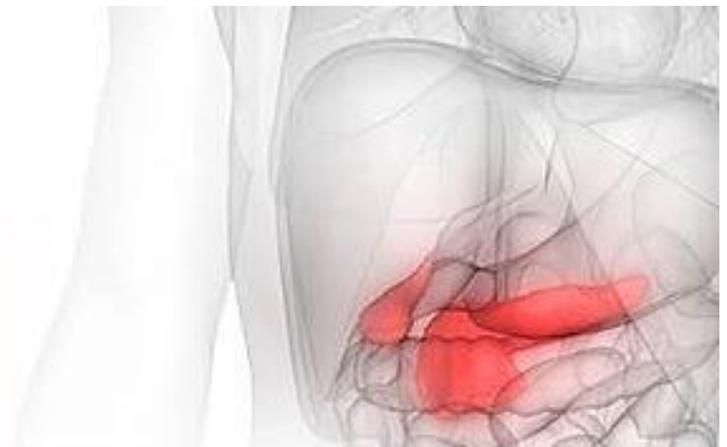


Deep Dive II

Uma imersão no câncer
de pâncreas.



“Tips and tricks” na reconstrução da pancreatectomia cefálica



Orlando Jorge M. Torres

Professor Titular e Chefe do Serviço de
Cirurgia do Aparelho Digestivo
Unidade Hepatopancreatobiliar
Universidade Federal Maranhão - Brasil

Sem conflitos de interesse

FÍSTULA PANCREÁTICA

- ❑ Uma complicação frustrante
3-45% dos pacientes
- ❑ Principal causa de morbidade e mortalidade
Mortalidade
1% Geral
25% Grau C
- ❑ Aspectos técnicos
- ❑ Vários procedimentos descritos

FATORES DE RISCO

☐ Pâncreas

Textura

Diâmetro do ducto

Suprimento sanguíneo do

coto

Débito do suco pancreático

Características da doença

☐ Paciente

Idade, Sexo

Icterícia (nível)

Comorbidades

☐ Operação

Tempo operatório

Perda sanguínea

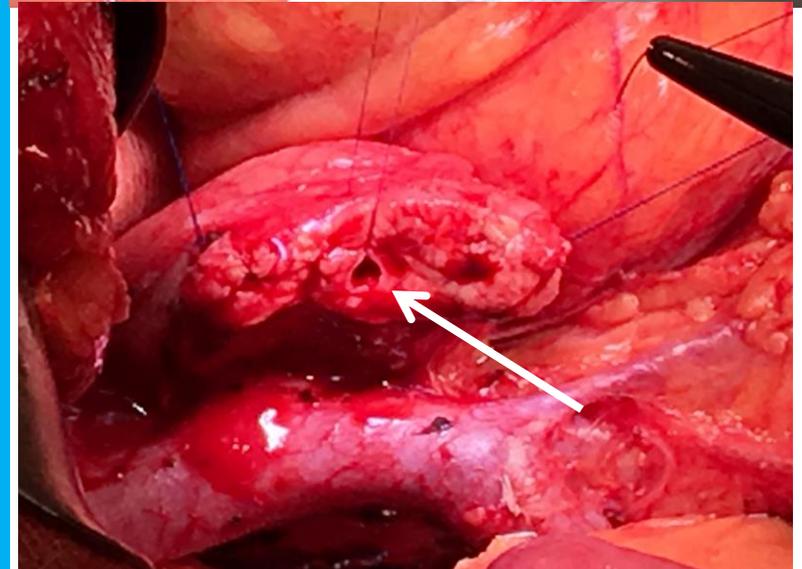
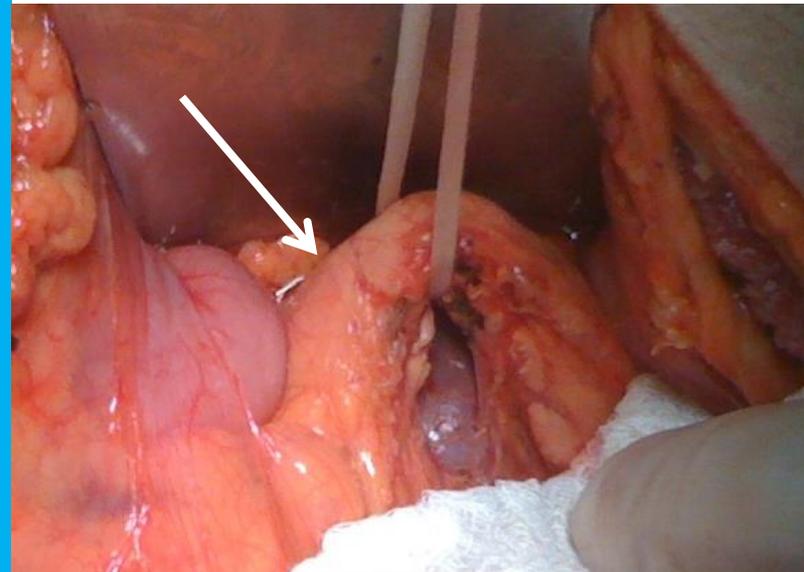
Tipo de anastomose

☐ Outros

IMC

Hidratação excessiva

Desnutrição



7

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S

Table 2. Fistula Risk Score for Prediction of Clinically Relevant Pancreatic Fistula after Pancreatoduodenectomy (Model III)

Risk factor	Parameter	Points*
Gland texture	Firm	0
	Soft	2
Pathology	Pancreatic adenocarcinoma or pancreatitis	0
	Ampullary, duodenal, cystic, islet cell	1
Pancreatic duct diameter, mm	≥ 5	0
	4	1
	3	2
	2	3
	≤ 1	4
Intraoperative blood loss, mL	≤ 400	0
	401–700	1
	701–1,000	2
	$> 1,000$	3

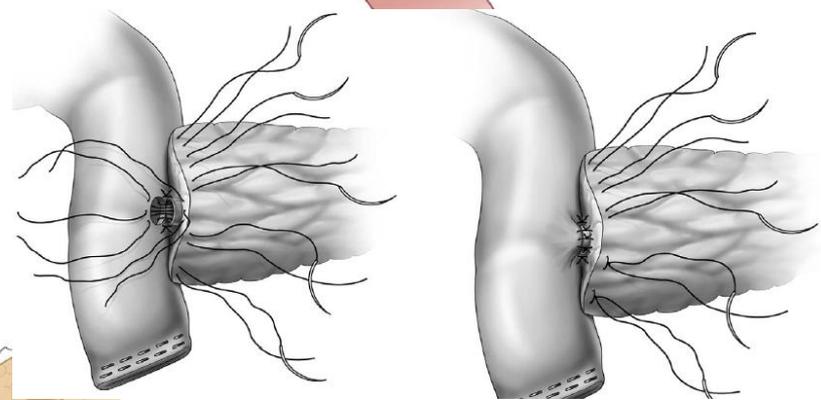
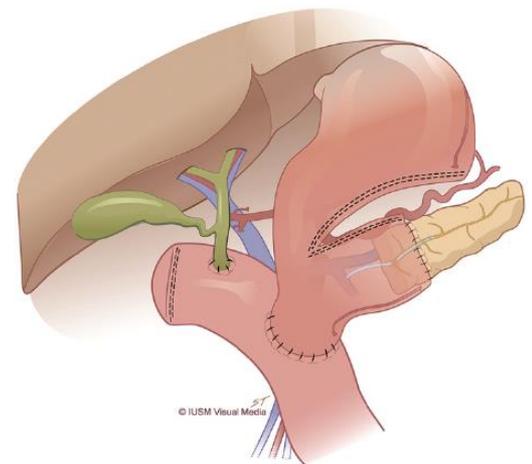
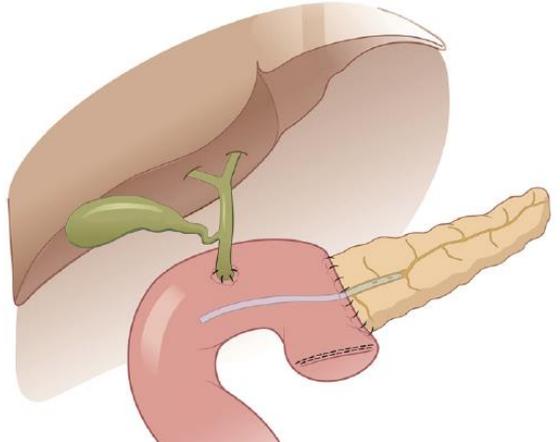
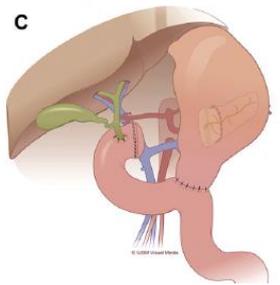
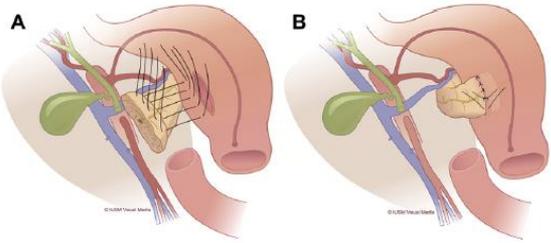
*Total 0 to 10 points.

- Desprezível 0
- Baixo 1-3
- Moderado 4-6
- Alto 7-10

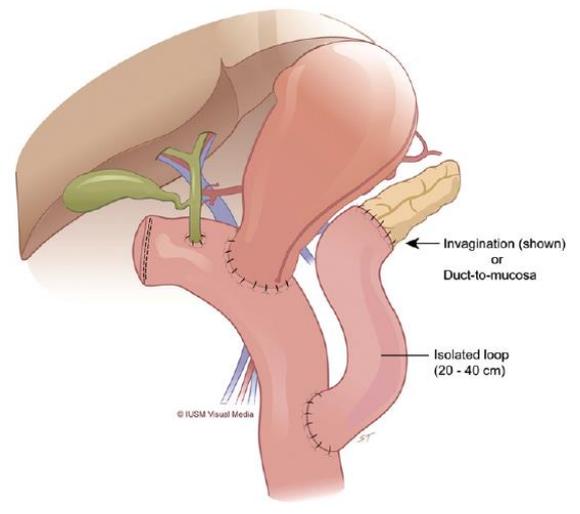
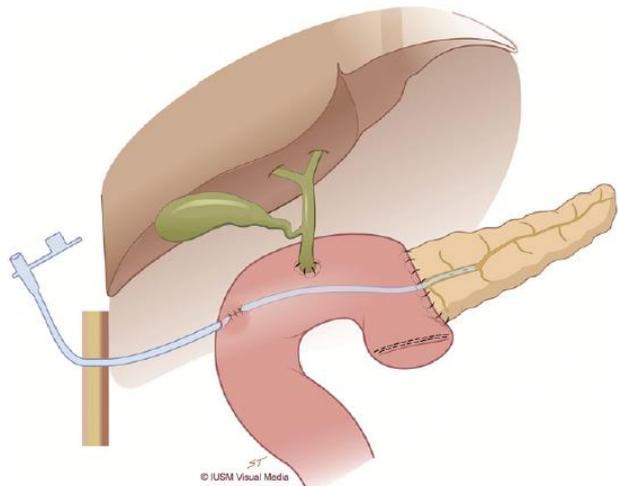
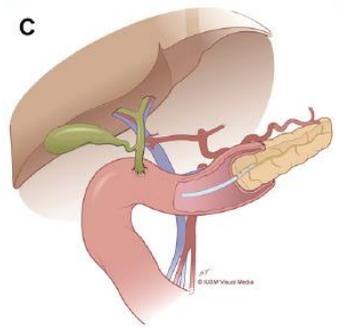
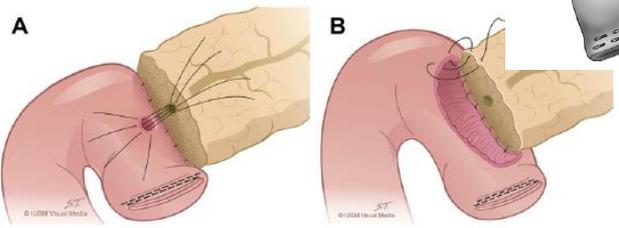
Anastomose

ANASTOMOSE PANCREÁTICA IDEAL

- Bom suprimento sanguíneo (coto pancreático)
- Bom fluxo de suco pancreático:
 - Para a luz intestinal
 - Para a luz gástrica
- Adequada para toda textura de pâncreas
- Adequada para todos os tipos de ductos
- Fácil de realizar
- Fácil de aprender



**ANASTOMOSE
IDEAL?**



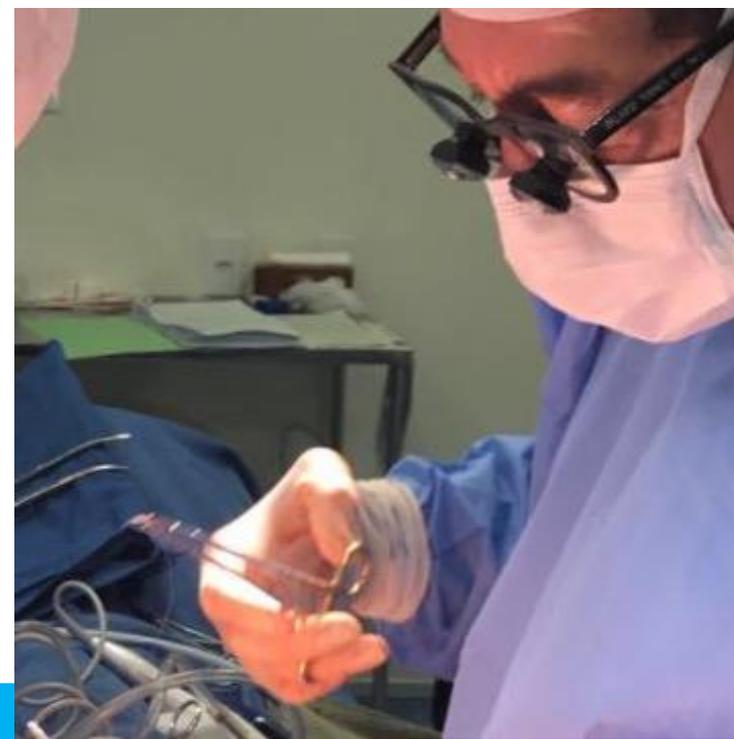
Pancreatic anastomosis after pancreatoduodenectomy: A position statement by the International Study Group of Pancreatic Surgery (ISGPS)

