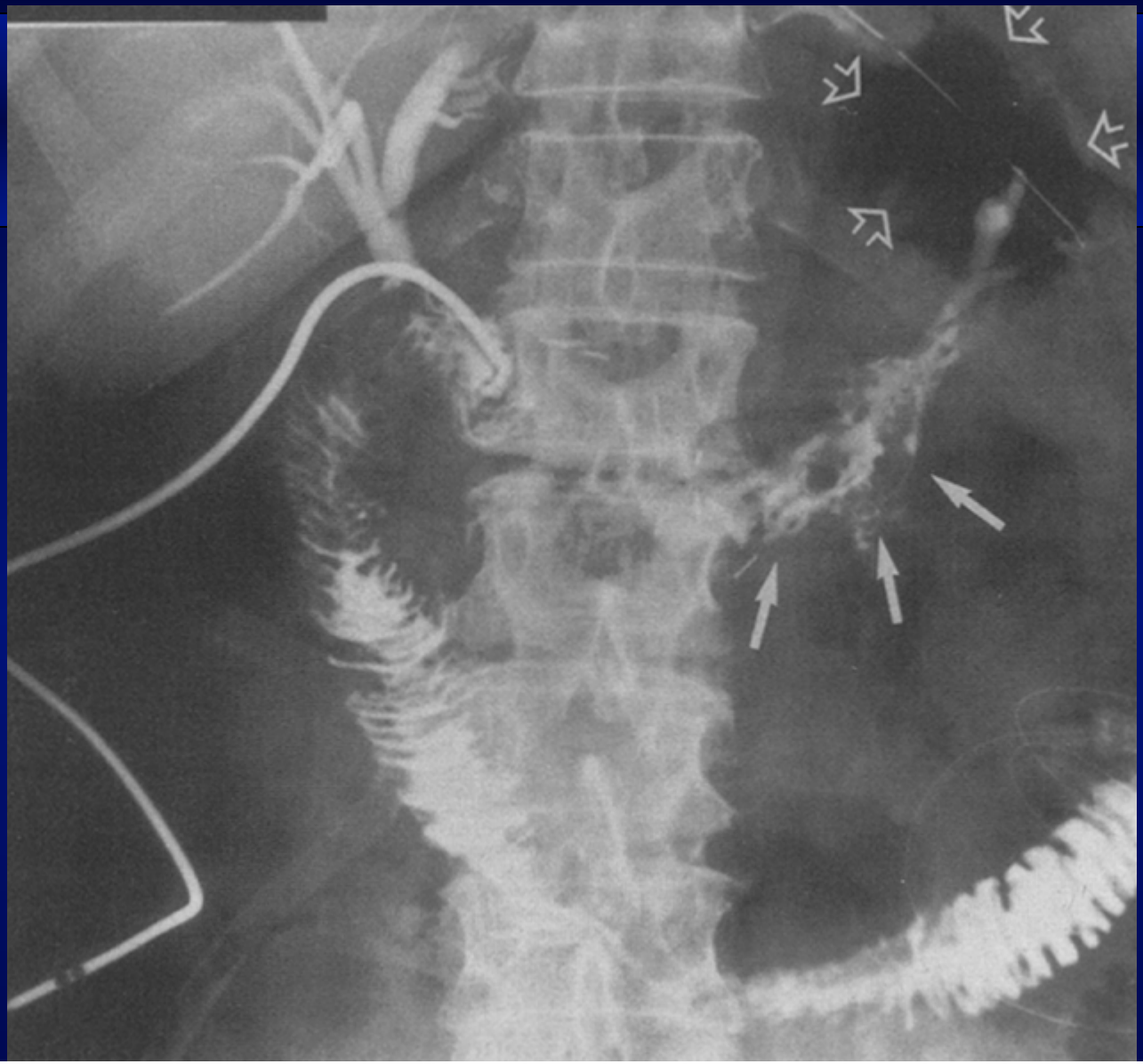


FIG 2. Cholangiogram in a patient after pylorus preserving pancreaticoduodenectomy with gastric stasis at 16 days postoperatively. The open arrows show the atonic gastric fundus.

Van Berge Henegouwewn MI. J Am Coll Surg 1997;185:373-9.

Two Thousand Consecutive Pancreaticoduodenectomies

John L Cameron, MD, FACS, Jin He, MD, PhD

BACKGROUND: The first successful local resection of a periampullary tumor was performed by Halsted in 1898. Kausch performed the first regional resection in 1909, and the operation was popularized by Whipple in 1935. The operation was infrequently performed until the 1980s and 1990s.

STUDY DESIGN: Two thousand consecutive pancreaticoduodenectomies performed by 1 surgeon (JLC) from the 1960s to the 2000s were retrospectively reviewed from a prospectively maintained database. The first 1,000 were performed over a period of 34 years, the second 1,000 over a period of 9 years.

RESULTS: The most common indication throughout was adenocarcinoma of the head of the pancreas (PDAC, 46%). Benign intraductal papillary mutinous neoplasm (IPMN) increased from

Cameron JL, He J. J Am Coll Surg 2015;220:530-6.

Câncer do pâncreas

Table 4. Morbidity

Complication	n	%
Delayed gastric emptying	410	21
Postoperative pancreatic fistula	295	15
Wound infection	222	11
Cardiac event	69	3
Pneumonia	38	2
Delayed bleeding	32	2
Chyle leak	28	1
Any complication	894	45

Mortalidade 1,55%

21-61%

Cameron JL, He J. J Am Coll Surg 2015;220:530-6

RETARDO NO ESVAZIAMENTO GÁSTRICO

- 19 - 61%
- Promovendo
  - Desconforto
  - Aumento do tempo de internação
  - > risco de complicação respiratória
  - Aumento do custo hospitalar
  - Menor qualidade de vida

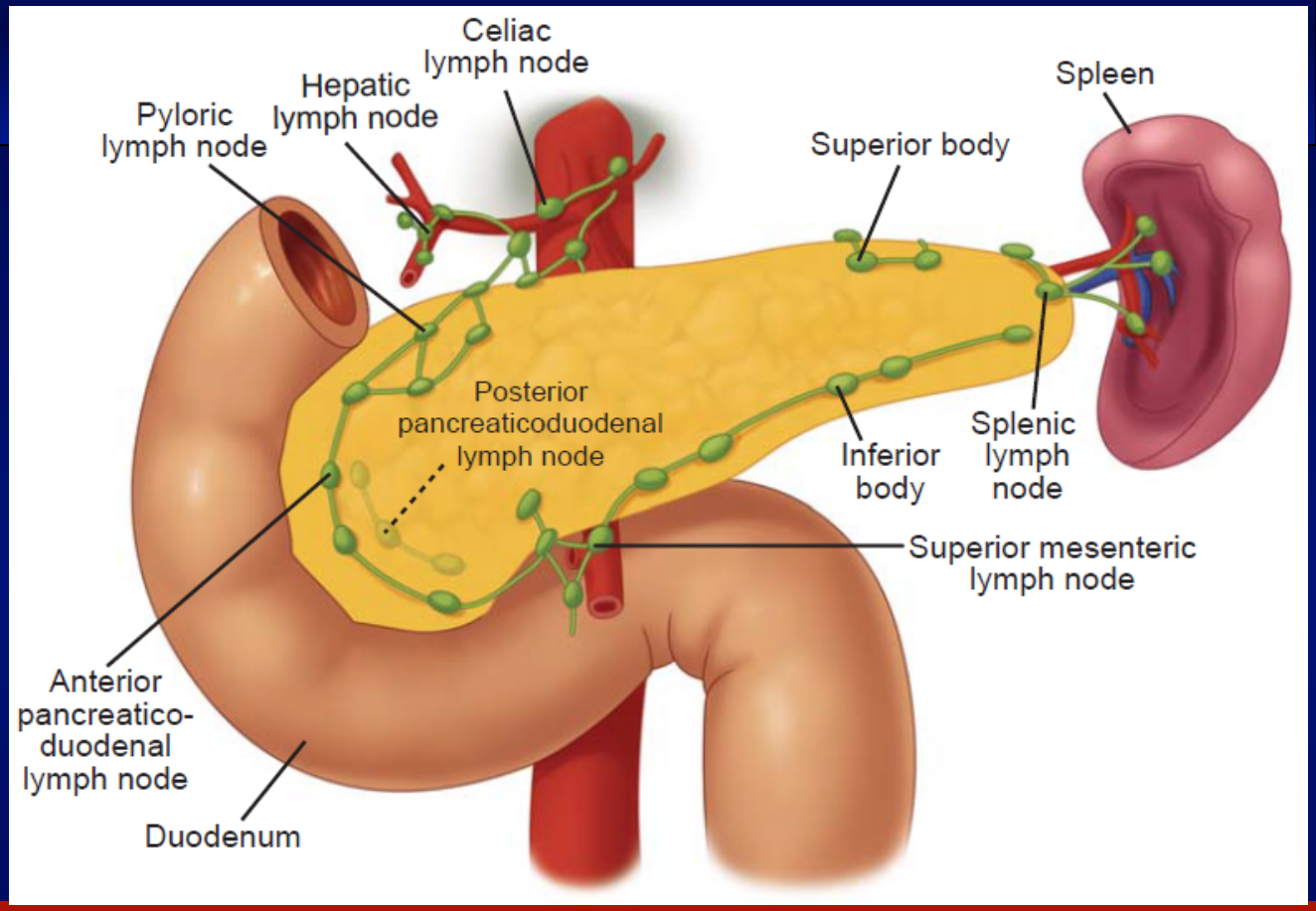
Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

RETARDO NO ESVAZIAMENTO GÁSTRICO

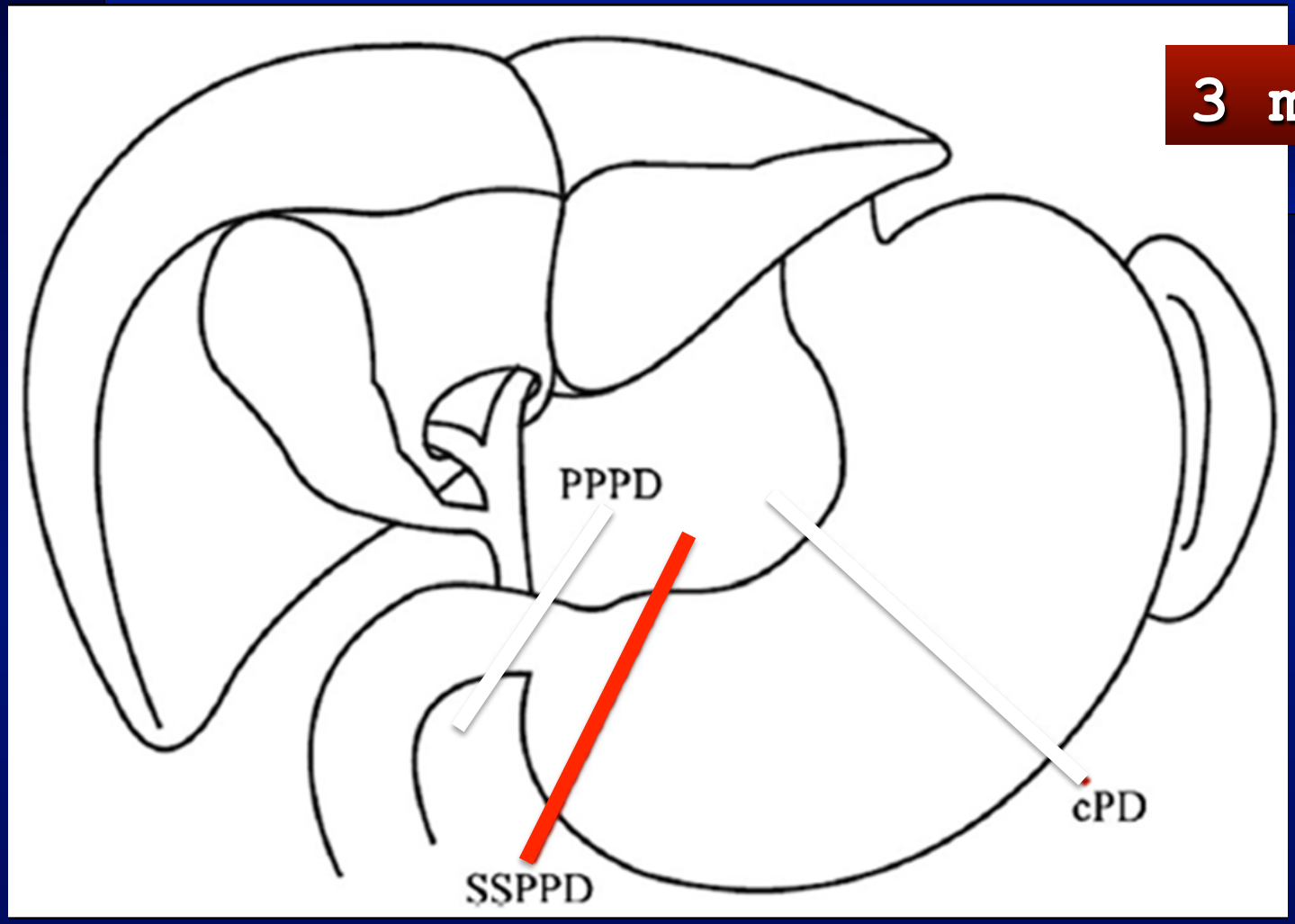
- Piloroespasmo
  - Ruptura do Sistema Nervoso Vagal
  - Diminuição do suprimento vascular
  - Isquemia antropilórica

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

PRESERVAÇÃO PILÓRICA



- Ligadura da a. gastroduodenal
- Linfadenectomia
- Dissecção



3 momentos:

1995

3º Preservação gástrica (SSPPD)

Mais realizada no Japão

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

Duodenopancreatectomia

1º Whipple clássica (cPD)

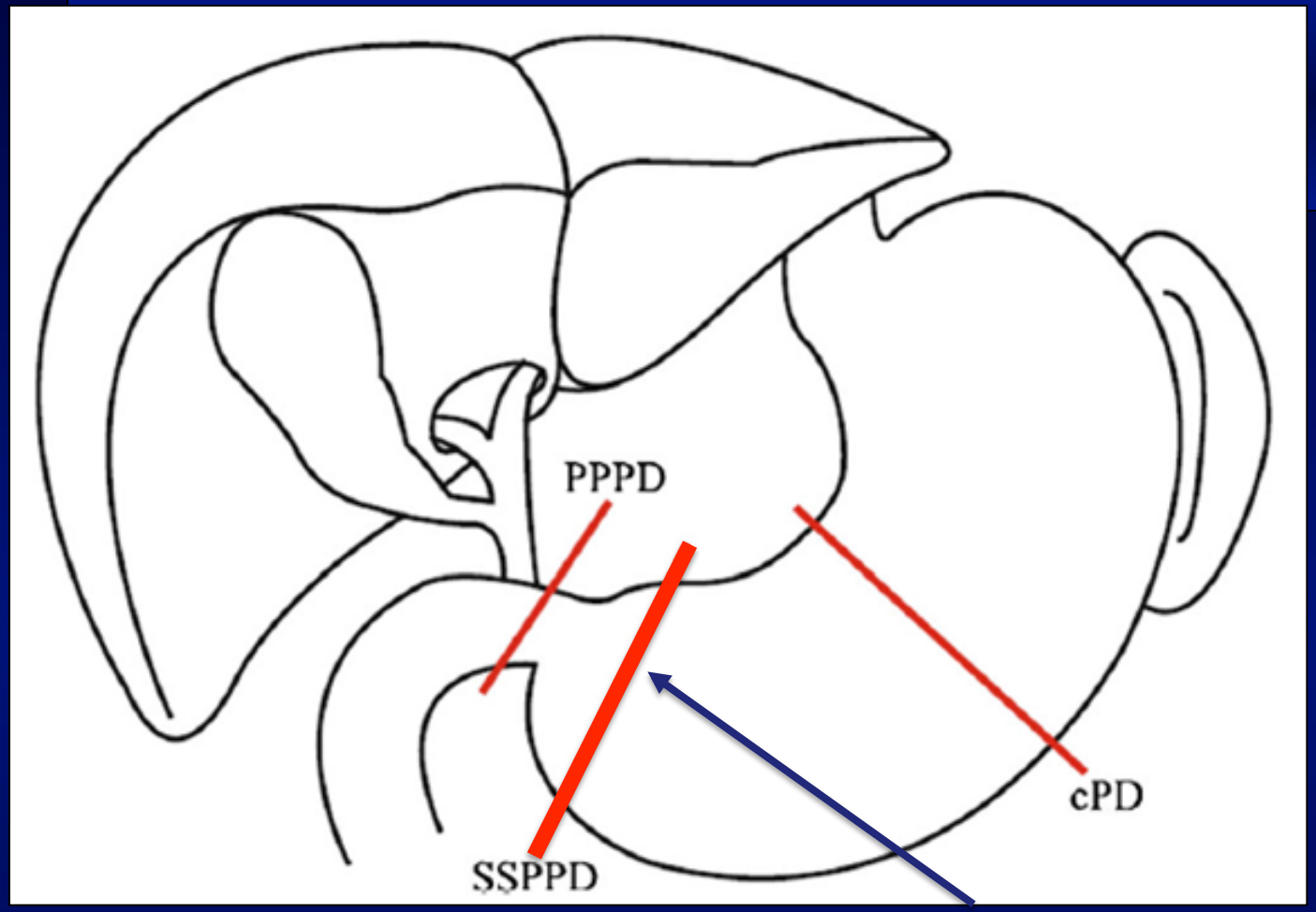
1935

2º Preservação pilórica (PPPD)

1978

3º Preservação gástrica (SSPPD)

1995



- Saída gástrica mais larga
- Ausência do piloro:
  - Desnervado
  - Desvascularizado

SSPPD

Hanna M, et al. J Gastrointest Surg 2015.

