



Gastric and Pancreatic Cancer: What do you need to know?

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Introduction

- Objectives
- Role of surgery
 - Going for cure
 - Surgery for palliation
- Common problems – when to seek help

Objectives



1. To review the indications for surgery and stenting
2. To review the outcomes of surgery: survival and recurrence
3. To review the short term and long term common complications that CCPs need to be aware of
4. To review the management of complications – When to notify the surgeon?

Pancreatic Cancer – Going for Cure?



- Is surgery indicated at all?
- Does surgery cure anybody?
- Is there any benefit?

Pancreatic Cancer



- ACTUAL 5-Year Survivors:
 - 27% (91 of 332) at MD Anderson¹
 - 18% (62 of 357) at Mayo Clinic²
 - 12% (75 of 618) at MSKCC³
 - 15% (18 of 123) at Toronto⁴

1. Katz et al, Ann Surg Onc, 2009
2. Schnelldorfer et al, Ann Surg, 2008
3. Ferrone et al, J GI Surg, 2008
4. Cleary et al, JACS, 2004

Pancreatic Cancer

- Is it all selection?
- What is the natural history of the disease in patients who are candidates for surgery?

Pancreatic Cancer – Natural History



- George Crile – “moment of truth”
- Abandoned Whipples in favor of palliative bypass
- 28 pts that would be candidates for resection

- Median survival 8 months

Crile, Surg Gynecol Obstet, 1970

Validation of the 6th Edition AJCC Pancreatic Cancer Staging System

Report From the National Cancer Database

TABLE 4
Observed Survival in Patients With Pancreatic Adenocarcinoma, 1992–1998

All patients	No. of patients (%)	Observed survival					Median survival (mo)
		1-y	2-y	3-y	4-y	5-y	
Nonresected patients							
Stage IA	3412 (4.4%)	29.2%	10.5%	6.2%	4.6%	3.8%	6.8
Stage IB	4298 (5.4%)	26.0%	9.4%	5.7%	4.0%	3.4%	6.1
Stage IIA	8486 (10.1%)	25.0%	7.7%	4.1%	2.8%	2.4%	6.2
Stage IIB	6570 (11.8%)	26.9%	7.7%	3.8%	2.6%	2.0%	6.7
Stage III	12,981 (13.0%)	27.0%	7.3%	3.4%	2.4%	1.8%	7.2
Stage IV	64,454 (55.2%)	8.3%	2.3%	1.2%	0.8%	0.6%	2.5
Total	100,201						3.5
Pancreatotomy patients							
Stage IA	1886 (8.8%)	71.3%	50.2%	40.7%	34.7%	31.4%	24.1
Stage IB	2364 (11.0%)	67.3%	45.4%	35.3%	29.6%	27.2%	20.6
Stage IIA	3846 (17.9%)	60.7%	34.9%	23.8%	18.4%	15.7%	15.4
Stage IIB	7828 (36.4%)	52.7%	23.8%	14.4%	10.2%	7.7%	12.7
Stage III	2850 (13.2%)	44.5%	19.3%	11.0%	8.1%	6.8%	10.6
Stage IV	2738 (12.7%)	19.2%	8.4%	5.3%	3.7%	2.8%	4.5
Total	21,512						12.6

* All survival comparisons between stages are significant to $P < .0001$.

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Pancreatic Cancer



- Manitoba Experience(2004-2006)
 - 413 cases pancreatic cancer
 - 124 pts were stage I or II
 - 28 (23%) had surgery
 - 11 (9%) had other treatment
 - 85 (69%) had no treatment

McKay et al, World J Surg Onc, 2011

Pancreatic Cancer



- Of the 85 early stage patients with no treatment:
 - 39% never saw a surgeon
 - Tended to be older
 - BUT did not have more comorbidity

McKay et al, World J Surg Onc, 2011

Pancreatic Cancer

- Survey to evaluate physician attitudes
 - Most (73%) thought surgery was worthwhile
 - Tendency to overestimate mortality
 - Only 41% of family physicians felt surgery could result in cure