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*

Estômago x Jejunum

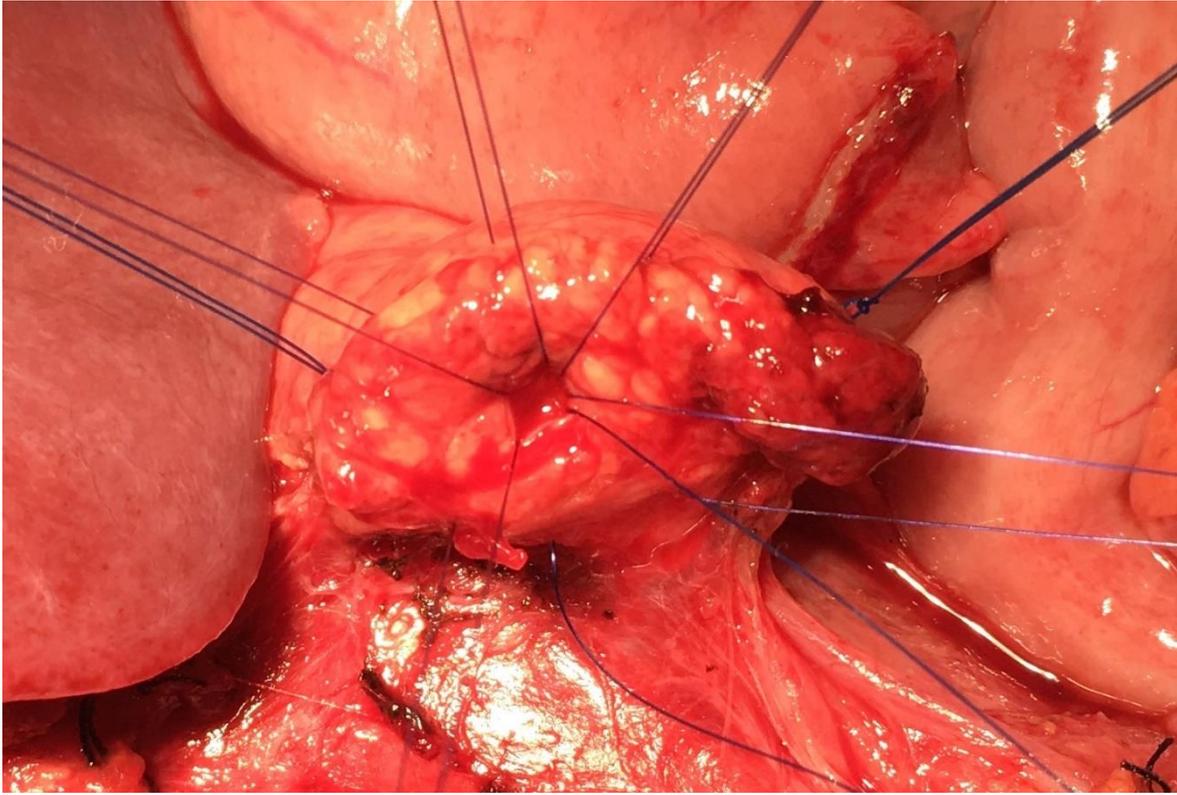
Alça única x alça de Roux

MAGNIFICAÇÃO



- Melhor identificação do ducto
- Adequado posicionamento das suturas
- Melhora a precisão da anastomose
- Decisivo em ductos $\leq 3\text{mm}$
- Erros:
 - Sutura cruzada
 - Incluir as duas margens
 - Pegar menor quantidade de ducto
 - Posicionamento incorreto dos nós

SUPRIMENTO SANGUÍNEO



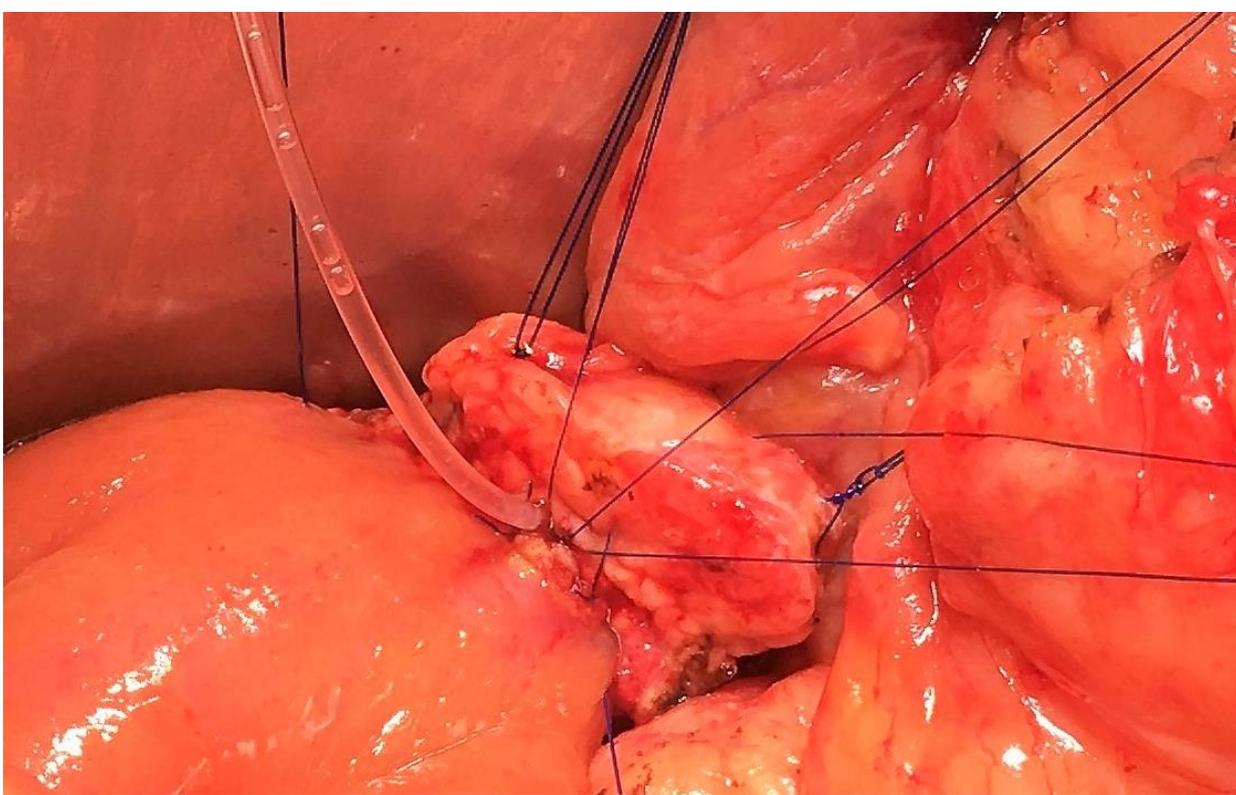
- Incisão do pâncreas com lâmina fria
- Promover bom suprimento sanguíneo do pâncreas e intestino

INTESTINO SECCIONADO

- ❑ Desorganização da transmissão nervosa
- ❑ Secção e manipulação excessiva
- ❑ Maior paresia nas primeiras horas
- ❑ Estase subsequente



STENT

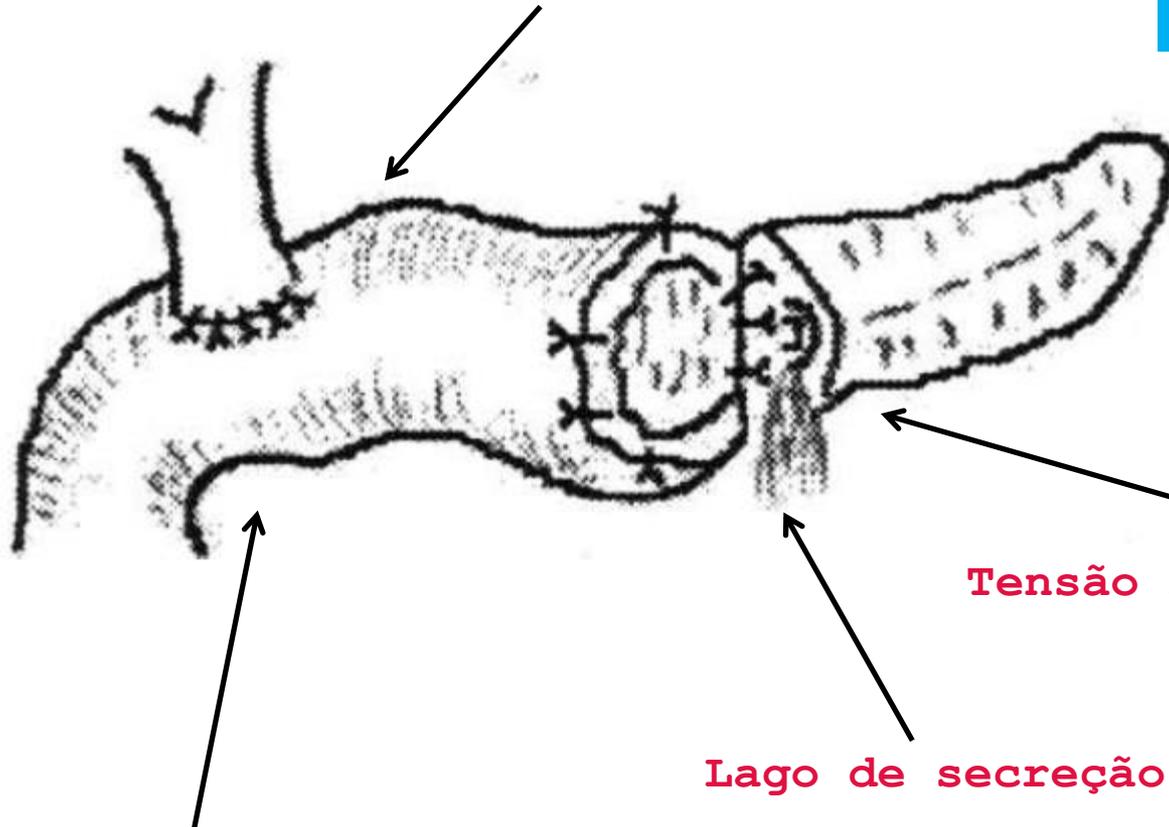


- Facilita a colocação precisa da sutura
- Deriva o suco pancreático longe do local da anastomose.
- Evita ou reduz a retenção de secreção pancreática no segmento inicial do jejuno enquanto a peristalse não está restaurada.
- Diminui o risco de oclusão inadvertida do ducto pancreático.
- Melhora a integridade da anastomose, reduzindo o risco de formação de estenose do ducto.
- Melhora a drenagem do pâncreas para a luz intestinal



SEM STENT

Paresia intestinal



Tensão na linha de sutura

Lago de secreção na anastomose

Associação com secreção biliar

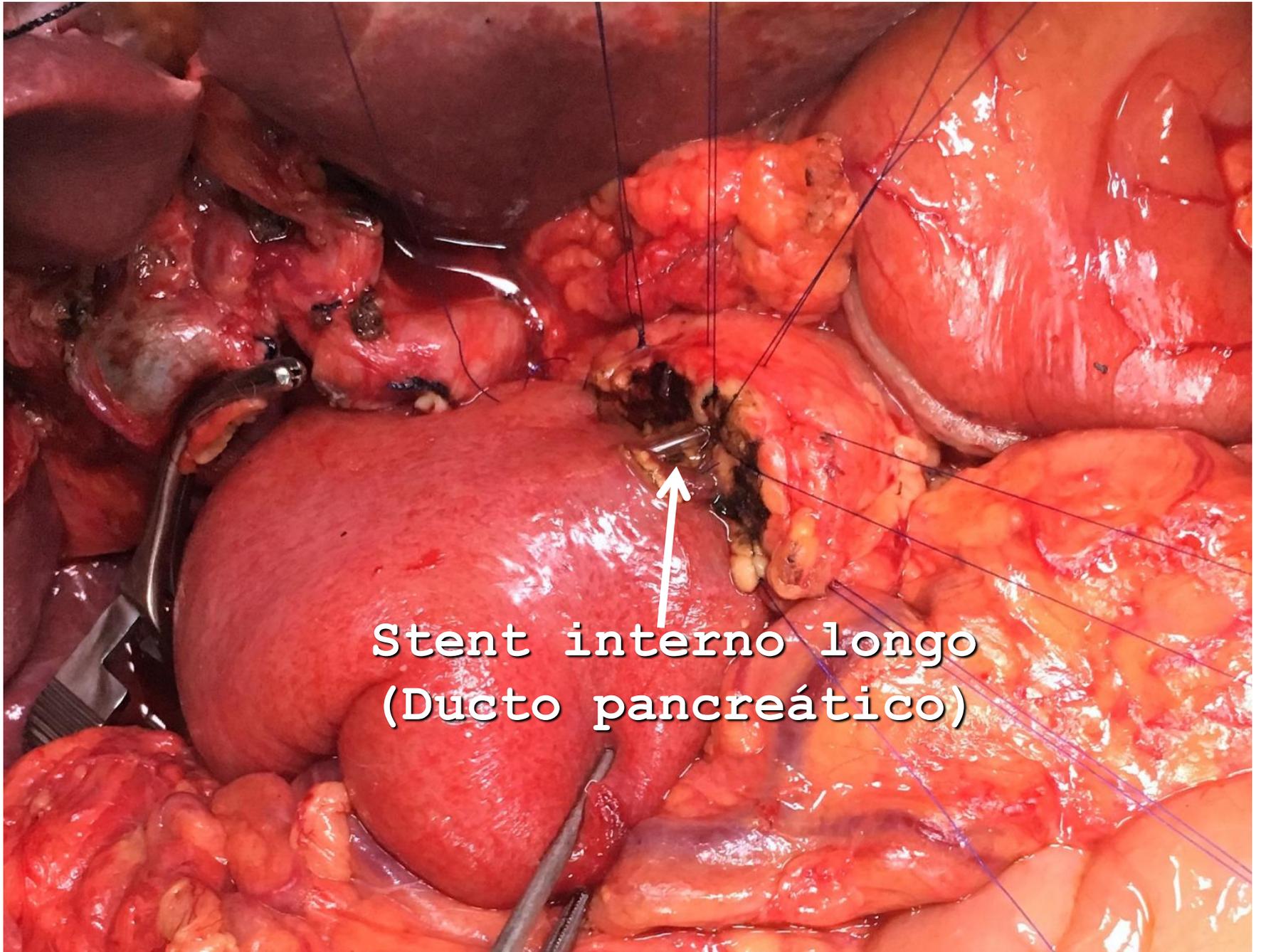
Outros:

Hiperhidratação

Opióides

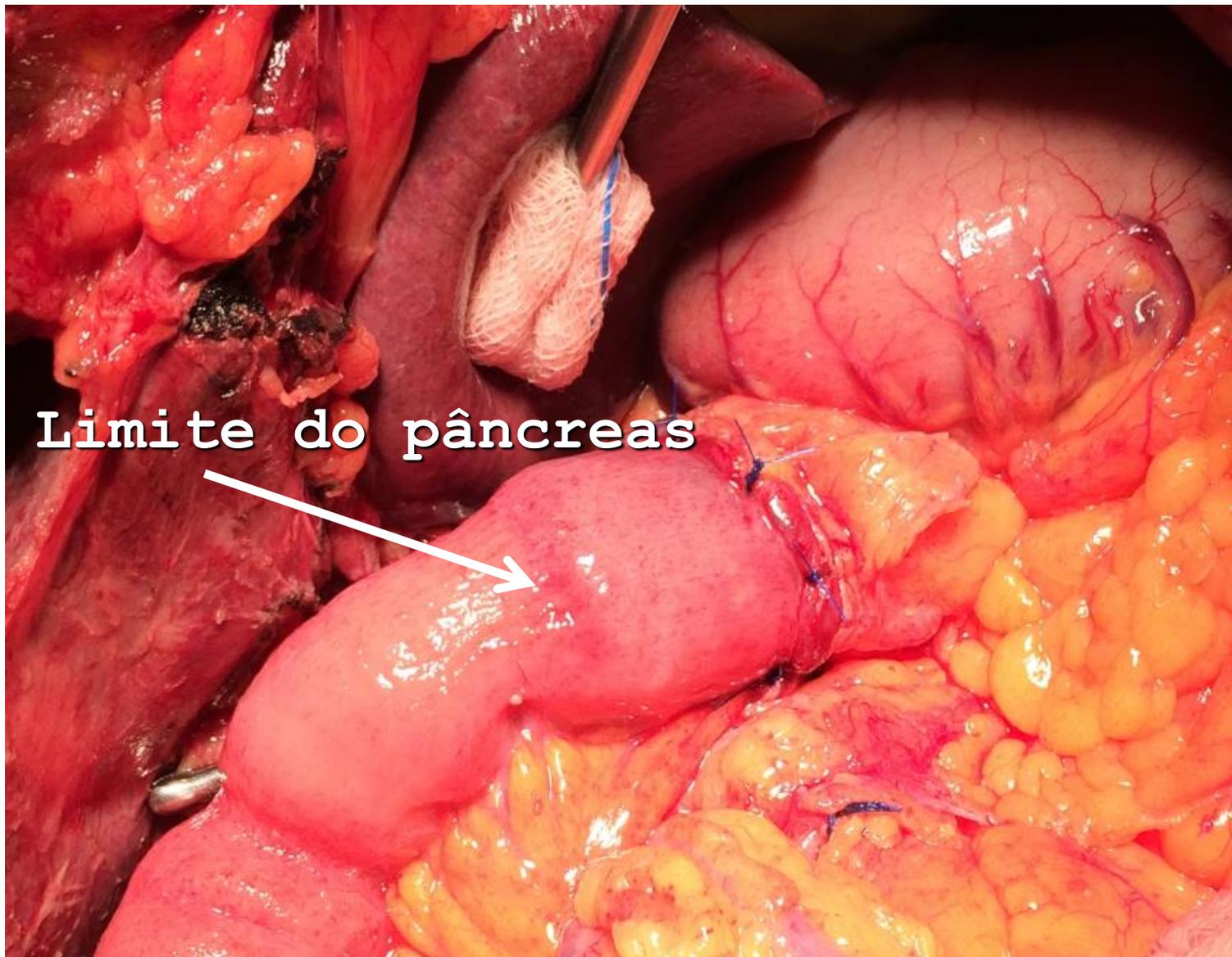
Piloro

Retrocólica

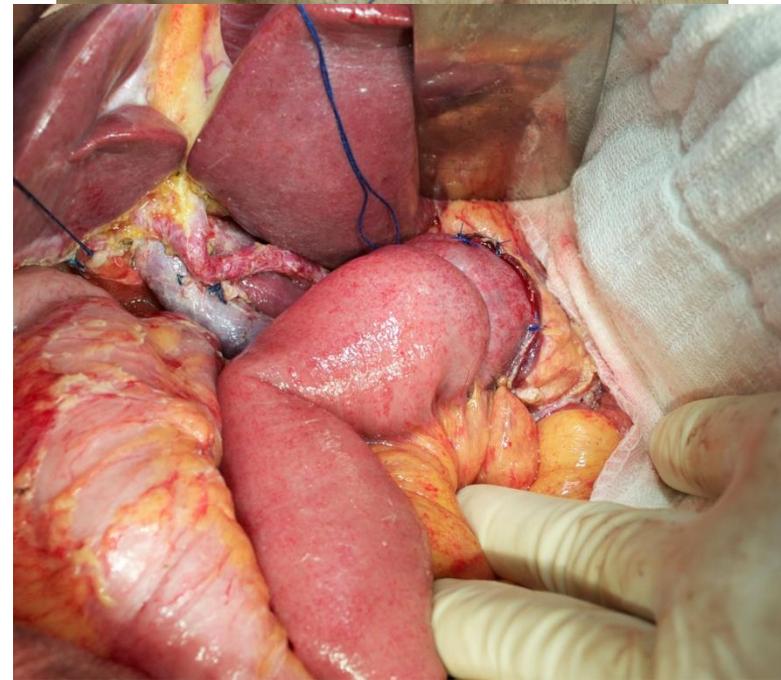
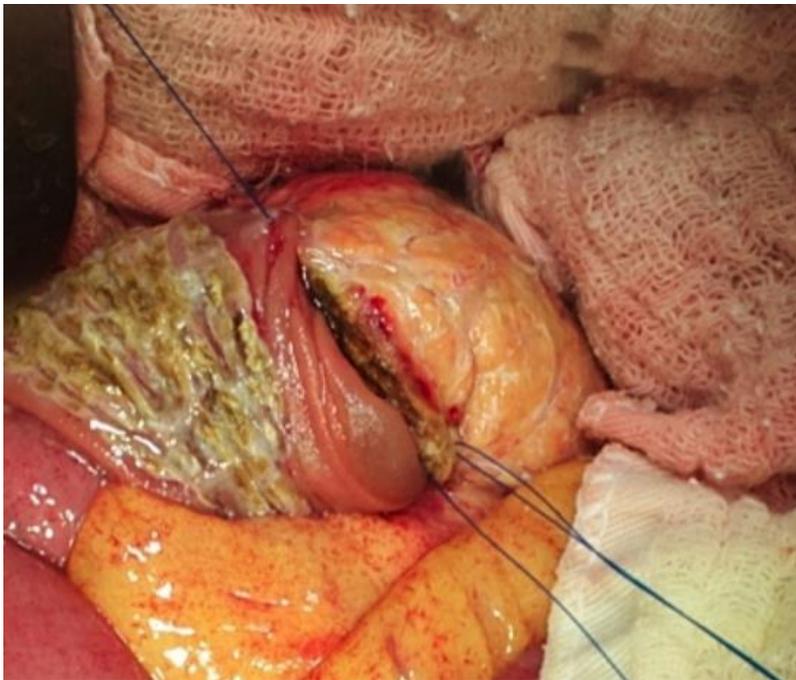
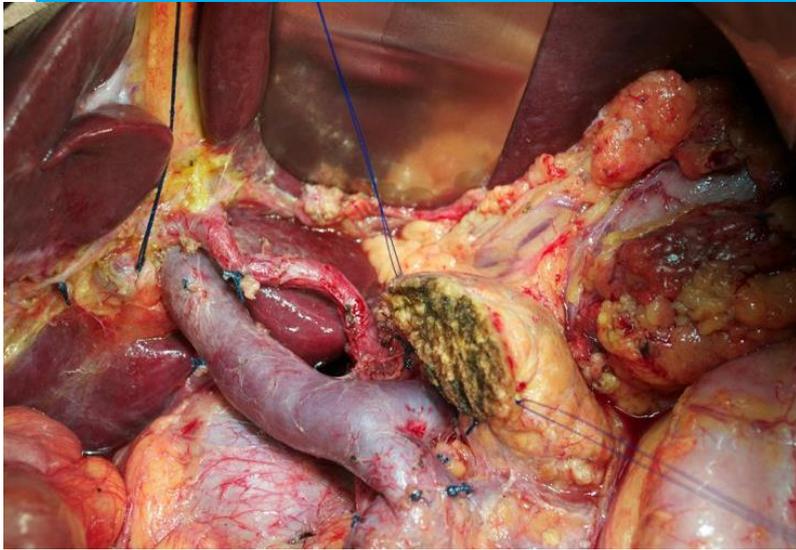


Stent interno longo
(Ducto pancreático)

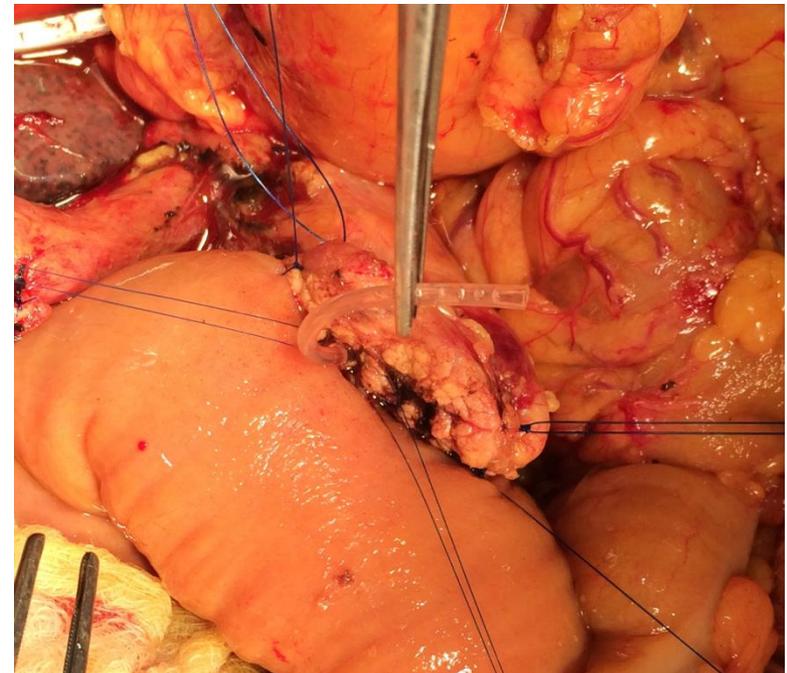
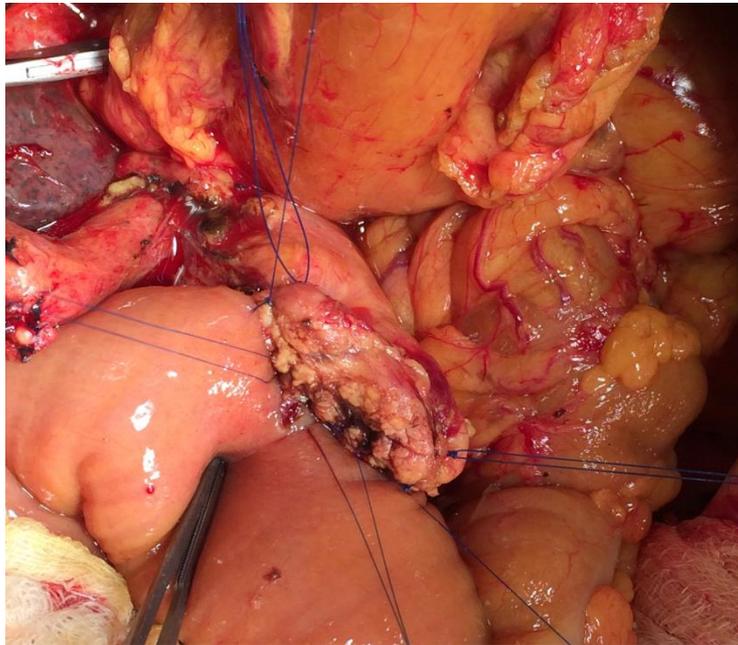
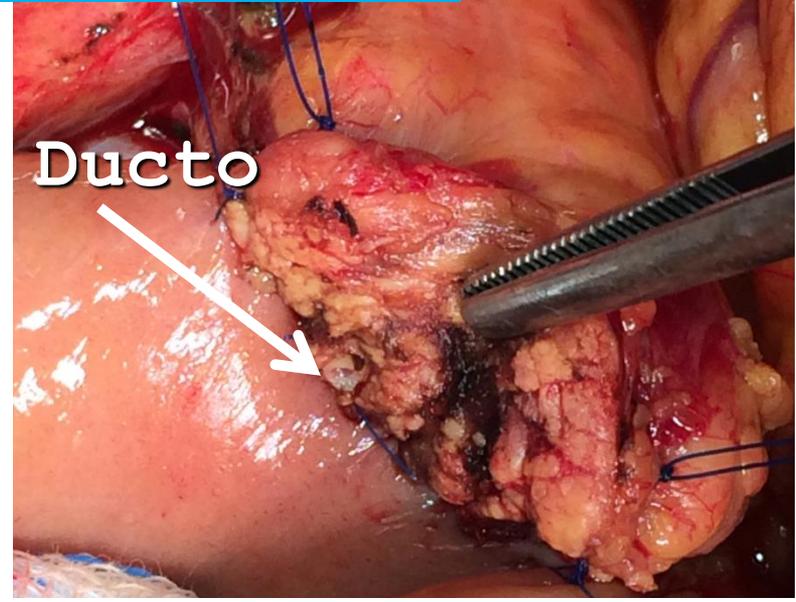
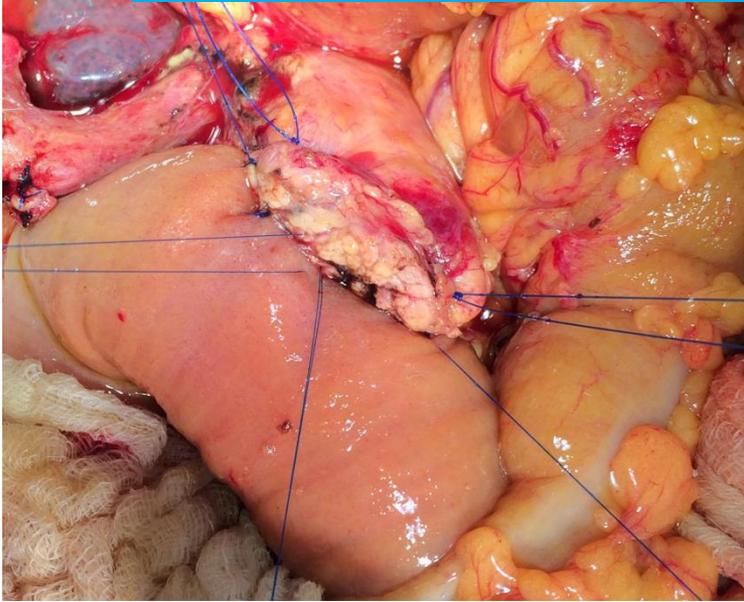
Invaginação (telescopagem)



