Ongoing Challenges of Pancreatic Cancer

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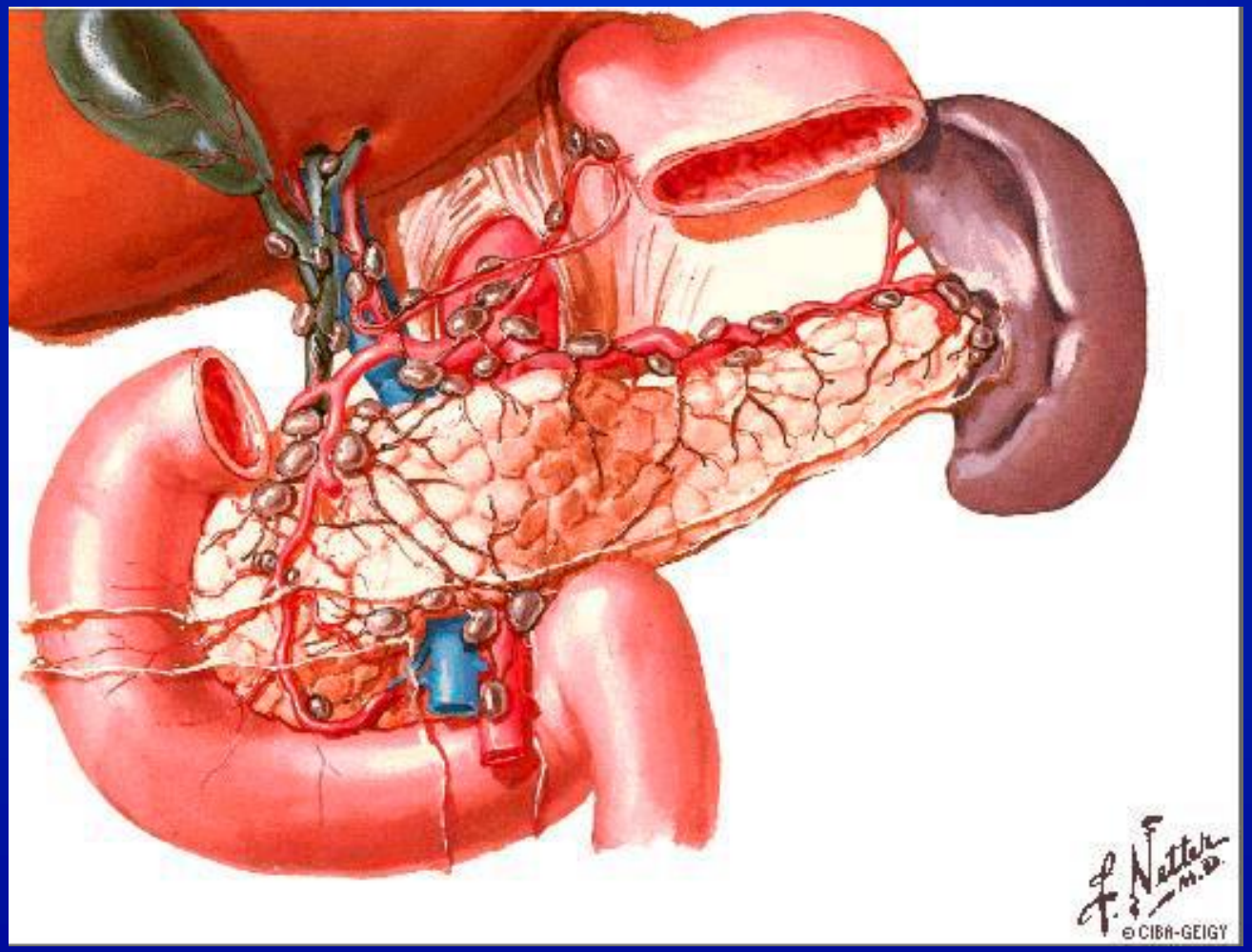
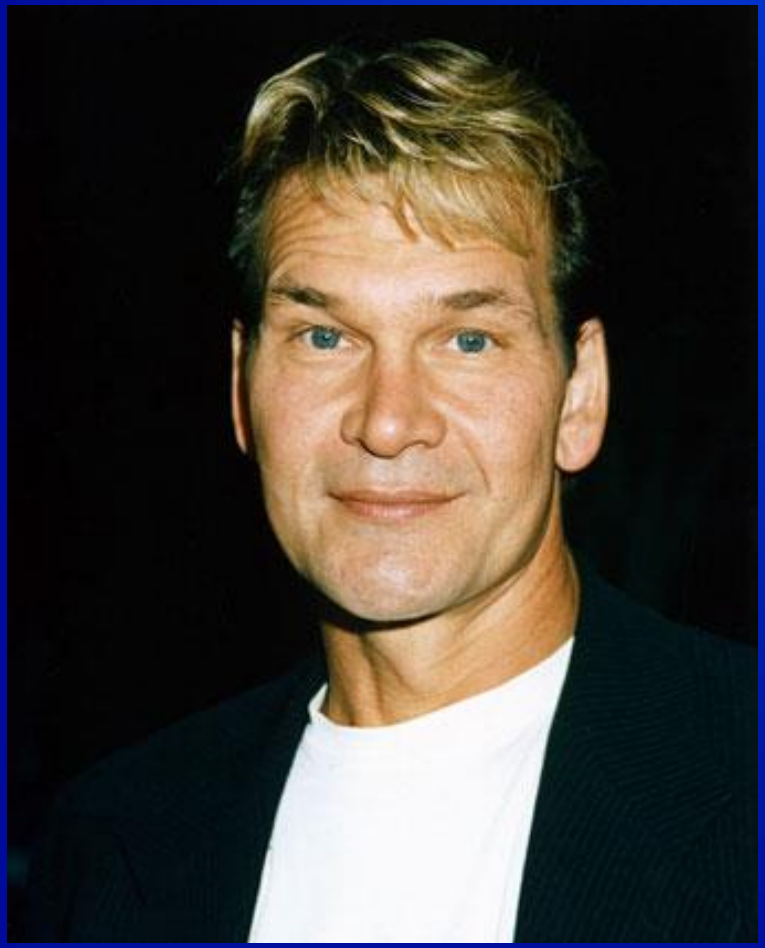
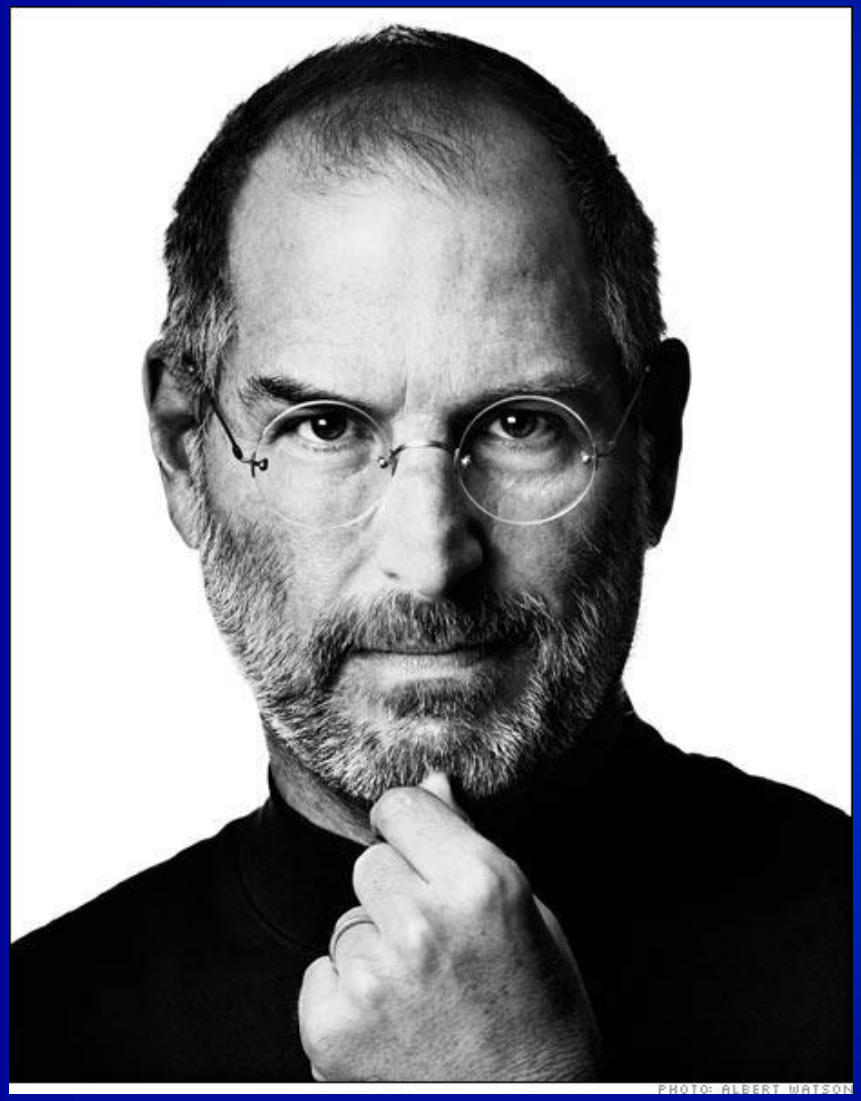
Outline



"I was a fortunate and happy man. After that, this blow arrived. And now I am paying the penalty for this fortune and happiness."



"I keep dreaming of a future, a future with a long and healthy life, not lived in the shadow of cancer but in the light,"



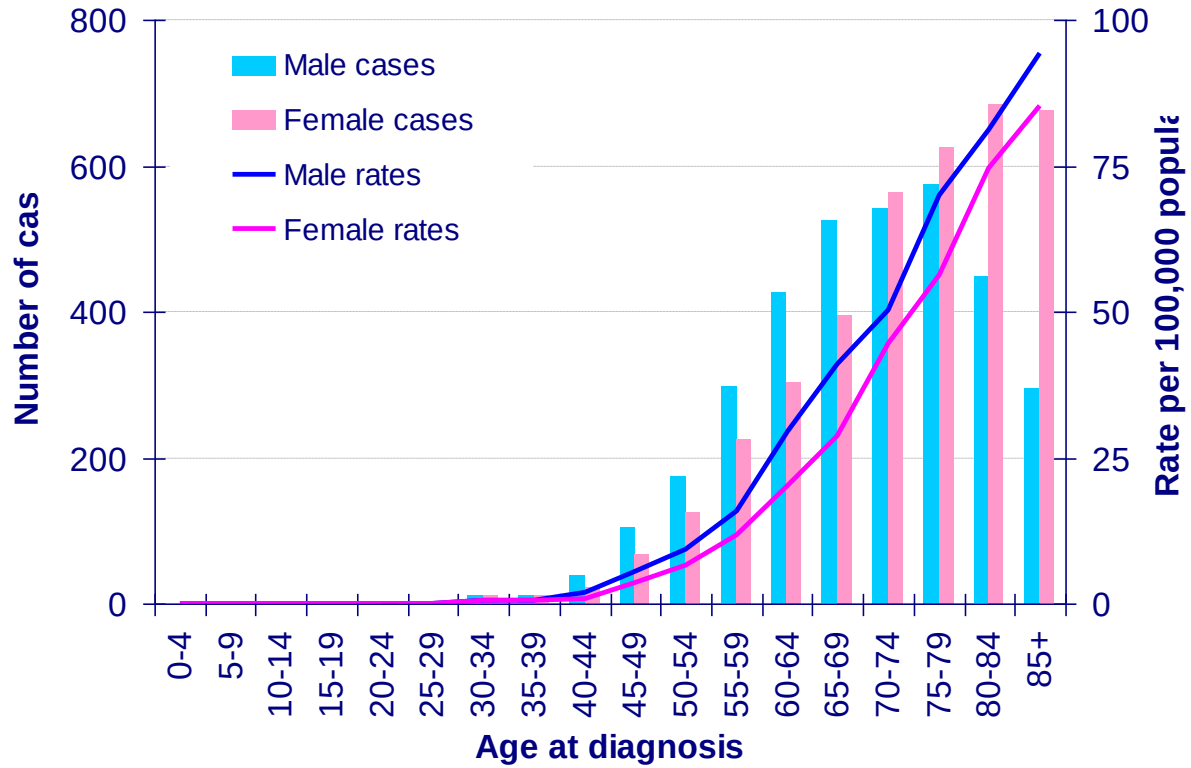
“It means to try to tell your kids everything you thought you’d have the next ten years to tell them in just a few months. It means to make sure everything is buttoned up so that it will be as easy as possible for your family. It means to say your goodbyes.”

