

XVIII Semana Brasileira do Aparelho Digestivo



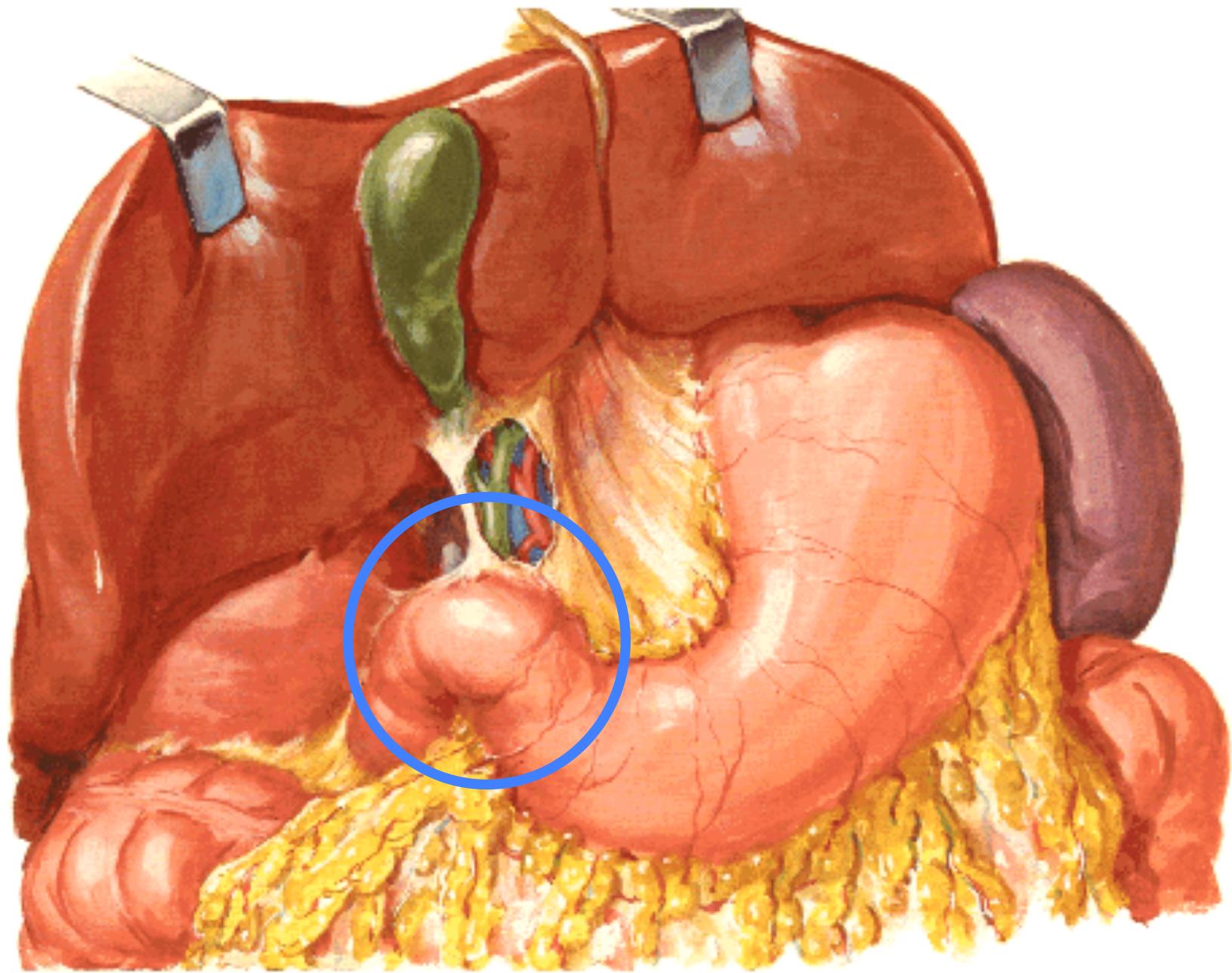
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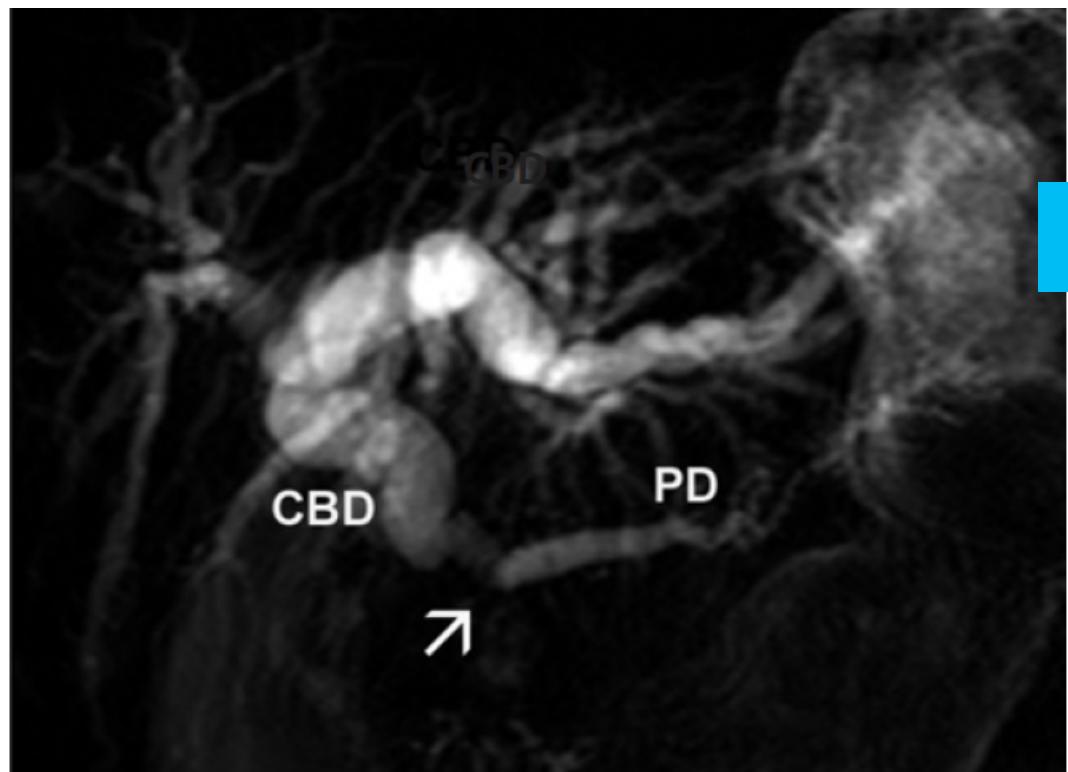
QUANDO DRENAR A VIA BILIAR NO CÂNCER PERIAMPULAR



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Cirurgia do Aparelho Digestivo
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Universidade Federal Maranhão - Brasil