McKay et al, World J Surg Onc, 2011

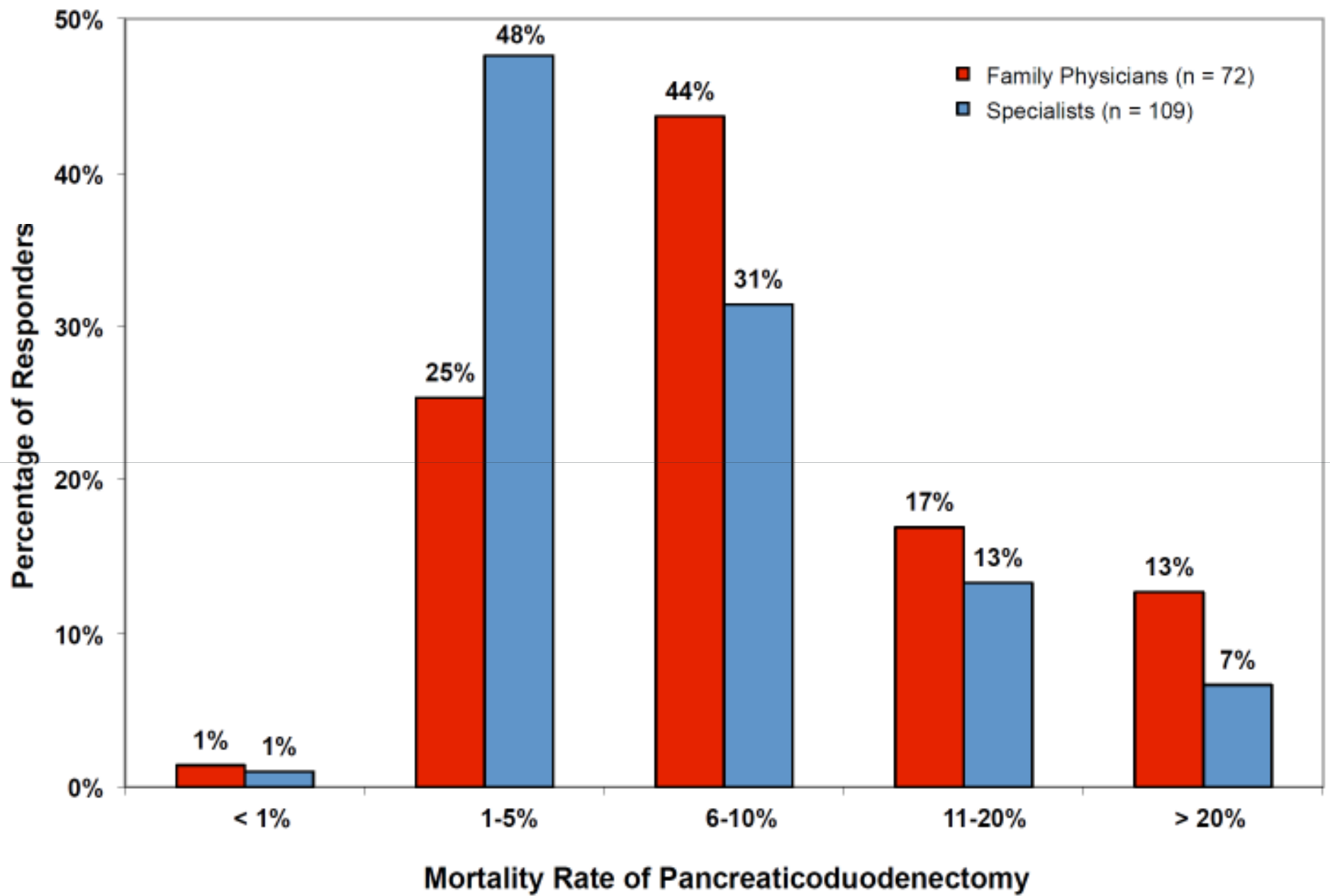
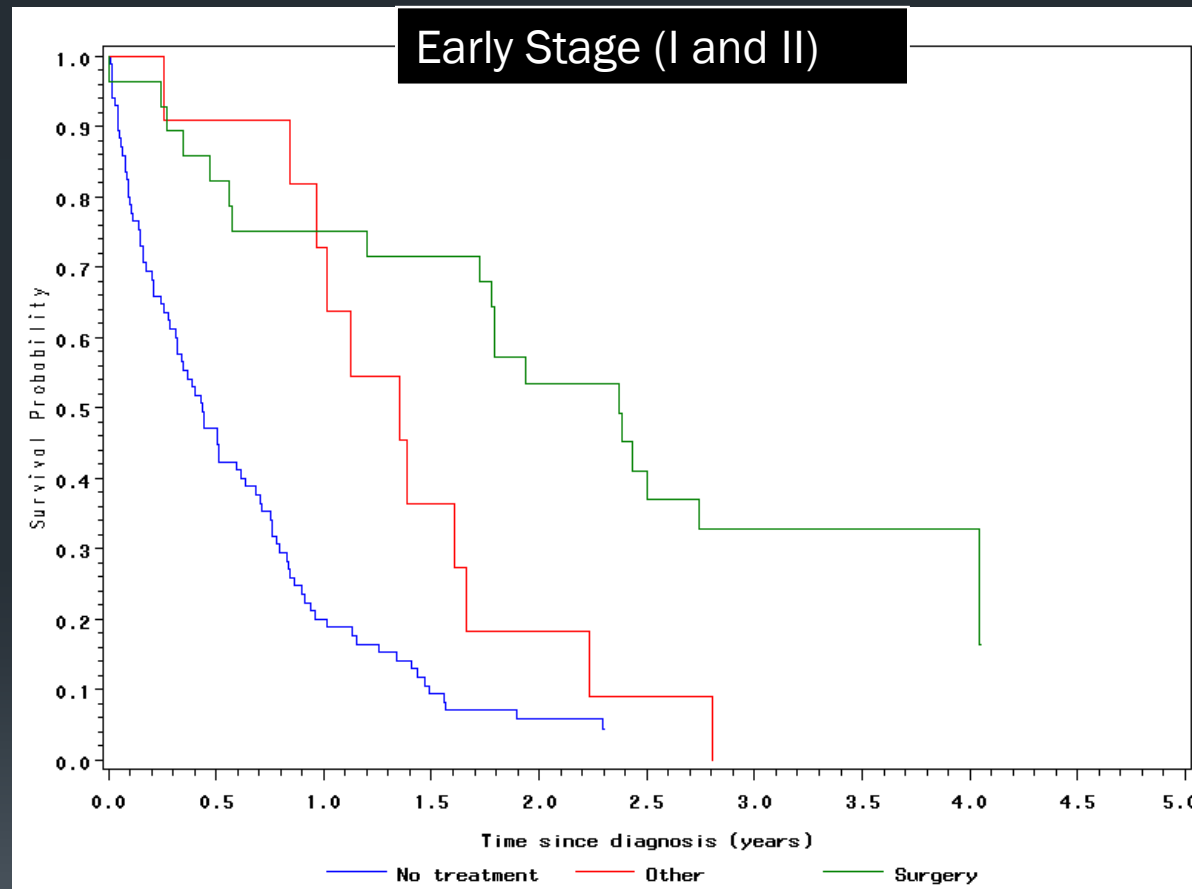