Zhan H, et al. World J Surg Oncol 2015;13:105-9

Harmuth S, et al. J Gastrointest Surg 2014;18:52-9.

Kurahara H, et al. J Surg Oncol 2010;102:615-9.

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Tol JAMG, et al. Surgery 2014;156:591-600.

Van Berge, MI.J Am Coll Surg 1997;185:373-9.

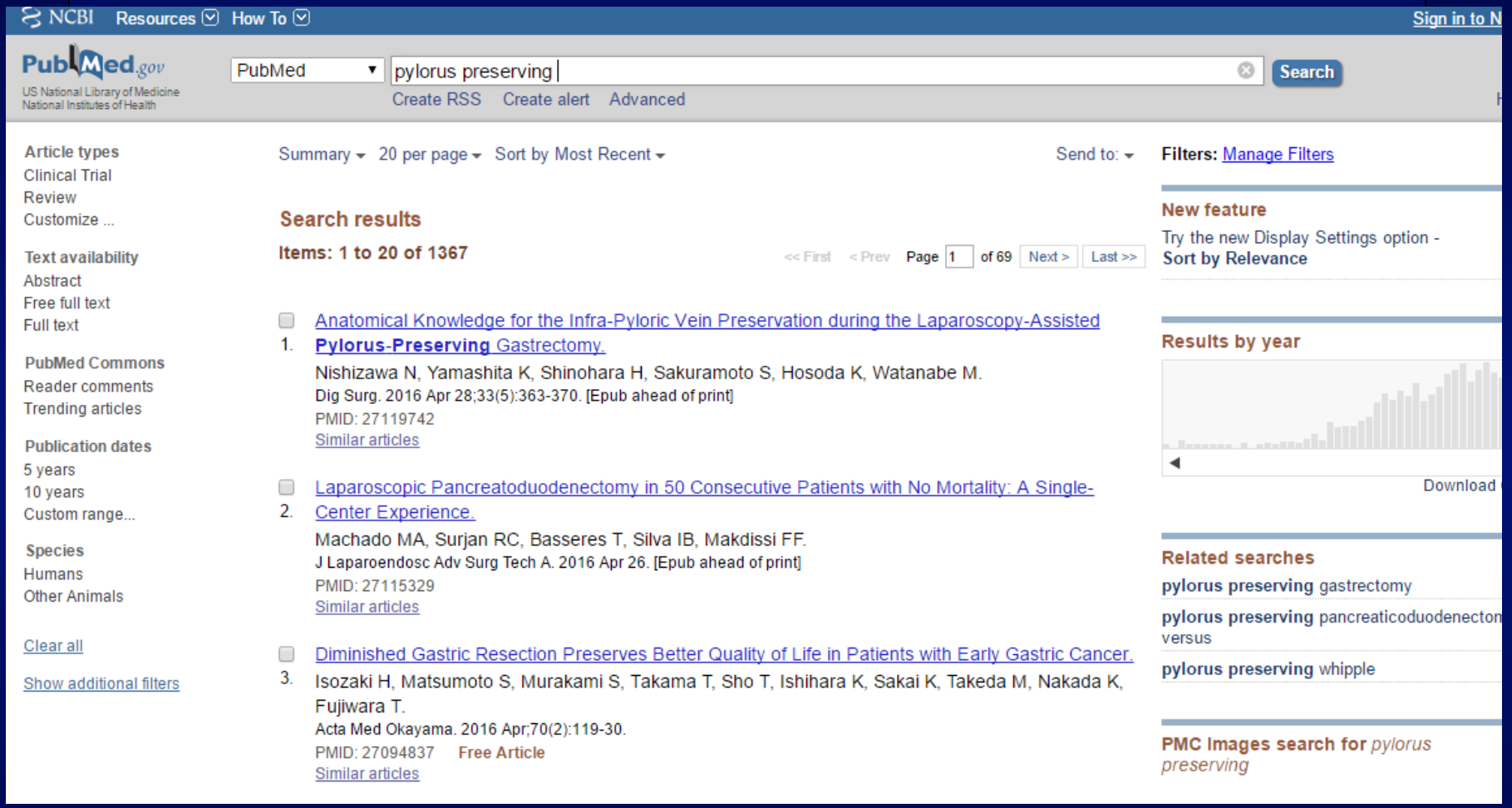
Hackert T, et al. Am J Surg 2013;206:296-9.

Kawai M, et al. Ann Surg 2011;253:495-501.

Zhou Y, et al. HPB 2015;17:337-43.

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

Nanashima A, et al. Hepatogastroenterol 2013;60:1182-8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1. Anatomical Knowledge for the Infra-Pyloric Vein Preservation during the Laparoscopy-Assisted Pylorus-Preserving Gastrectomy.
Nishizawa N, Yamashita K, Shinohara H, Sakuramoto S, Hosoda K, Watanabe M.
Dig Surg. 2016 Apr 28;33(5):363-370. [Epub ahead of print]
PMID: 27119742
Similar articles
2. Laparoscopic Pancreatoduodenectomy in 50 Consecutive Patients with No Mortality: A Single-Center Experience.
Machado MA, Surjan RC, Basseres T, Silva IB, Makdissi FF.
J Laparoendosc Adv Surg Tech A. 2016 Apr 26. [Epub ahead of print]
PMID: 27115329
Similar articles
3. Diminished Gastric Resection Preserves Better Quality of Life in Patients with Early Gastric Cancer.
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Cochrane Database Syst Rev. 2011 May 11;(5):CD006053. doi: 10.1002/14651858.CD006053.pub4.

Pylorus-preserving pancreaticoduodenectomy (pp Whipple) versus pancreaticoduodenectomy (classic Whipple) for surgical treatment of periampullary and pancreatic carcinoma.

Diener MK[1], Fitzmaurice C, Schwarzer G, Seiler CM, Antes G, Knaebel HP, Büchler MW.

Author information

Update in

Pylorus-preserving pancreaticoduodenectomy (pp Whipple) versus pancreaticoduodenectomy (classic Whipple) for surgical treatment of periampullary and pancreatic carcinoma. [Cochrane Database Syst Rev. 2014]

Abstract

BACKGROUND: Pancreatic cancer is the fourth leading cause of cancer death for men and the fifth for women. The standard treatment for resectable tumours is either a classic Whipple (CW) operation or a pylorus-preserving pancreaticoduodenectomy (PPW). It is unclear which of the procedures is more favourable in terms of survival, mortality, complications and quality of life.

OBJECTIVES: The objective of this systematic review is to compare the effectiveness of each operation.

SEARCH STRATEGY: We conducted searches on 28 March 2006 and 11 January 2011 to identify all randomised controlled trials (RCTs), applying no language restrictions. We searched the following electronic databases: the Cochrane Central Register of Controlled Trials (CENTRAL), CDSR and DARE from The Cochrane Library (2010, Issue 4), MEDLINE (1966 to January 2011), and EMBASE (1980 to January 2011). Abstracts from Digestive Disease Week and U nited European Gastroenterology Week (1995 to 2010). No additional studies were indentified upon updating the systematic review in 2011.

SELECTION CRITERIA: We considered RCTs comparing the CW with PPW to be eligible if they included patients with periampullary or pancreatic carcinoma.

DATA COLLECTION AND ANALYSIS: Two authors independently extracted data from the included studies. We used a random-effects model for pooling data. We compared binary outcomes using odds ratios (OR), pooled continuous outcomes using mean differences (MD) and used hazard

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Abstract

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J Med Assoc Thai. 2008 May;91(5):693-8.

Standard whipple's operation versus pylorus preserving pancreaticoduodenectomy: a randomized controlled trial study.

Srinarmwong C[1], Luechakiettisak P, Prasitvilai W.

Author information

Abstract

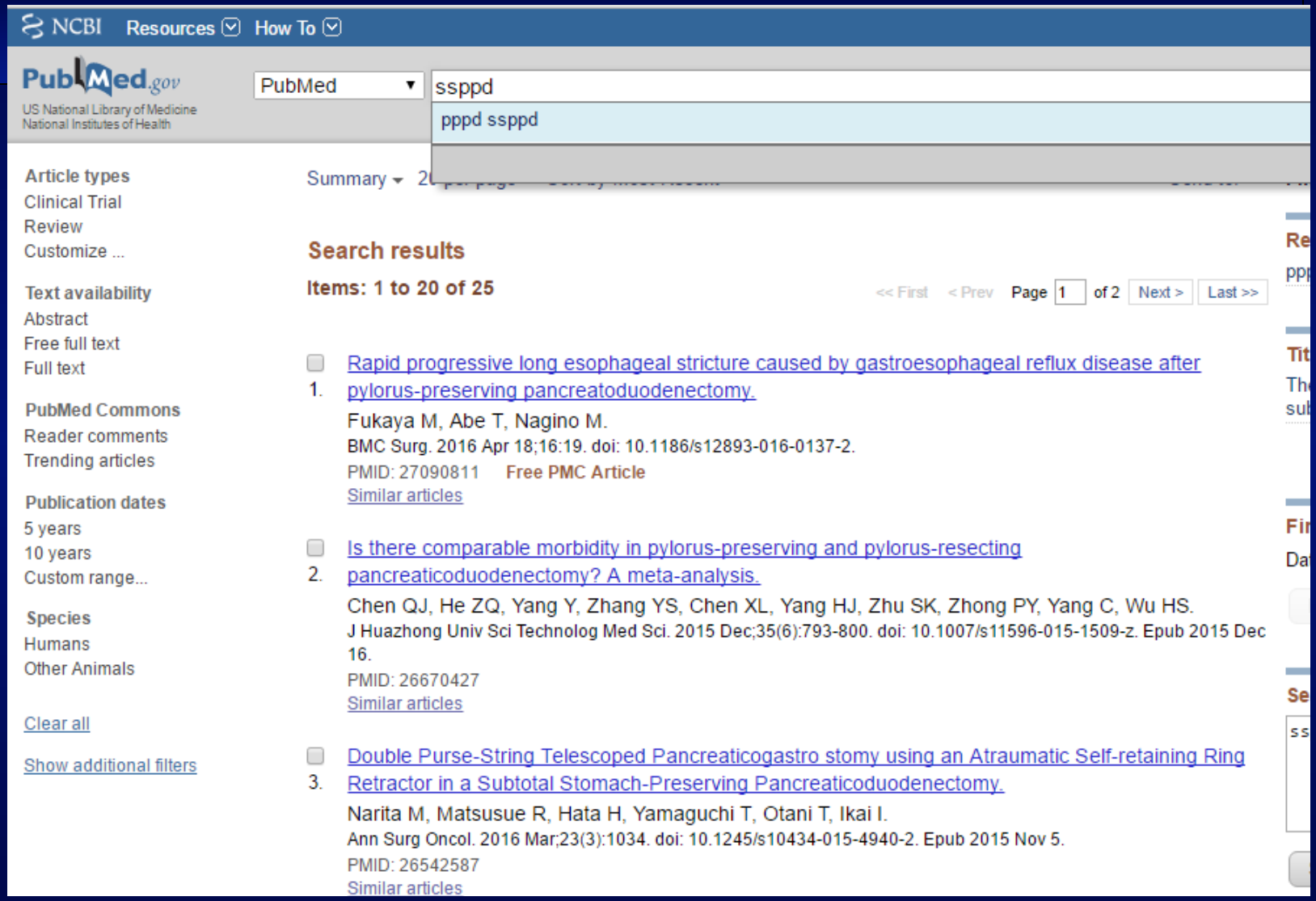
OBJECTIVE: A single-institution randomized controlled trial was conducted to compare the results of standard whipple operation (SW) with those of pylorus-preserving pancreaticoduodenectomy (PPPD).

MATERIAL AND METHOD: Between January 2000 and December 2004, 27 patients with pancreatic or periampullary adenocarcinoma were enrolled into the study. All patients were randomly allocated to either a SW or a PPPD resection. Patients' characteristics, postoperative mortality and morbidity, and survival up to two years were compared.

RESULTS: There were no significant differences in baseline characteristics between the two groups of patients. There were also no significant differences in blood loss and operative time. Delayed gastric emptying (DGE) occurred more frequently in the PPPD group, but other operative complications, hospital mortality, and the length of hospital stay were similar for the two groups. There were no significant survival differences at two years after operation.

CONCLUSIONS: SW and PPPD were comparable in terms of operation time, blood loss, operative mortality and morbidity, and survival. Although the incidence of DGE was higher in the PPPD group, the hospital stay was similar for both groups. Both surgical procedures were equally effective for the treatment of pancreatic and periampullary carcinoma.

PMID: 18672634 [PubMed - indexed for MEDLINE]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BMC Surg. 2016 Apr 18;16:19. doi: 10.1186/s12893-016-0137-2.
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J Huazhong Univ Sci Technolog Med Sci. 2015 Dec;35(6):793-800. doi: 10.1007/s11596-015-1509-z. Epub 2015 Dec 16.
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Ann Surg Oncol. 2016 Mar;23(3):1034. doi: 10.1245/s10434-015-4940-2. Epub 2015 Nov 5.
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World J Gastroenterol. 2015 May 28;21(20):6361-73. doi: 10.3748/wjg.v21.i20.6361.

Meta-analysis of subtotal stomach-preserving pancreaticoduodenectomy vs pylorus preserving pancreaticoduodenectomy.

Huang W[1], Xiong JJ[1], Wan MH[1], Szatmary P[1], Bharucha S[1], Gomatos I[1], Nunes QM[1], Xia Q[1], Sutton R[1], Liu XB[1].

Author information

Abstract

AIM: To investigate the differences in outcome following pylorus preserving pancreaticoduodenectomy (PPPD) and subtotal stomach-preserving pancreaticoduodenectomy (SSPPD).

METHODS: Major databases including PubMed (Medline), EMBASE and Science Citation Index Expanded and the Cochrane Central Register of Controlled Trials (CENTRAL) in The Cochrane Library were searched for comparative studies between patients with PPPD and SSPPD published between January 1978 and July 2014. Studies were selected based on specific inclusion and exclusion criteria. The primary outcome was delayed gastric emptying (DGE). Secondary outcomes included operation time, intraoperative blood loss, pancreatic fistula, postoperative hemorrhage, intraabdominal abscess, wound infection, time to starting liquid diet, time to starting solid diet, period of nasogastric intubation, reinsertion of nasogastric tube, mortality and hospital stay. The pooled odds ratios (OR) or weighted mean difference (WMD) with 95% confidence intervals (95%CI) were calculated using either a fixed-effects or random-effects model.