Pancreatic cancer

- Fourth leading cause of cancer-related death
- > 7000 deaths annually in UK
- Overall 5-year survival approx 1%
- Only approx 13% alive after 1 year
- Often called the “silent disease” because it usually doesn’t cause symptoms in early stages

Demographics

Figure 1.2: Numbers of new cases and age-specific incidence rates, by sex, pancreatic cancer, UK 2003

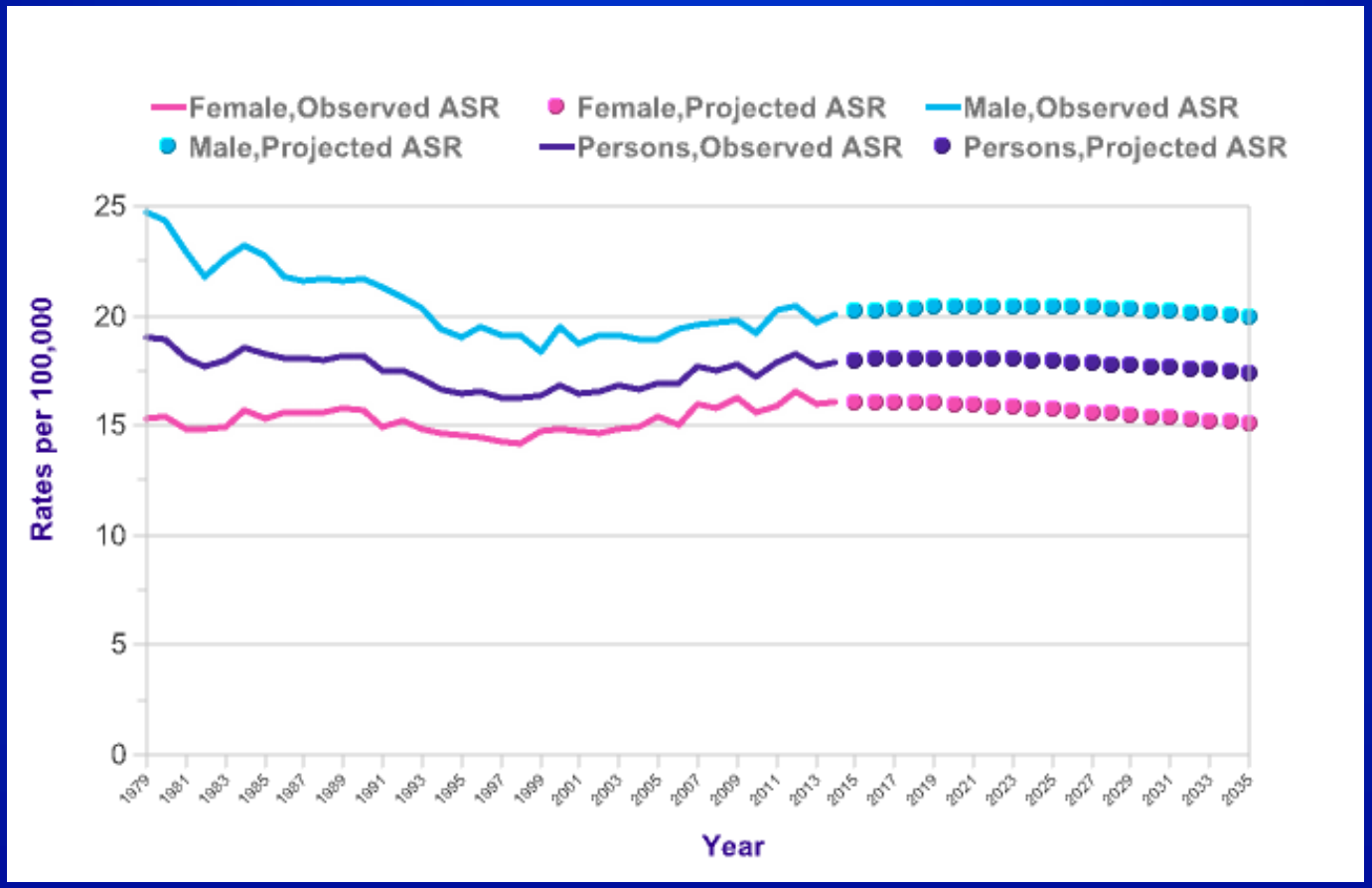


Epidemiology

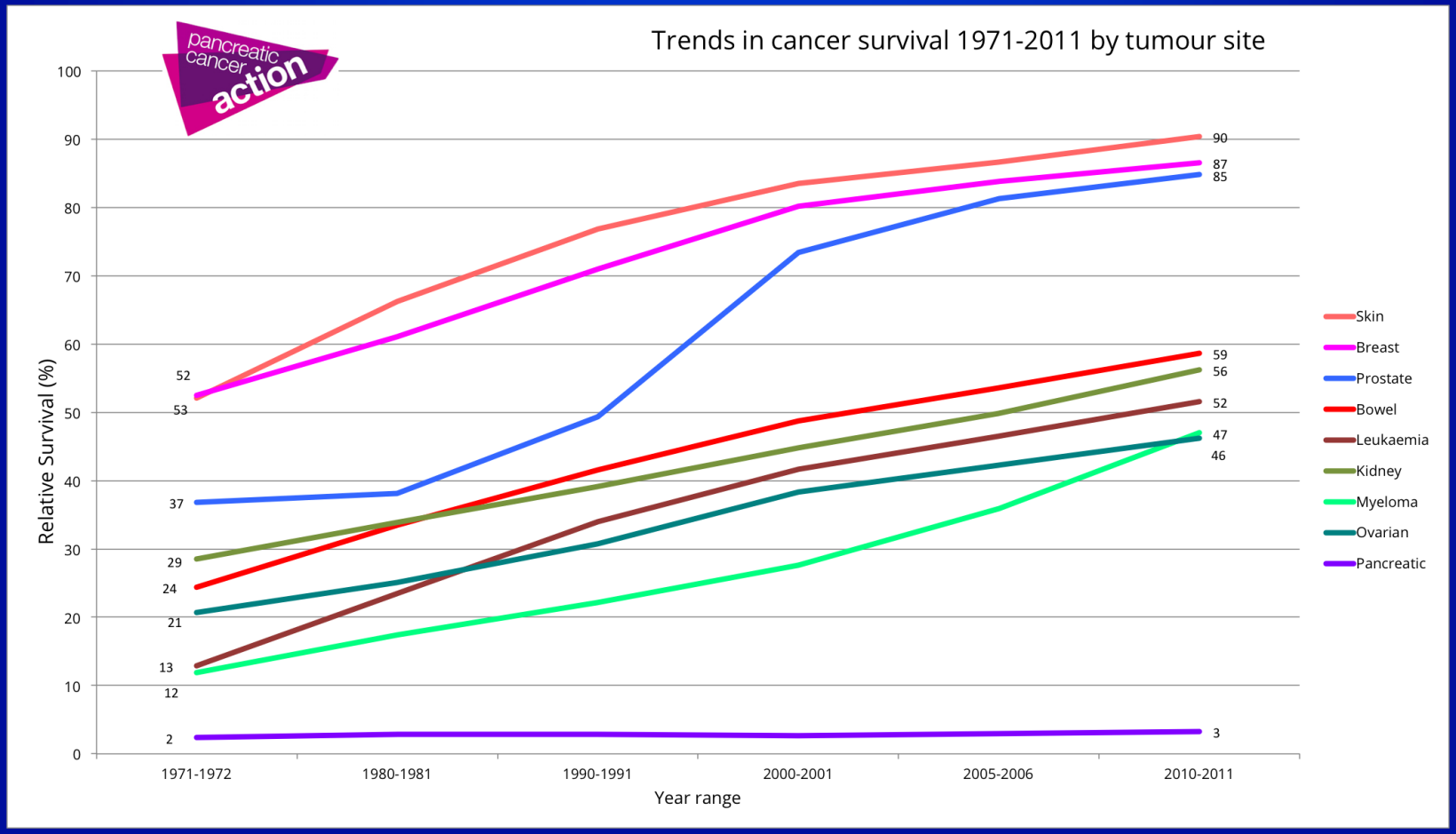
- Rare < 40 years
- > 60% cases from 60 & 80 years
- Approx 10/100,000 population/year
- Male:female ratio 1.4:1

Mortality

Age standardised Mortality Rates per 100, 000 persons, UK, 1971-2019



Mortality

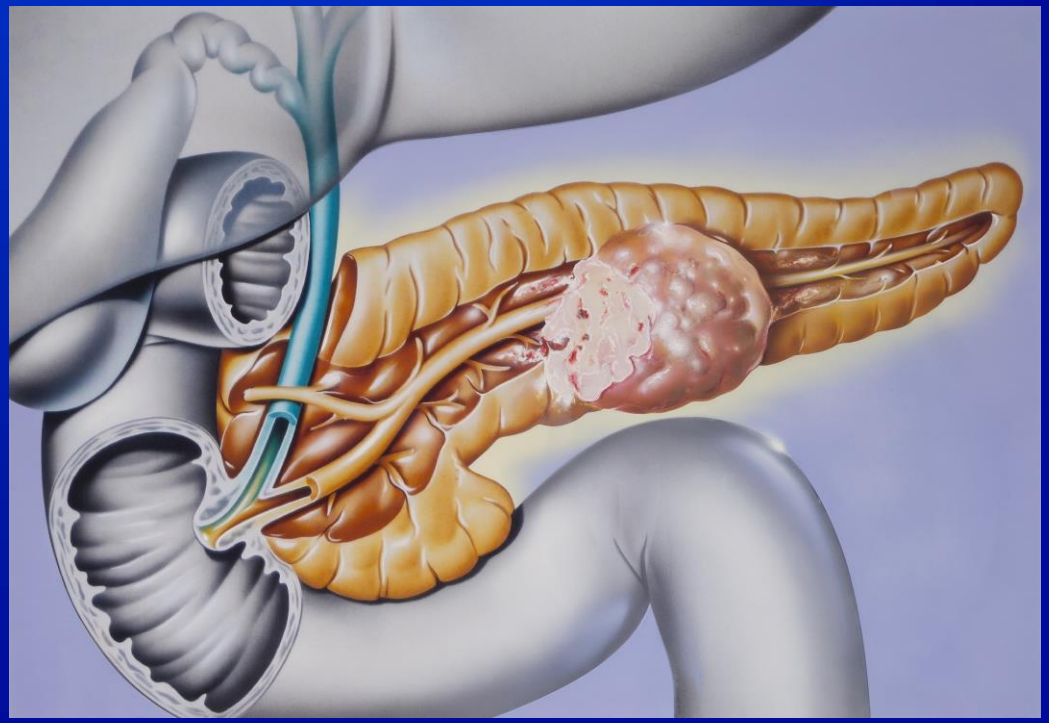

Trends in cancer survival 1971-2011 by tumour site
pancreatic cancer action
Relative Survival (%)
Year range
1971-1972
1980-1981
1990-1991
2000-2001
2005-2006
2010-2011
0
10
20
30
40
50
60
70
80
90
100
52
53
37
29
24
21
13
12
2
90
87
85
59
56
52
47
46
3
Skin
Breast
Prostate
Bowel
Leukaemia
Kidney
Myeloma
Ovarian
Pancreatic