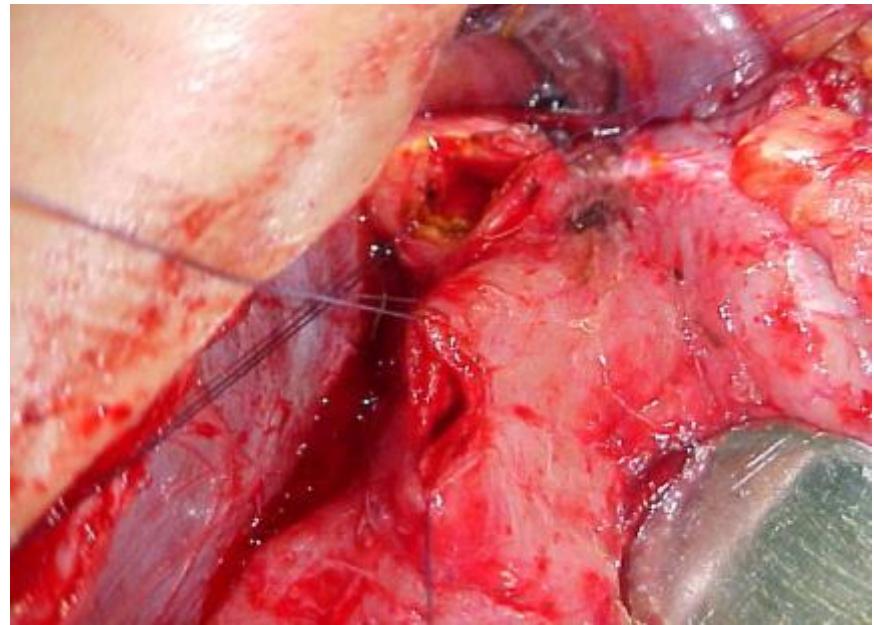
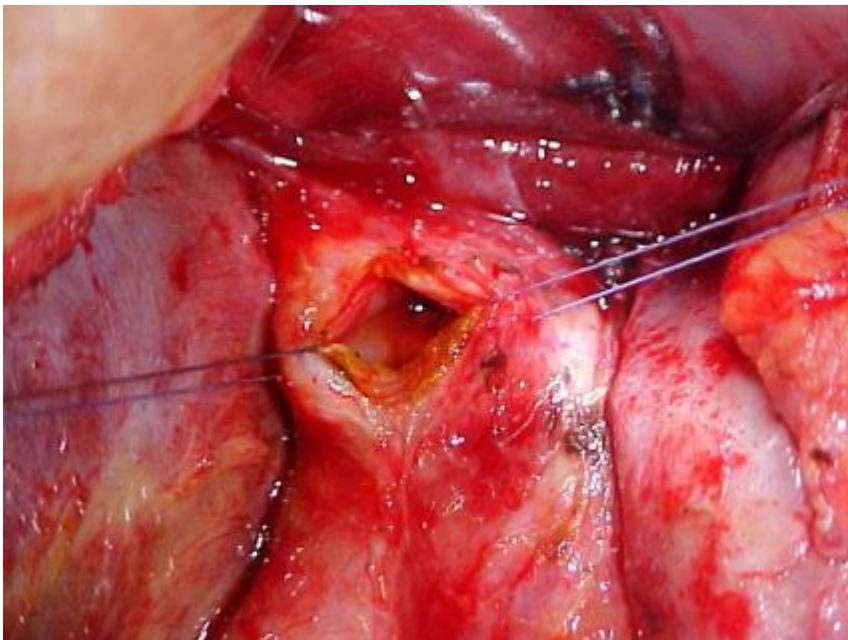