RESULTS: Eight comparative studies recruiting 650 patients were analyzed, which include two RCTs, one non-randomized prospective and 5 retrospective trial designs. Patients undergoing SSPPD experienced significantly lower rates of DGE (OR = 2.75; 95%CI: 1.75-4.30, P < 0.00001) and a shorter period of nasogastric intubation (OR = 2.68; 95%CI: 0.77-4.58, P < 0.00001), with a tendency towards shorter time to liquid (WMD = 2.97, 95%CI: -0.46-7.83; P = 0.09) and solid diets (WMD = 3.69, 95%CI: -0.46-7.83; P = 0.08) as well as shorter inpatient stay (WMD = 3.92, 95%CI: -0.37-8.22; P = 0.07), although these latter three did not reach statistical significance. PPPD, however, was associated with less intraoperative blood loss than SSPPD [WMD = -217.70, 95%CI: -429.77-(-5.63); P = 0.04]. There were no differences in other parameters between the two approaches, including operative time (WMD = -5.30, 95%CI: -43.44-32.84; P = 0.79), pancreatic fistula (OR = 0.91; 95%CI: 0.56-1.49; P = 0.70), postoperative hemorrhage (OR = 0.51; 95%CI: 0.15-1.74; P = 0.29), intraabdominal abscess (OR = 1.05; 95%CI: 0.54-2.05; P = 0.89), wound infection (OR = 0.88; 95%CI: 0.39-1.97; P = 0.75), reinsertion of nasogastric tube (OR = 1.90; 95%CI: 0.91-3.97; P = 0.09) and mortality

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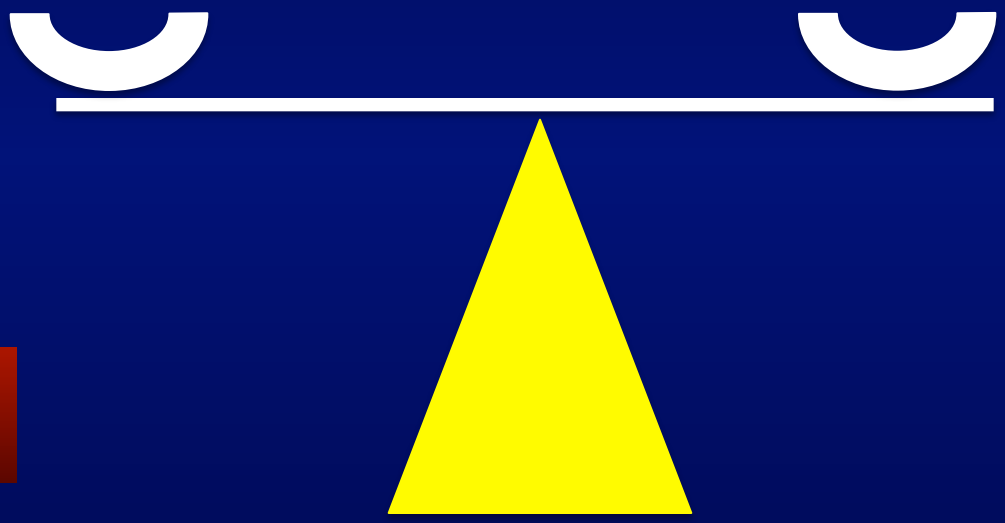

SSPPD

PPPD

IGUAIS

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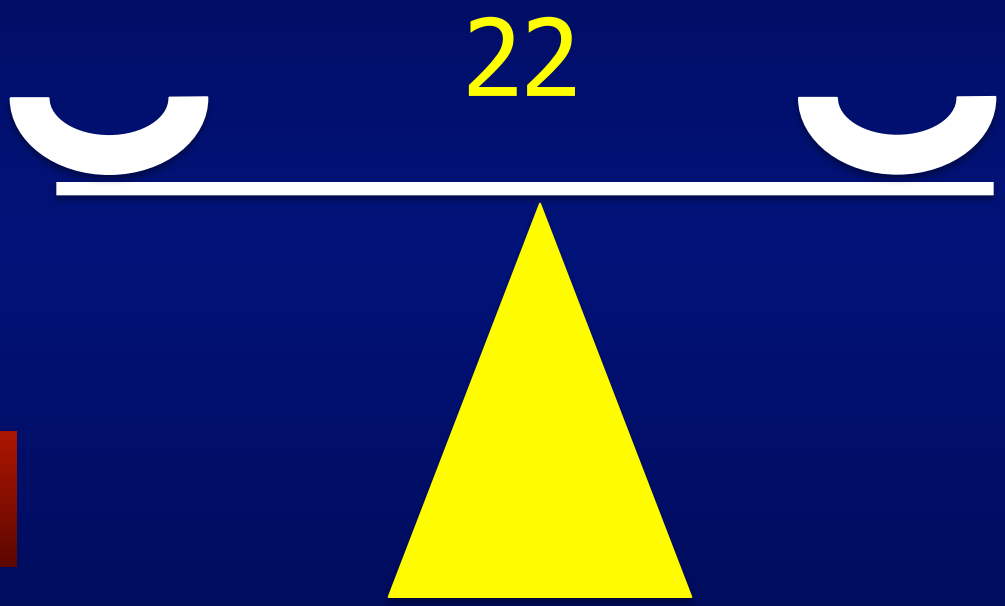

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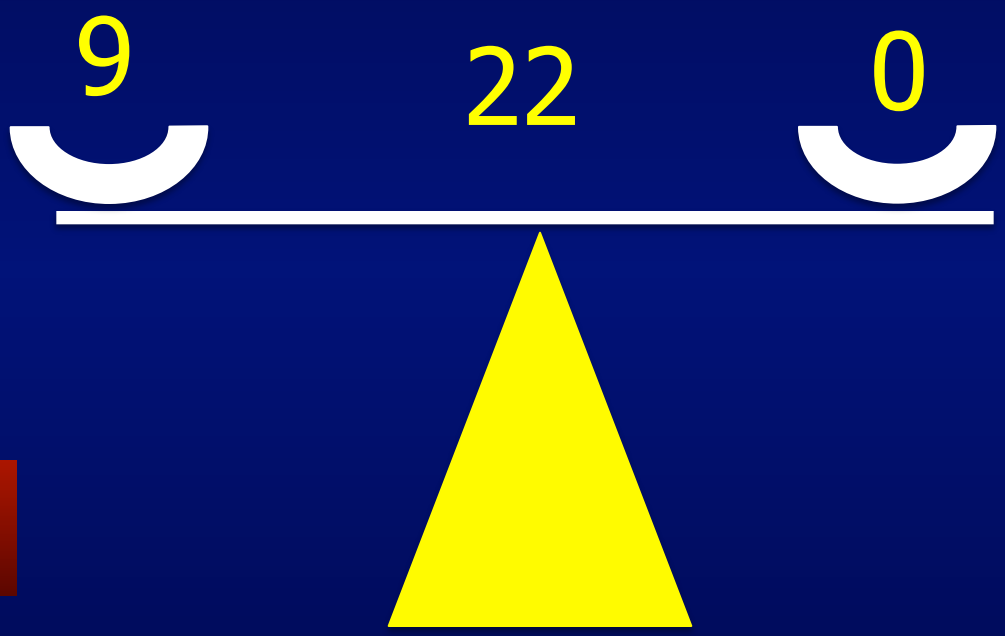

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PPPD

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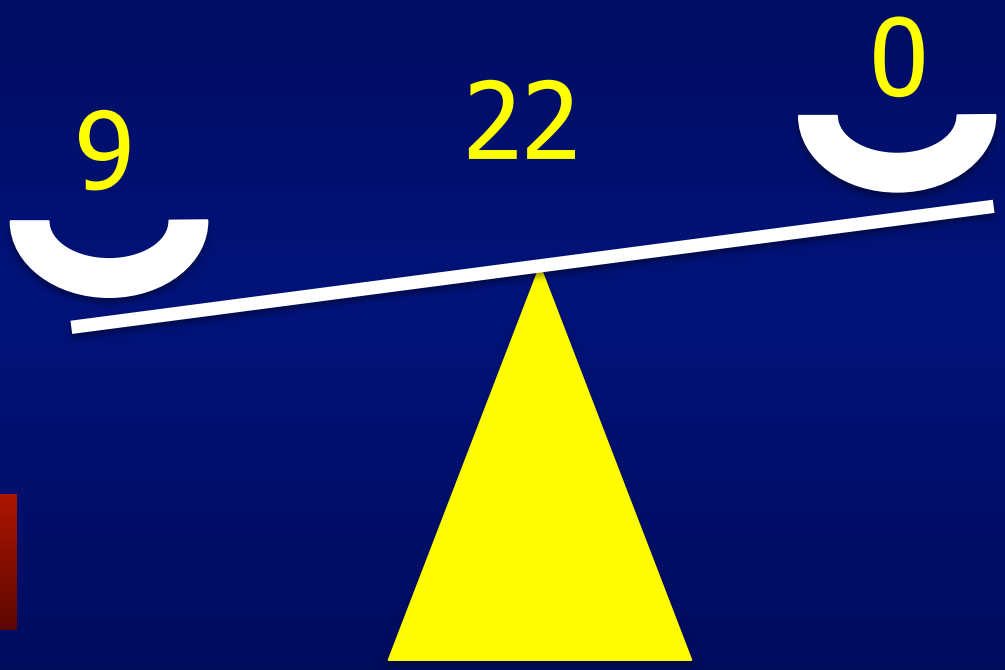


SSPPD

PPPD

IGUAIS

- Retardo no esvaziamento gástrico
- Linfadenectomia
- Status nutricional
- Diâmetro da saída gástrica

J Gastrointest Surg
DOI 10.1007/s11605-015-2816-1

Metanálise

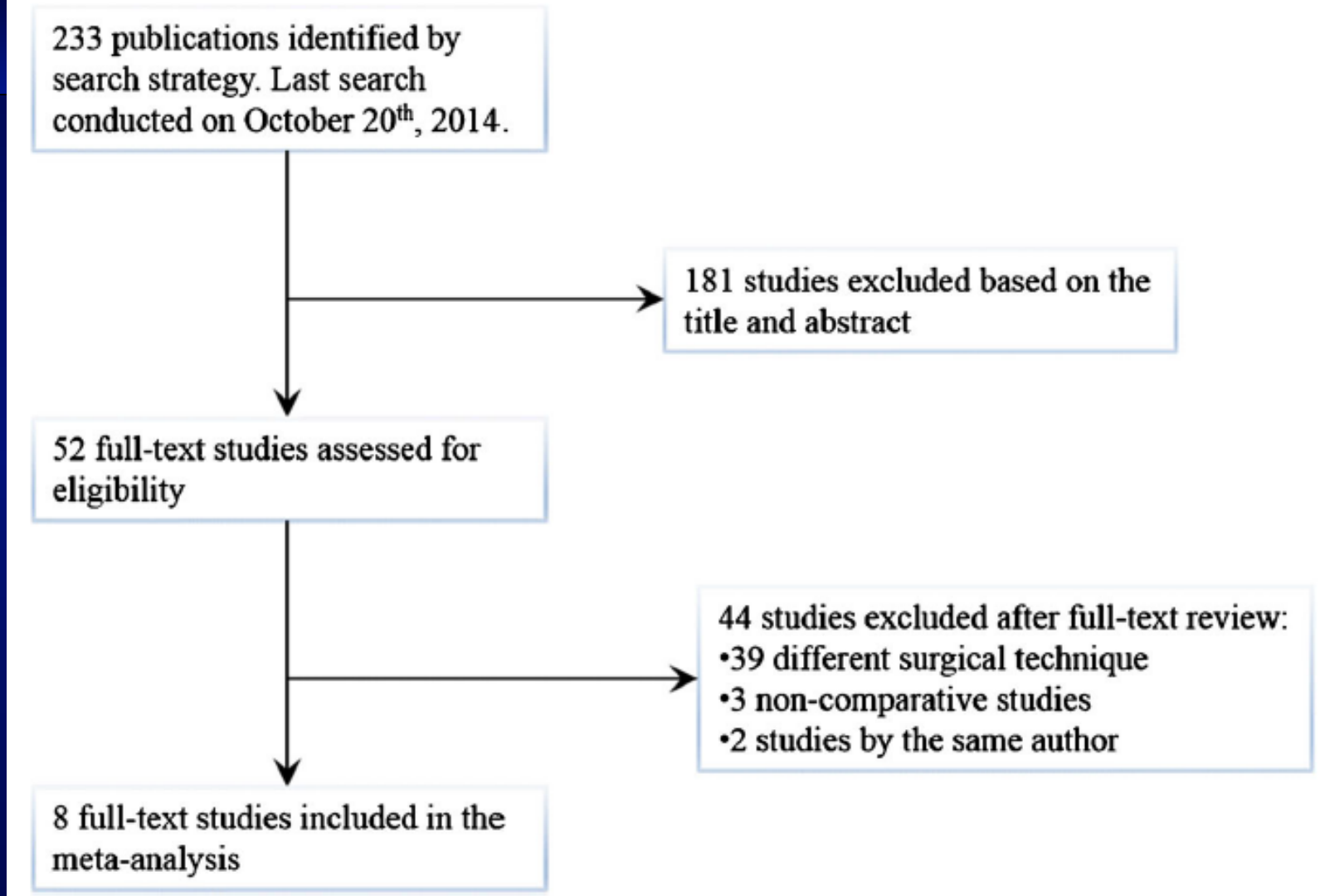
REVIEW ARTICLE

Delayed Gastric Emptying After Pancreaticoduodenectomy: Is Subtotal Stomach Preserving Better or Pylorus Preserving?

Mena Hanna[1] · Rahul Gadde[1,2] · Leonardo Tamariz[2] · Casey Allen[1] · Jonathan Meizoso[1] · Danny Sleeman[1,3] · Alan Livingstone[1,3] · Danny Yakoub[1,3,4]

Retardo no esvaziamento gástrico (DGE)

Hanna M, et al. J Gastrointest Surg 2015.



Hanna M, et al. J Gastrointest Surg 2015.

Year	DGE definition	Study design	Number of patients, *N*		DGE, *N* (%)	
			PPPD	SSPPD	PPPD	SSPPD
2007	NGT≥POD 10/solid food≥POD 14	NRCT	34	30	3 (9 %)	3 (10 %)
2007	NGT≥POD 10/regular diet≥POD 14	Retro	12	21	6 (50 %)	3 (14 %)
2010	ISGPS	Retro	48	64	31 (65 %)	35 (55 %)
2011	ISGPS	RCT	64	66	11 (17 %)	3 (5 %)
2012	ISGPS	Retro	33	56	9 (27 %)	3 (5 %)
2012	ISGPS	Retro	40	40	17 (43 %)	6 (15 %)
2013	ISGPS	Retro	28	27	27 (96 %)	16 (59 %)
2014	ISGPS	RCT	50	50	10 (20 %)	6 (12 %)

*ISGPS - International Study Group of Pancreatic Surgery

Conclusões

Conclusion SSPPD was associated with less DGE than PPPD.

Hanna M, et al. J Gastrointest Surg 2015.