Aetiology

- Cause unknown
- Smoking & alcohol?
- Chronic pancreatitis
- Diabetes? (5 years greater than 2x increase)
- Hereditary pancreatic cancer – susceptibility locus has been found in relation to chromosome 4q32-34.
- Familial breast cancer gene (BRCA2)

Clinical presentation

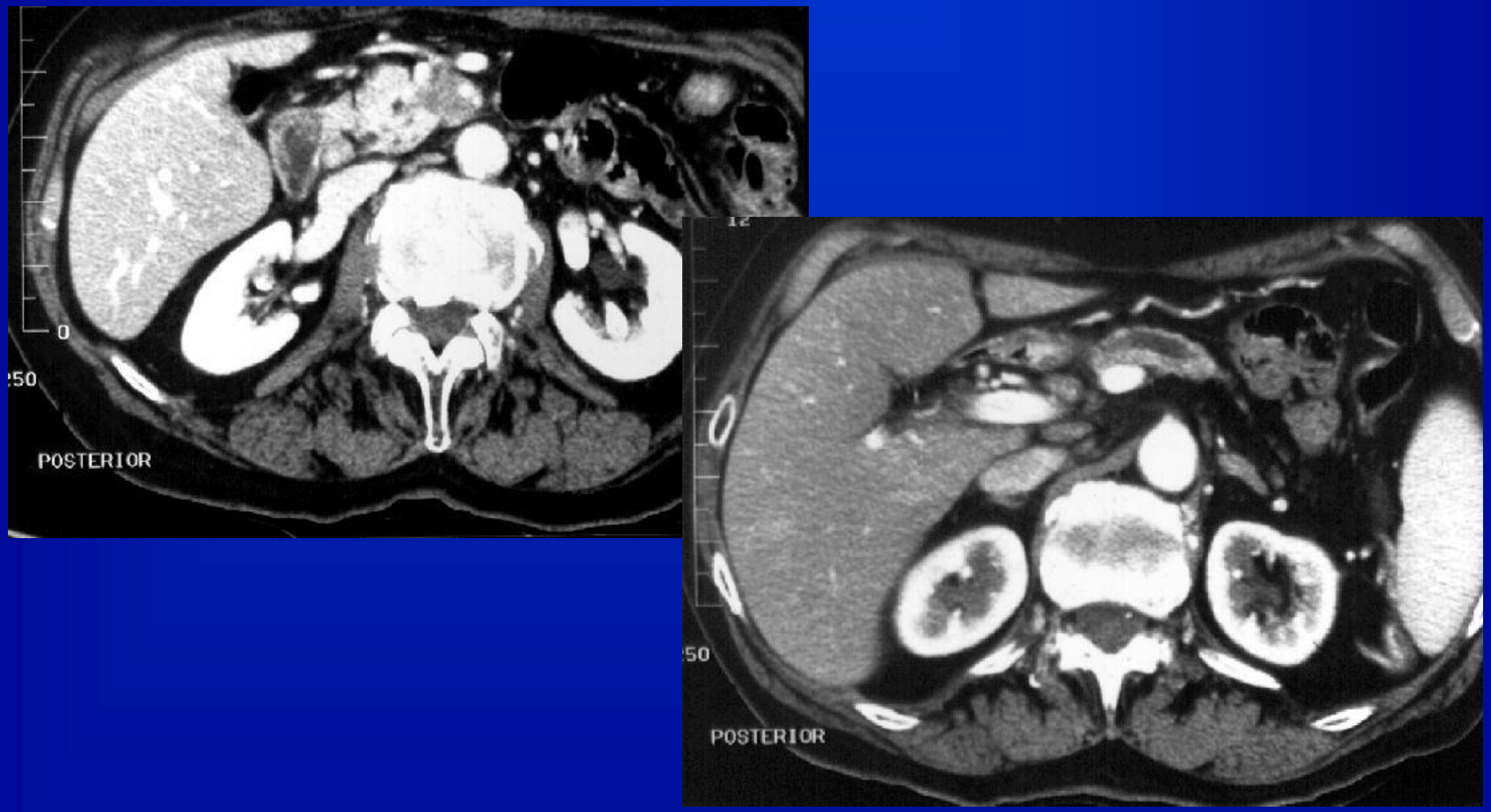
- Very difficult to diagnose in early stage
- Weight ↓
  - Malabsorption
  - Steatorrhoea
- N+V
- Anorexia
- Cachexia
- Jaundice
- Pain
- Diabetes



Diagnosis

- Ultrasound
- CT scan

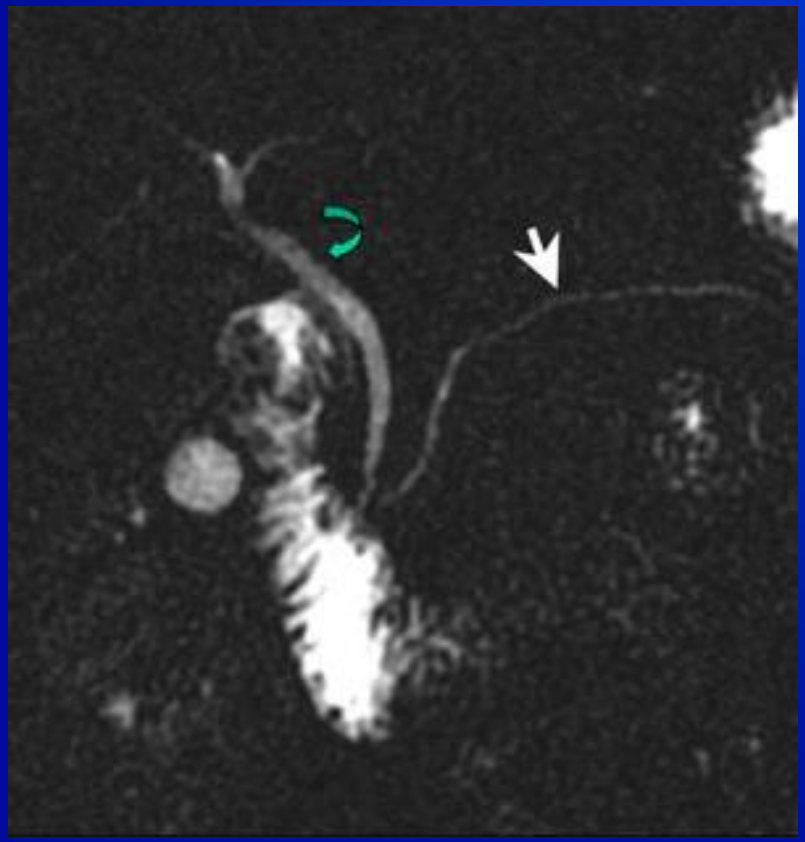
CT



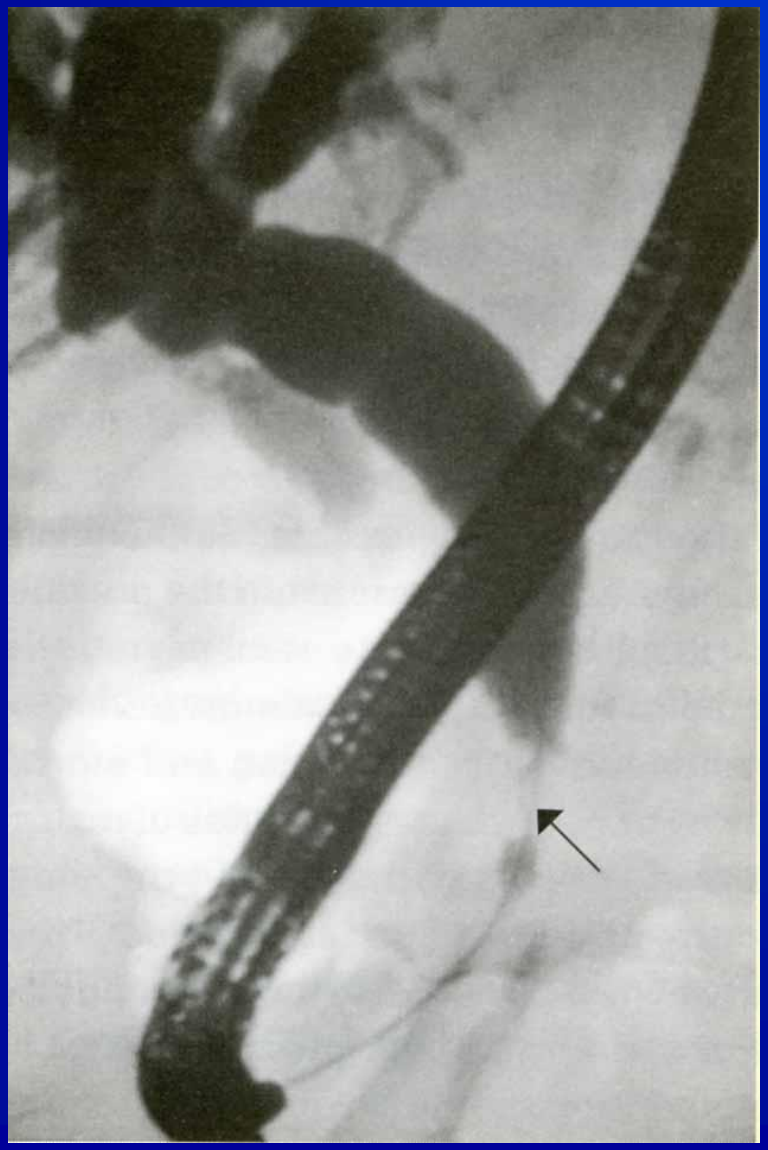
Diagnosis

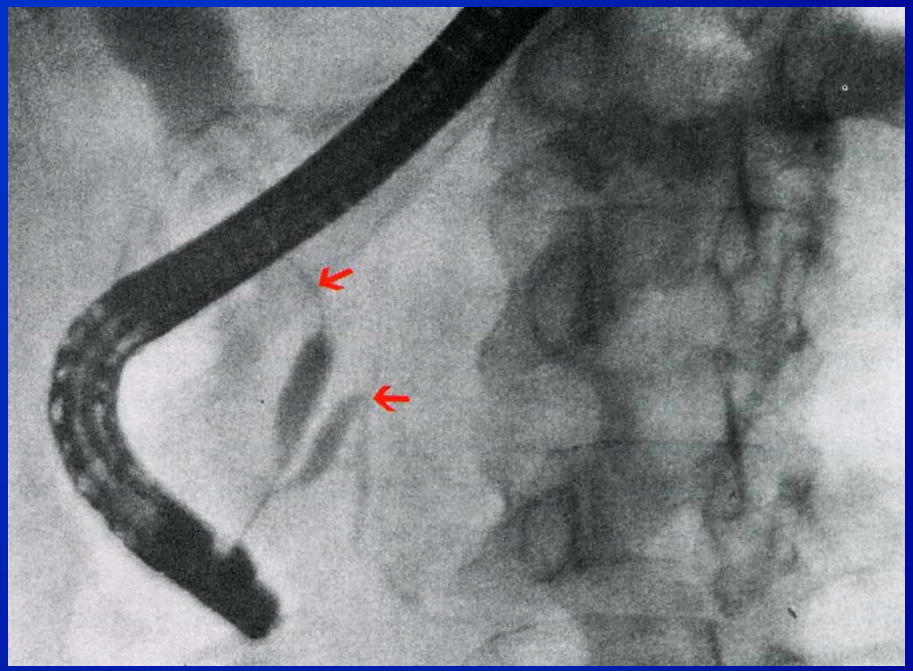
- Ultrasound
- CT scan
- MRI & MRCP
- ERCP