Figure 2 Physician estimated mortality rates associated with the surgical resection of a pancreatic tumor.

Pancreatic Cancer in Manitoba



- 30-day mortality 2.9%
- Median Survival 28 months



Pancreatic Cancer Surgery – Summary

- Surgery rarely cures
- Surgery DOES have benefit
- Major surgery – major risk
- 30-day mortality 2-3%

- Surgery is not for everybody, BUT patients should make that decision

Complications of the Tumor



Obstructive Jaundice



Obstructive Jaundice

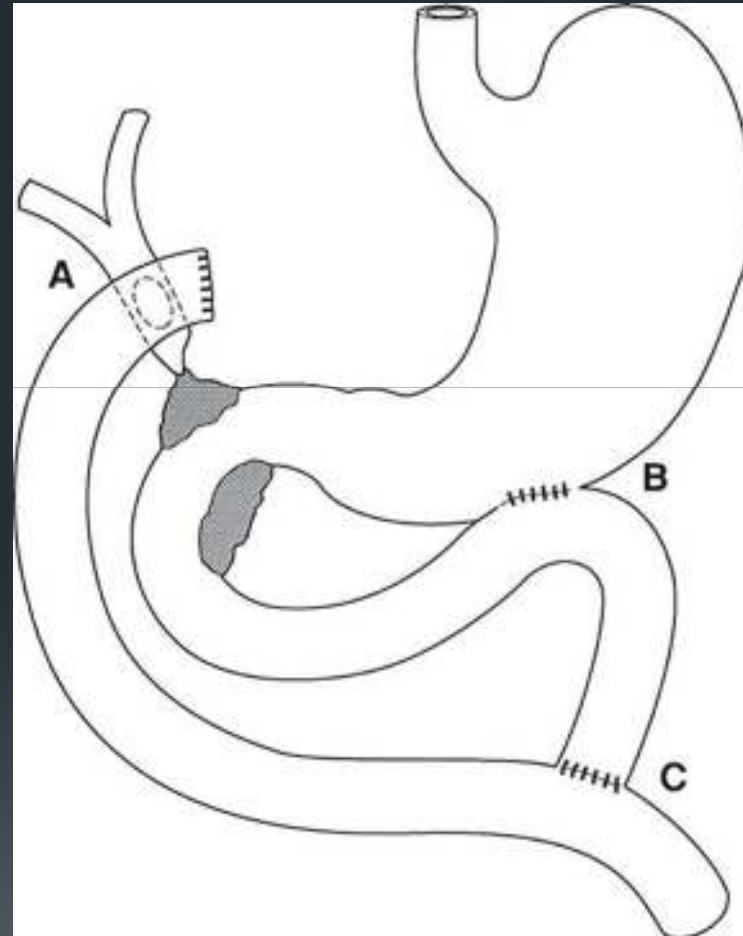
- De novo obstruction in a bile duct that has never been instrumented is RARELY an emergency
 - PAINLESS
 - Cholangitis is surprisingly RARE