Fortemente Recomendado

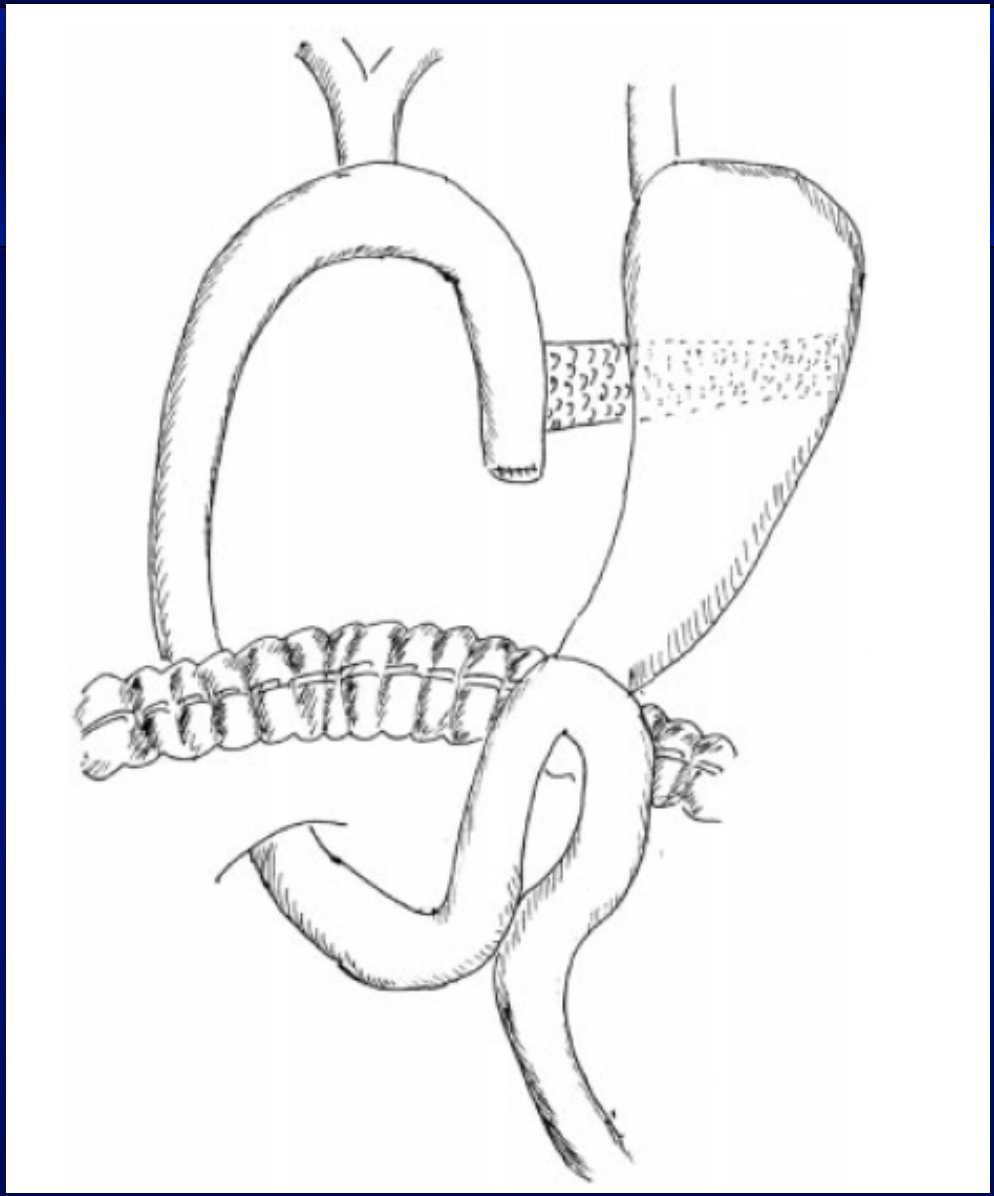
Journal of Surgical Oncology 2007;95:106–109

The Surgical Procedure and Clinical Results of Subtotal Stomach Preserving Pancreaticoduodenectomy (SSPPD) in Comparison With Pylorus Preserving Pancreaticoduodenectomy (PPPD)

AKIRA HAYASHIBE, MD,[1]* MASAO KAMEYAMA, MD,[1] MASAYA SHINBO, MD,[2] AND SHINICHIRO MAKIMOTO, MD[2]

[1]*Department of Surgery, Bell Land General Hospital, 500-8 Higashiyama, Sakai-city, Osaka 599-8247, Japan*
[2]*Department of Surgery, Kishiwada Tokushukai Hospital, 4-27-1, Kamoricho, Kishiwada-city, Osaka, 596-8522, Japan*

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.



Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

TABLE III. Operative and Postoperative Findings in Patients with PPPD and SSPPD

	PPPD (n = 12)	SSPPD (n = 21)	*P*-value
Days of hospital stay (days)	33.1 ± 4.0	32.5 ± 4.7	0.7
Operation time (min)	450.5 ± 63.8	494.5 ± 138.9	0.2
Operative blood loss (cc)	1321.7 ± 682.0	1843.2 ± 987.7	0.09
Morbidity	0	2	0.2
Wound infection	0	1	
Pneumothorax	0	1	
Pancreatic leakage	0	0	
Mortality	0	0	
Days of nasogastric intubation	10.5 ± 6.4	6.1 ± 1.3	0.002
Days untill liquid diet	14.7 ± 4.2	10.0 ± 2.0	0.004
Delayed gastric emptying	6 (50%)	3 (14%)	0.02

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

Conclusions: We consider SSPPD as one of the most favorable procedures in patients who undergo pancreaticoduodenectomy.

Hayashibe A, et al. J Surg Oncol 2007;95:106-9.

1. Retardo no esvaziamento gástrico
   - Aumento do tempo de uso de SNG
   - Retardo no início de dieta líquida

DOI:10.1111/hpb.12358

Metanálise

HPB

ORIGINAL ARTICLE

A case-matched comparison and meta-analysis comparing pylorus-resecting pancreaticoduodenectomy with pylorus-preserving pancreaticoduodenectomy for the incidence of postoperative delayed gastric emptying

Yanming Zhou*, Liang Lin*, Lupeng Wu, Donghui Xu & Bin Li

Zhou Y, et al. HPB 2015;17:337-43

Table 1 Patient characteristics and surgical outcomes in the two groups

Variable	PrPD group (n = 37)	PpPD group (n = 37)	P-value
Morbidity, *n*			
DGE grade (A/B/C)	(5/0/1)	(9/3/5)	0.006
DGE grade (B/C)	1	8	0.013
Primary DGE	2	8	0.041
Pancreatic fistula grade (A/B/C)	(5/1/0)	(7/0/1)	0.553
Intra-abdominal abscess	3	5	0.454
Biliary leakage	0	1	0.314
Haemorrhage	1	2	0.556
Wound infection	4	3	0.691
Ileus	1	3	0.304
Re-exploration	0	1	0.314
Length of hospital stay, days, median (range)	16 (11–43)	28 (10–75)	0.017

Zhou Y, et al. HPB 2015;17:337-43

Conclusões

Conclusions: Pylorus-resecting pancreaticoduodenectomy is a safe procedure associated with less severe and less frequent postoperative DGE than PpPD.

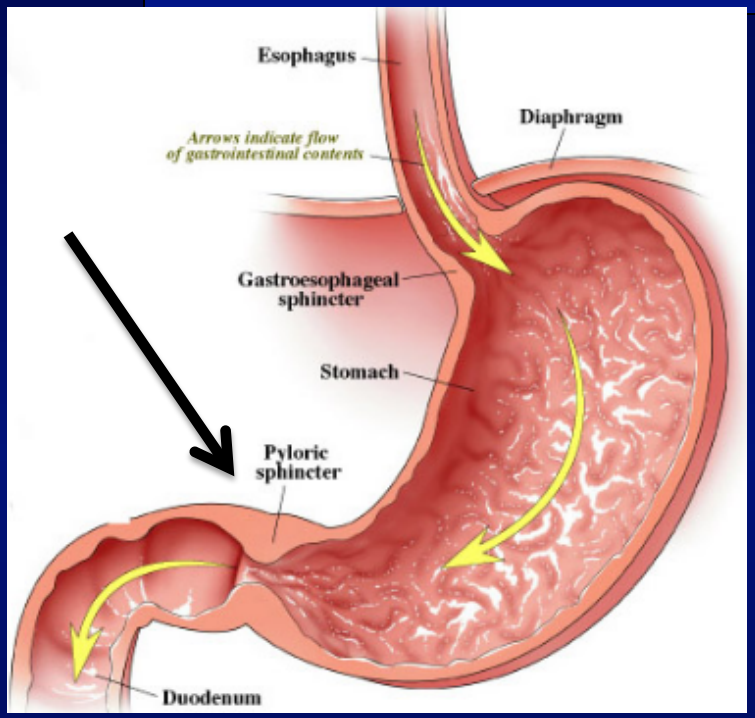
Recomendação A

Fortemente recomendado

Zhou Y, et al. HPB 2015;17:337-43

1. Retardo no esvaziamento gástrico
   - Aumento do tempo de uso de SNG
   - Retardo no início de dieta líquida
   - Aumento do tempo de permanência hospitalar

Diâmetro da saída gástrica



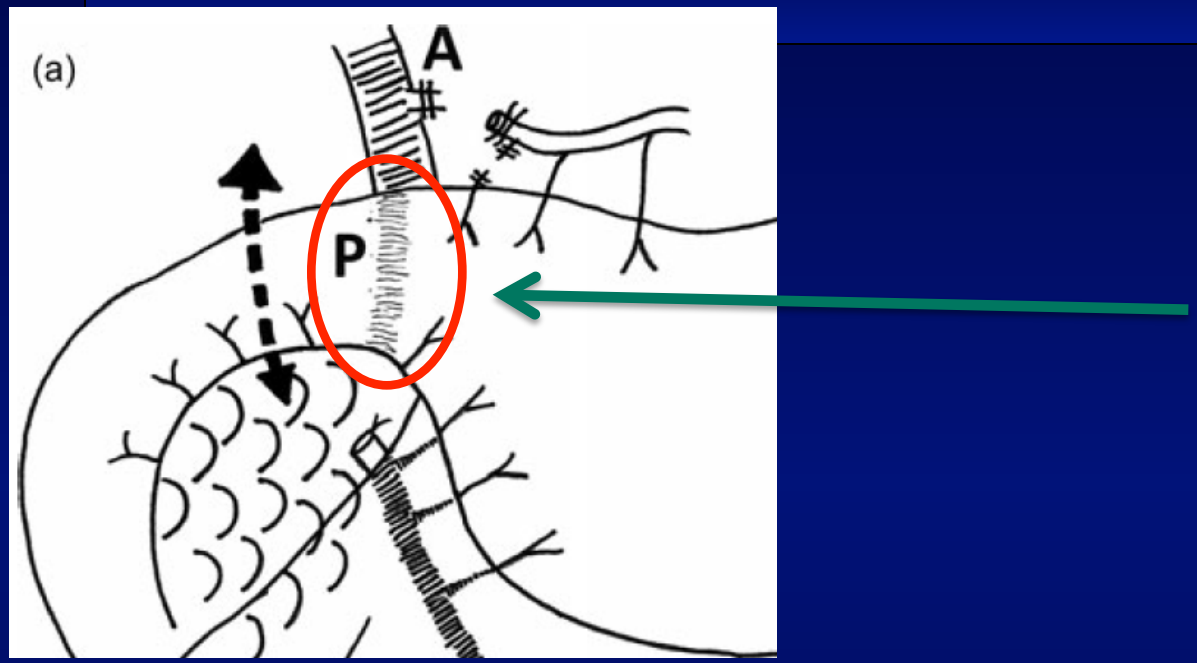
PPPD 33 ± 5mm

SSPPD 47 ± 7mm

p< 0,0001

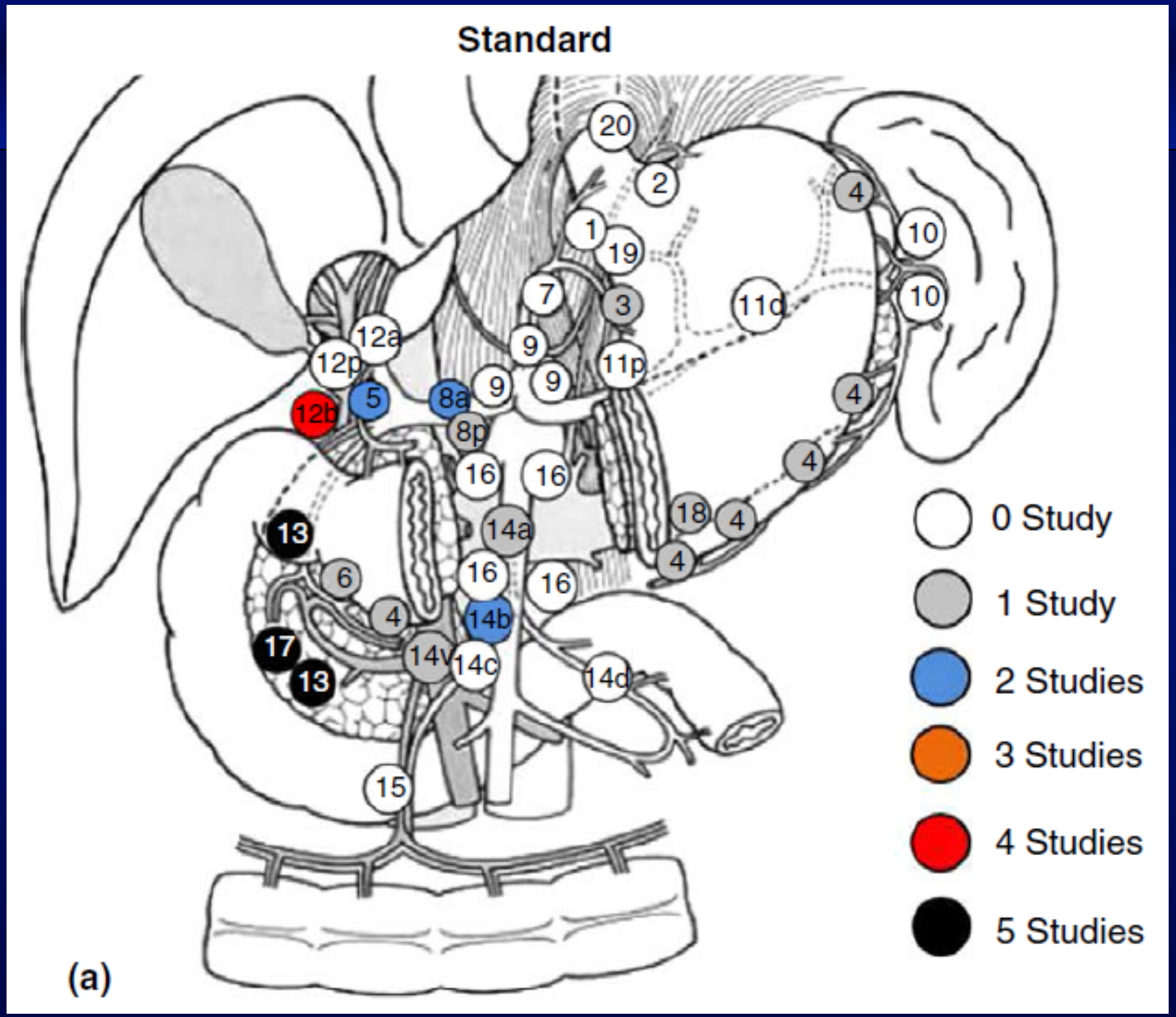
Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Diâmetro da saída gástrica



A possibilidade de ajustar o diâmetro da saída gástrica é um dos benefícios da SSPPPD