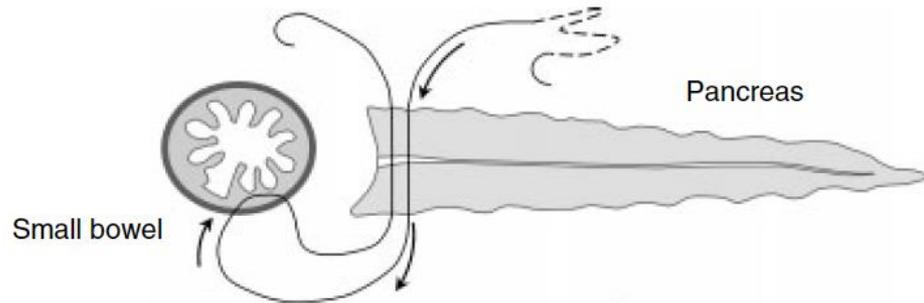
Anastomose tipo PENG



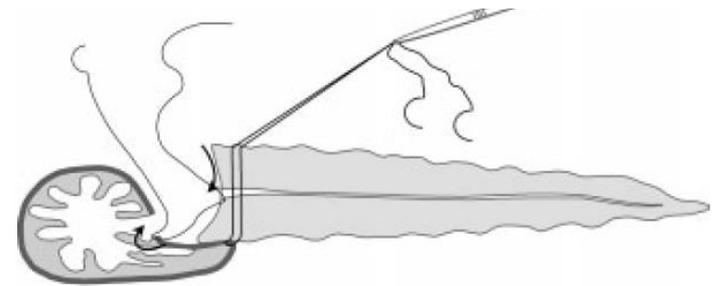
Anastomose Ducto-mucosa



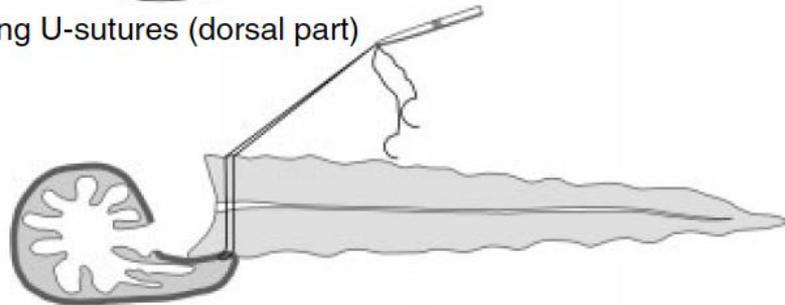
Técnica de Blumgart



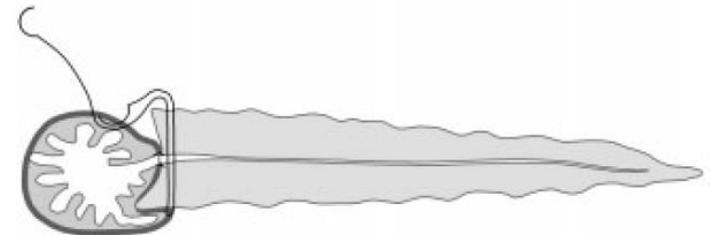
a Placing U-sutures (dorsal part)



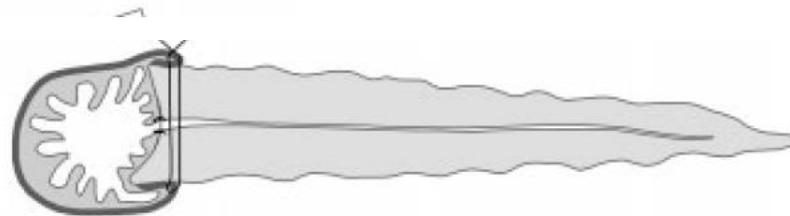
c Duct-to-mucosa anastomosis



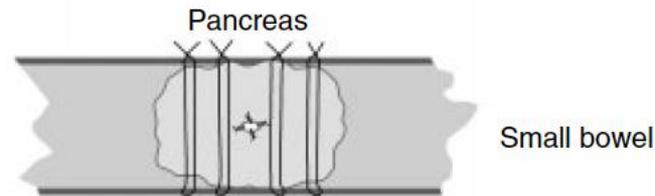
b Approximation of the jejunum



d Completion of U-sutures (ventral part)

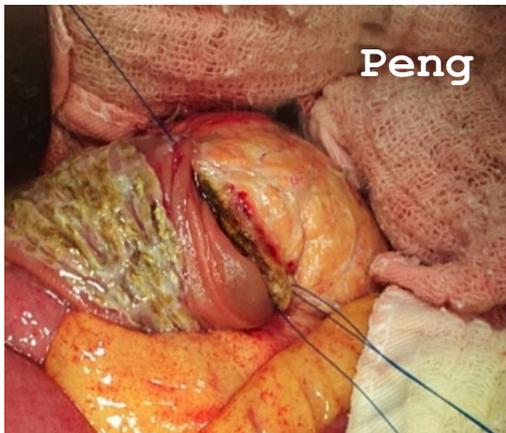
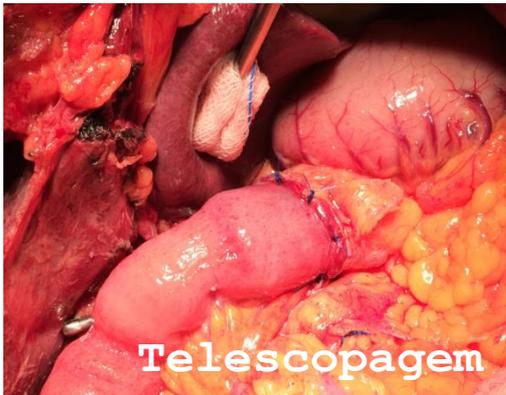
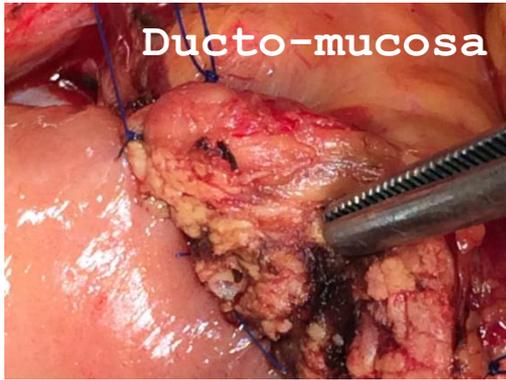


e Longitudinal view of completed anastomosis



f Transverse view of completed anastomosis

Anastomose



- Envolve o ducto
- Espessura total
- Stent
- Número de camadas
- Acomoda o intestino
- Todos os pâncreas





Sugestão

Mumbai (India)
Janeiro 2016

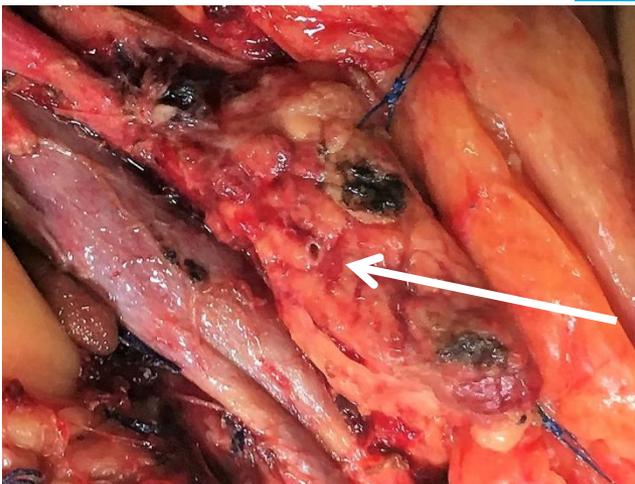


MODIFIED HEIDELBERG TECHNIQUE FOR PANCREATIC ANASTOMOSIS

Anastomose pancreática pela técnica de Heidelberg modificada

Orlando Jorge M **TORRES**¹, Roberto C N da Cunha **COSTA**¹, Felipe F Macatrão **COSTA**¹, Romerito Fonseca **NEIVA**¹,
Tarik Soares **SULEIMAN**¹, Yglésio L Moyses S **SOUZA**¹, Shailesh V **SHRIKHANDE**²