Obstructive Jaundice

- On the other hand, in patients with prior instrumentation of the bile duct:
 - Bile duct is colonized heavily with bacteria
 - Stasis/obstruction will quickly lead to cholangitis
- MUST refer back to ERCP endoscopist or surgeon ASAP at first sign of jaundice

Jaundice – Palliation

- Surgery
- Hepaticojejunostomy
- Often done with gastrojejunostomy (Double Bypass)



Jaundice – Palliation

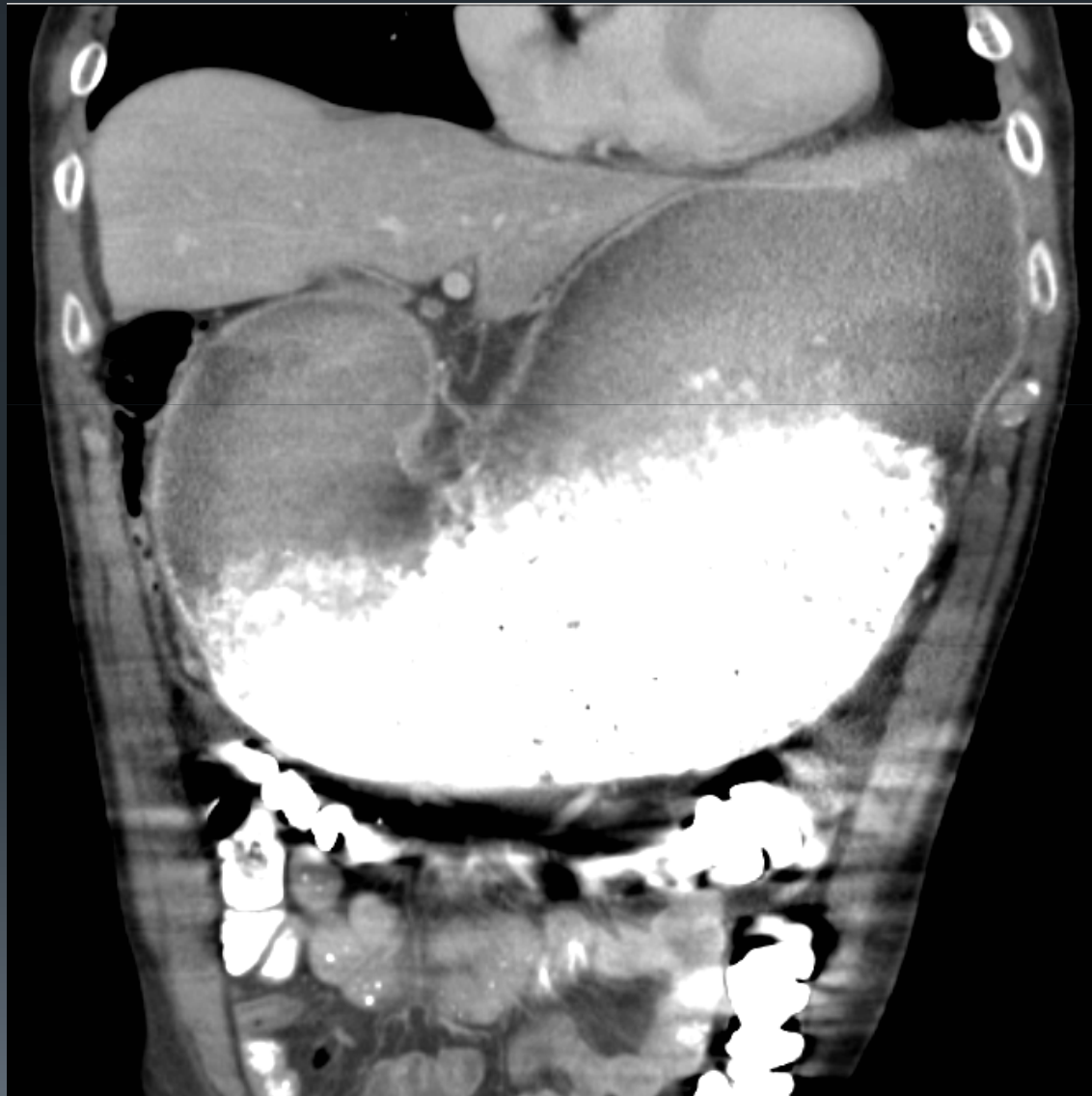
- Plastic stent
- Metallic Stent



Jaundice – Palliation

- Surgery vs. Stenting?
- Unresectable at OR → Surgical
 - Upfront morbidity BUT best long-term results
- Unresectable on imaging → Stenting
 - Plastic median patency 5 mos.
 - Metal much longer
 - Often start with plastic
 - If life-expectancy long enough → change to metallic after 3-4 months