MRCP



ERCP

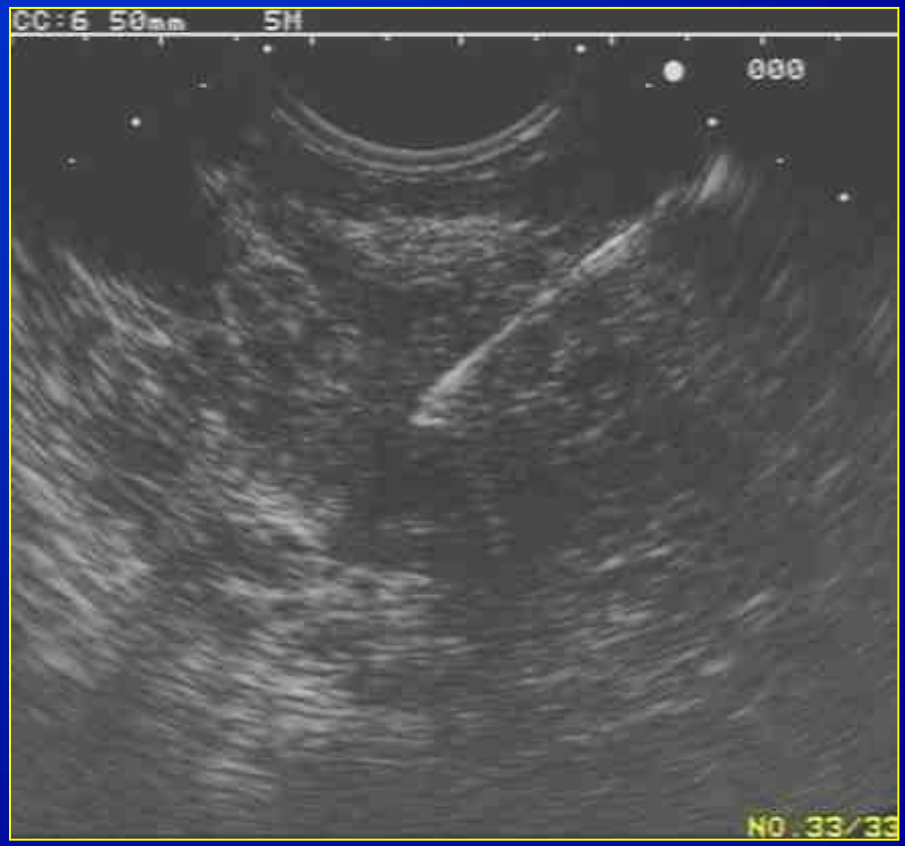




- Therapeutic - stent
- Diagnostic – brushing

- Post ERCP pancreatitis – 5%

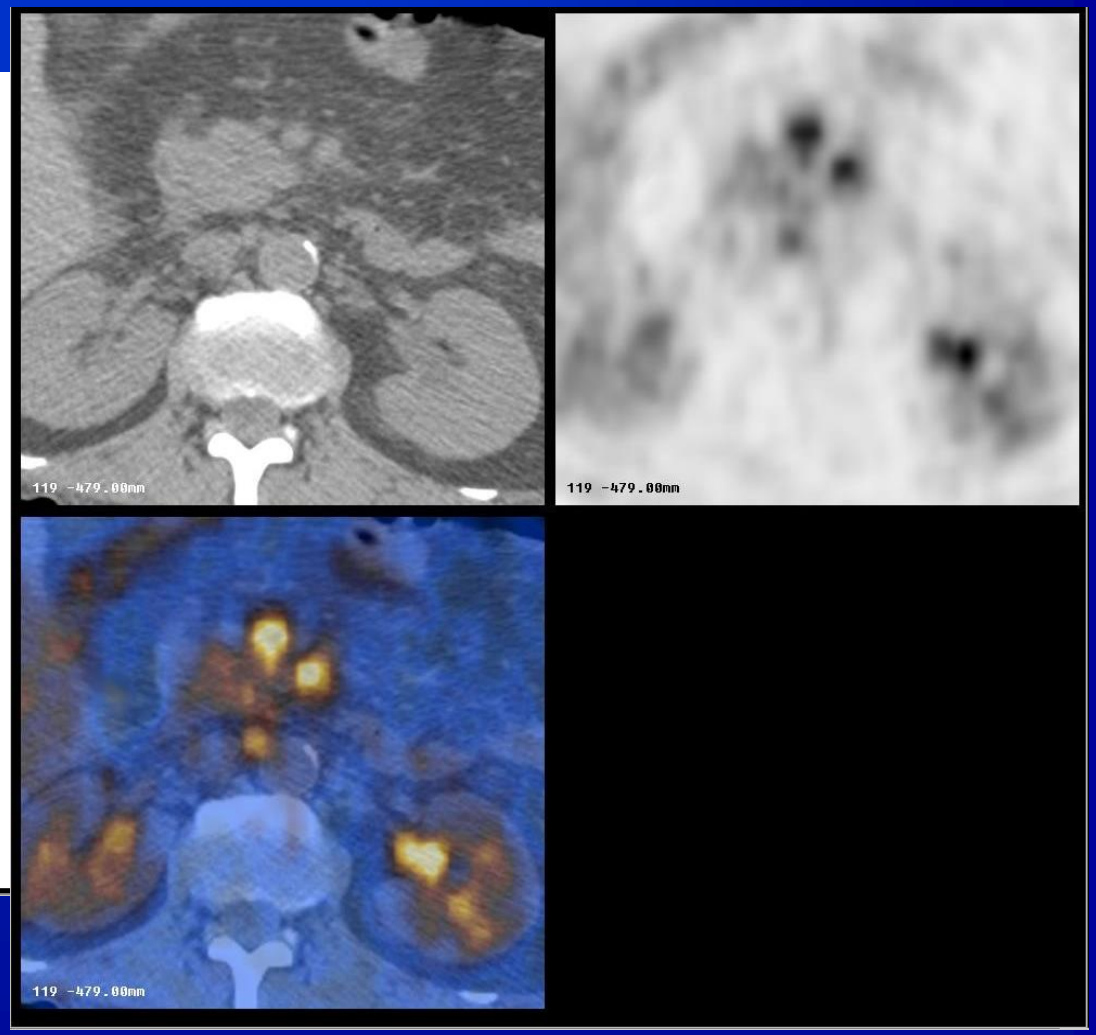
EUS



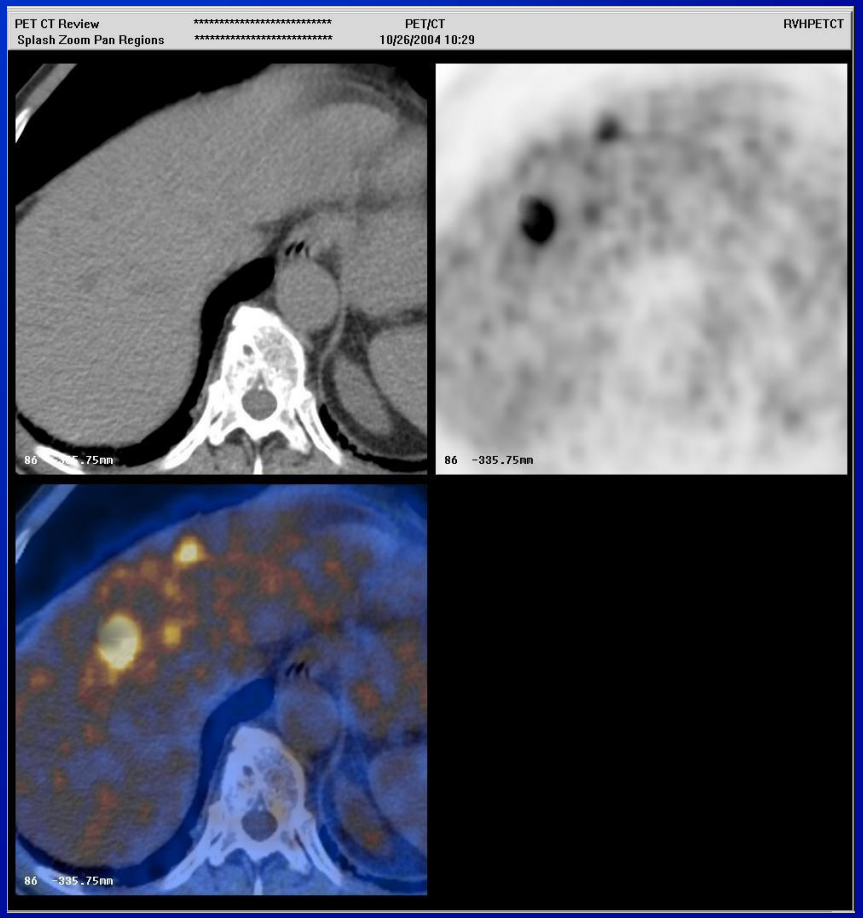
Diagnosis

- Ultrasound
- CT scan
- MRI & MRCP
- ERCP
- EUS
- CT-PET

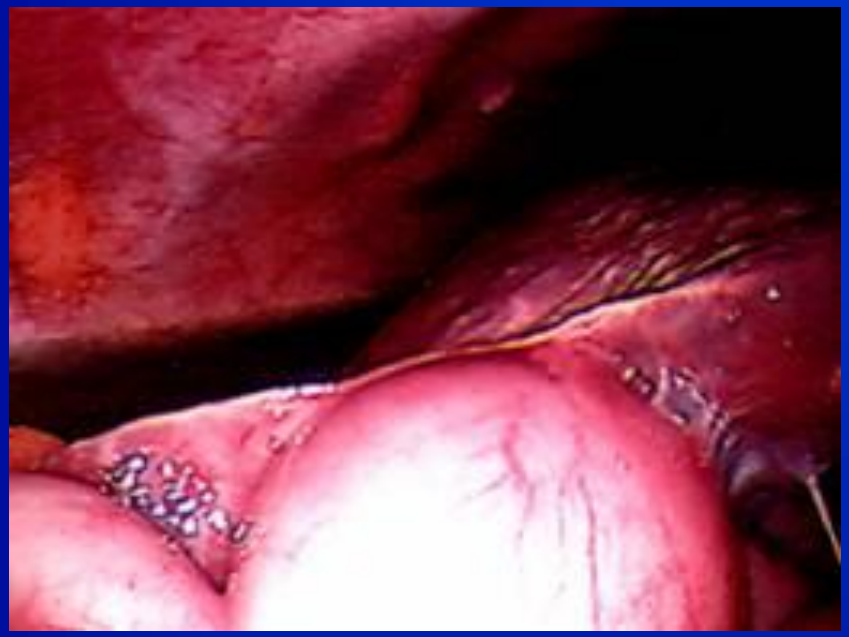
CT-PET

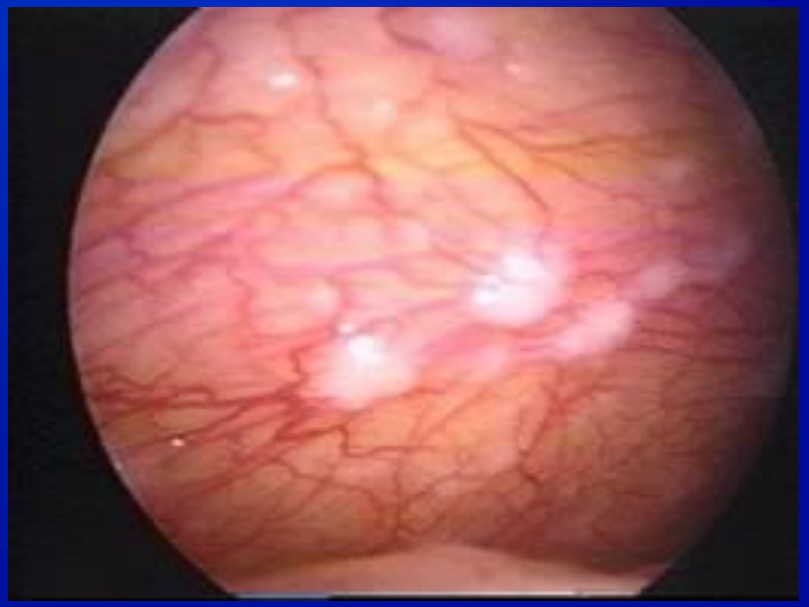


Extrapancreatic disease



Staging Laparoscopy





1. John et al. Annals of Surg 1995; 221: 156-164

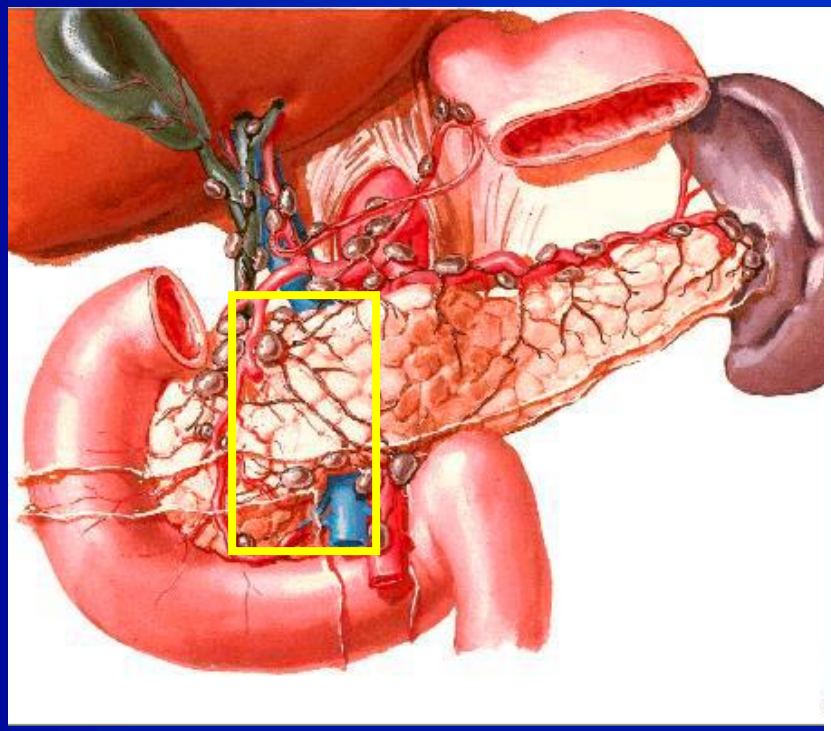