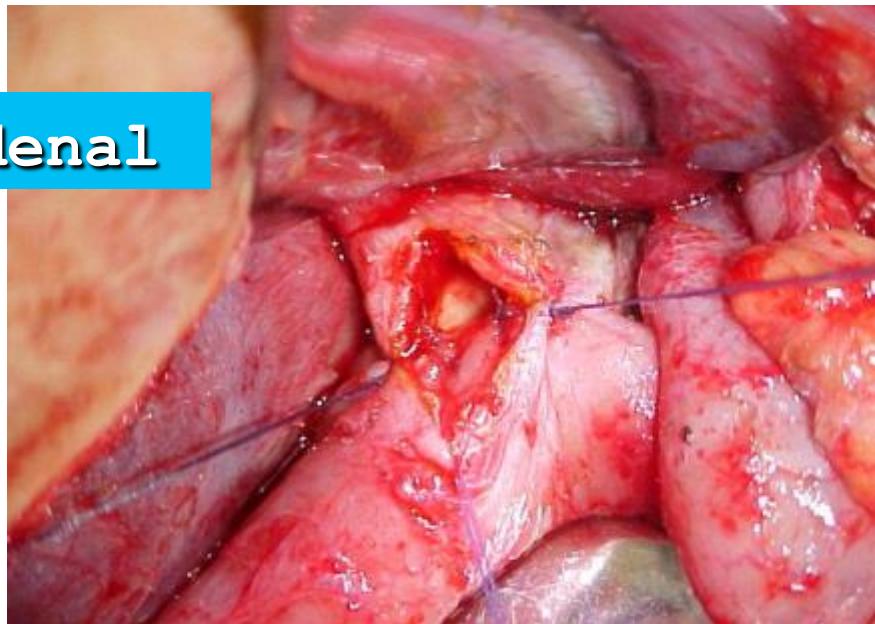
BT \geq 15 mg/dl



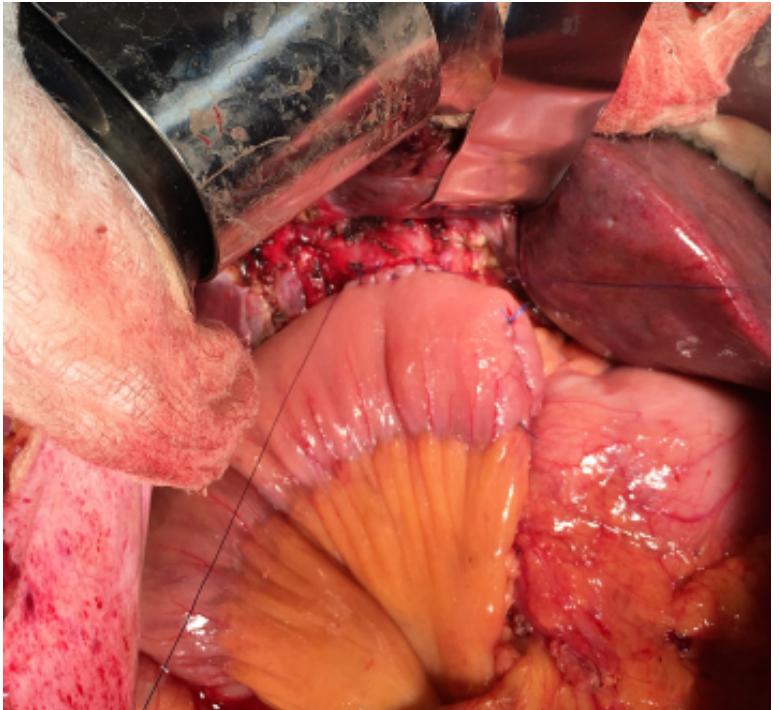
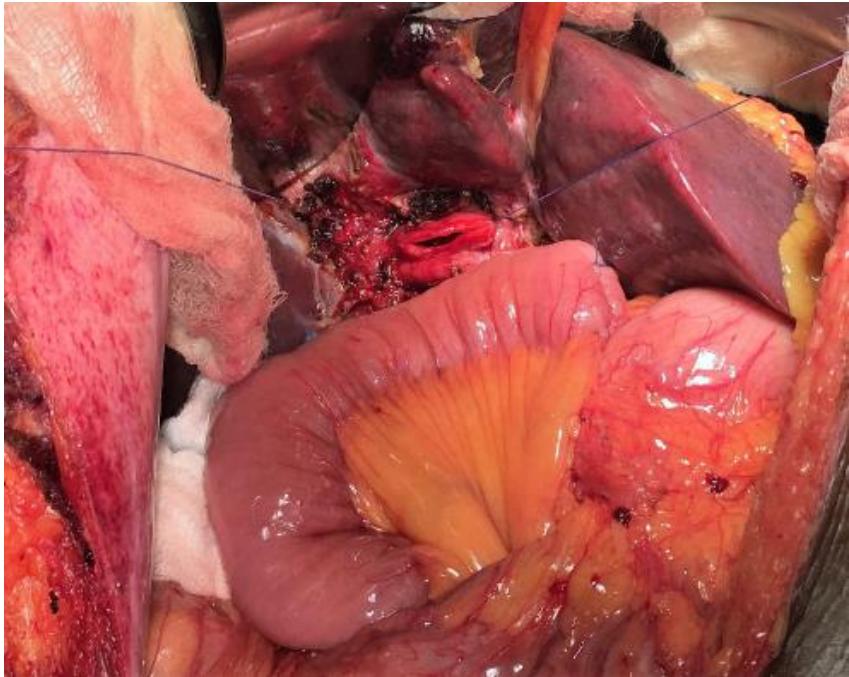
Type Of Intervention		Drainage	Method
Surgical	Laparoscopic	Internal	Choledochojejunostomy Choledochoduodenostomy Choledochogastrostomy e.t.c
	Open		
Non Surgical	Percutaneous	External	Tube above the obstruction
		External-Internal	Tube across the obstruction
		Internal	Stent
	Endoscopic (ERCP)	Internal -External	Nasobiliary tube
			Stent



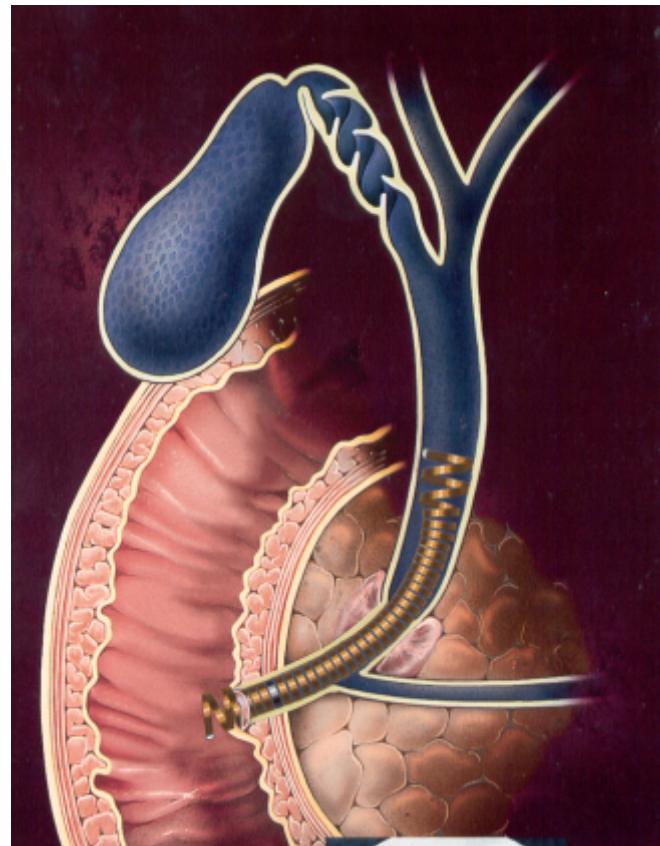
Anastomose colédoco-duodenal



Anastomose hepático-jejunal em Y de Roux

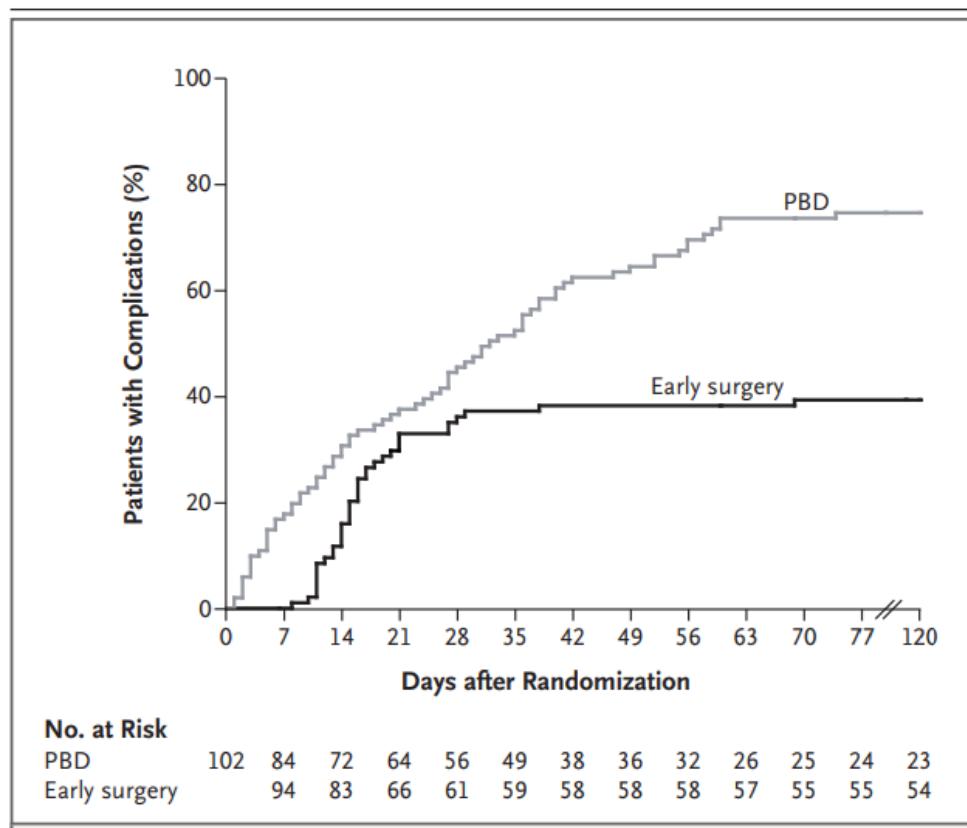


- PTBD
- ENBD



ORIGINAL ARTICLE

Preoperative Biliary Drainage for Cancer of the Head of the Pancreas



Cirurgia:

- 1 semana
- 4-6 semanas

Qualquer complicação:

- Cirurgia precoce 2%
- Drenado 46%

ORIGINAL ARTICLE

Preoperative Biliary Drainage for Cancer of the Head of the Pancreas

Table 2. Serious Complications within 120 Days after Randomization.*

Complication	Early Surgery (N=94)	Preoperative Biliary Drainage (N=102)
	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)

Table 2. Serious Complications within 120 Days after Randomization.*

Complication	Early Surgery (N=94)	Preoperative Biliary Drainage (N=102)
	no. (%)	
Related to surgery		
Any	35 (37)	48 (47)
Pancreaticojunostomy leakage§	11 (12)	8 (8)
Grade A	1 (1)	0
Grade B	4 (4)	4 (4)
Grade C	6 (6)	4 (4)
Hemorrhage after pancreatectomy‡	4 (4)	2 (2)
Delayed gastric emptying	9 (10)	18 (18)
Biliary leakage	3 (3)	1 (1)
Gastrojejunostomy or duodenojejunostomy leakage	2 (2)	4 (4)
Intraabdominal abscess	3 (3)	2 (2)
Wound infection	7 (7)	13 (13)
Portal-vein thrombosis	1 (1)	0
Pneumonia	5 (5)	9 (9)
Cholangitis		
Myocardial infarction		
Need for repeated laparotomy¶		

* The numbers refer to patients who had one or more complications. ERCP denotes endoscopic retrograde cholangio-pancreatography.

Complicações sérias (120d) :

- Cirurgia precoce 39%
- Drenado 74%



ORIGINAL ARTICLE

Upfront pancreaticoduodenectomy in severely jaundiced patients: is it safe?

Table 1 Details of the indications, methods and duration of preoperative biliary drainage in Group C (PBD group)

Group C (PBD group)

$n = 69$ (ERCP + plastic stenting in 67 and PTBD in two)

Pre-drainage serum T. bilirubin: 10 (0.4–31.9) mg/dl

Indications:

1. Serum T. bilirubin <15 mg/dl, $n = 42$ (60.9%)

- Jaundice, $n = 19$
- Cholangitis, $n = 21$
- Malnutrition, $n = 2$

(Duration of PBD = 18 [14–23] days)

2. Serum T. bilirubin ≥ 15 mg/dl, $n = 27$ (39.1%)

- Jaundice, $n = 19$
- Cholangitis, $n = 7$
- Malnutrition, $n = 1$

(Duration of PBD = 22 [18–28] days)

Bilirubina 15 mg/dl

ERCP endoscopic retrograde cholangiopancreatography, *PBD* preoperative biliary drainage, *PTBD* percutaneous transhepatic biliary drainage

ORIGINAL ARTICLE

Upfront pancreaticoduodenectomy in severely jaundiced patients: is it safe?

Table 3 Summary of postoperative complications

	Without PBD and preoperative bilirubin ≥15 mg/dl: Group A (n = 20)	Without PBD and preoperative bilirubin <15 mg/dl: Group B (n = 88)	With PBD: Group C (n = 69)	P-value
Bile leak	0	1	2	0.57
Chyle leak	4	10	6	0.37
Delayed gastric emptying	5	42	38	0.06
Positive intra-operative bile culture	4 (20%)	20 (22.7%)	43 (62.3%)	<0.0001
Infected intra-abdominal collection	1 (5%)	6 (6.8%)	13 (18.8%)	0.04
Wound infection	2 (10%)	23 (26.1%)	43 (62.3%)	<0.0001
Wound dehiscence	0	2	4	0.32
Chest infection	0	4	6	0.27
Renal dysfunction	2 (10%)	5 (5.7%)	5 (7.2%)	0.77
Sepsis	2 (10%)	10 (11.4%)	24 (34.8%)	0.001
ICU stay (days)	2 (1–25)	2 (1–35)	3 (1–20)	0.01
Postoperative hospital stay (days)	20 (11–69)	14 (5–50)	16 (5–44)	0.15

ICU intensive care unit, PBD preoperative biliary drainage

 Cirurgia

Value of preoperative biliary drainage in a consecutive series of resectable periampullary lesions

Parameter	PBD (n=38)	Non-PBD (n=62)	p value
Main outcomes			
No complications, number (%)	8 (21)	20 (32.2)	0.26
Details complications			
Positive blood culture, number (%)	8 (21)	10 (16)	0.67
Positive bile culture (gallbladder), number (%)	21 (55.2)	7 (11.3)	0.001
Positive bile culture (bile duct), number (%)	31 (81.5)	10 (16.1)	0.001
Other outcomes			
Mean operating time (h)	4.9±0.76	4.6±0.86	0.27
Mean intraoperative blood loss (ml)	520±505.9	325±281.6	0.07
Patients requiring packed red blood cells (RBC) transfusion, number (%)	7 (18.4)	16 (25.8)	0.52
Mean RBC transfusion (units)	0.83±1.65	0.48±0.94	0.43
Mean postoperative length of stay (days)	28.6±30.7	24.2±17	0.36
Disease-free survival (months)	32	32	0.55

OPEN

The Effects of Different Preoperative Biliary Drainage Methods on Complications Following Pancreaticoduodenectomy

TABLE 2. Pairwise Comparisons Between the 4 Groups in Parameters With Possible Differences

Variables	Non-PBD (n = 170)	PTBD (n = 45)	ENBD (n = 18)	ERBS (n = 37)
PBD duration (day)	—	26.2 ± 24.0 [§]	18.9 ± 10.3 [¶]	45.2 ± 59.9
Preoperative ALT (IU/L)	208.7 ± 165.4	81.0 ± 44.1 [#]	74.1 ± 33.3 [†]	62.5 ± 43.5 ^{**}
Preoperative TB (umol/L)	209.9 ± 136.7	98.2 ± 83.1 [#]	59.7 ± 55.0 [†]	85.0 ± 127.1 ^{**}
Postoperative hospital stay (day)	22.3 ± 10.4	21.5 ± 9.0 [§]	25.5 ± 13.5	28.8 ± 25.3 [‡]
Overall complications (%)	96 (56.5)	19 (42.2) ⁺⁺	11 (61.1)	27 (73.0)
Severe complications (%)	29 (17.1)	2 (4.4) ^{*,§}	3 (16.7)	9 (24.3)
Cholangitis (%)	14 (8.2)	5 (11.1)	4 (22.2)	8 (21.6) [‡]
Pancreatic fistula (%)	66 (38.8)	11 (24.4) ⁺⁺	8 (44.4)	20 (54.1)
Delayed gastric emptying (%)	21 (12.4)	3 (6.7) ⁺⁺	1 (5.6)	11 (29.7) ^{**}
Wound infection (%)	18 (10.6)	7 (15.6)	5 (27.8)	9 (24.3) [‡]