Gastric Outlet Obstruction

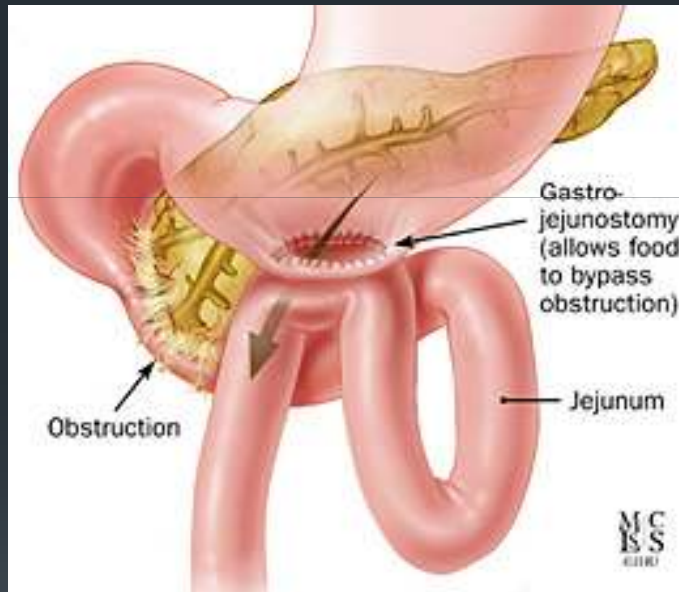


Gastric Outlet Obstruction

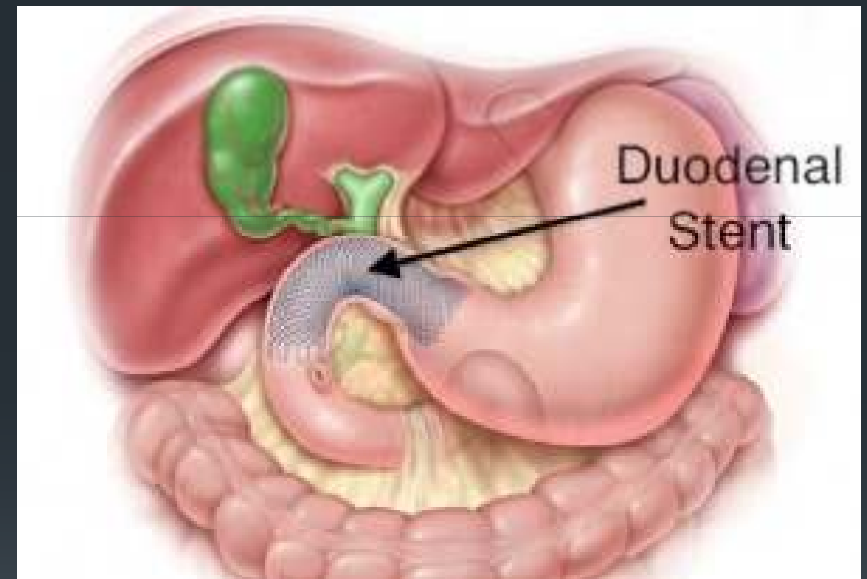


- Dehydration, electrolyte abnormalities may be emergency
- Obstruction not an emergency

Gastric Outlet Obstruction



Vs.

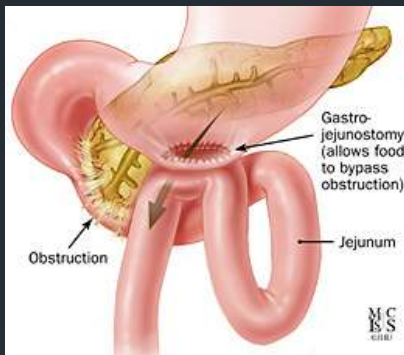


Gastric Outlet Obstruction

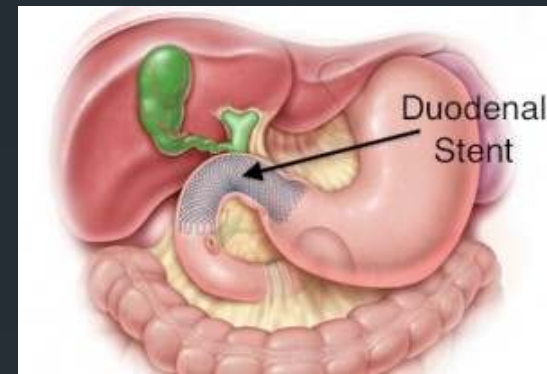


- Both options are often disappointing
 - Longstanding obstruction and autonomic nerve involvement lead to functional disorder
- Surgery has initial morbidity but better patency and function over long-term
- Stent has little morbidity, but tend to get plugged
 - Liquid/soft diet

Gastric Outlet Obstruction



Vs.