Treatment

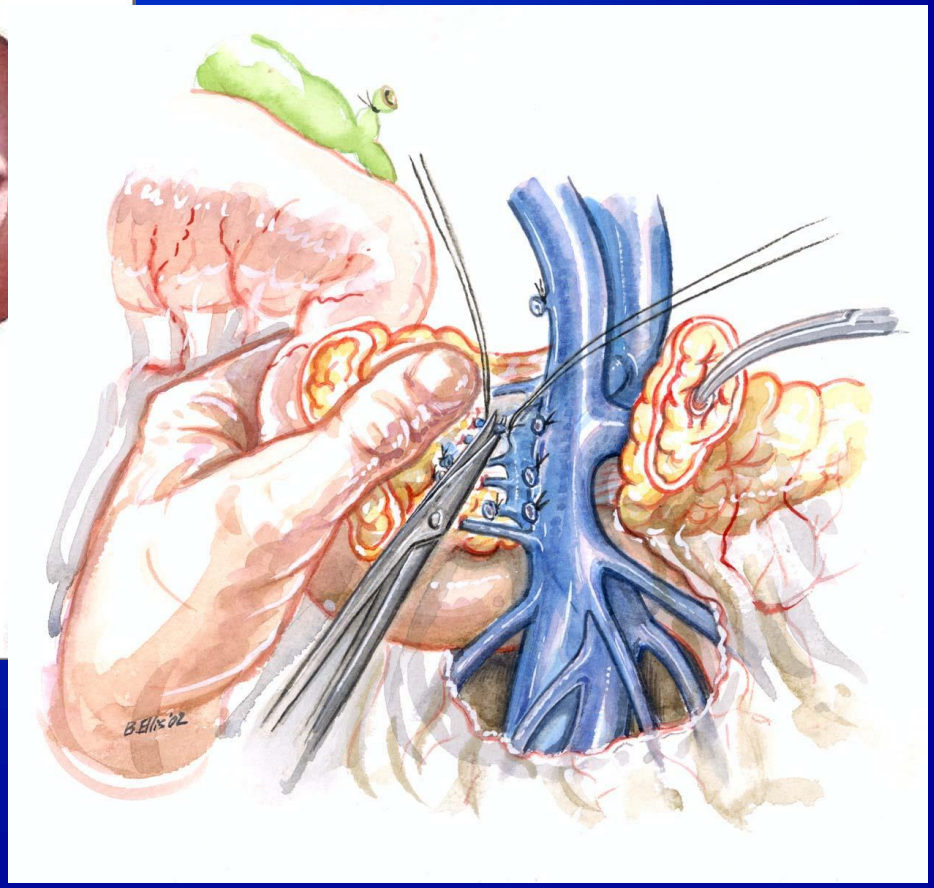
- Resection possible in only approx 20%
  - local invasion
  - metastases
  - advanced cachexia
- Resection – Whipple procedure / Distal pancreatectomy / Total pancreatectomy
- Unresectable – endoscopic vs surgical Rx biliary/gastric outlet obstruction

Allen Oldfather Whipple (1881-1963)

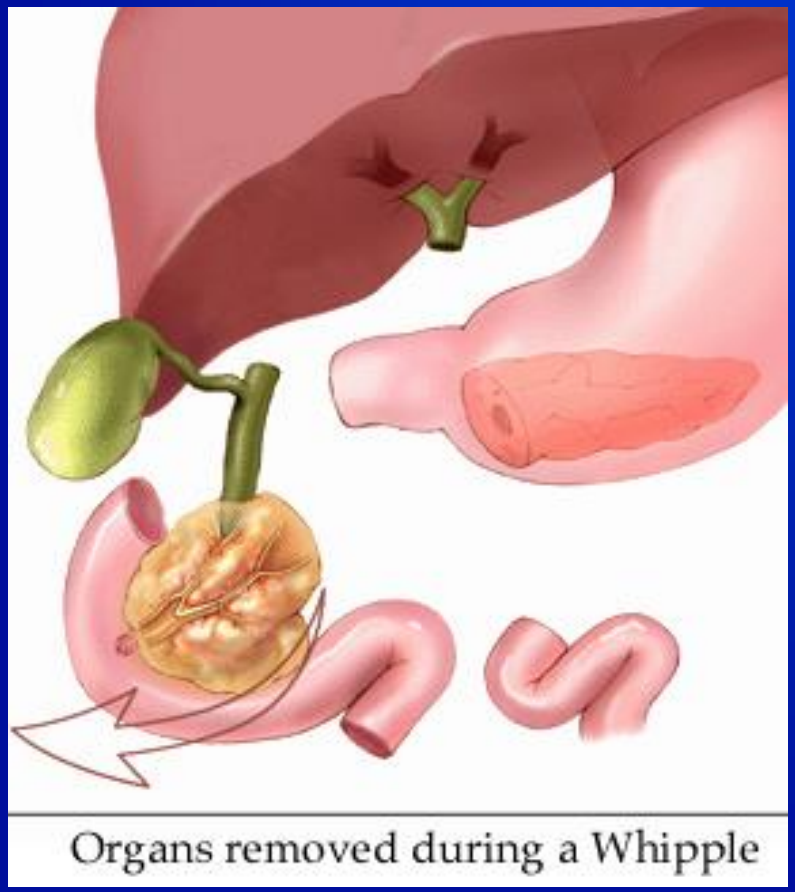
Original paper. Whipple AO, Parsons WB, Mullins CR. Treatment of Carcinoma of the Ampulla of Vater. Ann Surg 1935; 102: 763-769.