Perioperative antibioticotherapy should replace prophylactic antibiotics in patients undergoing pancreaticoduodenectomy preceded by preoperative biliary drainage

TABLE 3 Resistance to perioperative antibiotic treatment

	PA group (n = 53)	ABT group (n = 69)	P value
Resistance to perioperative antibiotic treatment (n, %):			
Overall	34/53 (64)	10/69 (14)	<.0001
Polymicrobial (n = 62 vs n = 51)	28/33 (84)	9/51 (17)	<.0001
<i>Enterococcus</i> sp.	26/27 (96)	8/50 (16)	<.0001
<i>Escherichia coli</i>	13/16 (81)	3/27 (11)	<.0001
<i>Enterobacter</i> sp.	14/16 (87)	6/21 (29)	.0004
<i>Klebsiella</i> sp.	9/12 (75)	3/24 (12)	.0002
<i>Streptococcus</i> sp.	3/6 (50)	0/9 (0)	.02
<i>Pseudomonas aeruginosa</i>	4/5 (80)	0/4 (0)	.02

Abbreviations: ABT, antibioticotherapy; PA, prophylactic antibiotic.

Perioperative antibiotic therapy should replace prophylactic antibiotics in patients undergoing pancreaticoduodenectomy preceded by preoperative biliary drainage

TABLE 4 Postoperative complications

	PAs group (n = 53)	ABT group (n = 69)	P value
DINDO classification	3 (2-4)	2 (2, 3)	.005
Surgical complications (n,%)			
Wound abscess	4 (8)	4 (6)	.7
Bacteremia	22 (41)	4 (6)	<.0001
Respiratory tract infection	8 (15)	2 (3)	.02
Urinary tract infection	5 (9)	1 (1)	.08
Deep abdominal abscess	19 (36)	7 (10)	.0008
Outcome			
90-d mortality (n, %)	4 (7)	1 (1)	.2
Hospital stay (d)	17 (13-27)	13 (10-14)	<.0001

Grupo:

- Cefazolina 2g
- Pipe-Tazo 4g/500mg

Atb perioperatório:

- Pipe-Tazo 4g/500mg

ORIGINAL ARTICLE

Major intraoperative bleeding during pancreateoduodenectomy - preoperative biliary drainage is the only modifiable risk factor

Table 2 Univariable and multivariable analysis to identify predictors for major intraoperative bleeding (≥ 1000 ml) during pancreateoduodenectomy

	Event/Total	Univariable analysis			Multivariable analysis		
		OR	95% CI	p-value	OR	95% CI	p-value
Male sex	1002/1864	1.77	1.44–2.19	<0.001	1.87	1.49–2.35	<0.001
BMI ≥ 25	838/1788	1.77	1.43–2.19	<0.001	1.72	1.37–2.15	<0.001
Diabetes	862/1854	1.36	1.06–1.75	0.016			
Heart disease	594/1844	1.42	1.15–1.76	0.001			
PBD	1215/1850	1.67	1.33–2.09	<0.001	1.59	1.25–2.04	<0.001
CRP ≥ 12	452/1728	1.47	1.16–1.85	0.001	1.41	1.10–1.80	0.006
NAT	52/1855	2.60	1.49–4.53	0.001	2.70	1.43–5.10	0.002

Odds ratio (OR); Confidence interval (CI); Body mass index kg/m² (BMI); Preoperative biliary drainage (PBD); Preoperative biliary drainage (PBD); C-reactive protein mg/L (CRP); Neoadjuvant chemotherapy (NAT).



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Surgery

journal homepage: www.elsevier.com/locate/surg

Delaying surgery after preoperative biliary drainage does not increase surgical morbidity after pancreaticoduodenectomy

Table IIIPostoperative outcomes in the total cohort ($N = 603$)

Variables	No stent ($n = 420$)	Short duration ($n = 110$)	Delaying surgery ($n = 73$)	P value
Overall complications	171 (40.7)	46 (41.8)	29 (39.7)	.959
PPH	21 (5)	4 (3.6)	1 (1.4)	.421
Pulmonary complications	47 (11.2)	12 (10.9)	7 (9.6)	.921
Chyle leak	27 (6.4)	3 (2.7)	8 (11)	.079
GI and/or bile leaks	2 (0.5)	1 (0.9)	0 (0)	.663
Intra-abdominal fluid collection	8 (1.9)	4 (3.6)	0 (0)	.262
Intra-abdominal abscess	14 (3.3)	2 (1.8)	3 (4.1)	.619
Sepsis	6 (1.4)	2 (1.8)	1 (1.4)	.872
Wound infection	7 (1.7)	9 (8.2)	3 (4.1)	.003*
Positive drainage culture	126 (30)	33 (30)	28 (38.4)	.351
Reoperation	19 (4.5)	1 (0.9)	1 (1.4)	.124
90-day mortality	1 (0.2)	1 (0.9)	0 (0)	.515
90-day readmission	42 (10)	11 (10)	6 (8.2)	.891
Postsurgical hospital stay (d)	12 (9–16)	11.5 (9–17.3)	12 (9.5–17.5)	.844