- Choice depends on life-expectancy and goals of care
- When these options begin to fail
 - Not really an emergency
 - Really time to talk about comfort care
 - TPN/feeding tubes not great palliation

Palliation – Summary

- Really just comes down to common sense

Palliation – Summary

- Surgical options and endoscopic options
- Choice really depends on functional status/life-expectancy
 - Surgery more durable, but up front morbidity
- Need to be realistic about what we are trying to achieve
- Few emergencies – EXCEPT recurrent jaundice

Complications of the Surgery



Complications of the Surgery

- Pancreatic Leak/Fistula

Table II. Main parameters for POPF grading

<i>Grade</i>	<i>A</i>	<i>B</i>	<i>C</i>
Clinical conditions	Well	Often well	Ill appearing/ bad
Specific treatment*	No	Yes/no	Yes
US/CT (if obtained)	Negative	Negative/ positive	Positive
Persistent drainage (after 3 weeks)†	No	Usually yes	Yes
Reoperation	No	No	Yes
Death related to POPF	No	No	Possibly yes
Signs of infections	No	Yes	Yes
Sepsis	No	No	Yes
Readmission	No	Yes/no	Yes/no

International Study Group on Pancreatic Fistula, Surgery, 2005

Complications of the Surgery



Complications of the Surgery

- Delayed Gastric Emptying
 - 20% to 50%

Table 2 International Study Group of Pancreatic Surgery definition of delayed gastric emptying after pancreatic surgery³

DGE grade	Nasogastric tube required	Unable to tolerate solid oral intake by POD	Vomiting/gastric distension	Use of prokinetics
A	4–7 days or reinsertion > POD 3	7	±	±
B	8–14 days or reinsertion > POD 7	14	+	+
C	>14 days or reinsertion > POD 14	21	+	+

DGE, delayed gastric emptying; POD, postoperative day

Complications of the Surgery



- Delayed Gastric Emptying
 - Common “chronic problem” after Whipple
 - Prokinetics
 - Metoclopramide
 - Domperidone
 - Erythromycin
 - Nutritional support/supplements

Gastric Cancer – Going for Cure

- 5-year survival

Stage IA	71%
Stage IB	57%
Stage IIA	46%
Stage IIB	33%
Stage IIIA	20%
Stage IIIB	14%
Stage IIIC	9%
Stage IV	4%

American Cancer Society, SEER Data 1991 to 2000

Gastric Cancer

- MAGIC Trial (NEJM 2004)
- 5-Yr Survival 23% with surgery alone
- 5-Yr Survival 36% with surgery and periop chemo

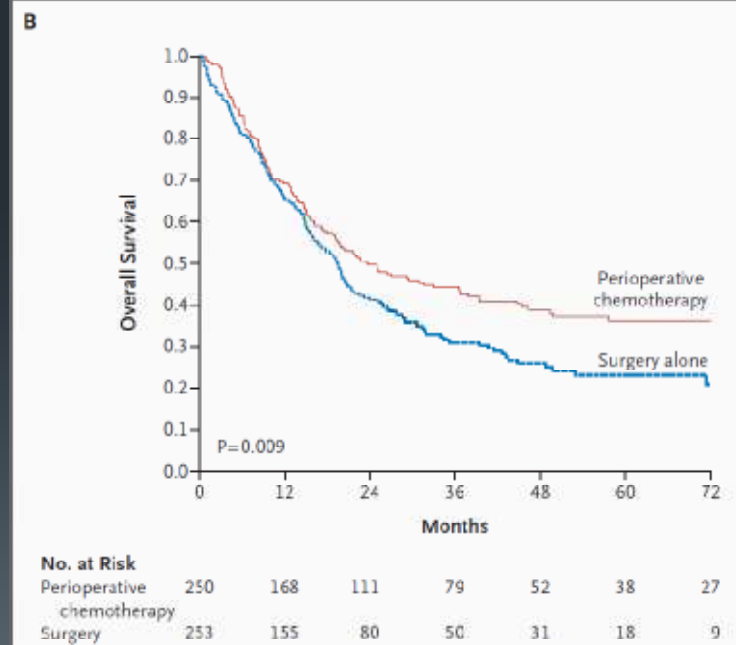
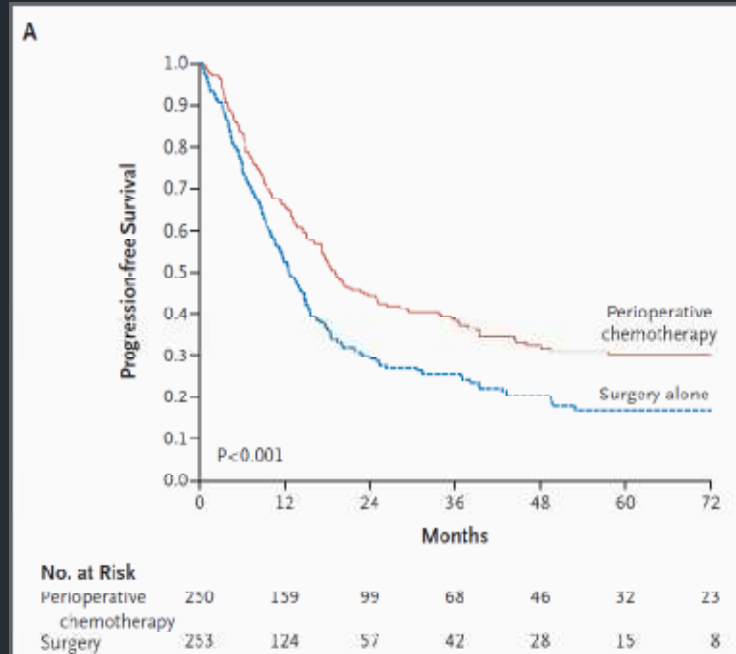