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

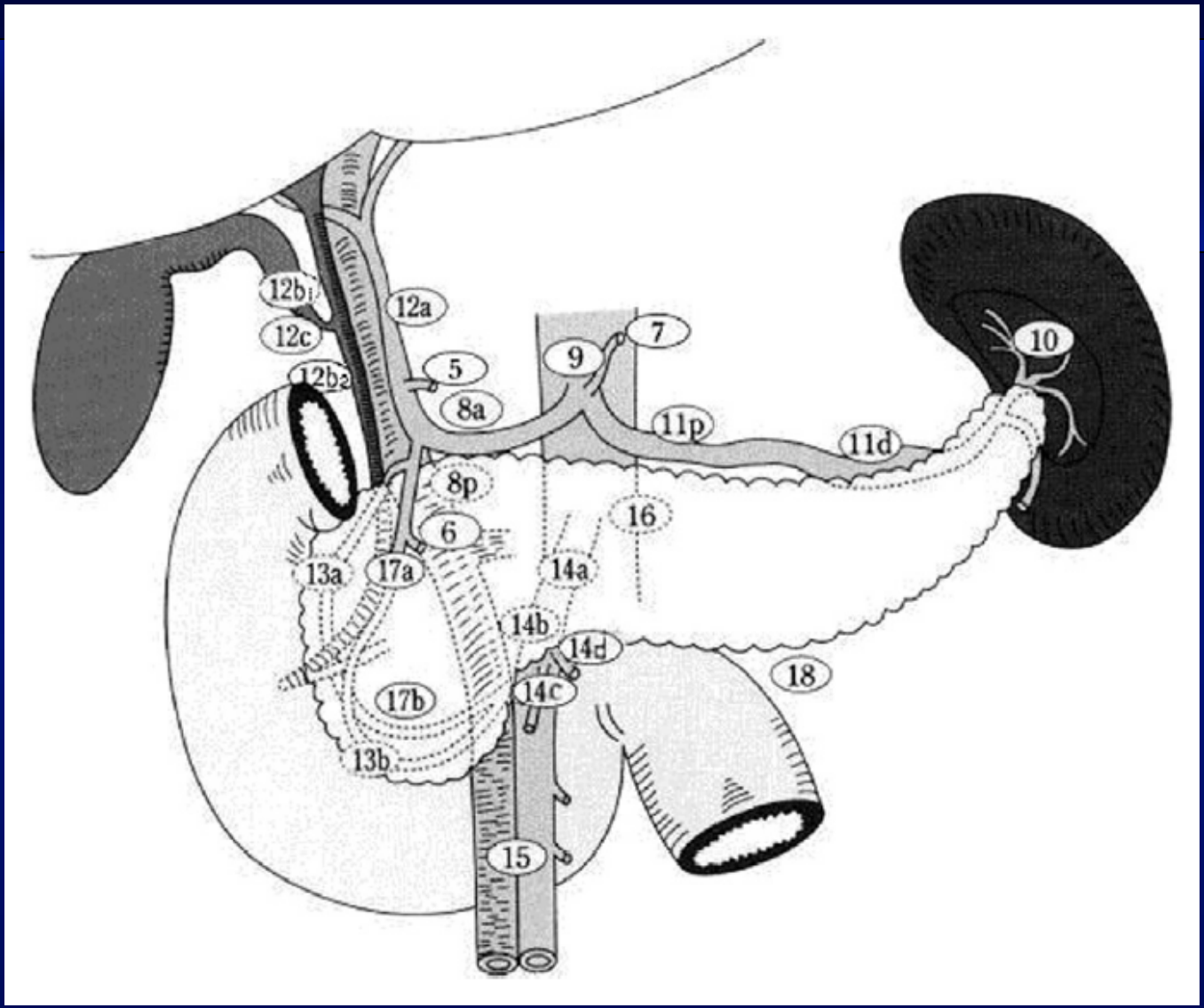

Standard
20
2
4
10
1
19
10
7
3
11d
12a
9
12p
11p
9
9
4
5
8a
12b
8p
4
16
16
18
4
13
14a
4
16
16
6
14b
4
17
14v
14c
14d
13
15
(a)
0 Study
1 Study
2 Studies
3 Studies
4 Studies
5 Studies

Consensus

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

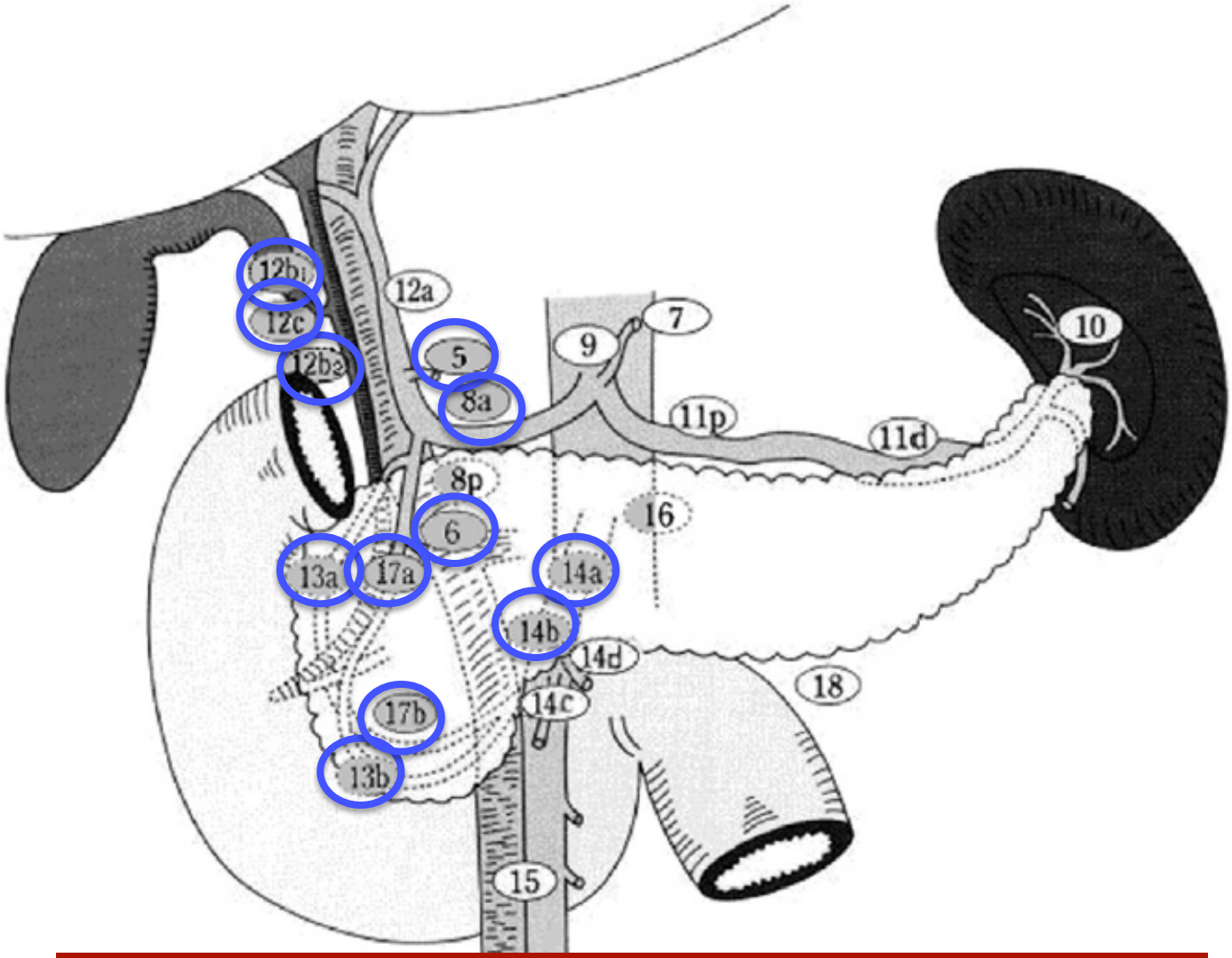
Johanna A. M. G. Tol, MD,[a] Dirk J. Gouma, MD,[a] Claudio Bassi, MD,[b] Christos Dervenis, MD,[c] Marco Montorsi, MD,[d] Mustapha Adham, MD,[e] Ake Andrén-Sandberg, MD,[f] Horacio J. Asbun, MD,[g] Maximilian Bockhorn, MD,[h] Markus W. Büchler, MD,[i] Kevin C. Conlon, MD,[j] Laureano Fernández-Cruz, MD,[k] Abe Fingerhut, MD,[l,m] Helmut Friess, MD,[n] Werner Hartwig, MD,[i] Jakob R. Izbicki, 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*

Tol JAMG, et al. Surgery 2014;156:591-600.



- 5, 6, 8a, 12b1, 12b2, 12c, 13a, 13b, 14a, 14b, 17a, and 17b.

Tol JAMG, et al. Surgery 2014;156:591-600.



- 5, 6, 8a, 12b1, 12b2, 12c, 13a, 13b, 14a, 14b, 17a, and 17b.

Tol JAMG, et al. Surgery 2014;156:591-600.

Linfadenectomia

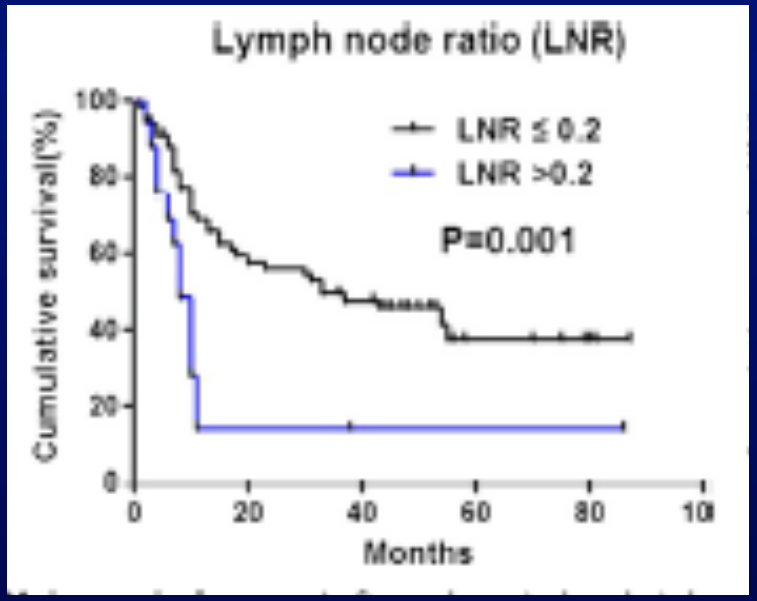
Zhan et al. World Journal of Surgical Oncology (2015) 13:105
DOI 10.1186/s12957-015-0510-0

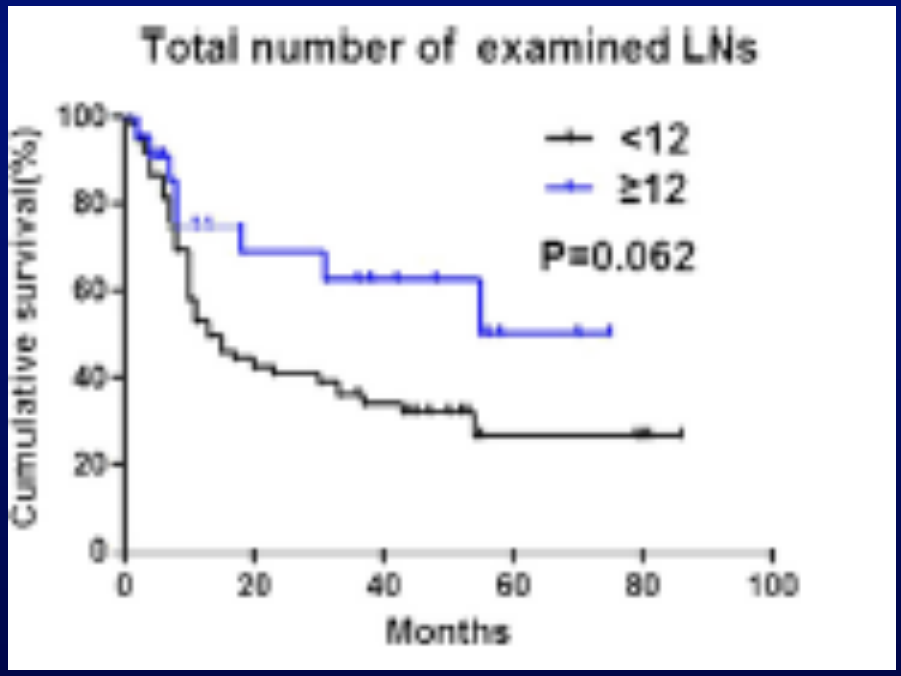
WORLD JOURNAL OF SURGICAL ONCOLOGY

RESEARCH Open Access

Lymph node ratio is an independent prognostic factor for patients after resection of pancreatic cancer

Han-xiang Zhan, Jian-wei Xu, Lei Wang, Guang-yong Zhang and San-yuan Hu*





Zhan H, et al. World J Surg Oncol 2015;13:105-9

Journal of Surgical Oncology 2010;102:615–619

Subtotal Stomach-Preserving Pancreaticoduodenectomy (SSPPD) Prevents Postoperative Delayed Gastric Emptying

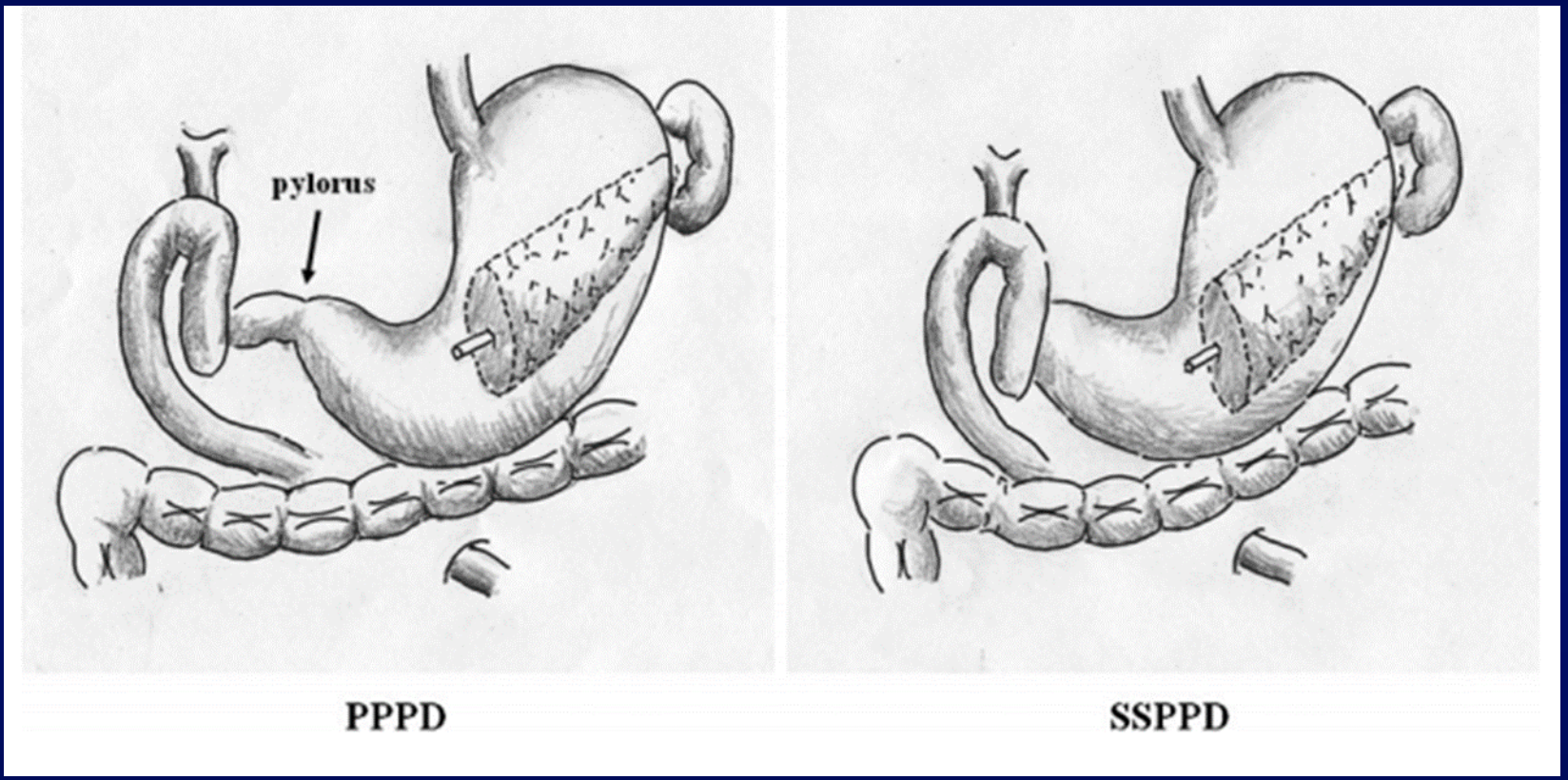
HIROSHI KURAHARA, MD,[1]* SONSHIN TAKAO, MD,[2] HIROYUKI SHINCHI, MD,[1] YUKO MATAKI, MD,[1] KOUSEI MAEMURA, MD,[1] MASAHIKO SAKODA, MD,[1] SHINICHI UENO, MD,[1] AND SHOJI NATSUGOE, MD[1]