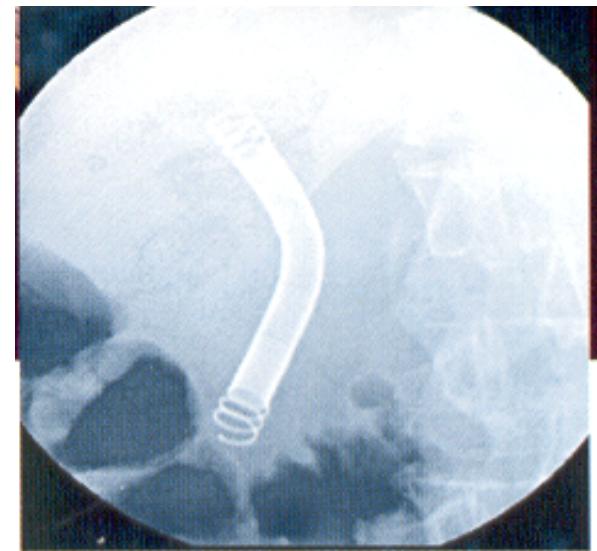
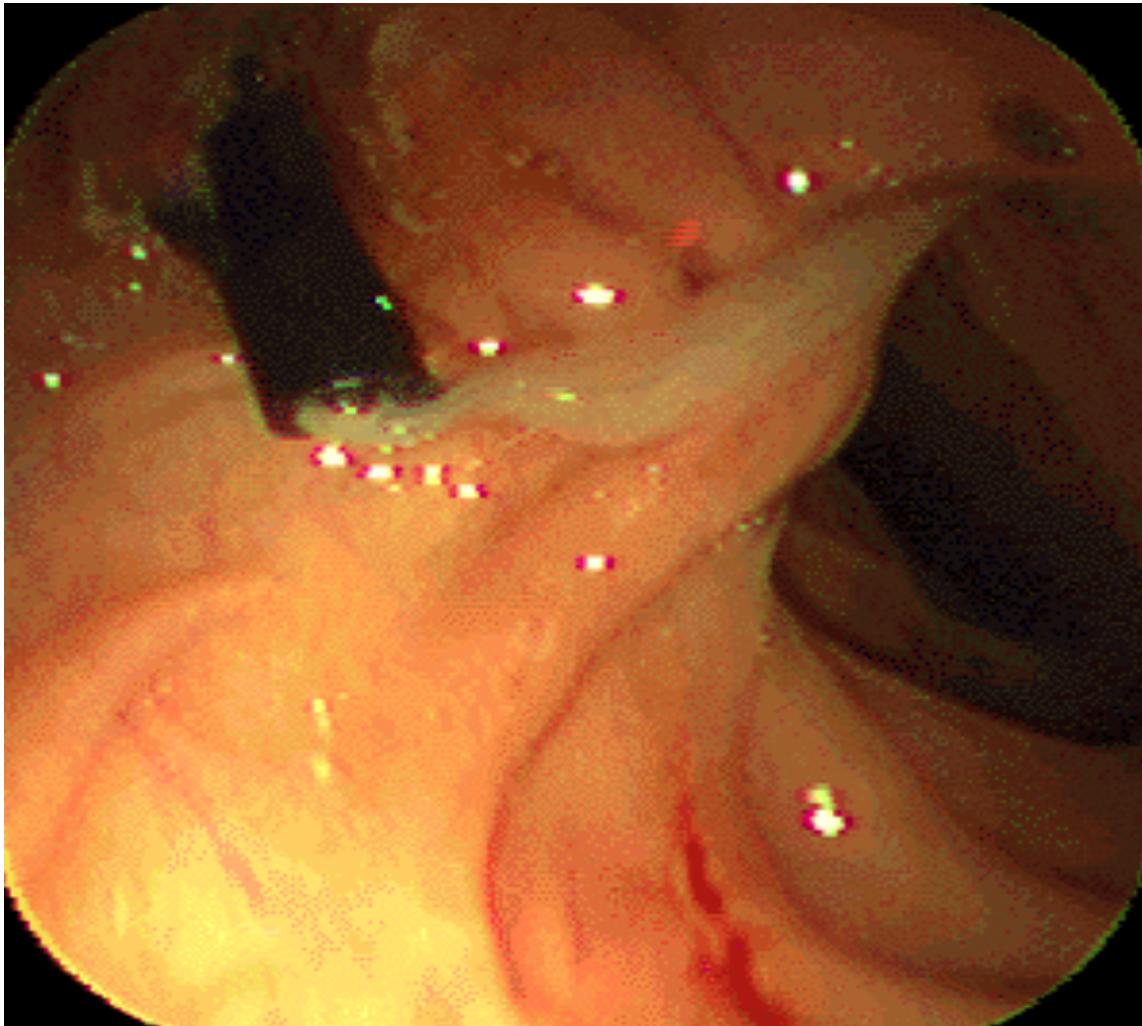


Sem diferença

Preoperative Biliary Drainage: a Routine or Selective Strategy in Jaundiced Patients With Pancreatic Cancer?

- Colangite
- Bilirrubina ≥ 15 mg/dl
- Quimioterapia neoadjuvante
- Retardo na cirurgia:
 - Desnutrição
 - Disfunção renal
- Prurido intenso

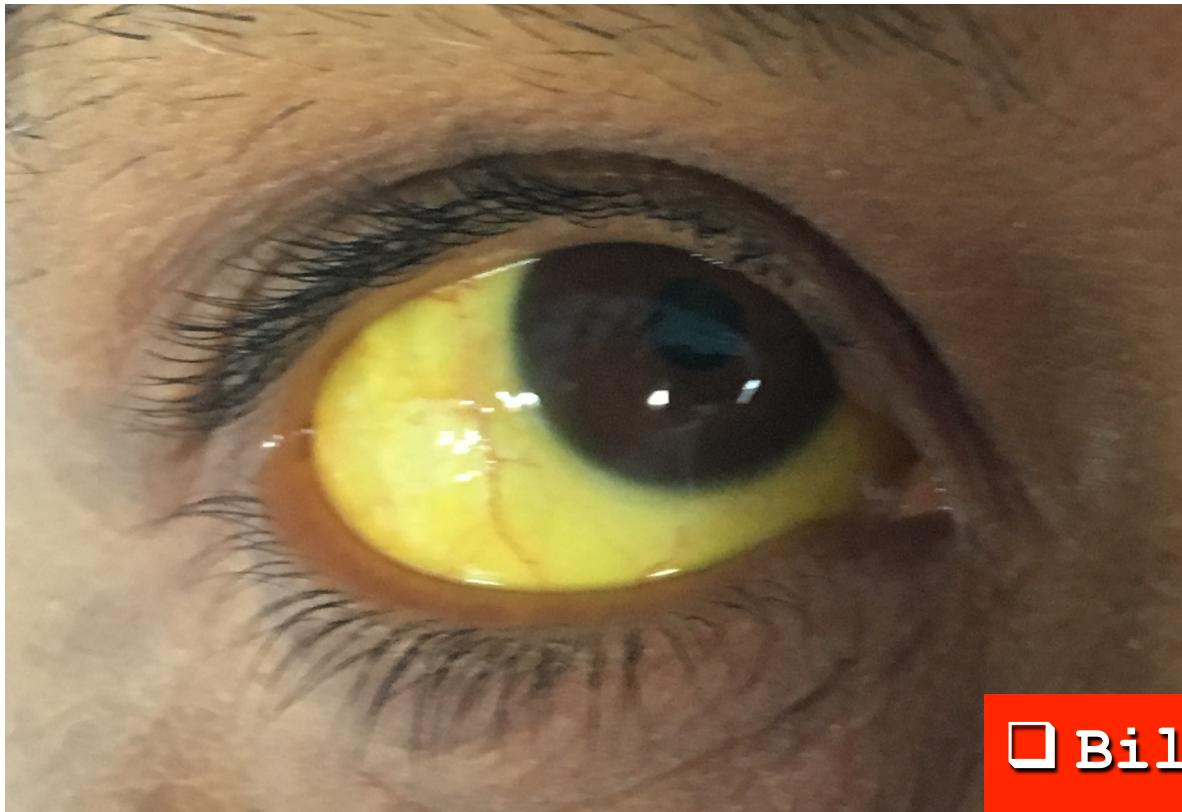
COLANGITE



- DESCOMPRESSÃO
- ANTIBIÓTICO



NÍVEL DE BILIRRUBINA



Prurido

Bilirrubina
 $\geq 6 \text{ mg/dl}$
 $\geq 15 \text{ mg/dl}$
 $\geq 20 \text{ mg/dl}$