Whipple pancreaticoduodenectomy



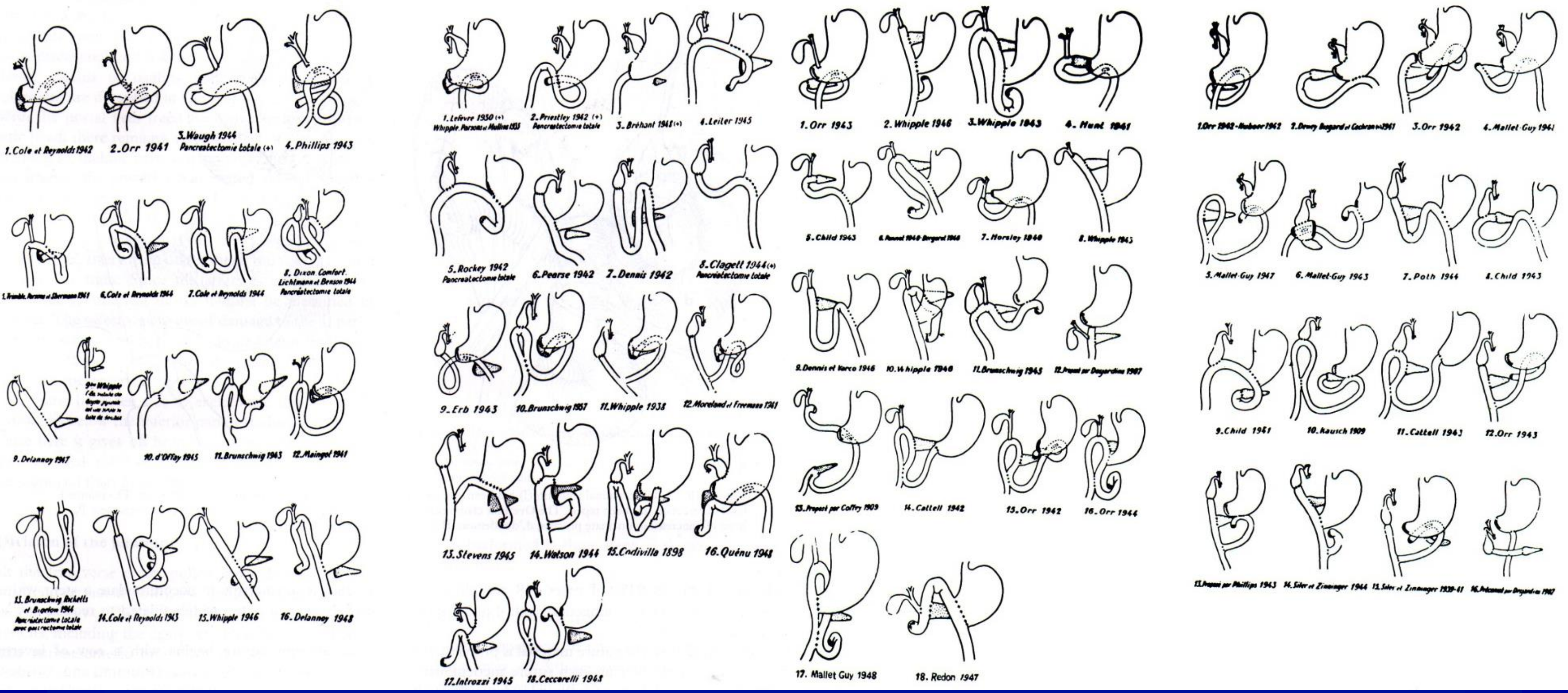


Whipples Procedure

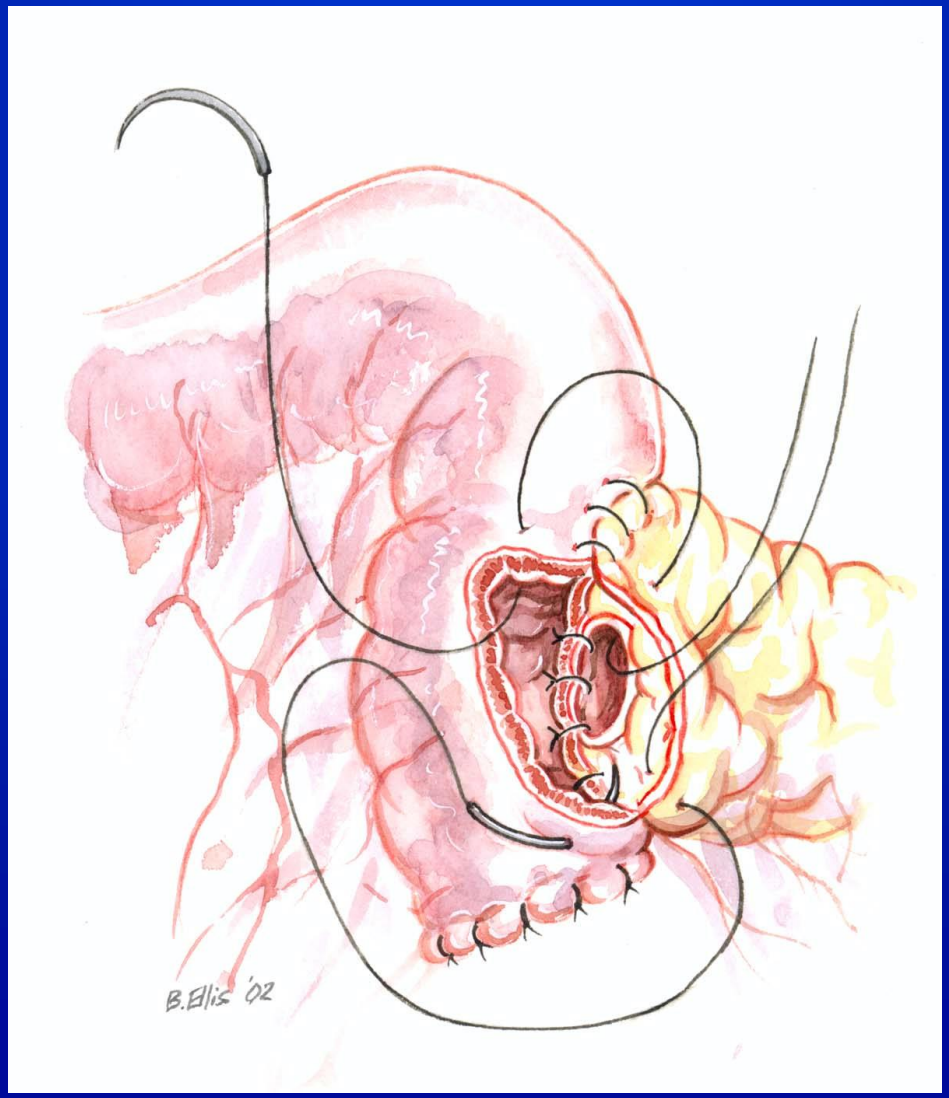


Organs removed during a Whipple

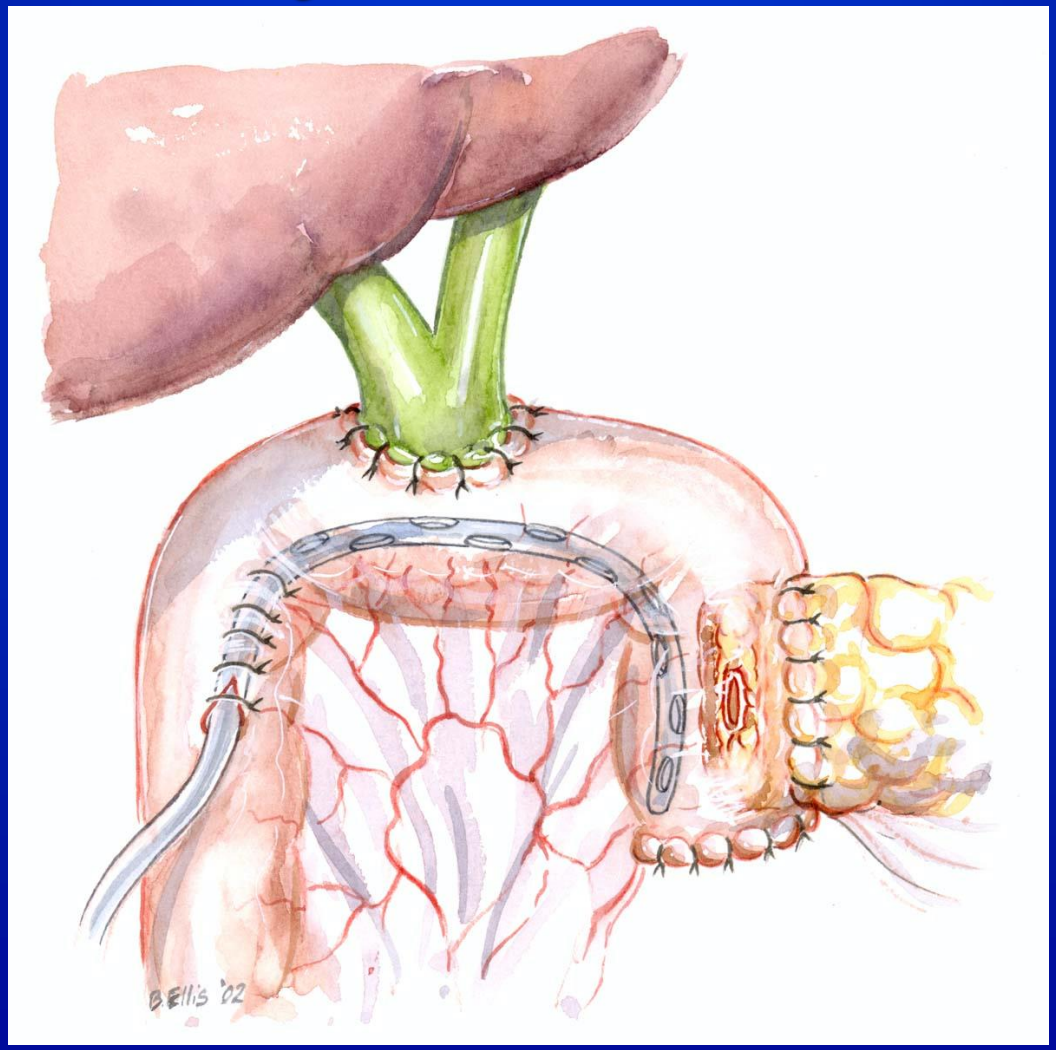
Most common anatomy after Whipple


1. Cole et Reynolds 1942
2. Orr 1941
3. Waugh 1944 Pancréatectomie totale (+)
4. Phillips 1943
6. Cole et Reynolds 1944
7. Cole et Reynolds 1944
8. Dixon Comfort. Lichtman et Benson 1944 Pancréatectomie totale
9. Delannoy 1947
10. d'Offay 1945
11. Brunschwig 1943
12. Maingot 1941
13. Brunschwig Rickells et Bowden 1946 Pancréatectomie totale
14. Cole et Reynolds 1943
15. Whipple 1946
16. Delannoy 1948
1. Lefevre 1950 (+)
2. Priestley 1942 (+) Pancréatectomie totale
3. Bréhant 1948 (+)
4. Leiter 1945
5. Rockey 1942 Pancreatectomie totale
6. Pearse 1942
7. Dennis 1942
8. Clagett 1944 (+) Pancréatectomie totale
9. Erb 1943
10. Brunschwig 1937
11. Whipple 1938
12. Moreland et Freeman 1941
13. Stevens 1945
14. Watson 1944
15. Codivilla 1898
16. Quénu 1948
17. Introzzi 1945
18. Ceccarelli 1948
1. Orr 1943
2. Whipple 1946
3. Whipple 1943
4. Hunt 1941
5. Child 1943
7. Horsley 1940
8. Whipple 1943
9. Dennis et Varco 1946
10. Whipple 1940
11. Brunschwig 1945
13. Proposé par Coffey 1909
14. Cattell 1942
15. Orr 1942
16. Orr 1944
17. Mallet Guy 1948
18. Redon 1947
3. Orr 1942
4. Mallet-Guy 1941
5. Mallet-Guy 1947
6. Mallet-Guy 1943
7. Poth 1944
8. Child 1943
9. Child 1941
10. Kausch 1909
11. Cattell 1943
12. Orr 1943
13. Proposé par Phillips 1943
14. Siler et Zinninger 1944