Figure 1. Kaplan–Meier Estimates of Progression-free Survival (Panel A) and Overall Survival (Panel B).

Palliative Gastrectomy

- 285 patients enrolled in Dutch Gastric Cancer Trial found to have metastases at laparotomy

	No. of patients	Morbidity*	Hospital stay (days)†	Mortality*	Survival (months)	
					Median	Mean
All ages						
No resection						
Exploration	78	9 (12)	9 (3–93)	8 (10)		
Gastroenterostomy	51	7 (14)	11 (7–27)	5 (10)		
Total	129	16 (12)	10 (3–93)	13 (10)	5.4	6.0
Resection						
Partial gastrectomy	93	28 (30)	14 (7–154)	12 (13)		
Total gastrectomy	63	31 (49)	17 (11–82)	7 (11)		
Total	156	59 (38)	15 (7–154)	19 (12)	8.1	14.3
<i>P</i> ‡		< 0.001	< 0.001	n.s.	< 0.001	

- Very little survival benefit – is it just selection?

Hartgrink et al, Br J Surg, 2002

Palliative Gastrectomy

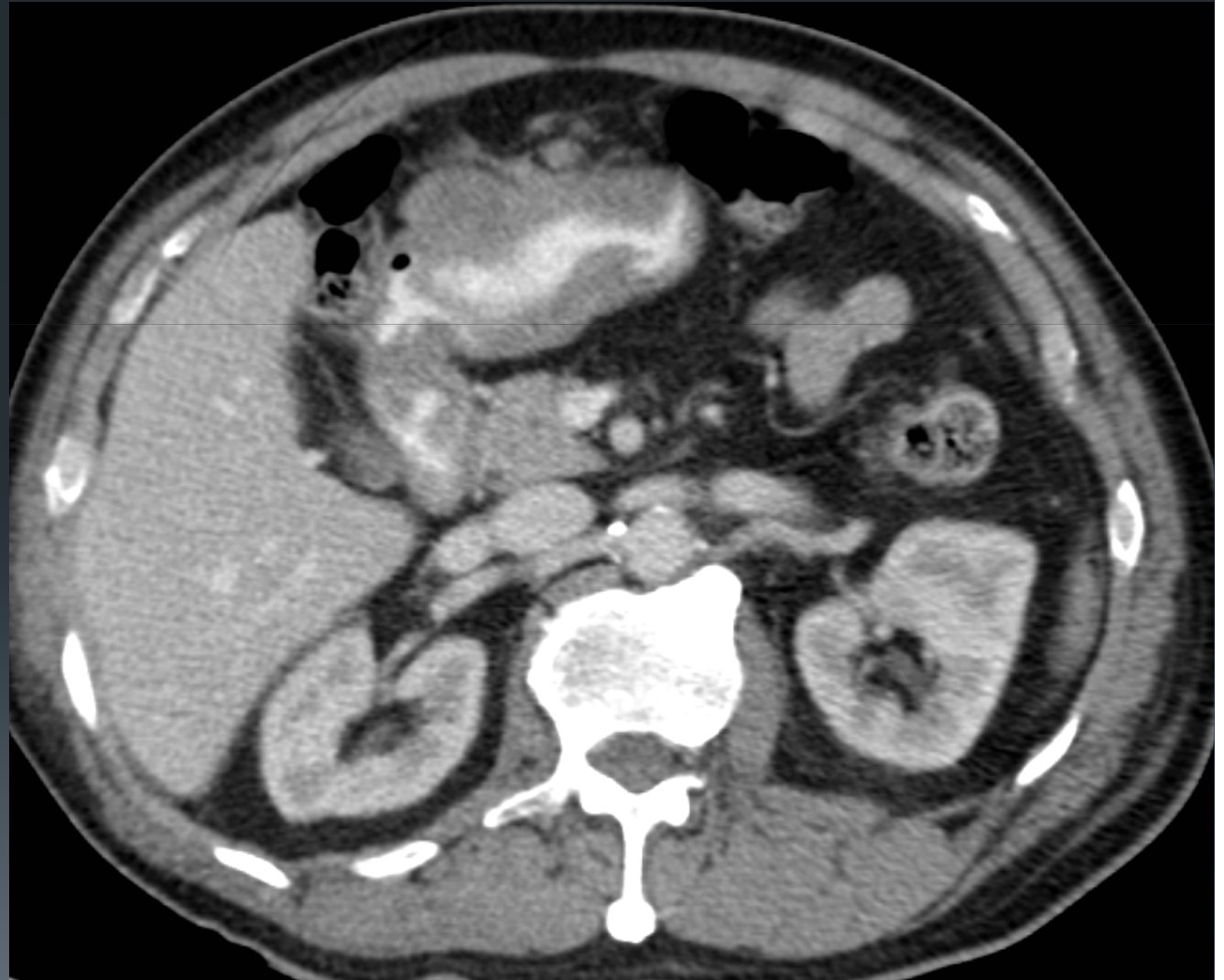
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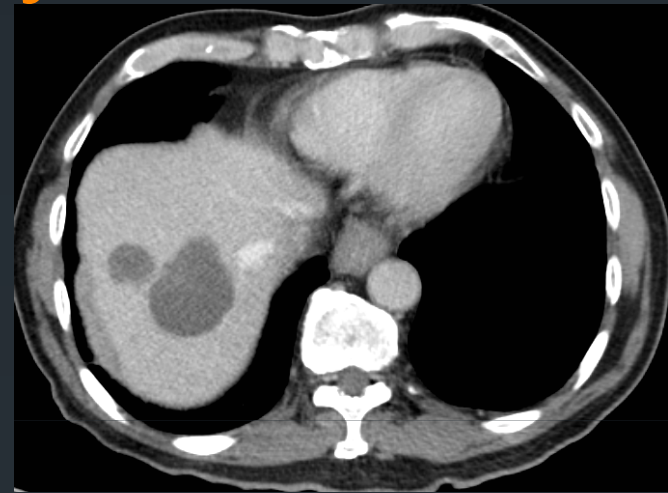
Palliative Gastrectomy