[1]*Department of Surgical Oncology and Digestive Surgery, Graduate School of Medical Sciences, Kagoshima University, Japan*

[2]*Frontier Science Research Center, Kagoshima University, Japan*

Linfadenectomia inadequada

Kurahara H, et al. J Surgical Oncol 2010;102:615-9



Kurahara H, et al. J Surgical Oncol 2010;102:615-9

- Ruptura do sistema nervoso vagal ao redor do estômago com isquemia antro-duodenal.
- Diminuição da concentração plasmática de motilina.
- Disritmia gástrica devido a inflamação peripancreática.
- Outras causas
- **Dissecção linfonodal**

Kurahara H, et al. J Surgical Oncol 2010;102:615-9

TABLE IV. Incidence of DGE in Patients Who Underwent PPPD Versus SSPPD With D1 Lymph Node Dissection

	PPPD (n = 25)	SSPPD (n = 10)	*P*
DGE grade A[a]	44.0 (11)	30.0 (3)	0.4397[b]
DGE grade B/C[a]	8.0 (2)	20.0 (2)	0.3348[b]
DGE including all grades[a]	52.0 (13)	50.0 (5)	0.9148[b]
Postoperative hospital stay without postoperative chemotherapy[‡]	24.0 (n = 24)	27.9 (n = 10)	0.1383[c]

TABLE V. Incidence of DGE in Patients Who Underwent PPPD Versus SSPPD With D2 Lymph Node Dissection

	PPPD (n = 23)	SSPPD (n = 54)	*P*
DGE grade A[a]	43.5 (10)	42.6 (23)	0.9427[b]
DGE grade B/C[a]	34.8 (8)	13.0 (7)	0.0326[b]
DGE including all grades[a]	78.3 (18)	55.6 (30)	0.0534[b]
Postoperative hospital stay without postoperative chemotherapy[‡]	32.7 (n = 22)	25.6 (n = 43)	0.0476[c]

Kurahara H, et al. J Surgical Oncol 2010;102:615-9

CONCLUSIONS

In conclusion, for appropriate surgery involving secure RLND, SSPPD instead of PPPD might be recommended in order decrease the incidence of postoperative DGE.

RLND – Regional lymph node dissection

Kurahara H, et al. J Surgical Oncol 2010;102:615-9

Conclusões

- A pancreatoduodenectomia com preservação pilórica (PPPD) deve ser substituída por pancreatoduodenectomia com preservação gástrica (SSPPD) quando for realizada a linfadenectomia regional a D2, para prevenir o retardo no esvaziamento gástrico pós-operatório.

Kurahara H, et al. J Surgical Oncol 2010;102:615-9

Ann Surg Oncol (2012) 19:176–183
DOI 10.1245/s10434-011-1901-2

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – PANCREATIC TUMORS

Preservation of the Pyloric Ring Has Little Value in Surgery for Pancreatic Head Cancer: A Comparative Study Comparing Three Surgical Procedures

Tsutomu Fujii, MD, PhD, FACS[1], Mitsuro Kanda, MD, PhD[1], Yasuhiro Kodera, MD, PhD, FACS[1], Shunji Nagai, MD, PhD[1], Tevfik T. Sahin, MD[1], Masamichi Hayashi, MD[1], Akiyuki Kanzaki, MD[1], Suguru Yamada, MD, PhD[1], Hiroyuki Sugimoto, MD, PhD[1], Shuji Nomoto, MD, PhD[1], Shin Takeda, MD, PhD[1], Satoshi Morita, PhD[2], and Akimasa Nakao, MD, PhD, FACS[1]

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Metástase linfonodal peri-pilórica

N 358 pacientes

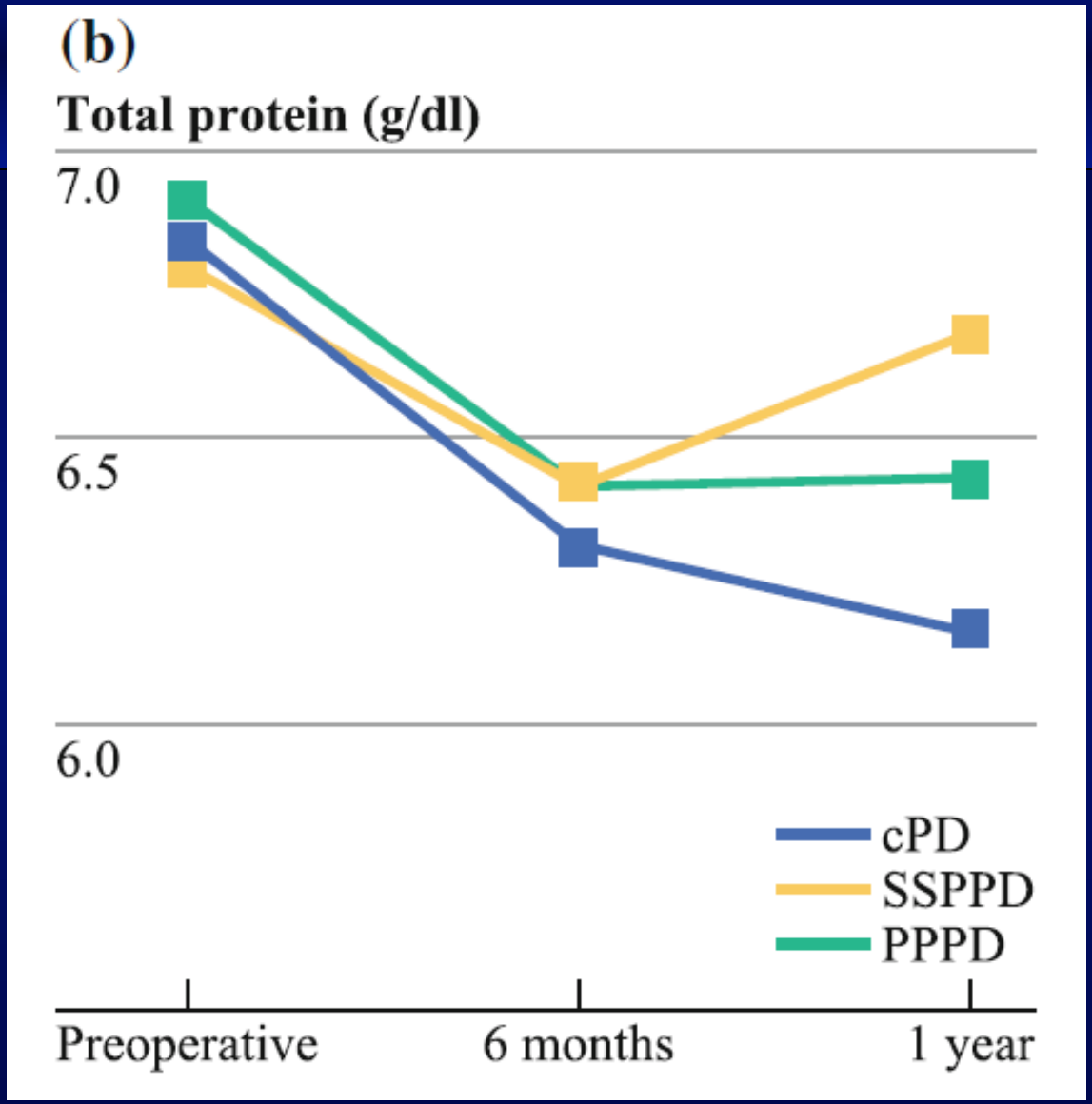
	N	%
❑Pequena curvatura	0	0
❑Grande curvatura	1	0,3
❑Supra-pilórico	3	0,8
❑Infra-pilórico	34	9,5

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

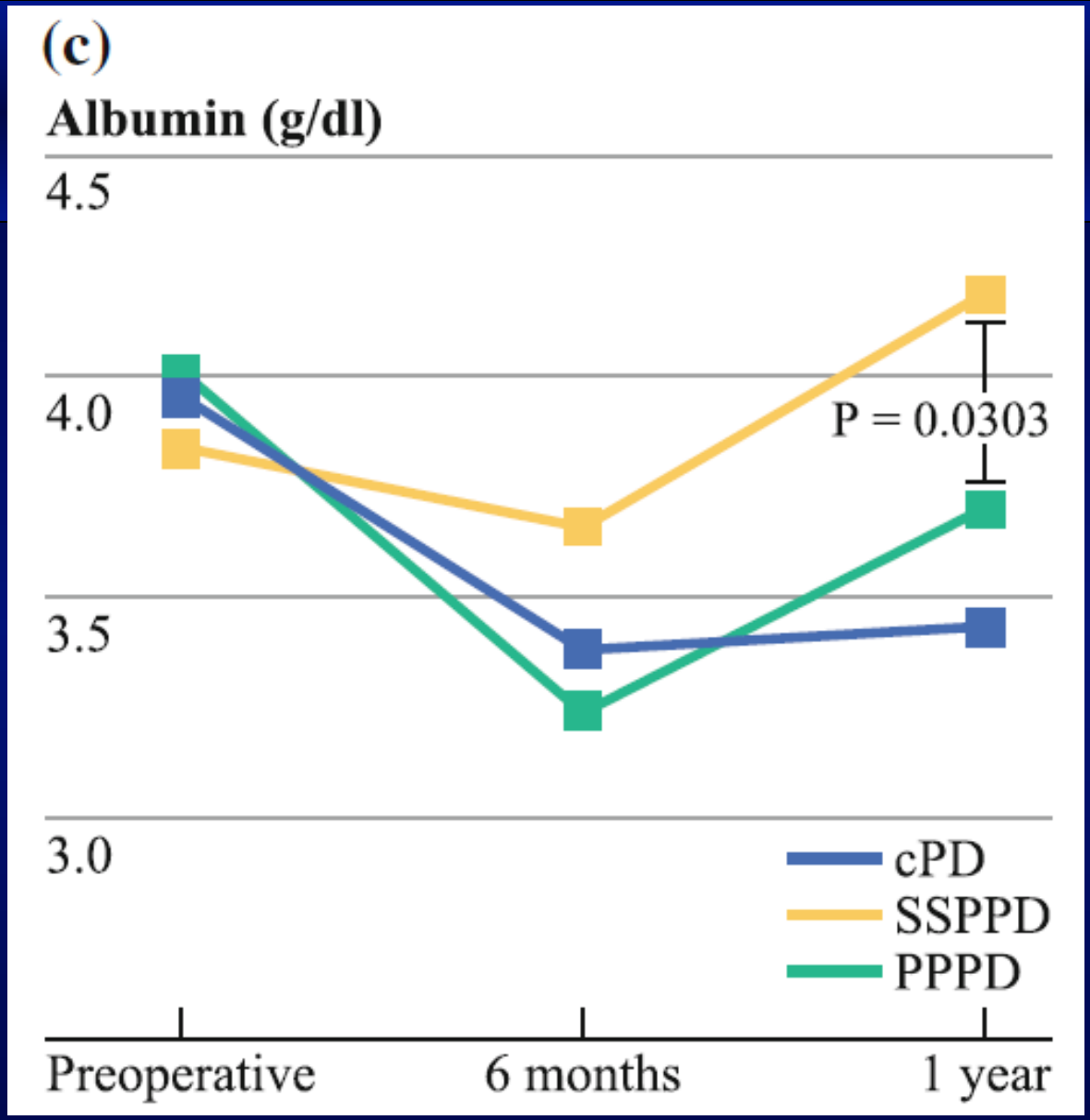
TABLE 2 Comparisons of perioperative and short-term follow-up

Characteristic	cPD ($n = 69$)	SSPPD ($n = 56$)	PPPD ($n = 33$)	P value
Mortality	0	0	0	
Overall morbidity (Clavien grade III or more)	25 (36.2%)	21 (37.5%)	13 (39.4%)	0.932
Pancreatic fistula (ISGPF grade B or more)	16 (23.2%)	17 (30.4%)	7 (21.2%)	0.592
DGE (ISGPS grade B or more)	4 (5.8%)	3 (5.4%)	9 (27.3%)	0.0012
Grade B/C	3/1	2/1	7/2	
Length of the nasogastric tube (days)	2.1 ± 1.6	1.3 ± 0.7	2.7 ± 6.1	0.0006
Days to start oral intake (days)	9.7 ± 5.7	8.6 ± 4.7	15.2 ± 7.8	<0.0001
Use of gastroprokinetic agent	13 (18.8%)	6 (10.7%)	9 (27.3%)	0.135
Use of antiulcer agent	45 (65.2%)	39 (69.6%)	23 (69.7%)	0.839
Postoperative peptic ulcer	2 (2.9%)	3 (5.4%)	2 (6.1%)	0.704
Gastric dumping syndrome	0	0	0	
Postoperative adjuvant chemotherapy	50 (72.5%)	36 (64.3%)	18 (54.5%)	0.194
Length of the hospital stay (days)	41.5 ± 21.6	39.4 ± 16.9	49.1 ± 46.6	0.926

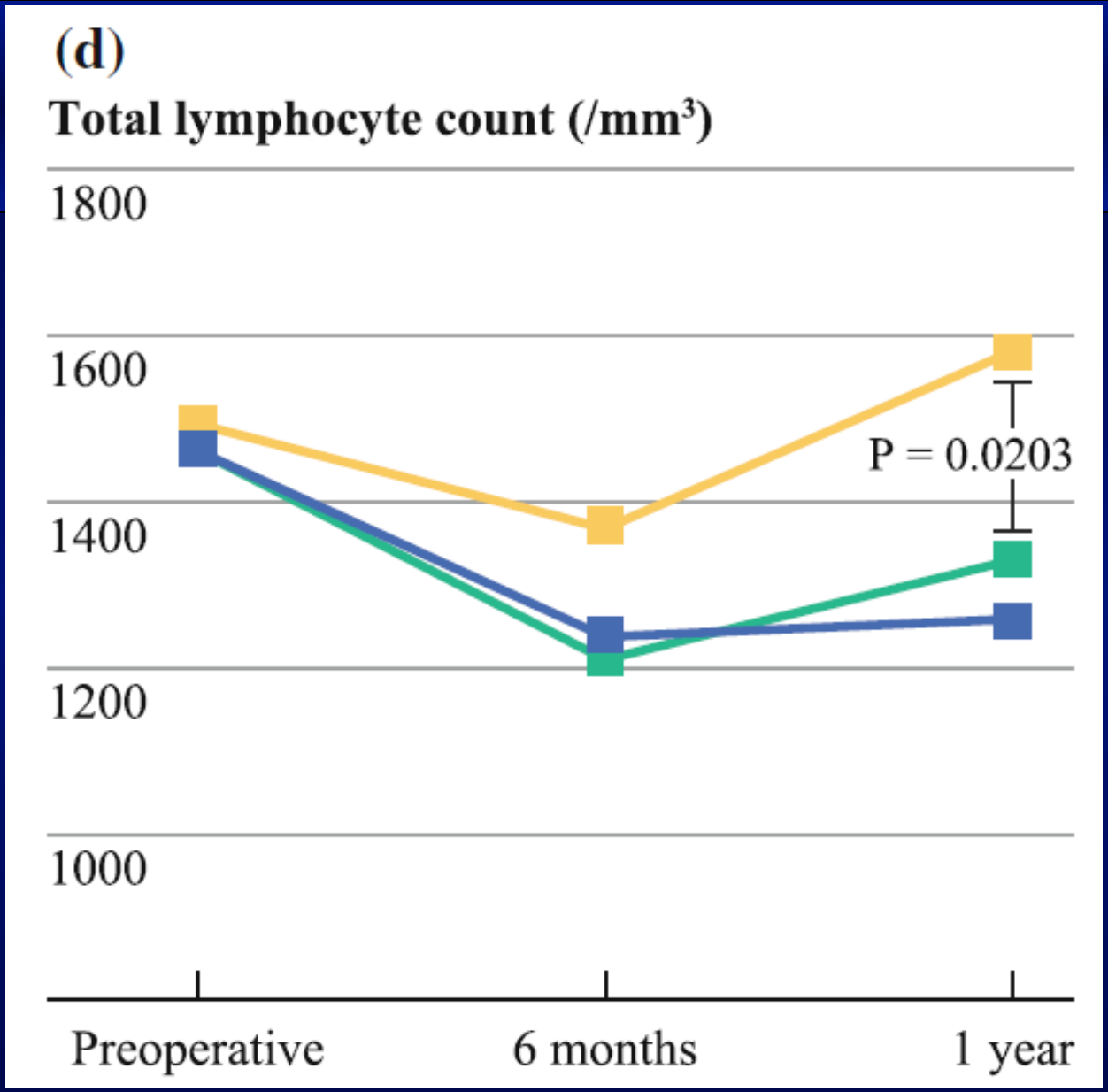
Fujii T, et al. Ann Surg Oncol 2012;19:176-83.