Neoadjuvânci

Neoadjuvant Treatment for Pancreatic Cancer

Invited Commentary

Invited Commentary

Neoadjuvant Treatment in Locally Advanced and Borderline Resectable Pancreatic Cancer vs Primary Resectable Pancreatic Cancer

Marco Del Chiaro, MD, PhD; Roberto Valente, MD; Urban Arnelo, MD, PhD

- Biópsia
- Drenagem biliar

Bilirrubina 2-3 mg/dl

Del Chiaro M, et al. Jama Surg 2017

RETARDO NA OPERAÇÃO

- DESNUTRIÇÃO
- DISFUNÇÃO RENAL

Bilirrubina
 $\geq 6 \text{ mg/dl}$
 $\geq 15 \text{ mg/dl}$
 $\geq 20 \text{ mg/dl}$



Via:

- Dreno nasobiliar?
- Percutânea?
- CPRE?



Impact of preoperative percutaneous transhepatic biliary drainage on post-operative survival in patients with distal cholangiocarcinoma

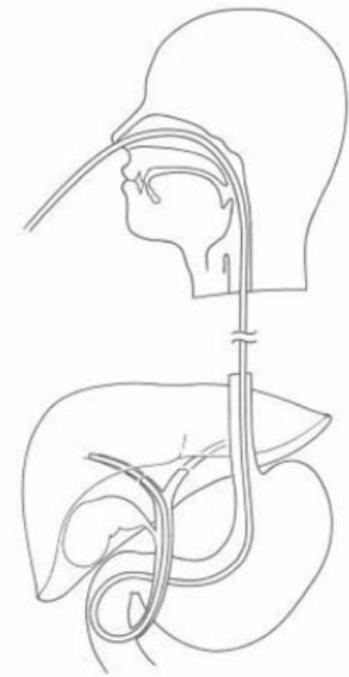
Conclusion

In conclusion, preoperative PTBD has a significant impact in terms of both poorer post-operative survival and a higher incidence of peritoneal recurrence in patients undergoing PD for DCC, and therefore PTBD should not be performed except when EBD is contraindicated.

Drenagem endoscópica

Via:

- Endoscópica?
- Percutânea?



Percutânea



Endoscópica

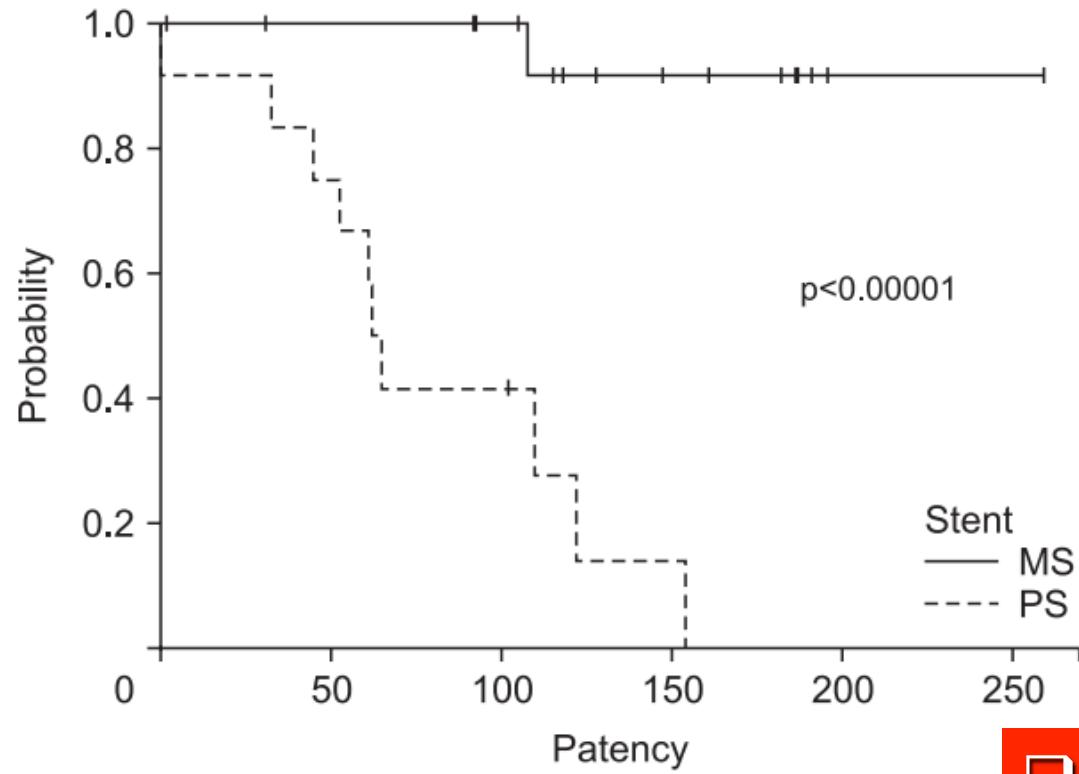
Drenagem endoscópica



Prótese:
 Plástica?
 Metálica?

Gut and Liver, Published online November 4, 2019

Clinical Outcomes of Biliary Drainage during a Neoadjuvant Therapy for Pancreatic Cancer: Metal versus Plastic Stents

