Pancreas Cancer and Jaundice

Pancreatic Cancer

Gallbladder
Common duct
Pancreatic duct
PANCREAS
CANCER

Bile duct
Duodenum
Superior mesenteric artery

The jaundiced eye is one of the symptoms of Pancreatic Cancer
Mass in head of the pancreas
Case for Biliary Drainage

• Relief of jaundice and obstructive symptoms e.g pruritus
• Improved appetite and sense of well being
• Improved immunity, coagulopathy, renal and cardiac function
• Reduces risk of chemotoxicity in cholestatic liver disease
Options for Biliary Drainage-Surgical and Percutaneous

- **Surgical bypass procedures**
  - *Halsted* -cholecystogastrostomy.
  - *Mortality ~29 % in 1980*
  - *Now comparable to endoscopic therapy with plastic stents*

- **Percutaneous drainage**
  - *External drains*
  - *Percutaneous SEMS placement*
Options for Biliary Drainage-Endoscopic

- **ERCP**
  - *ERCP with plastic stenting*
  - *ERCP with metal stenting*

- **EUS**
  - *Rendevoux*
  - *Choledochoduodenostomy*
  - *Hepatico-gastrostomy*
Pancreaticobiliary Anatomy
Normal ERCP
Double Duct Sign
Pancreatic Carcinoma
Plastic stents for Biliary Drainage
Types of self expanding metal stents (SEMS)

• Foreshortening (Wallstent®, Wallflex, Boston Sci)
  – Stainless steel
  – 30% foreshortening

• Non-foreshortening (Flexus, Zilver®, Olympus X-Suit)
  – Stainless steel or nitinol
  – Larger interstices

• Coated SEMS (Wallstent® with Peralume®, Viabil)
  – Partially covered
  – Fully Covered Stents
    • Viabil Gore stent
    • Wallflex with Platinol (nitinol and platinum)
Preoperative Biliary Drainage for CA of the head of the pancreas

- 202 with pancreas CA and jaundice randomized to preoperative drainage and surgery vs. surgery alone
- Surgery alone group were operated within 1 week, pre-op drainage was for 4-6 wks prior to surgery
- 25% failure rate with first ERCP, 94% were drained with > 1 ERCP, 46% complication rate with ERCP

Van der Gaag NEJM Jan 2010
Preoperative Biliary Drainage for CA of the head of the pancreas

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**Figure 2. Proportion of Patients with Complications.**

The primary outcome — the rate of serious complications within 120 days after randomization — occurred in 37 patients (39%) who underwent early surgery alone and 75 patients (74%) who underwent preoperative biliary drainage (PBD) followed by surgery (relative risk in the early-surgery group 0.54; 95% confidence interval [CI], 0.41 to 0.71; P<0.001).
Should all patients with obstruction from pancreatic CA undergo preoperative drainage?

- NEJM study High complications? ES
- Severely jaundiced patients excluded
- Patients with cholangitis and those receiving neoadjuvant therapy may benefit with stenting
- Those with modest bilirubin elevation and early surgery planned can forgo stenting
- ? No data with SEMS
Fully Covered Metal Stents

- Fully covered CSEMS with Fins
Covered (CSEMS) vs. Uncovered Metal Stents (SEMS)

- SEMS are not removable and usually occlude from tumor ingrowth
- CSEMS have much less tumor ingrowth (unless membrane degrades). Occlusion occurs as a result of tumor overgrowth, biliary sludge and food impaction
- Potential disadvantages of CSEMS: cannot use in hilum, stent migration and cholecystitis
Wallflex Biliary Stent
Viabil Stent Placement
Prospective study on EUS guided biliary drainage in patients with malignant distal bile duct obstruction after failed ERCP.

Kashab et al. Endoscopy 2016
Prospective study on EUS guided biliary drainage in patients with malignant distal bile duct obstruction after failed ERCP. Kashab et al. Endoscopy 2016

- EUS guided drainage in 96 patients from 12 centers with CBD obstruction
- Successful stent placement in 95.8%
- Mean procedure time 40 mins
- Patency rate 6 months 95%, 1 yr 86 %
- 10 adverse events (10.5%)
  - Pneumoperitoneum, sheared wire, bleeding, bile leak, cholangitis and perforation
Biliary Drainage in Pancreatic Cancer

- Palliation
- Preoperative Drainage
  - For pts undergoing neoadjuvant Rx
  - Patients with cholangitis
  - When surgery is delayed
- SEMS preferred to plastic
- Covered or Uncovered stents
- EUS guided Drainage