PANCREATIC AND PERIAMPULLARY TUMORS: PANCREATICODUODENECTOMY

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HELICAL CT

Accurately predicts resectability in 80 – 90 % cases

Mc Carthy MJ et al., BJS 1998;85:320-325

Much less accurate in identifying potentially resectable small tumours & in considering alternative diagnosis

**ROLE OF EUS: TWO EXTREMES**

Superior to spiral CT, MR, & PET in detection of small tumours

Invasion of vascular structures


**ROLE OF LAPAROSCOPY**

Detect occult metastatic lesions in liver and peritoneal cavity not identified by other imaging modalities

TISSUE DIAGNOSIS

Biopsy only when non-operative treatment is planned

FNAC ?

High false negative Peritoneal seeding

Guidelines for management of patients with pancreatic cancer, periampullary and ampullary carcinomas. Gut 2005

“FAILURE TO OBTAIN HISTOLOGICAL CONFIRMATION OF A SUSPECTED DIAGNOSIS OF MALIGNANCY DOES NOT EXCLUDE PRESENCE OF A TUMOUR AND SHOULD NOT DELAY APPROPRIATE SURGICAL TREATMENT”
PREOPERATIVE BILIARY DRAINAGE

Indications
Definitive surgery to be delayed by > 10 days
  in which case defer subsequent surgery by 3 – 6 weeks
to allow jaundice to resolve
Very high hyperbilirubinemia >20mg%

In preoperative stenting
  Only plastic stent
  No use of self expanding stents
  Should be inserted endoscopically

NO ROLE FOR PREOP EXTERNAL BILIARY DRAINAGE
CBD STENTING AND RESECTION: DO WE WAIT IN BETWEEN?

- Positive intraoperative bile culture
  - Higher morbidity / mortality
- Positive culture in stented group
  - Stent complications & duration of stenting
- Uncomplicated stenting
  - Not associated with increased morbidity / mortality
- Period of >6 weeks
  - Negative cultures in stented group

pp Whipple vs kl. Whipple (RCT)

6 randomized controlled trials

pylorus-pres. Whipple: 229
classical Whipple: 236

• Oncologically comparable
• Comparable complication rates
• No difference in QoL

Wenger et al., Chirurg 1999
Lin et al., Hepatogastroenterology 2005
Bloechle et al., DGCh Forumband 1999
Tran et al., Ann Surg 2004
Seiler et al., Br J Surg 2005
Paquet et al., Chir Gastroenterol 1998
Specific situations:
Have a flexible approach
Sites of haemorrhage

1. Gastroduodenal artery / Splenic artery branches
2. Uncinate branches
3. Inf. pancreaticoduodenal vein
4. Inf. pancreaticoduodenal artery
5. Pancreatic anastomosis
6. Gall bladder fossa
7. Digestive anastomosis

Wente MN, Shrikhande SV et al.
In: Surgery of Pancreatic tumors by Shrikhande SV et al. 2007
Intra-operative haemorrhage

Gain early control of major vessels
- Common Hepatic / Gastroduodenal artery
- Superior mesenteric vein / Portal vein
- Splenic artery / Splenic vein

Secure ligatures
Polypropylene transfixation
Vascular clips
Leave a good stump of the vessel!
Intra-operative haemorrhage
Management of uncinate process

Mesentery of the uncinate
Good retraction
Secure clips
Transfix vessels

If stapler division..
Avoid clips!
Extended lymph node dissection

Randomized controlled trials

Pedrazzoli et al., Ann Surg 1998

Yeo et al., Ann Surg 2002

Nimura et al., Pancreatology 2004

Farnell et al., Surgery 2005

No benefit of extended lymphadenectomy
Tata Memorial Hospital

1992 - 2001

144 Pancreaticoduodenectomies

Pancreaticogastrostomy (dunking)

Pancreatic fistula 16%

Bile leaks 6.3%; Haemorrhage 11.1%

Overall mortality 6.3%

Mortality increased following fistula / haemorrhage


Mortality increased following fistula / haemorrhage
Posterior inner layer

Shrikhande SV et al. Recent Advances in Surgery, Volume 9, Jaypee, India 2004
Anterior inner layer

Shrikhande SV et al. Recent Advances in Surgery, Volume 9, Jaypee, India 2004
Anterior outer layer

Shrikhande SV et al. Recent Advances in Surgery, Volume 9, Jaypee, India 2004
Pancreaticojejunostomy (2003 – 2007)

Pancreatic fistula 4 / 123 (3.2%)

Morbidity & Mortality

Overall mortality 4 / 123 (3.2%)

Fistula associated mortality 0.8%

Haemorrhage 3.2%

Shrikhande SV et al. Langenbecks Arch Surg 2007 (Epub ahead of print)
Comparison of postoperative complications and mortality rates

- Pancreatic fistula
- Haemorrhage
- Bile leaks
- Mortality

Preferred Reconstruction: What does EBM suggest?

Pancreaticojejunostomy versus pancreaticogastrostomy: systematic review and meta-analysis

Moritz N. Wente, M.D., M.Sc.\textsuperscript{a}, Shailesh V. Shrikhande, M.D.\textsuperscript{a,b}, Michael W. Müller, M.D.\textsuperscript{a}, Markus K. Diener, M.D.\textsuperscript{a}, Christoph M. Seiler, M.D., M.Sc.\textsuperscript{a}, Helmut Friess, M.D.\textsuperscript{a}, Markus W. Büchler, M.D.\textsuperscript{a,*}  

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No superiority of any one technique

Surgical Technique

- Fine 4-0, 5-0, 6-0 PDS sutures
- Gentle handling of the pancreatic remnant
- Absence of tension
- No distal obstruction
- Duct to mucosa approximation
- Good blood supply

Surgeon \(\rightarrow\) Most Important Prognostic Factor

Changing trends in Operative volumes for Pancreaticoduodenectomy at TMH

Total cases
Average case/year

16 cases / yr   28 cases / yr
Pancreatic resection for M1 cancer

October 2001 until July 2005

316 pancreatic cancer R0/R1 resections

- 287 M0 disease
- 29 M1 disease (liver, peritoneum, distant lymph node)

Shrikhande SV et al., Ann Surg Oncol 2007
Pancreatic resection for M1 cancer

1-year survival rate: 61.5%
Median survival time: 13.8 months

Shrikhande SV et al., Ann Surg Oncol 2007
Laparoscopic Whipple Resection: What does EBM suggest?


Pancreaticoduodenectomy, it seems that laparoscopy offers no advantage over conventional pancreaticoduodenectomy. This is perhaps because the morbidity of the procedure does not lie within the wound, but rather, it lies in what is done inside the abdomen. It is a procedure that should be performed only by expert laparoscopists who should appropriately select patients and tumors. We have

High volume centers have to take a proactive role
Feasibility should not be confused with benefit