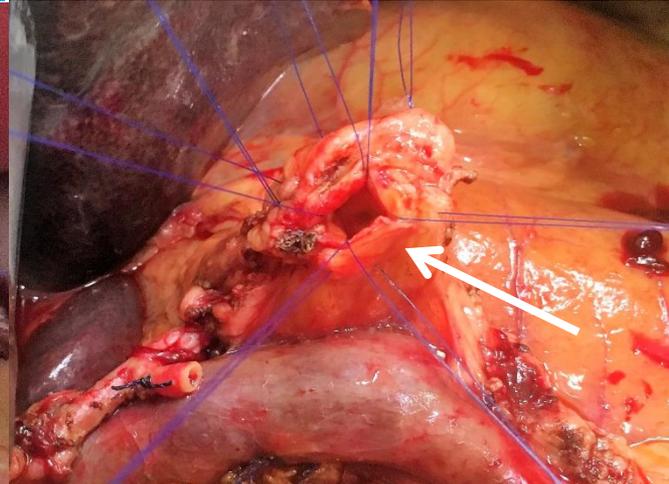
DUCTO FINO



DUCTO INTERMEDIÁRIO

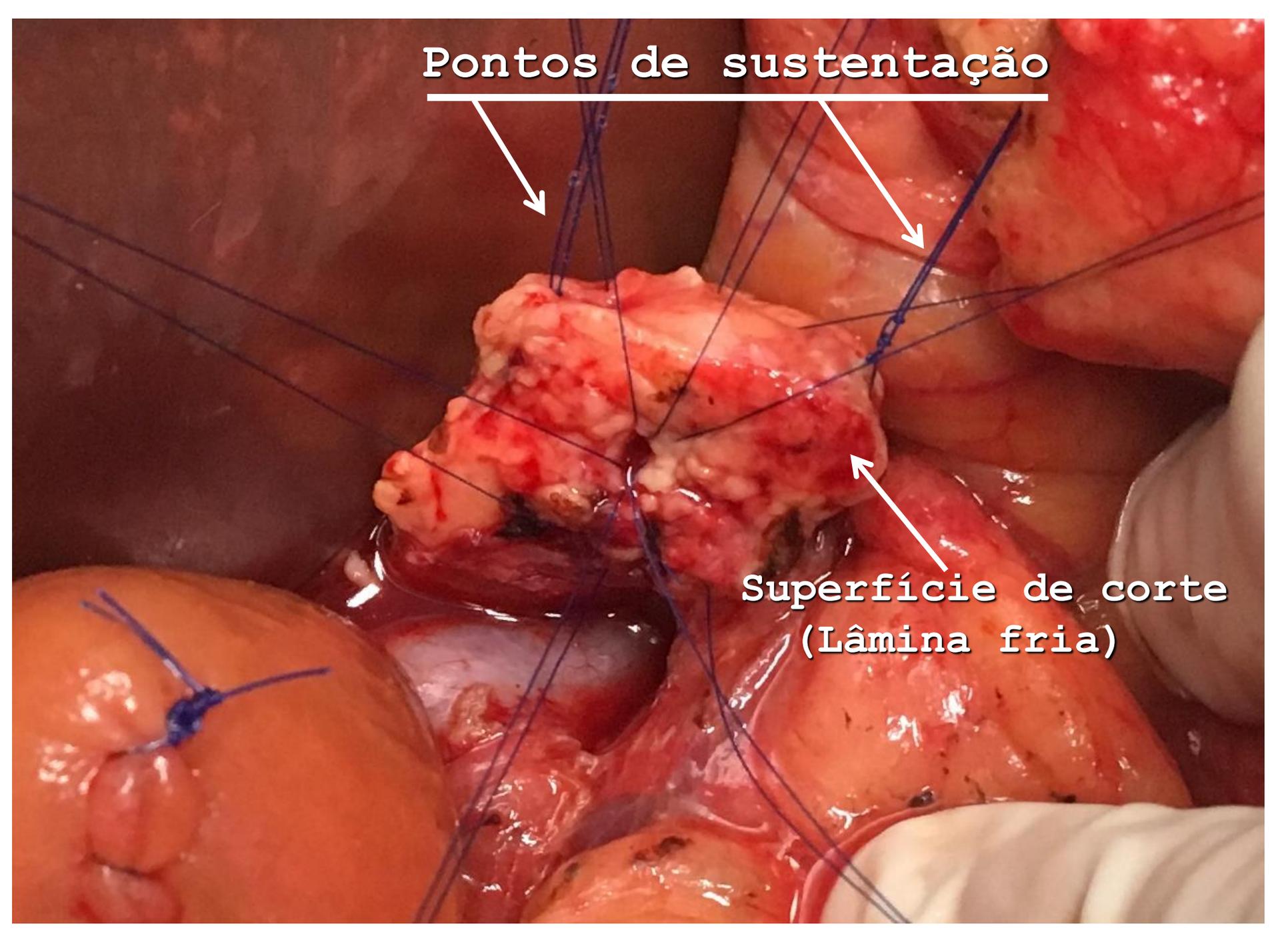


DUCTO CALIBROSO



Pontos de sustentação

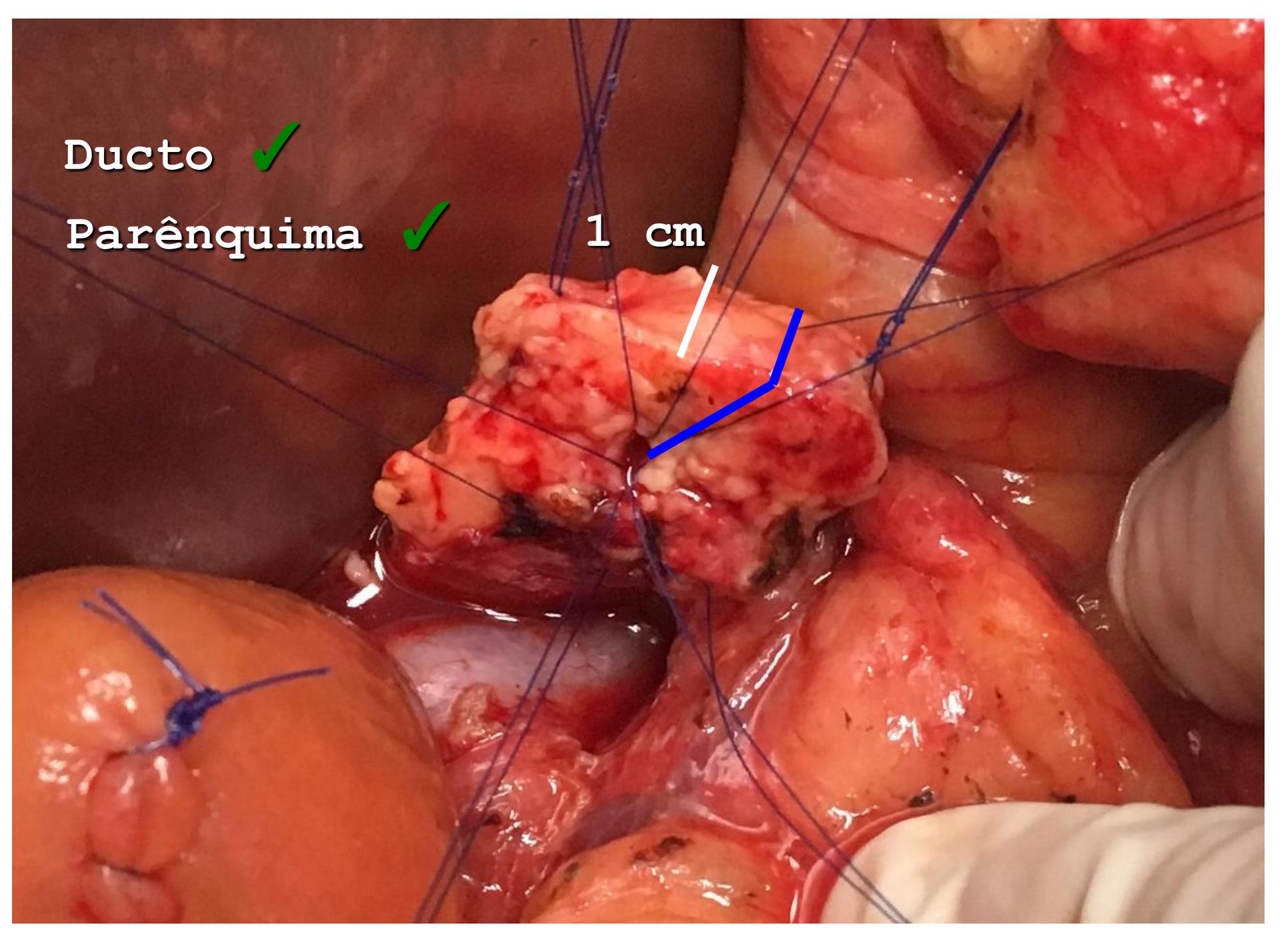
Superfície de corte
(Lâmina fria)



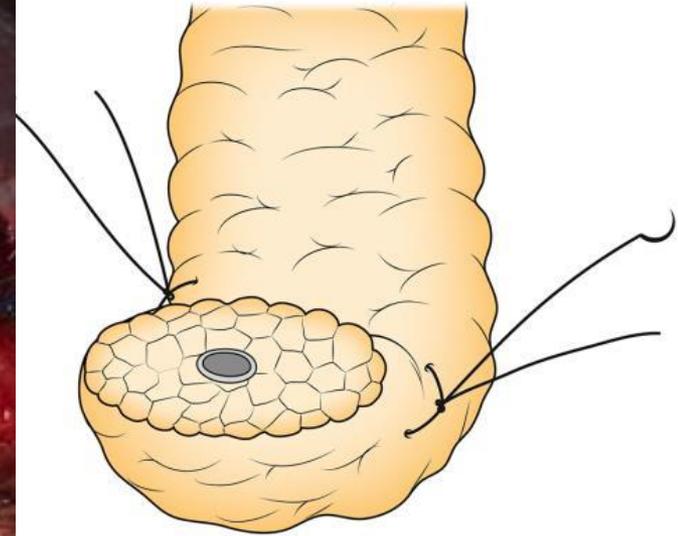
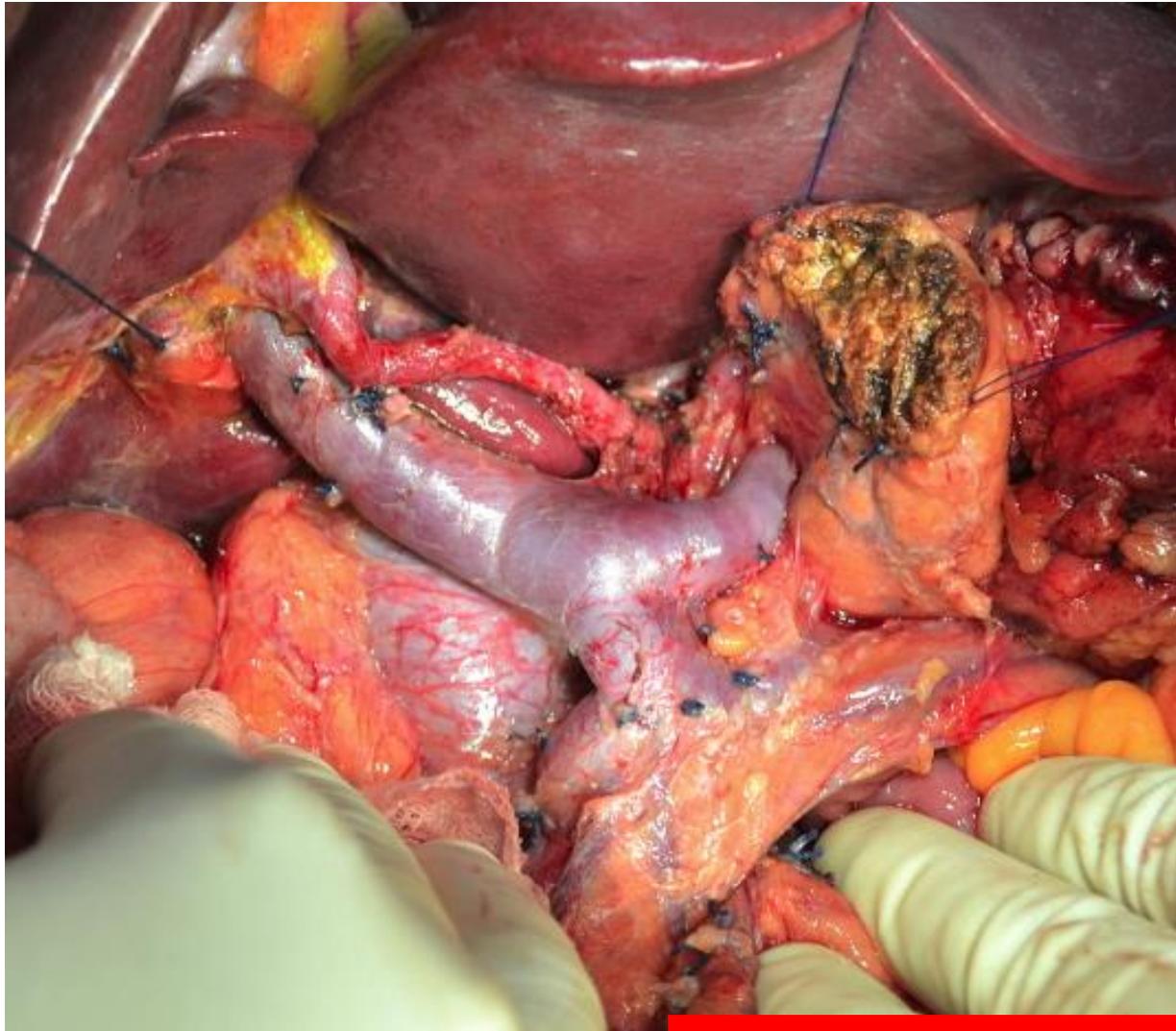
Ducto ✓

Parênquima ✓

1 cm



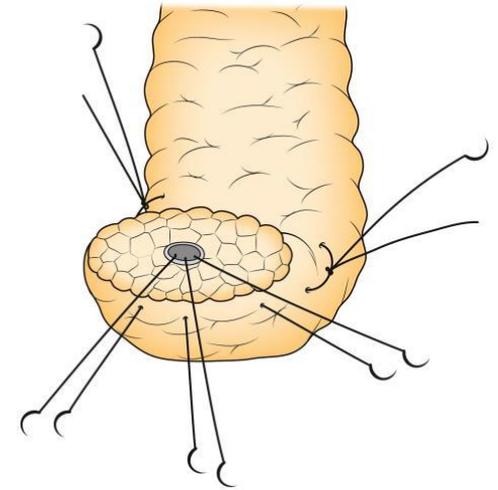
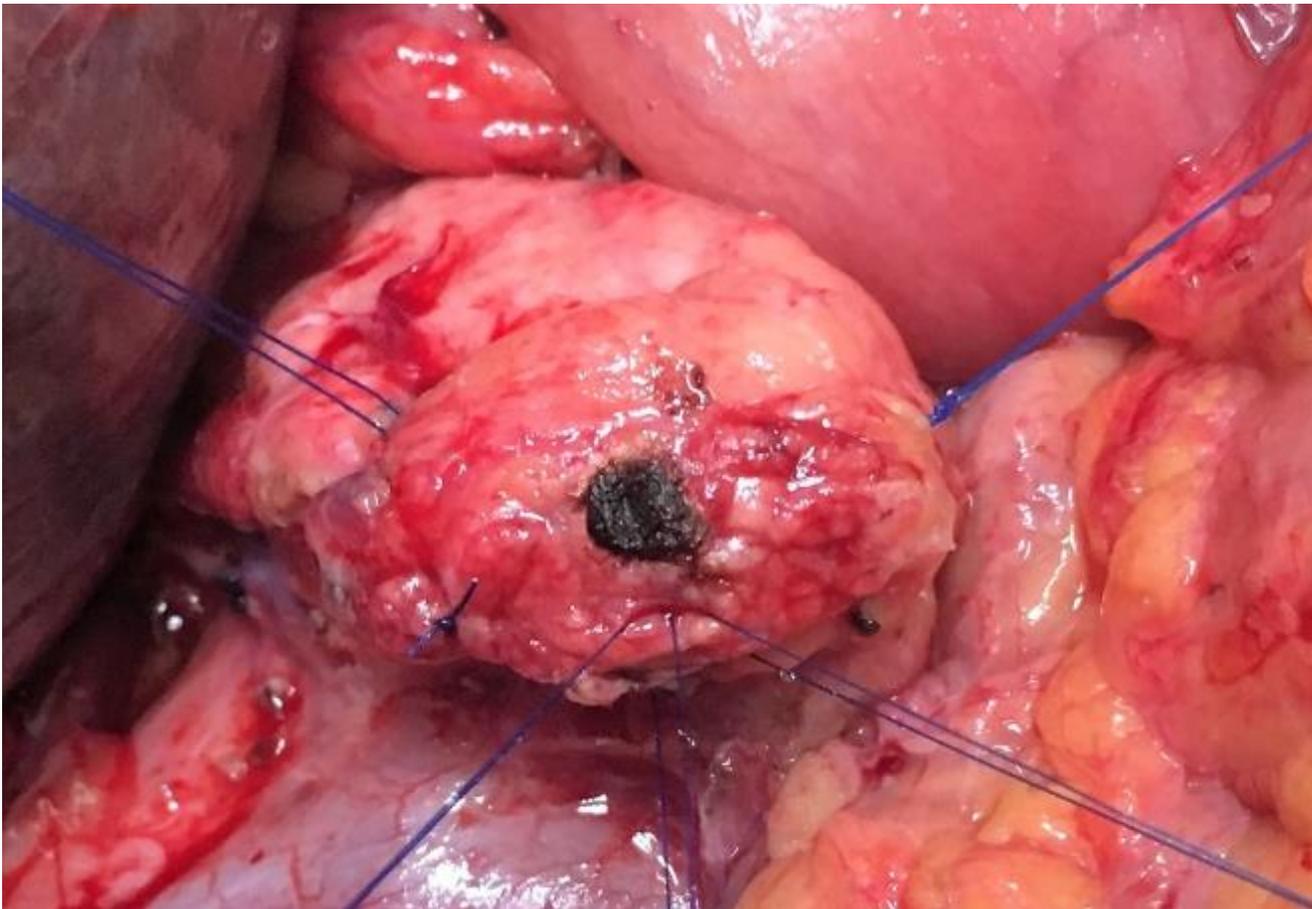
Sutura de sustentação