- Oct 31, 2013



Palliative Gastrectomy

- Feb 18, 2014



Obstruction

- Stent
- Palliative Resection
- Gastrojejunostomy

TABLE III. Outcome Data of the Three Treatment Groups of Gastric Cancer

	ES	PR	GJ	<i>P</i> -Value
Clinical success	44/50 (88%)	26/26 (100%)	17/21 (81%)	0.057
Time to free liquids (GOOSS 1), days ^a	0 (0-4)	3 (2-4)	2 (1-9)	<0.001
Time to soft solids (GOOSS 2), days ^a	1 (0-7)	4 (3-11)	4 (3-10)	<0.001
Hospital stay, days ^a	3 (0-28)	9 (3-15)	8 (4-27)	<0.001
Re-admissions	8 (16%)	3 (12%)	4 (19%)	0.770
Complications n (%) ^b	13 (26%)	9 (35%)	2 (10%)	0.134
Re-obstruction	12	6	2	
Abscess	0	2	0	
Bleeding	1	1	0	
Time to complication, days ^a	95 (5-304)	183 (10-908)	40 (18-61)	0.202
Discharge from hospital				0.001
Home	24	24	11	
Other hospital or hospice	22	2	7	
Hospital death	4	0	3	
Biliary obstruction during follow up (%)	4(8)	5 (19)	3 (14)	0.353
Post-procedure chemotherapy (%)	11 (22)	12 (46)	6 (29)	0.078
Symptom-free survival, days ^a	43 (1-453)	223 (25-2,784)	121 (11-656)	<0.001
Survival, days ^a	50 (1-453)	241 (25-2,784)	141 (11-656)	<0.001

Obstruction

- Stent (n = 72)
- GJJ (n = 41)
- Median patency 125 days vs. 282 days

TABLE 3. Late adverse events

	SEMS (n = 72)	GJJ (n = 41)	P value
Late adverse events, no. (%)	32 (44.4)	5 (12.2)	<.001
	Tumor in/ outgrowth (n = 29)	GJJ obstruction (n = 5)	
	Stent migration (n = 2)		
	Perforation (n = 1)		
Reintervention, no. (%)	31 (43.0)	4 (5.5)	<.001

SEMS, Self-expandable metallic stent; GJJ, gastrojejunostomy.

Bleeding

- Rarely massive
- Endoscopic techniques
- Radiation
- angiography
- Surgery?

Palliation for Gastric Cancer



- Summary
 - Use common sense
 - What are we trying to achieve

 - Palliative DISTAL gastrectomy – select cases
 - Palliative TOTAL gastrectomy – not so sure
 - Bypass vs. stent – depends of functional status and LE

 - Doing nothing is hard, but may be the right thing to do



Questions??