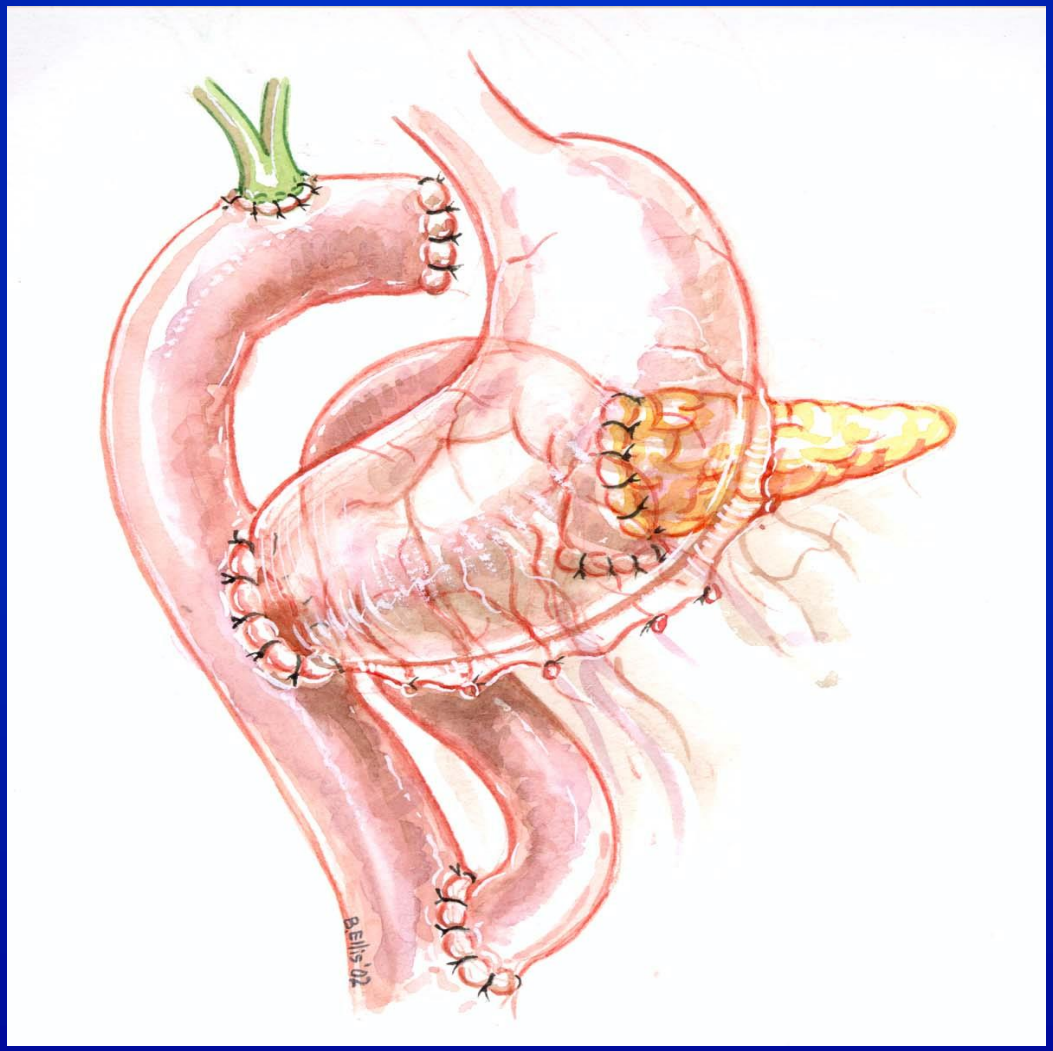
Pancreatic Anastomosis



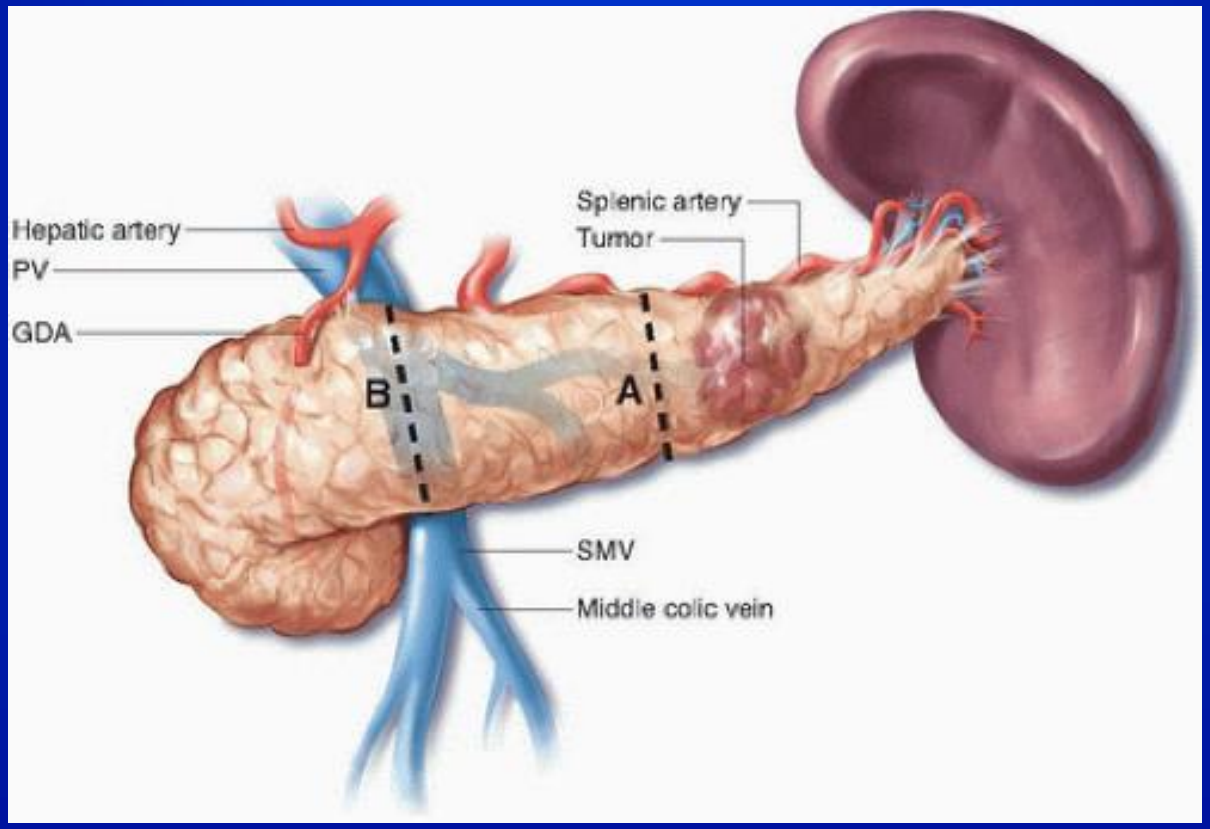
Biliary Anastomosis



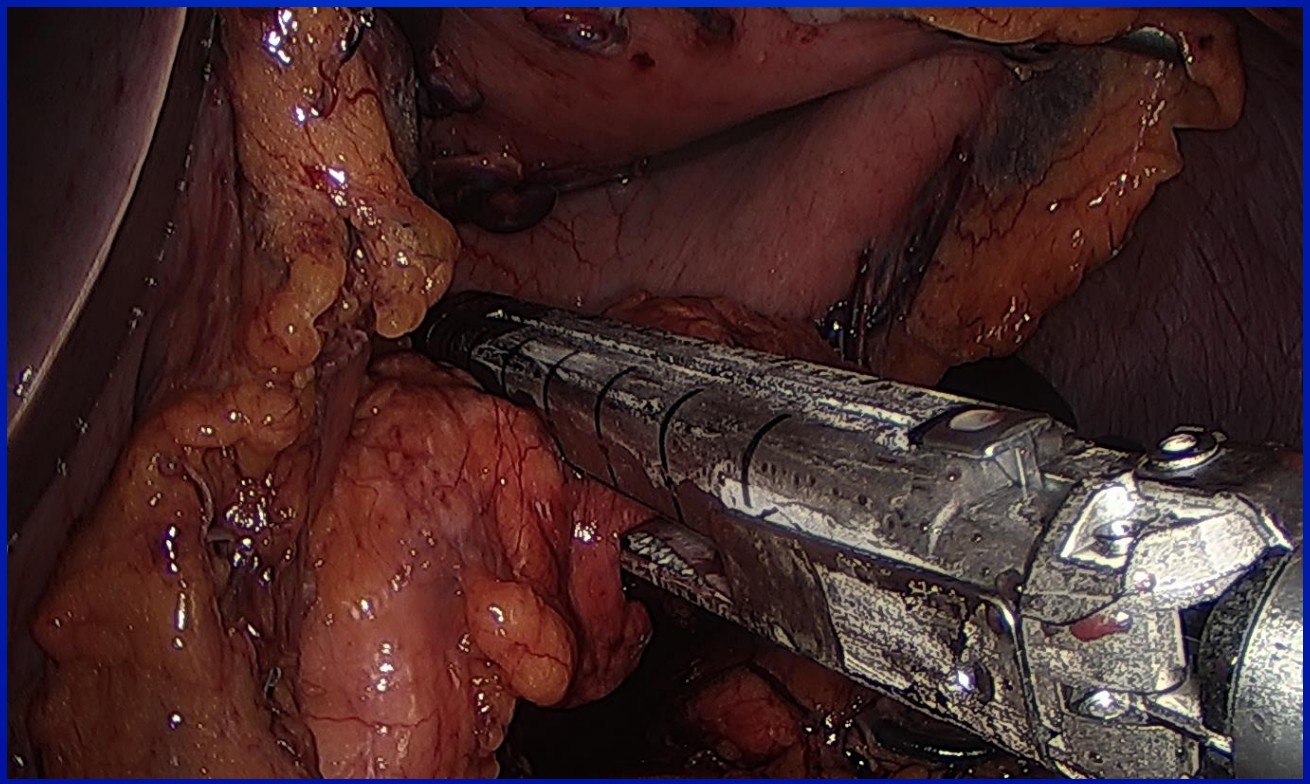
Gastric Anastomosis



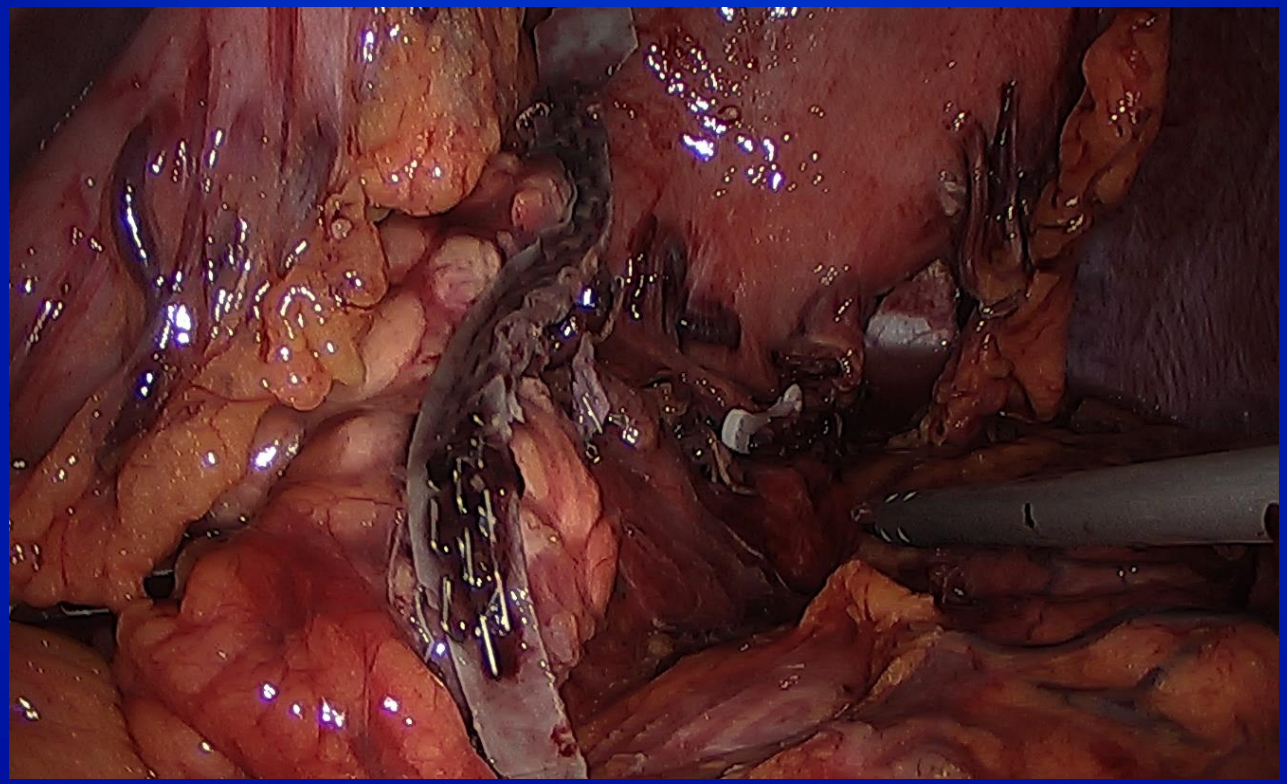
Distal Pancreatectomy



Distal Pancreatectomy



Distal Pancreatectomy



Complications

- Up to 40%
- Include: Pancreatic fistula
  → intraabdominal sepsis
  → haemorrhage

  Delayed gastric emptying
  → no difference between classical or pylorus preserving Whipples[1]

1. Diener et al. Ann of Surg; 2007;245(2);187-200

Mortality

- Resection is only option for cure
- Mortality in high volume centres less than 5%
- Clear evidence that high volume centres have better outcome

- *Yeo CJ, Cameron JL, Sohn TA, et al. Six hundred fifty consecutive pancreaticoduodenectomies in the 1990s: pathology, complications, and outcomes. Ann Surg. 1997;226:248–257.*
- *Bassi C, Falconi M, Salvia R, et al. Management of complications after pancreaticoduodenectomy in a high volume centre: results on 150 consecutive patients. Dig Surg. 2001;18:453–457.*
- *Gouma DJ, van Geenen RC, van Gulik TM, et al. Rates of complications and death after pancreaticoduodenectomy: risk factors and the impact of hospital volume. Ann Surg. 2000;232:786–795.*
- *Yuman Fong, MD, Mithat Gonen, PhD, David Rubin, MS, Mark Radzyner, MBA, JD, and Murray F. Brennan, MD. Long-Term Survival Is Superior After Resection for Cancer in High-Volume Centers Ann Surg. 2005 October; 242(4): 540–547.*

Pancreatic cancer – resection
Adjuvant chemo- & radio-therapy

- ESPAC 1-3
- Adjuvant chemotherapy has a significant survival benefit
- Adjuvant chemoradiotherapy has a deleterious effect on survival