Resistência na anastomose

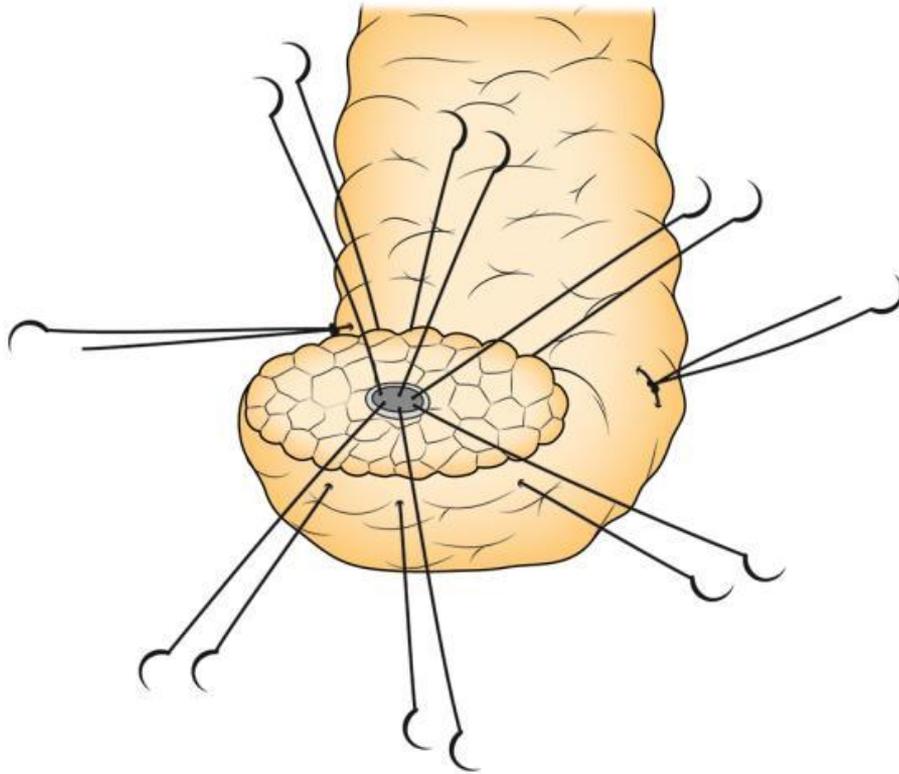
Posterior duct-pancreatic suture

Three sutures are placed on the posterior wall of the pancreatic duct to the posterior pancreatic parenchyma. The stitches are performed with 5-0 double needle prolene at the 4 o'clock, 6 o'clock, and 8 o'clock positions.

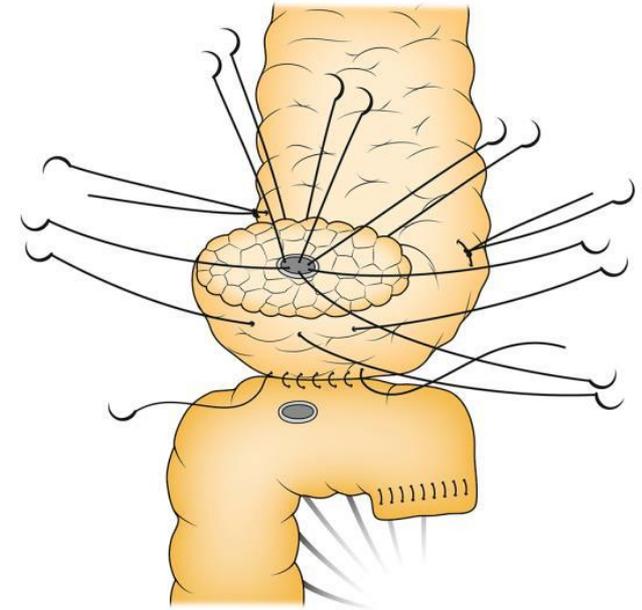
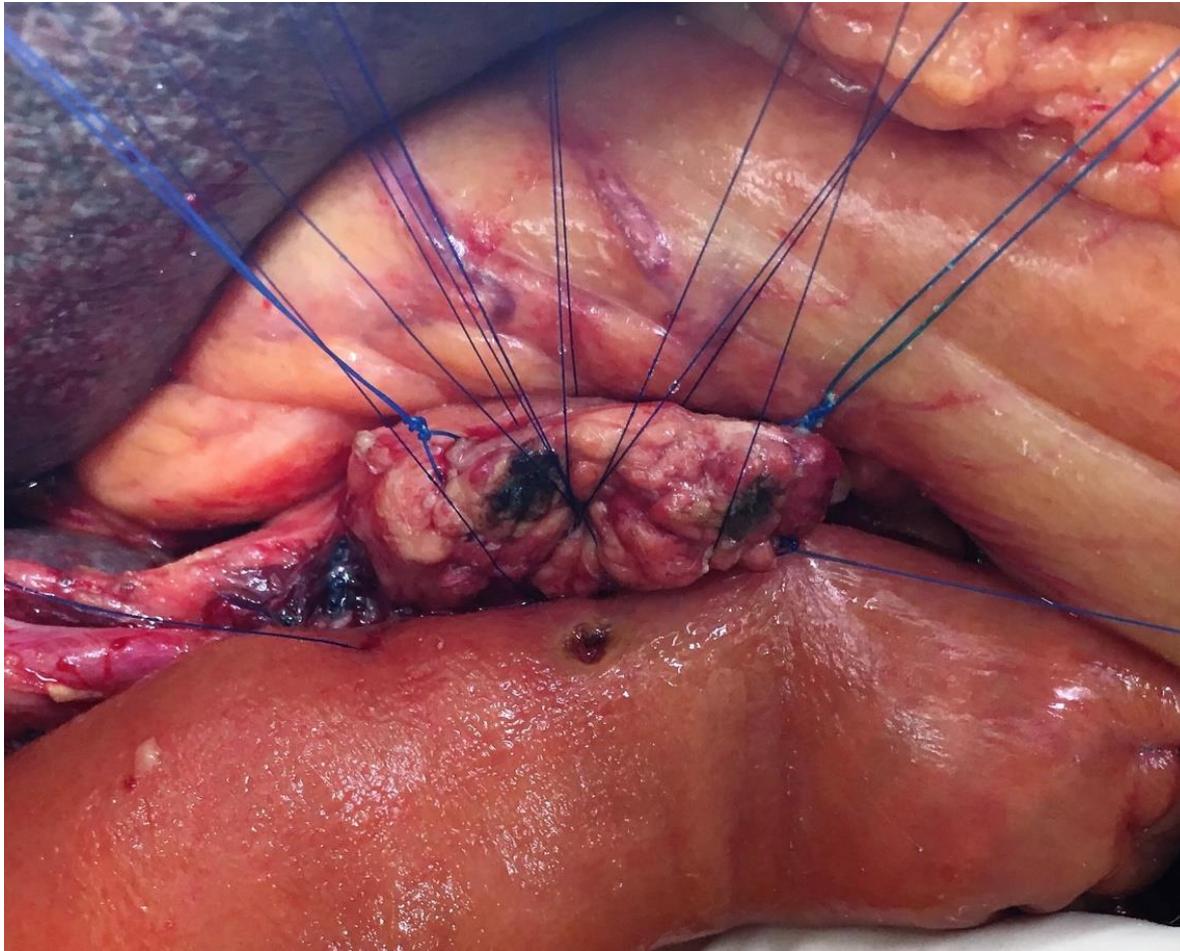


Anterior duct-pancreatic suture

Three sutures are placed on the anterior wall of the pancreatic duct to the anterior pancreatic parenchyma. The stitches are performed with 5-0 double needle prolene at the 10 o'clock, 12 o'clock, and 2 o'clock positions.

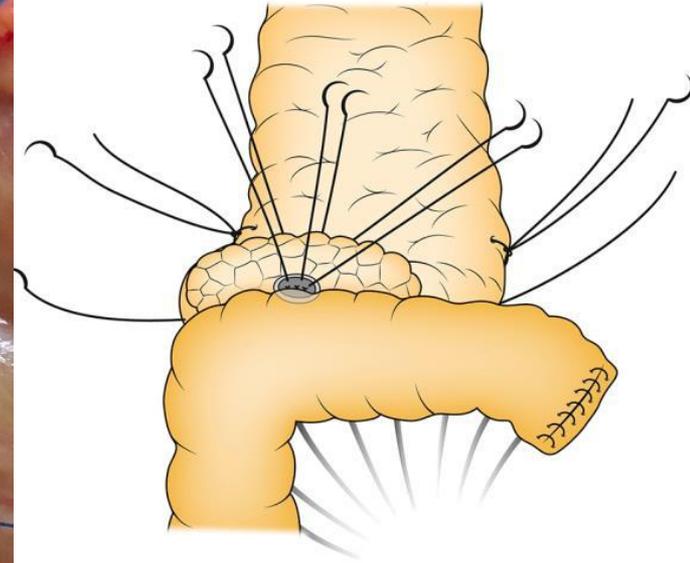
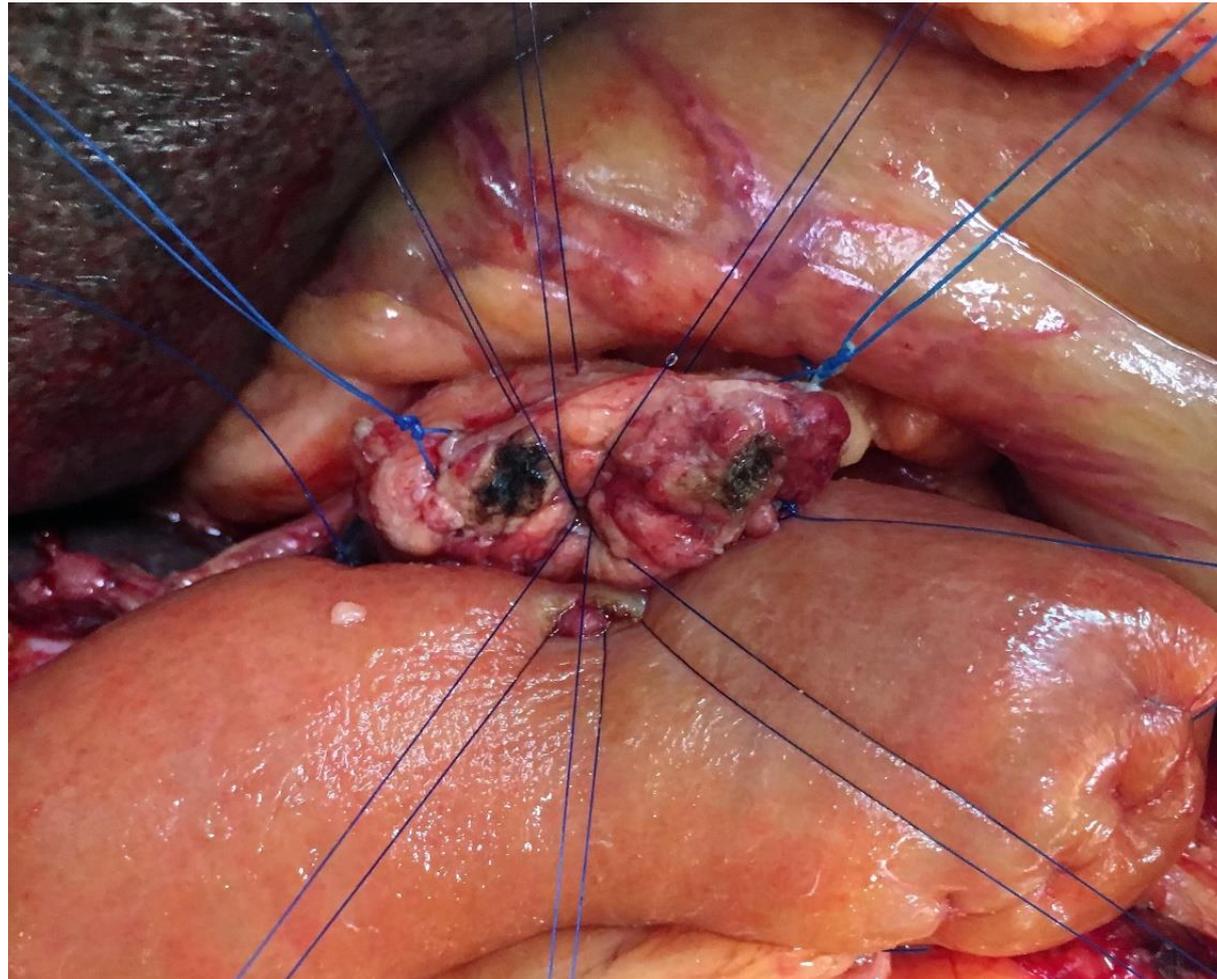