Fujii T, et al. Ann Surg Oncol 2012;19:176-83.



Fujii T, et al. Ann Surg Oncol 2012;19:176-83.



Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Nutrição

- Quimioterapia pós-operatória é fundamental nestes pacientes.
- Cirurgia associado a menor complicação pós-operatória é desejável para cirurgia do câncer do pâncreas.
- O Status nutricional pós-operatório tem influência na quimioterapia.
- Mal estado nutricional pode resultar em prognóstico adverso.

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Linfadenectomia

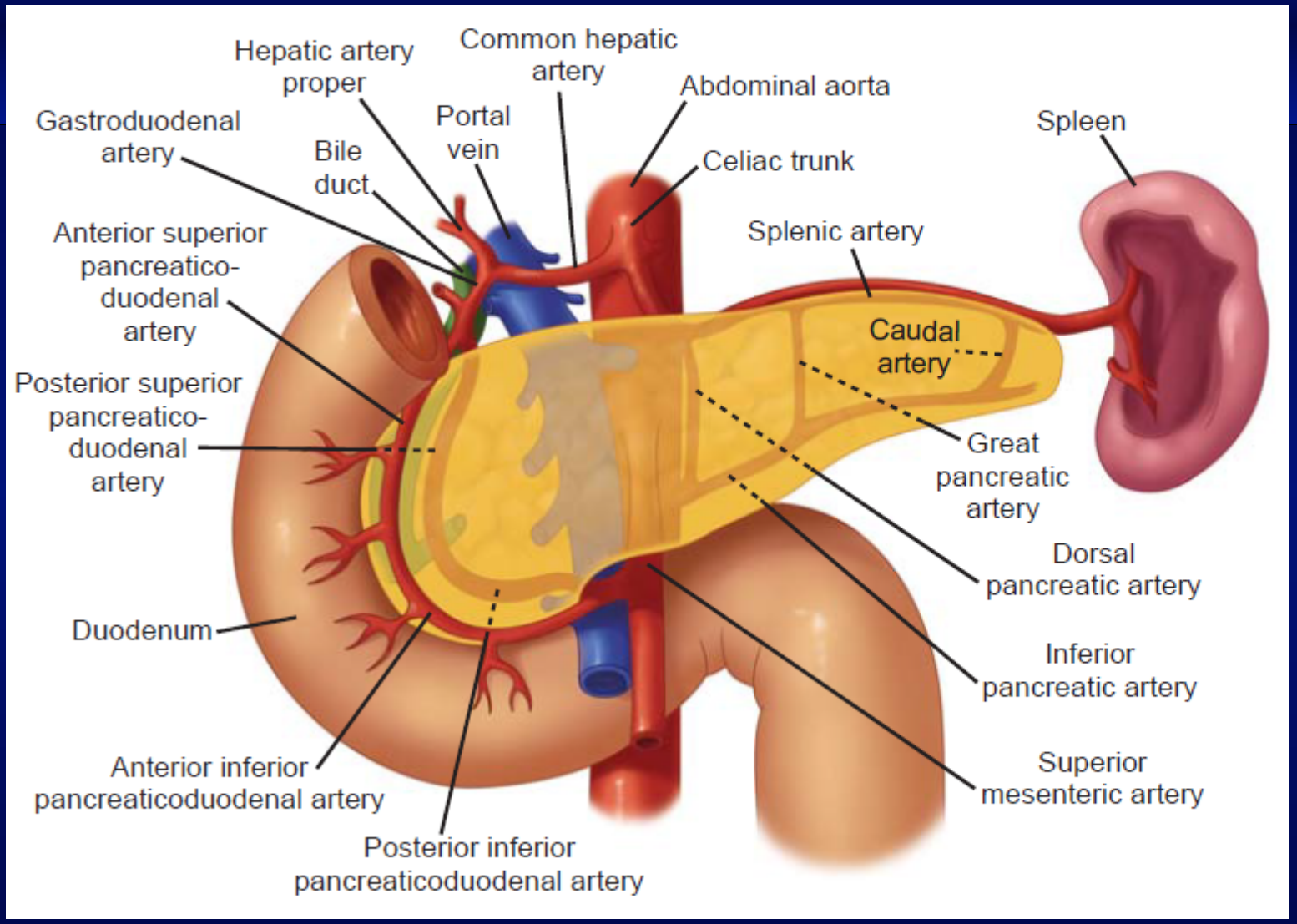
- A dissecção linfonodal adequada é fundamental.
- A preservação do nervo vagal não é compatível com a esqueletização do ligamento hepatoduodenal.

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.

Conclusões

Conclusions. Our results suggest that preservation of the pyloric ring without vagal innervation has little significance, and that SSPPD with better perioperative and long-term outcomes is more suitable as a standard procedure for patients with pancreatic head cancer.

Fujii T, et al. Ann Surg Oncol 2012;19:176-83.


Hepatic artery proper
Common hepatic artery
Abdominal aorta
Gastroduodenal artery
Portal vein
Bile duct
Celiac trunk
Spleen
Anterior superior pancreatico-duodenal artery
Splenic artery
Caudal artery
Posterior superior pancreatico-duodenal artery
Great pancreatic artery
Dorsal pancreatic artery
Duodenum
Inferior pancreatic artery
Anterior inferior pancreaticoduodenal artery
Superior mesenteric artery
Posterior inferior pancreaticoduodenal artery

1. Retardo no esvaziamento gástrico
   - Aumento do tempo de uso de SNG
   - Retardo no início de dieta líquida
   - Aumento do tempo de permanência hospitalar
2. Perda no controle da glicemia e gordura corporal (diabetes)
3. Impede um linfadenectomia adequada e segura (D2)
4. Não foi idealizado para doença maligna
5. Promove mais desnutrição
   - Retardando o início da quimioterapia
6. Compromete o suprimento sanguíneo e inervação piloroduodenal
7. Promove espasmo no piloro desnervado

ORIGINAL ARTICLE

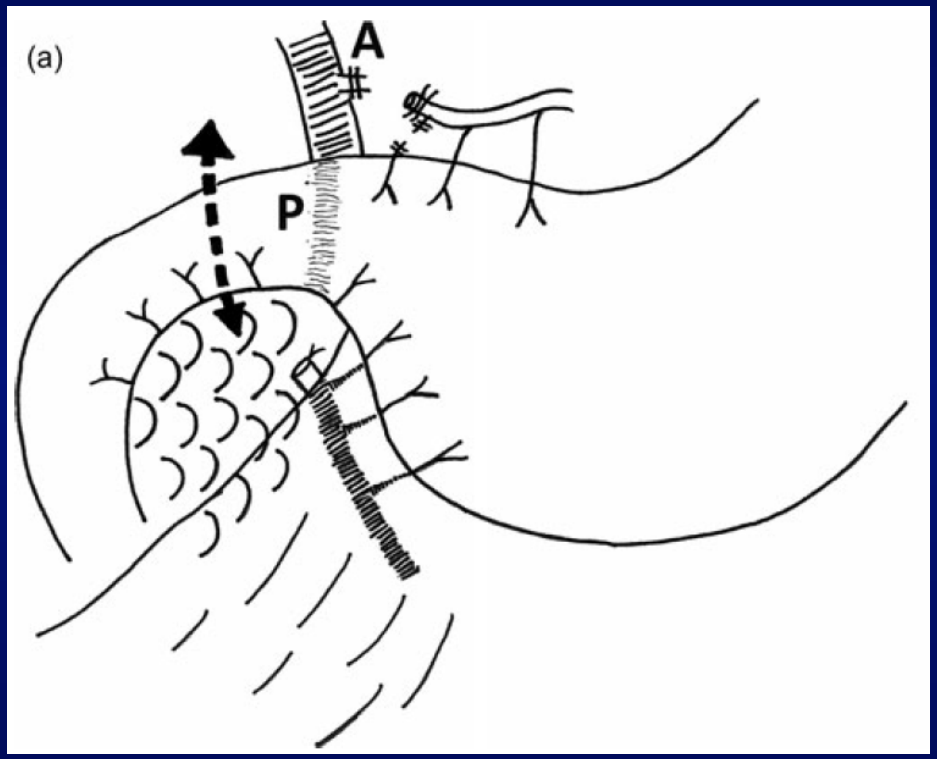
Pylorus Ring Resection Reduces Delayed Gastric Emptying in Patients Undergoing Pancreatoduodenectomy

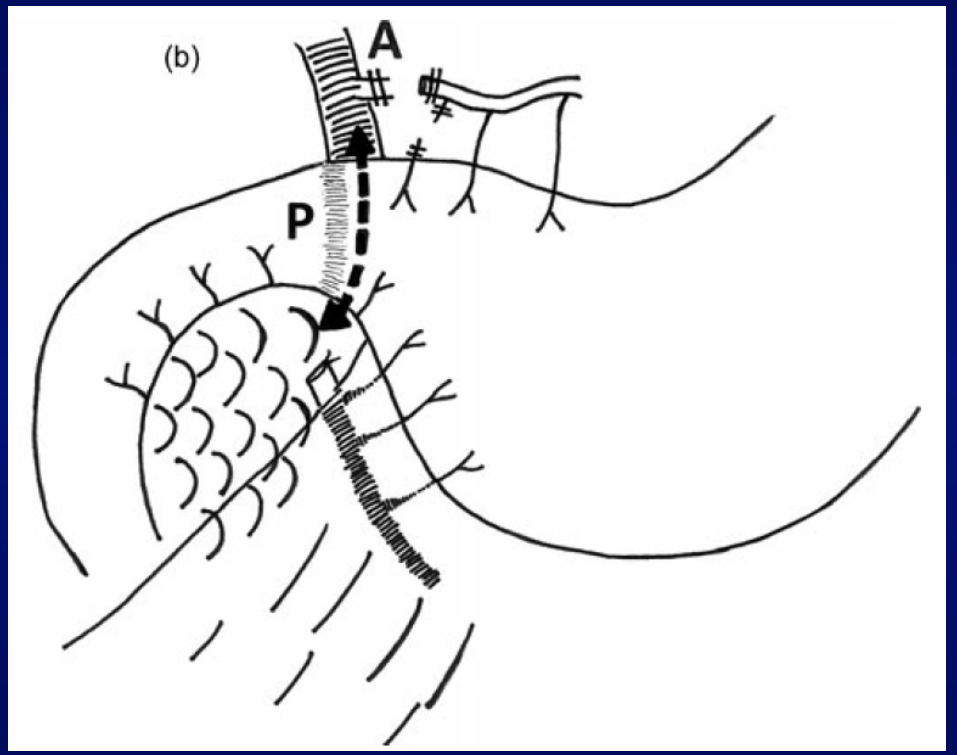
A Prospective, Randomized, Controlled Trial of Pylorus-Resecting Versus Pylorus-Preserving Pancreatoduodenectomy

Manabu Kawai, MD, Masaji Tani, MD, Seiko Hirono, MD, Motoki Miyazawa, MD, Atsushi Shimizu, MD, Kazuhisa Uchiyama, MD, and Hiroki Yamaue, MD

Prospectivo randomizado e controlado

Kawai M, et al. Ann Surg 2011;253:495-501





Kawai M, et al. Ann Surg 2011;253:495-501

TABLE 2. Delayed Gastric Emptying and Postoperative Course

	PpPD (n = 64)	PrPD (n = 66)	*P*
Delayed gastric emptying*	11 (17.2%)	3 (4.5%)	0.0244
Grade A	6 (9.4%)	1 (1.5%)	
Grade B	5 (7.8%)	1 (1.5%)	
Grade C	0 (0%)	1 (1.5%)	
Removal of nasogastric catheter, d	0.6 ± 0.9	0.6 ± 1.0	0.9410
Reinsertion of nasogastric catheter	8 (12.5%)	2 (3.0%)	0.0527
Start of solid diet, d	6.3 ± 3.7	5.6 ± 3.3	0.1138
Postoperative hospital stay, d	24.1 ± 14.8	24.3 ± 15.5	0.9305

*Delayed gastric emptying is defined according to the International Study Group of Pancreatic Surgeons.

Kawai M, et al. Ann Surg 2011;253:495-501

TABLE 3. Results of Gastric Emptying Assessed by ^{13}C-Acetate Breath Test

	PpPD (n = 64)	PrPD (n = 66)	*P*
Postoperative upper gastrointestinal gastrografin series, s*	27.2 ± 31.3	10.1 ± 9.0	0.0001
^{13}C-acetate breath test, min†			
1 mo after surgery	34.0 ± 24.1	18.7 ± 29.7	<0.0001
3 mo after surgery	26.5 ± 21.1	17.3 ± 11.7	0.0136
6 mo after surgery	26.7 ± 18.8	17.4 ± 13.2	0.0197

*Time for the passage of gastrografin from esophagogastric junction to gastrojejunostomy or duodenojejunostomy was measured on postoperative day 7.

†Gastric emptying was evaluated by the time of peak $^{13}CO_2$ content in ^{13}C-acetate breath test at 1, 3, and 6 months after surgery.

Kawai M, et al. Ann Surg 2011;253:495-501

Conclusões

Conclusion: Pylorus-resecting pancreatoduodenectomy significantly reduces of the incidence of DGE compared with PpPD.