Neoptolemos et al NEJM 2004; 350; 1200-1210

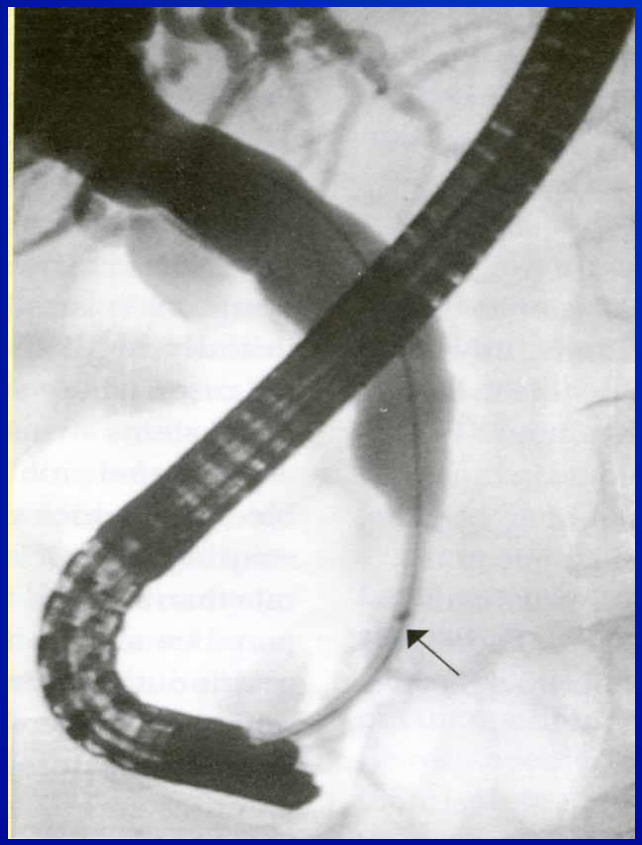
Pancreatic cancer – neoadjuvant chemotherapy

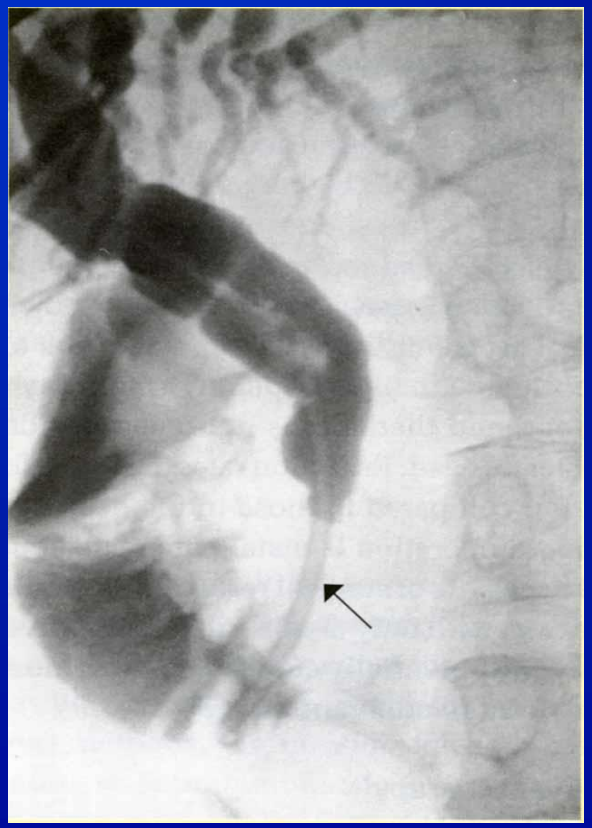
- Borderline resectable cases
  - 20% resectable at presentation
- Downstage – resectable, ↑R0 (clear margin)
- Patient selection – tumour biology
- Control micrometastases
  - 45% do not receive adjuvant chemotherapy

Treatment - palliation

- Palliative in majority
- Vital to have Nurse Specialist / Palliative Care Team Involvement
- Relief of obstructive jaundice
  - ERCP + sphincterotomy +stent

Endoscopic stent





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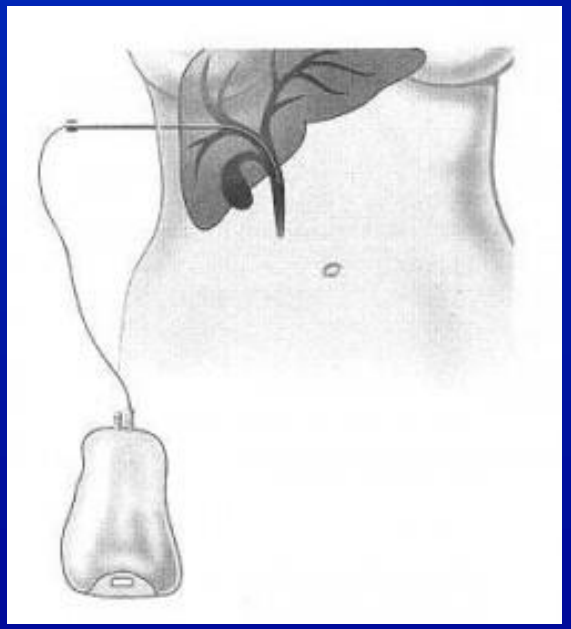
  - Percutaneous stent



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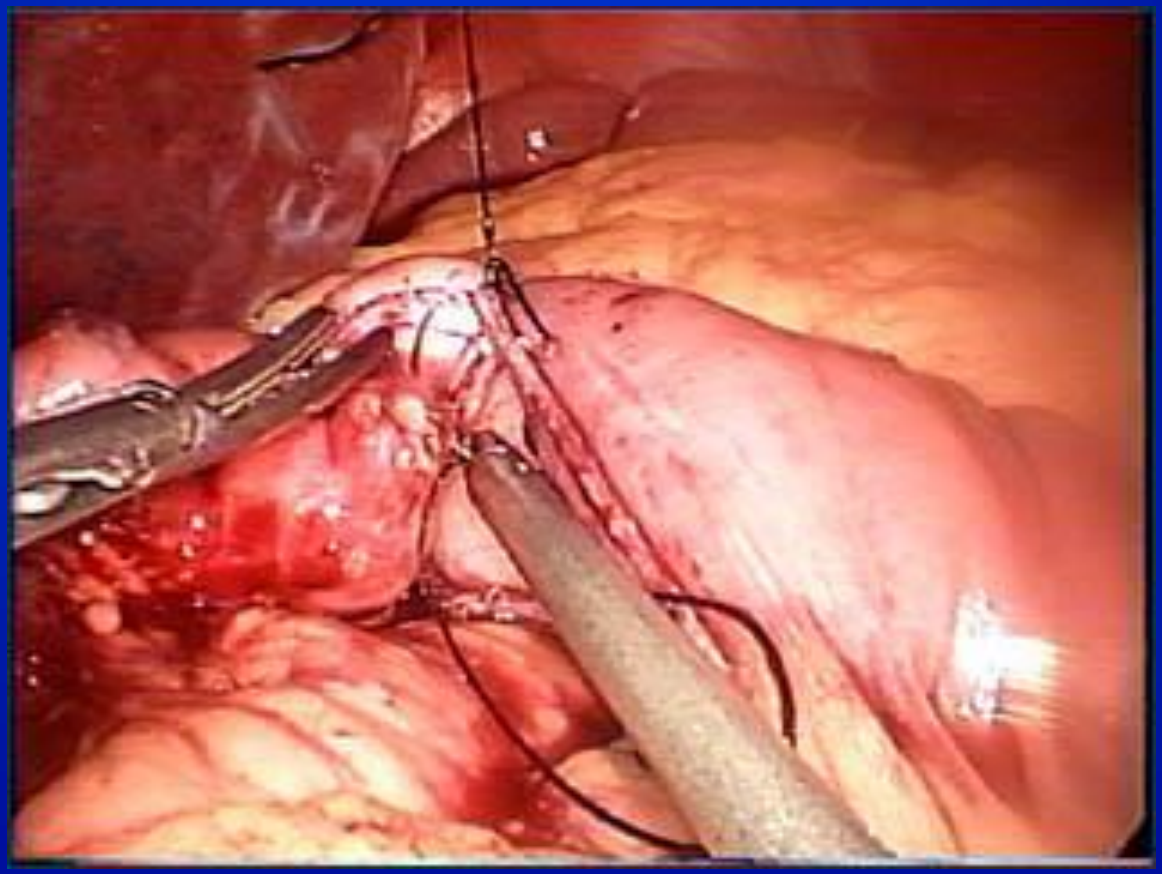
- Palliative in majority
- Vital to have Nurse Specialist / Palliative Care Team Involvement
- Relief of obstructive jaundice
  - ERCP + sphincterotomy +stent
  - Percutaneous stent
- Relief of gastric outlet obstruction
  - gastroenterostomy
  - stent

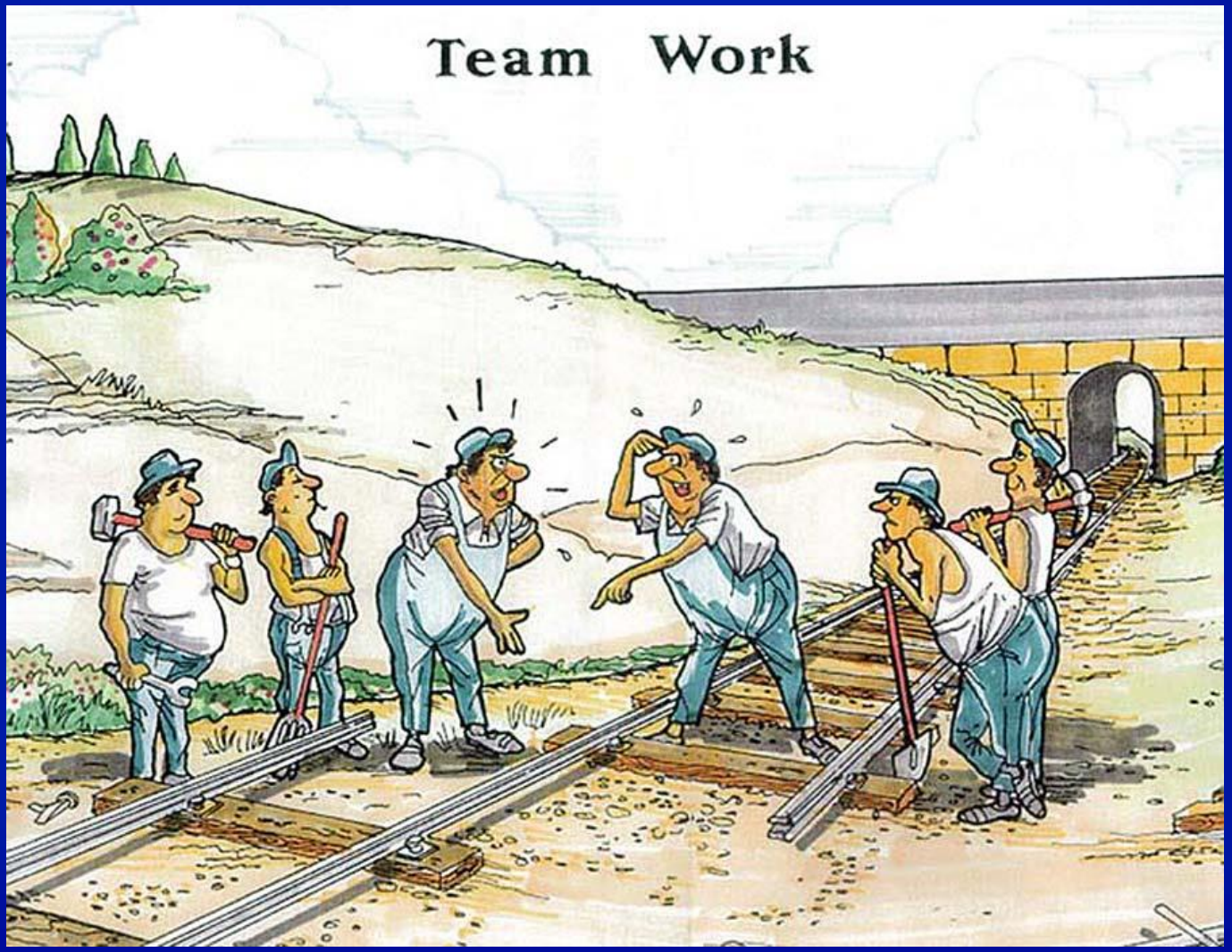
Laparoscopic Gastrojejunostomy



Latest Developments.

- Neoadjuvant regimes
- Locoregional options
- Immunotherapy
- Personalised medicine

"He is fighting like a lion.
He has not lost his heart"


Team Work

Thank You