Posterior outer layer



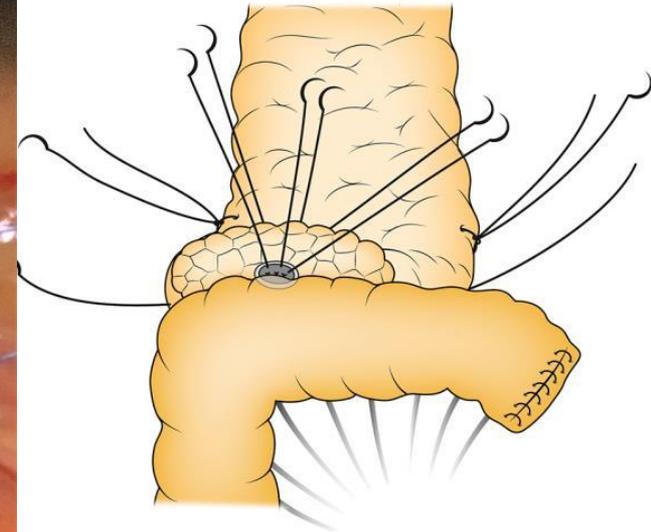
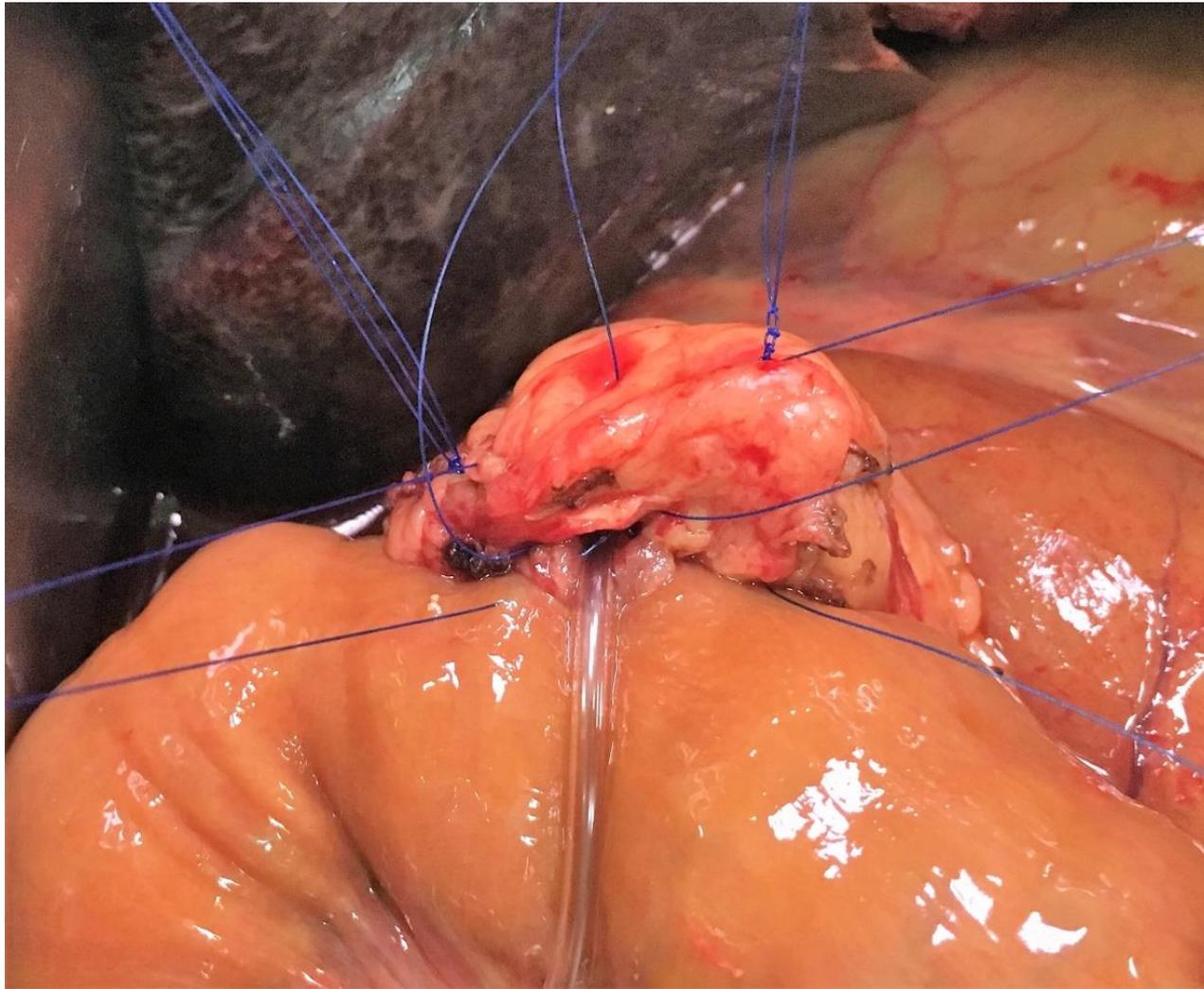
Running suture with 4-0 single needle prolene on the posterior aspect the pancreatic parenchyma with the jejunal seromuscular layer.

Posterior inner layer



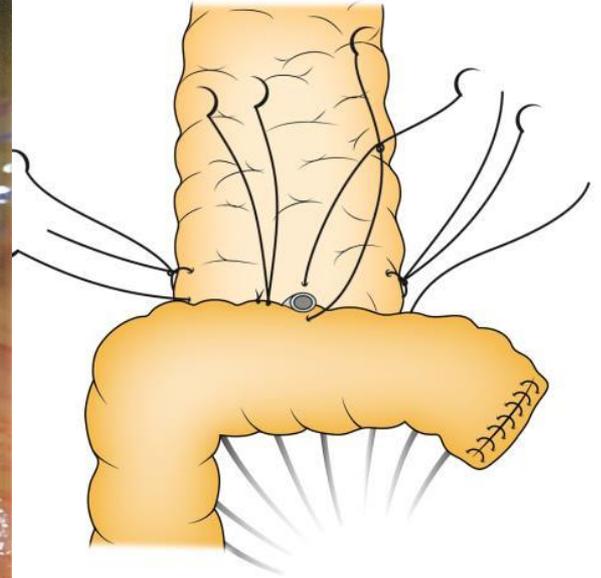
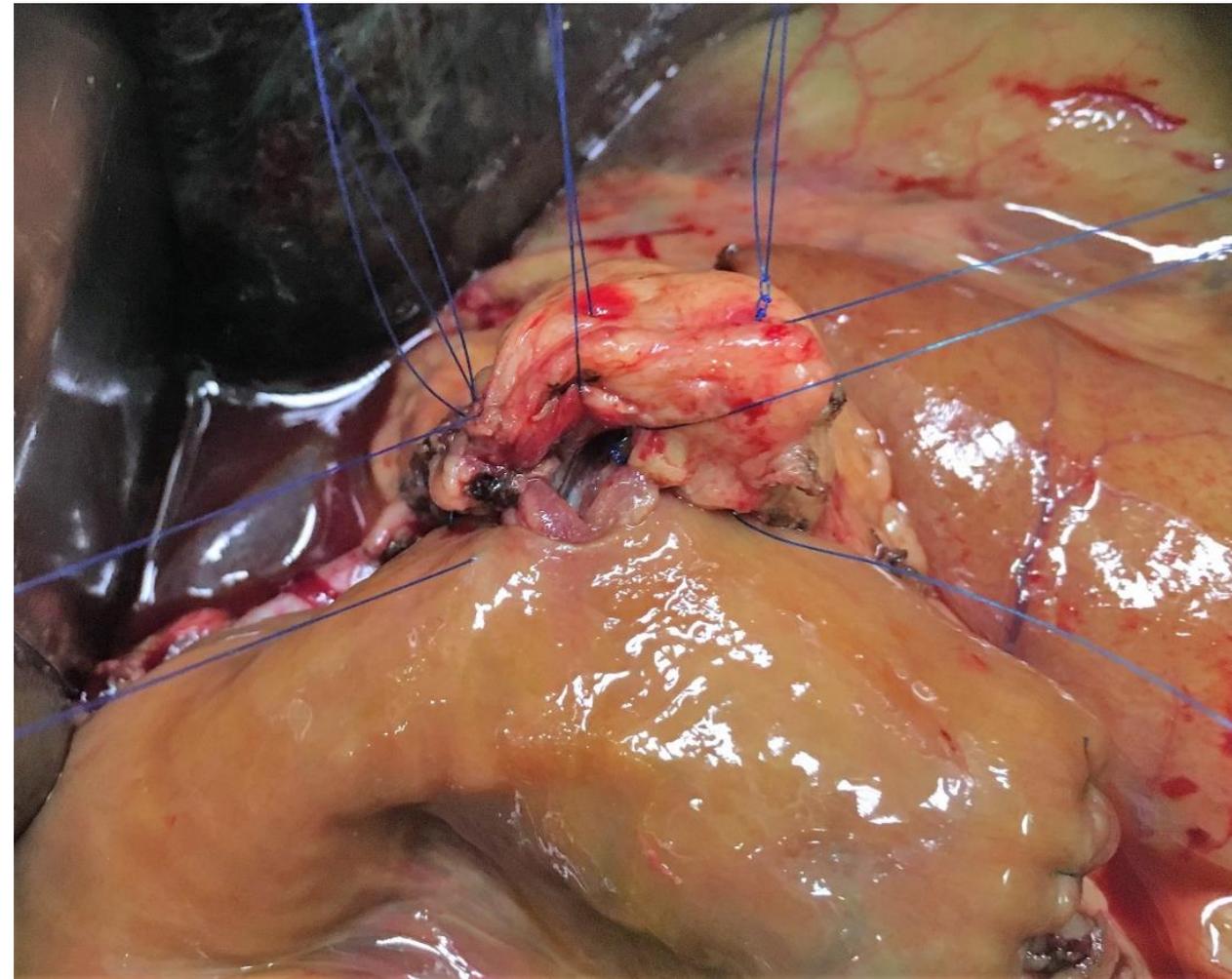
The sutures in the 4 o'clock, 6 o'clock, and 8 o'clock positions are passed from outside to inside in the inferior edge of the jejunum at the same positions.

Posterior inner layer



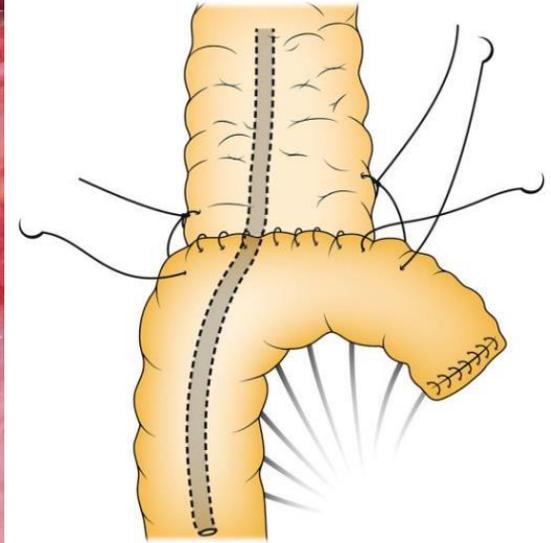
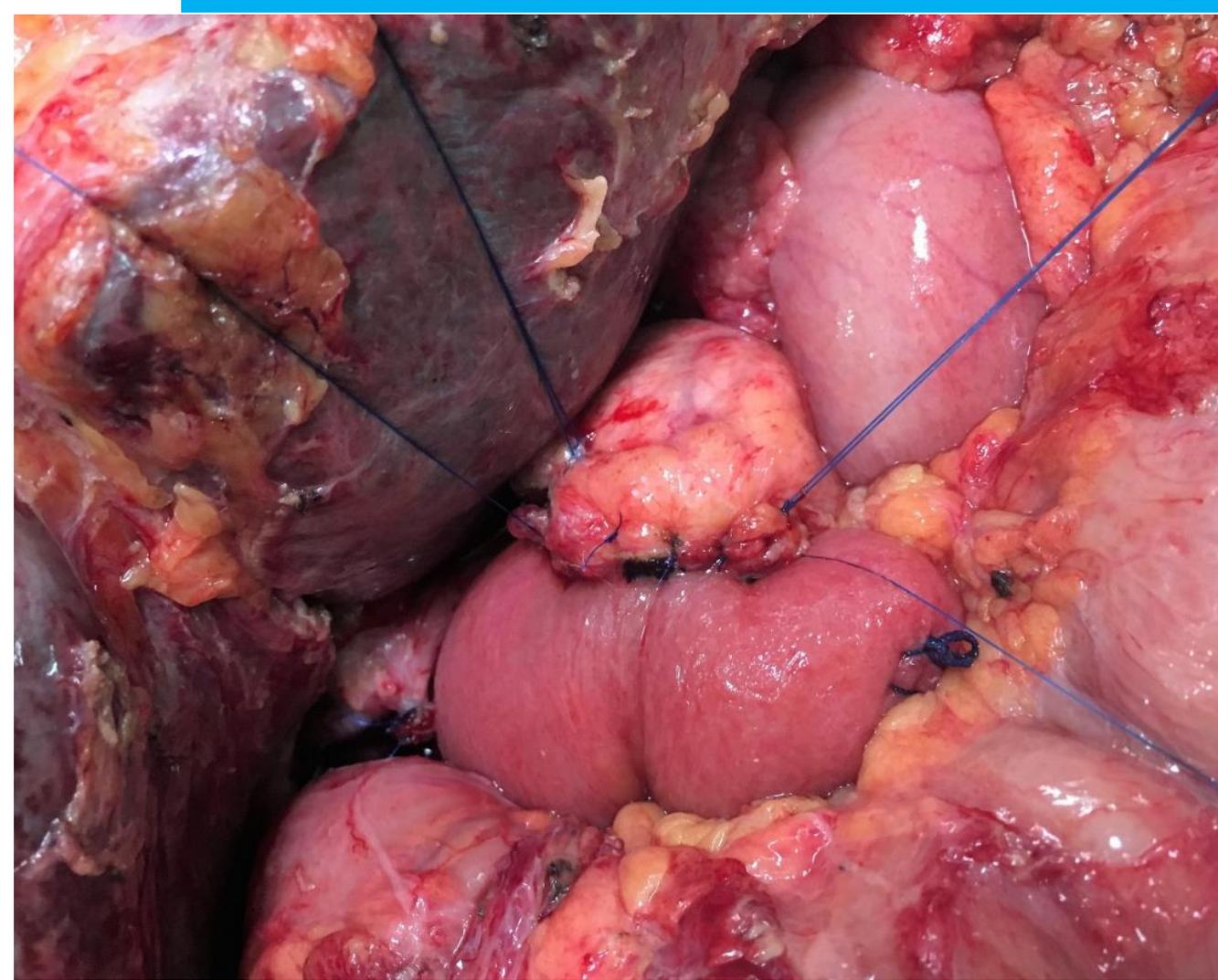
The sutures in the 4 o'clock, 6 o'clock, and 8 o'clock positions are passed from outside to inside in the inferior edge of the jejunum at the same positions.