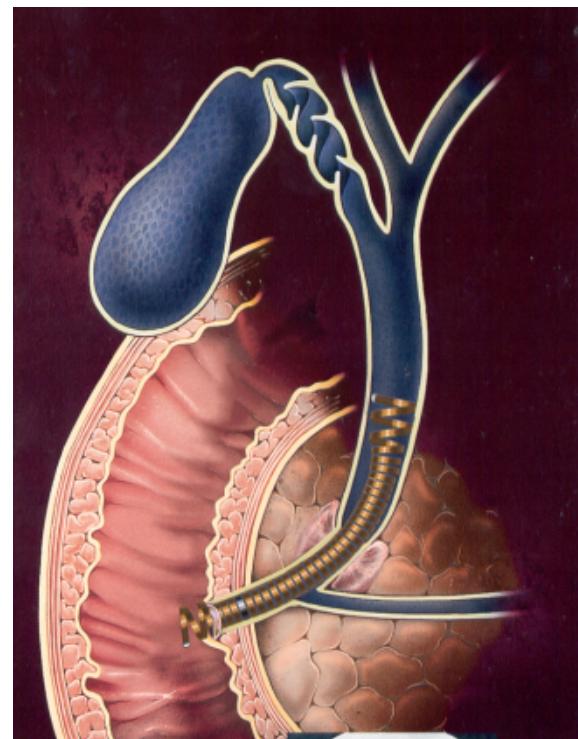
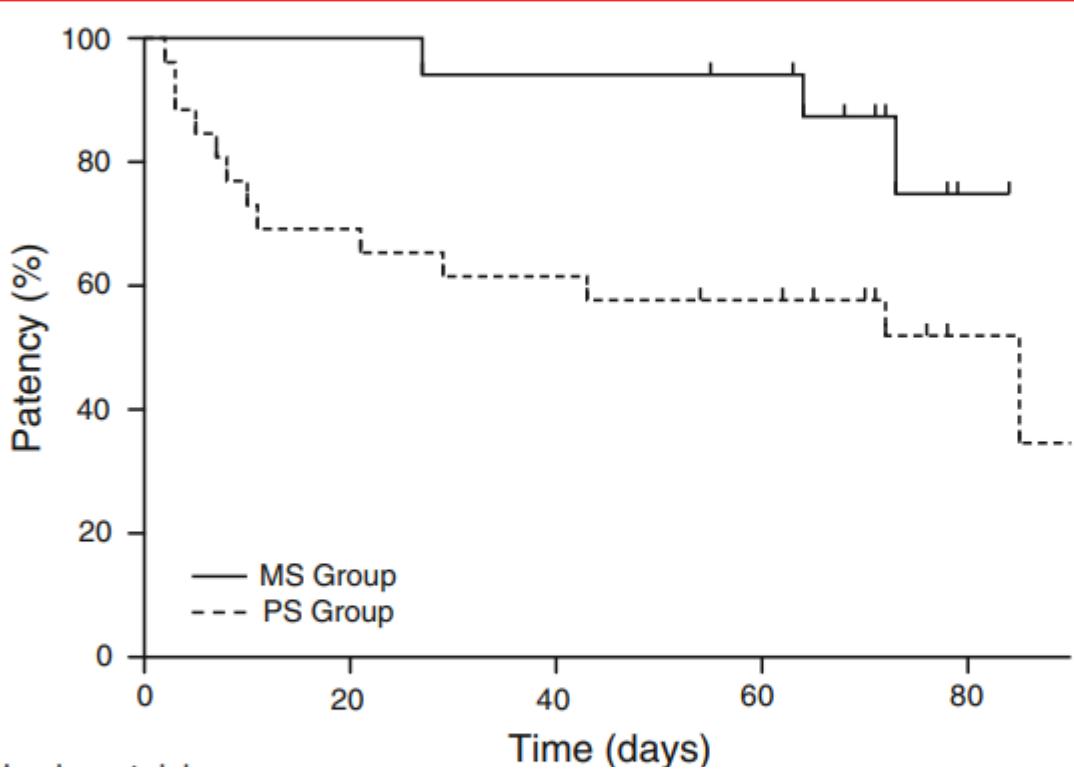


Metálica



ORIGINAL SCIENTIFIC REPORT (INCLUDING PAPERS PRESENTED AT SURGICAL CONFERENCES)

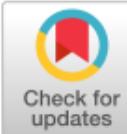
A Comparison Between Plastic and Metallic Biliary Stent Placement in Patients Receiving Preoperative Neoadjuvant Chemoradiotherapy for Resectable Pancreatic Cancer



Metálica

Table 3 Economic impact of maintaining biliary drainage during neoadjuvant chemoradiotherapy

	MS group	PS group
Initial biliary stent placement		
Biliary stent placement (USD)	5013	3308
Number of patients	17	26
Total (USD)	85,221	86,008
Stent exchange or cleaning		
Additional expense of reintervention (USD)	2667	3867
Number of reintervention (times)	4	15
Total (USD)	10,668	58,005



ORIGINAL ARTICLE

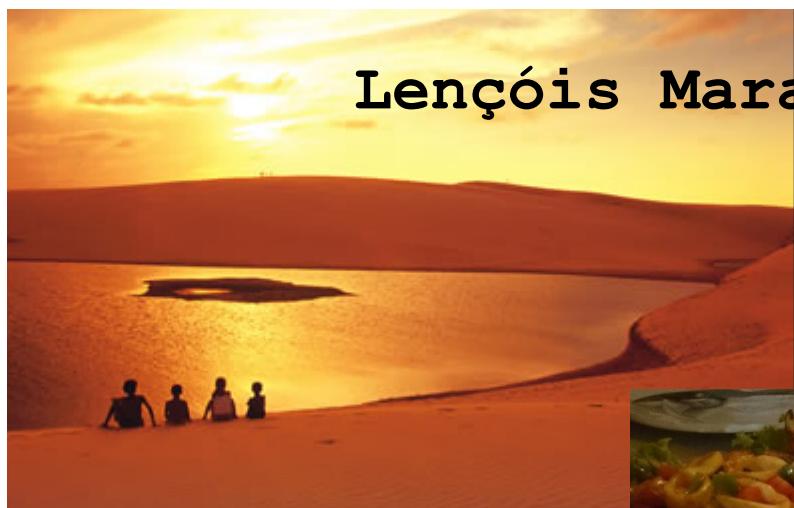
Optimal timing of pancreaticoduodenectomy following preoperative biliary drainage considering major morbidity and postoperative survival

Table 4 Comparisons of outcomes between early surgery (≤ 2 weeks) and late surgery (≥ 3 weeks) after PBD in the drainage group ($n = 831$)

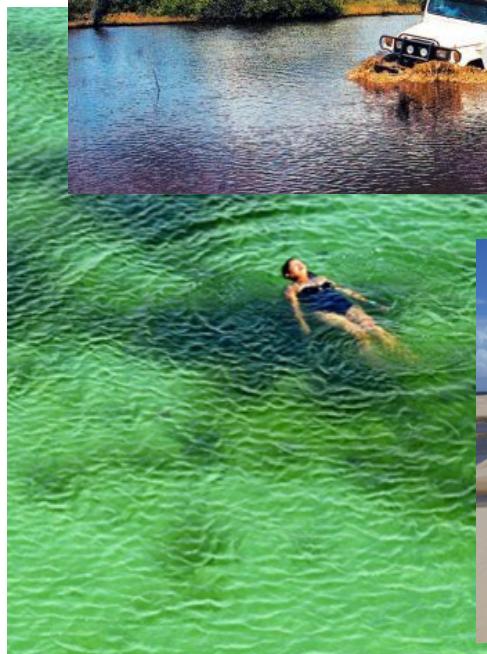
Characteristics	Early surgery (≤ 2 weeks)	Late surgery (≥ 3 weeks)	P-value
Length of hospital stay, day, mean ($\pm SD$)	15.0 (± 18.3)	15.8 (± 11.5)	0.435
Mortality within 90 days, n (%)	6 (1.2)	8 (2.4)	0.195
Major complications ^b , n (%)			
None or grade 1	313 (63.1)	175 (52.2)	0.002
Grade ≥ 2	183 (36.9)	160 (47.8)	
Survival in pancreatic cancer, months (median)	19.2	21.4	0.960
Survival in bile duct cancer, months (median)	53.9	55.5	0.991

1-2 semanas

Lençóis Maranhenses



Obrigado!



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