Recomendação A

Fortemente recomendado

Kawai M, et al. Ann Surg 2011;253:495-501

J Gastrointest Surg (2014) 18:52–59
DOI 10.1007/s11605-013-2283-5

2013 SSAT PLENARY

Distal Gastrectomy in Pancreaticoduodenectomy is Associated with Accelerated Gastric Emptying, Enhanced Postprandial Release of GLP-1, and Improved Insulin Sensitivity

Stefan Harmuth · Marlene Wewalka · Jens Juul Holst · Romina Nemecek · Sabine Thalhammer · Rainer Schmid · Klaus Sahora · Michael Gnant · Johannes Miholić

Harmuth S, et al. J Gastrointest Surg 2014;18:52-9

- GLP1

  Aumenta a estimulação da liberação de Insulina

  Inibe o Glucagon e resultante produção de glicose atenuada

  Induz diferenciação de células beta

  Inibição de apoptose de células beta

  Papel no controle da Glicemia

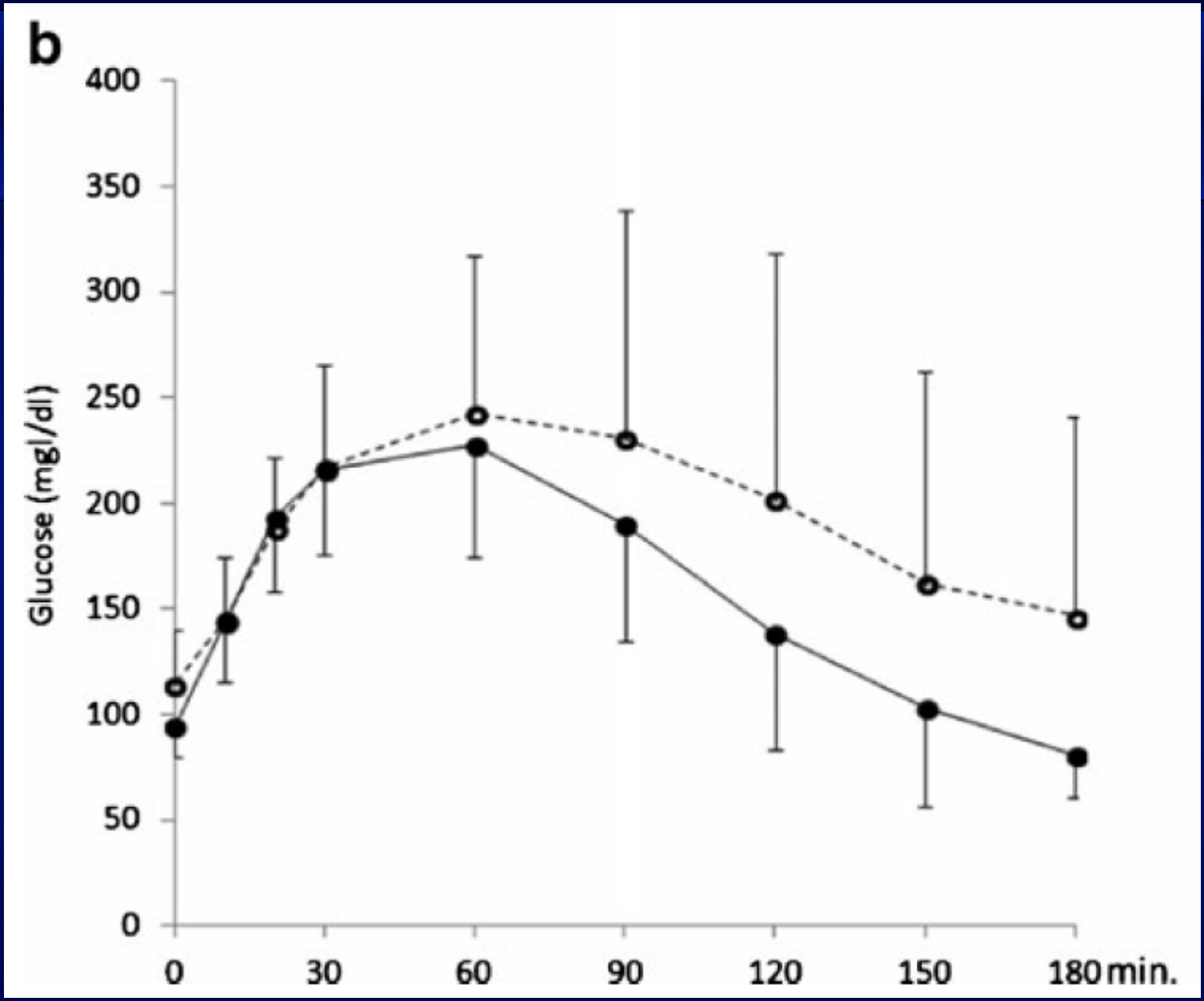
  Induz saciedade pós-prandial

  Reduz IMC e gordura corporal

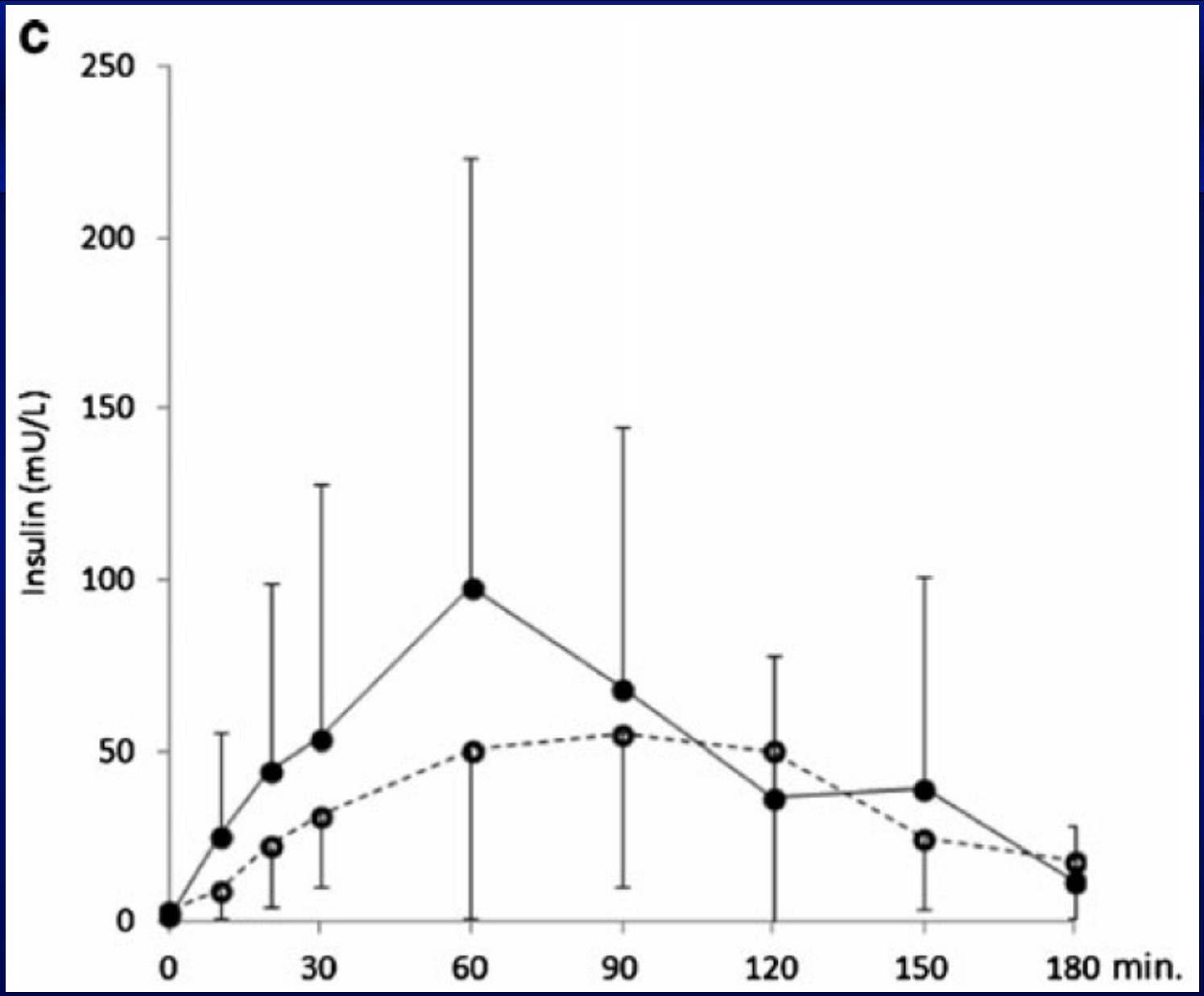
Harmuth S, et al. J Gastrointest Surg 2014;18:52-9

	Whipple	PPPD	*P*-value
Age (year)	61 (32–70)	62 (48–66)	0.918
Gender (M/F ratio)	6:7	11:2	0.097
Interval since surgery (months)	31 (7–199)	19 (5–107)	0.218
Underlying disease	Pancreatitis, 1 Neoplasia, 11 Trauma, 1	Pancreatitis, 1 Neoplasia, 12	0.593
Body mass index	22.6 (16.6–36.1)	25.4 (18.4–31.2)	0.72
% body fat	23.8 (7.1–45.8)	24.9 (2.0–34.1)	0.938
DM before surgery (fasting glucose ≥126 mg/dl)	2/13 (15 %)	4/13 (30 %)	0.189

Harmuth S, et al. J Gastrointest Surg 2014;18:52-9



Harmuth S, et al. J Gastrointest Surg 2014;18:52-9



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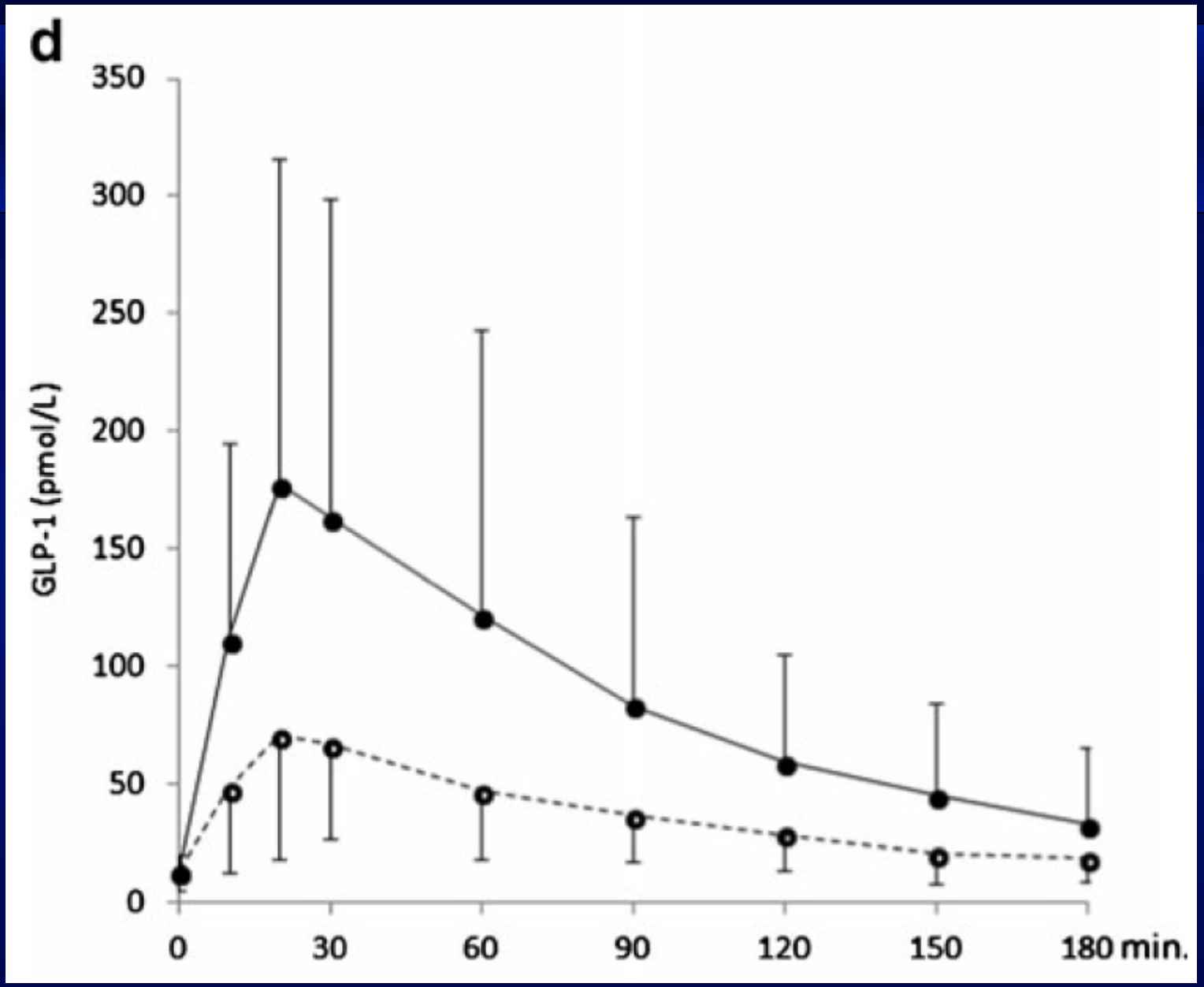

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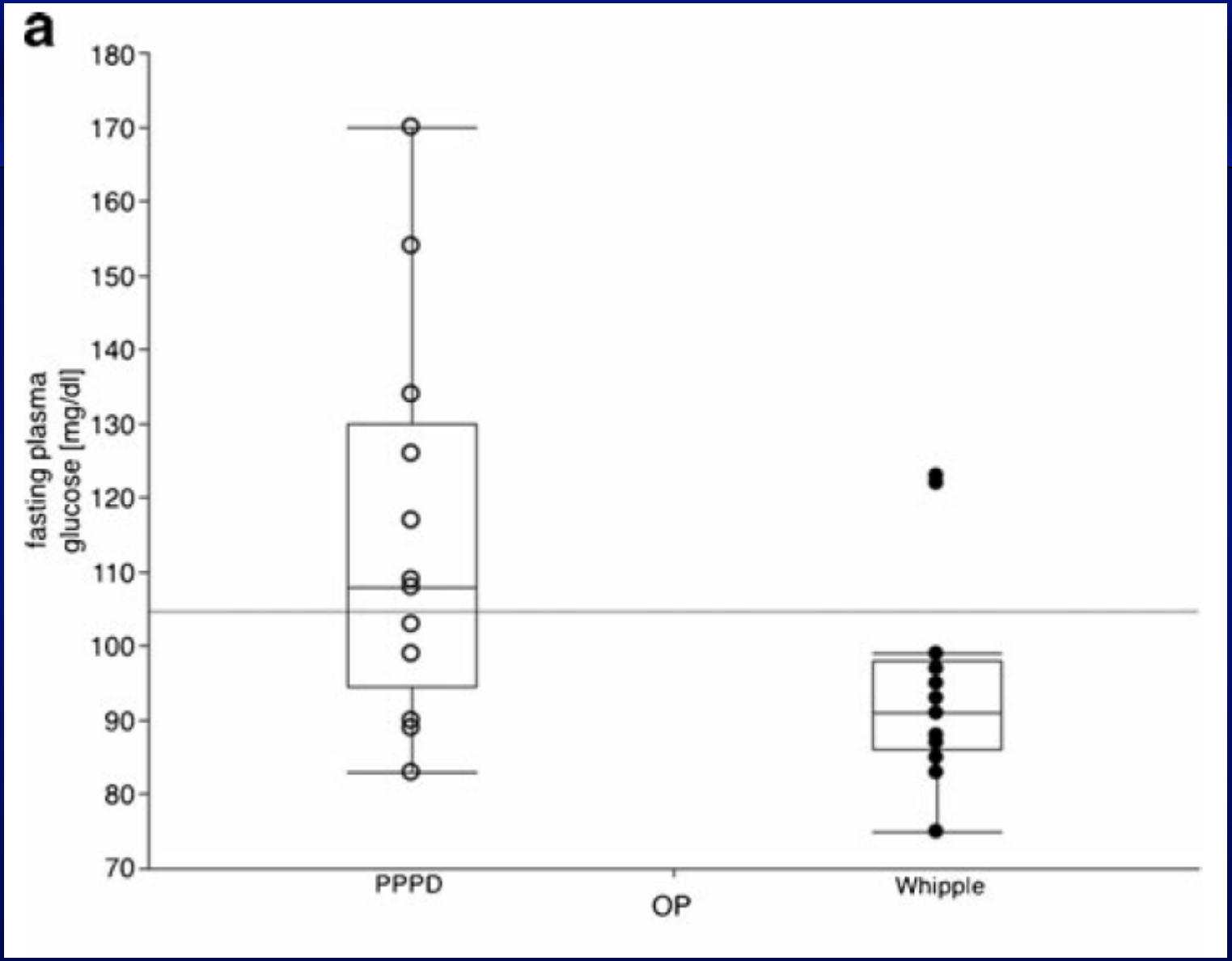

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Conclusões

warrant further research. In the connotation of pancreaticoduodenectomy, the consequences of pylorus preservation should be reconsidered, and prospective randomized trials may shed more light on the consequences of the type of operation on glucose metabolism.

Reconsiderada

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Conclusões

Conclusions Gastric emptying was accelerated after Whipple procedure as compared to patients who have undergone PPPD, resulting in higher postprandial GLP-1 concentrations and insulin sensitivity and improved glycemic control.

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Conclusões

1. A operação de Whipple, com o advento de novas drogas, pode ser utilizada em situações especiais.
2. A preservação do "anel pilórico", denervado e devascularizado, não tem nenhum valor na duodenopancreatectomia.
3. A duodenopancreatectomia com preservação gástrica (SSPPD) deve ser o procedimento de eleição, particularmente para doença maligna, onde a linfadenectomia padrão é desejada.

Muito obrigado!