Anterior inner layer



The sutures in the 10 o'clock, 12 o'clock, and 2 o'clock positions are passed from inside to outside in the superior edge of the jejunum and are knotted with the plastic stent into the jejunal lumen.

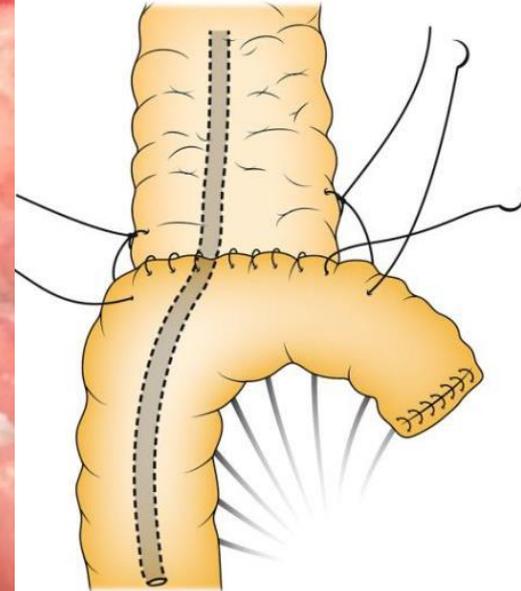
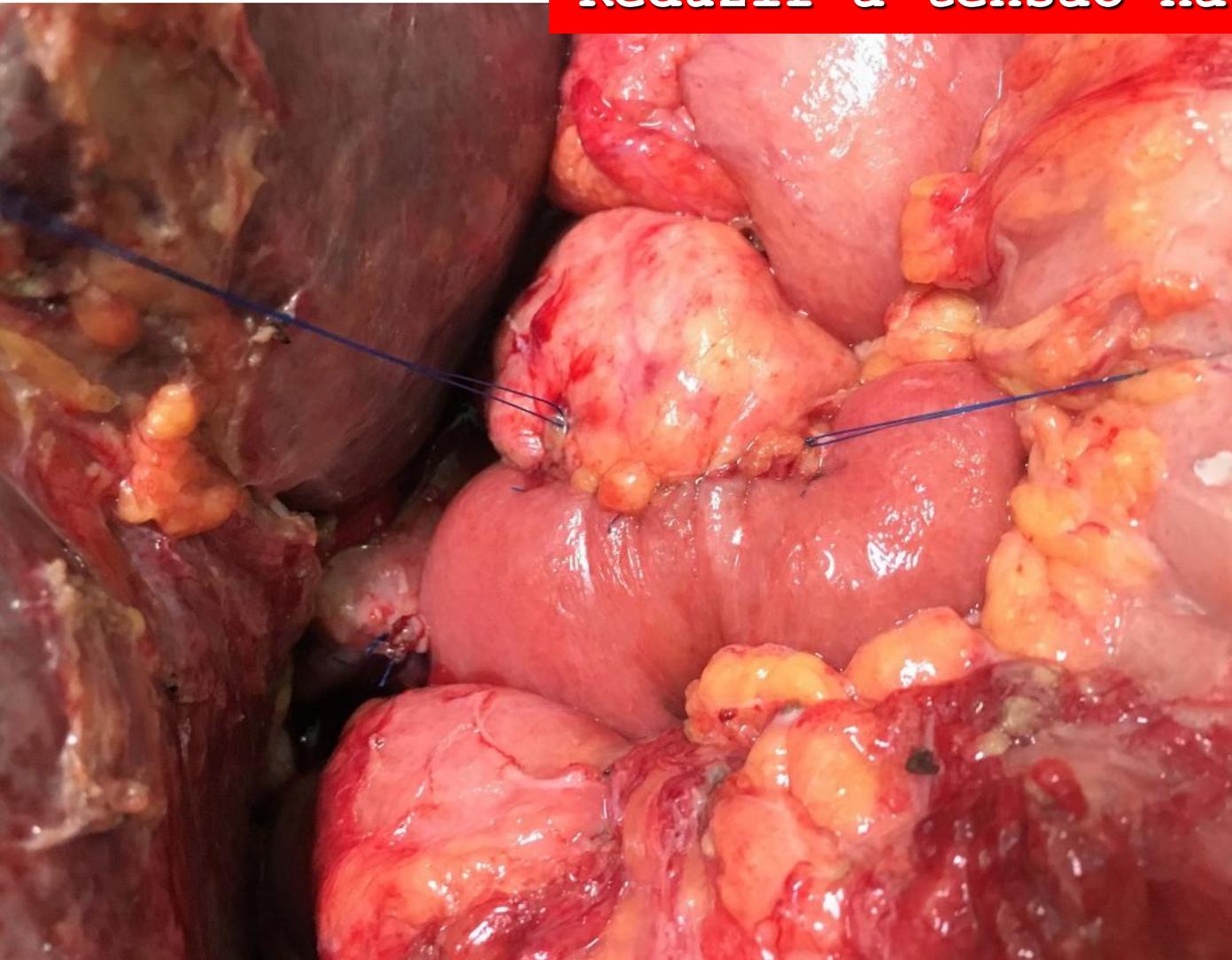
Anterior outer layer



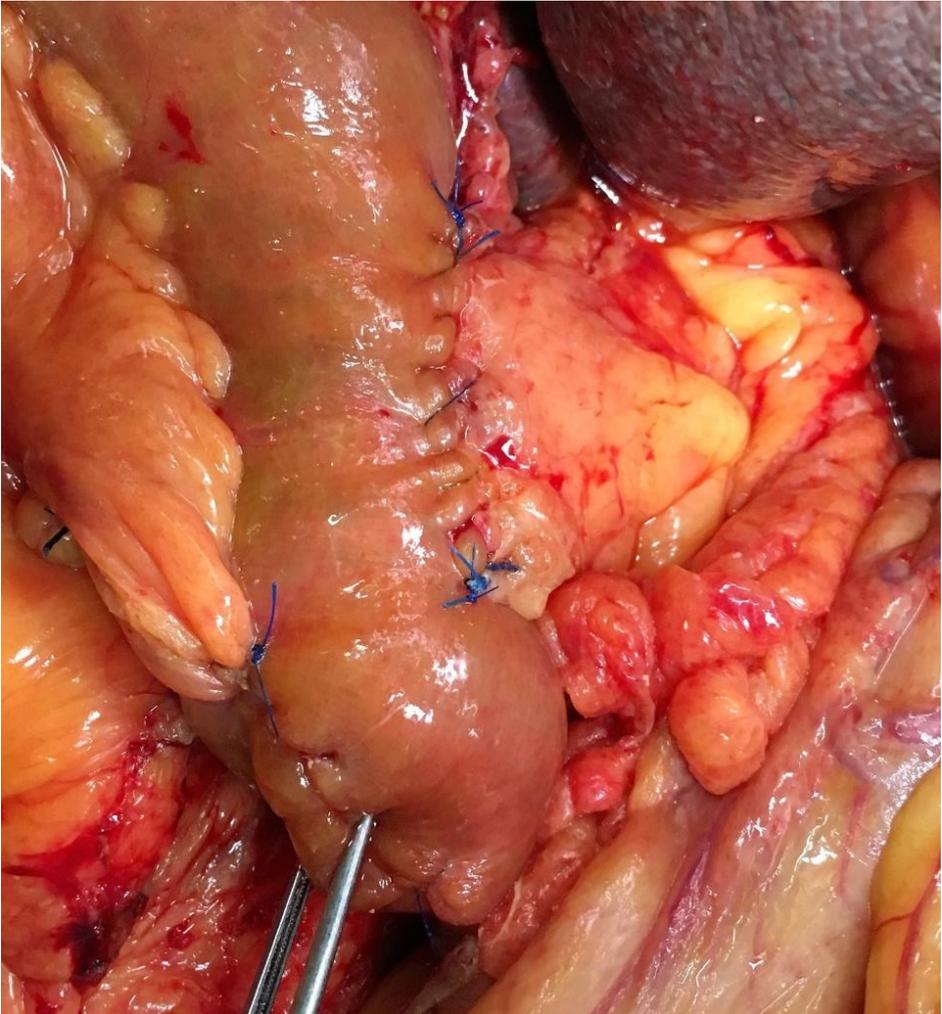
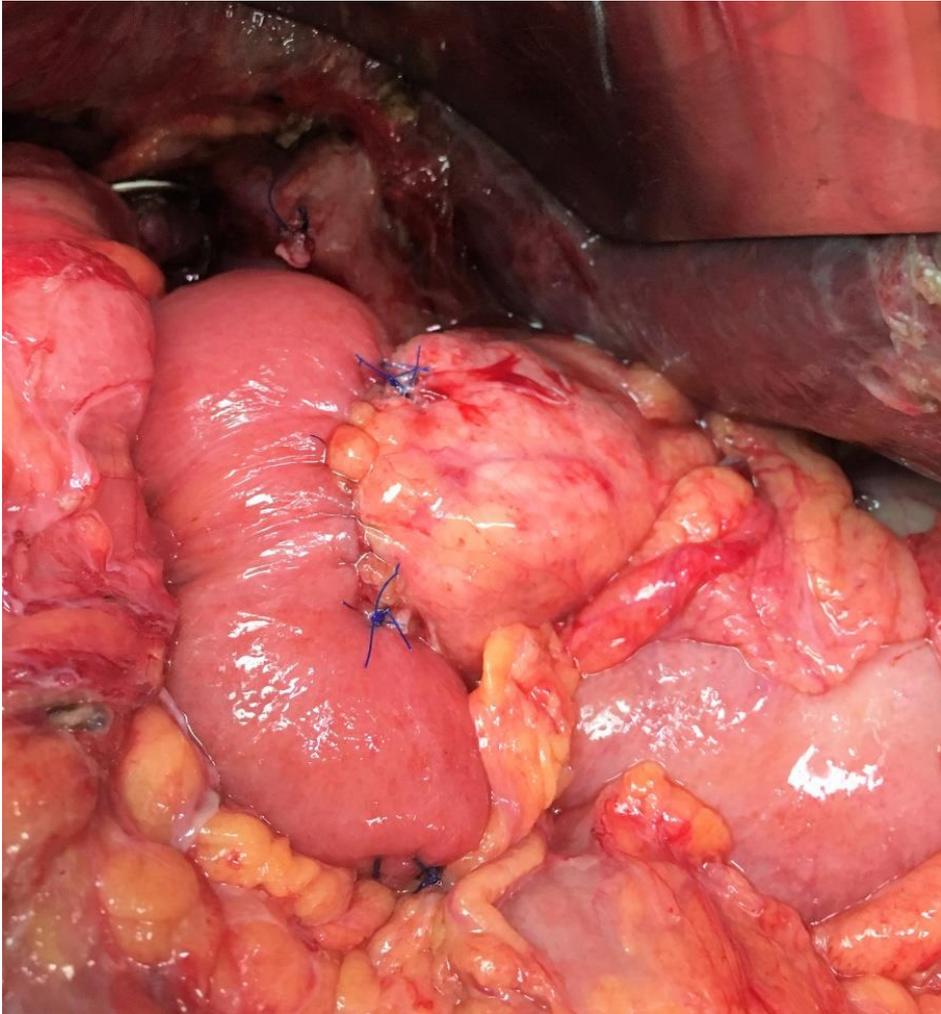
A running suture is performed with 4-0 single needle prolene, on the anterior aspect of the pancreatic parenchyma with jejunal seromuscular layer.

Sutura de sustentação

Reduzir a tensão na anastomose



Aspecto final



São Luís



Obrigado!

