

Endoscopic Management of Biliary Strictures

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Malignant Biliary Strictures

- Etiologies:
 - Pancreatic carcinoma
 - Cholangiocarcinoma
 - Ampullary carcinoma
 - Gallbladder cancer
 - Metastatic disease

Benign Biliary Strictures

- Etiologies

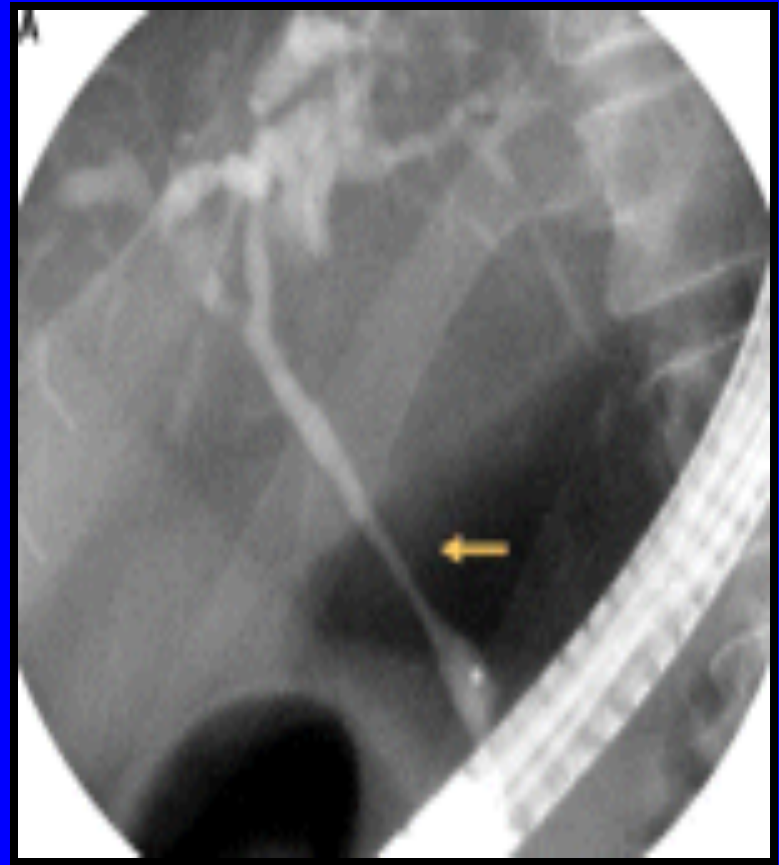
- Chronic pancreatitis

- Autoimmune cholangiopathy

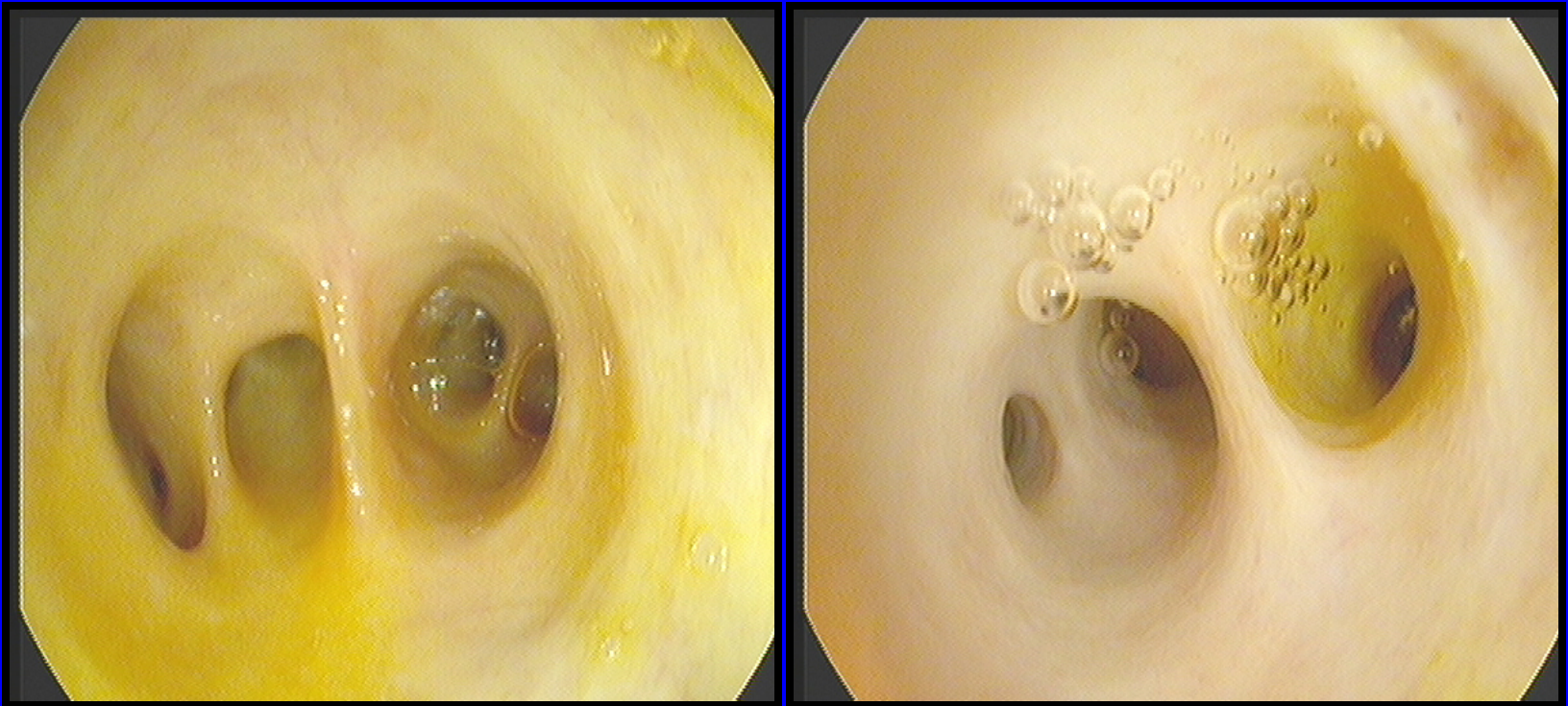
- Post-operative

- Primary sclerosing cholangitis (PSC)

Cholangiogram



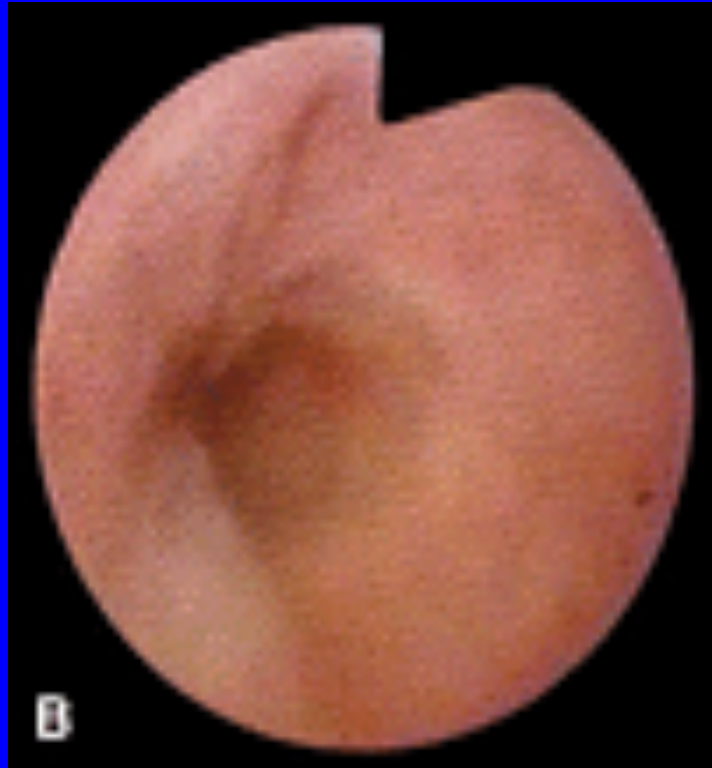
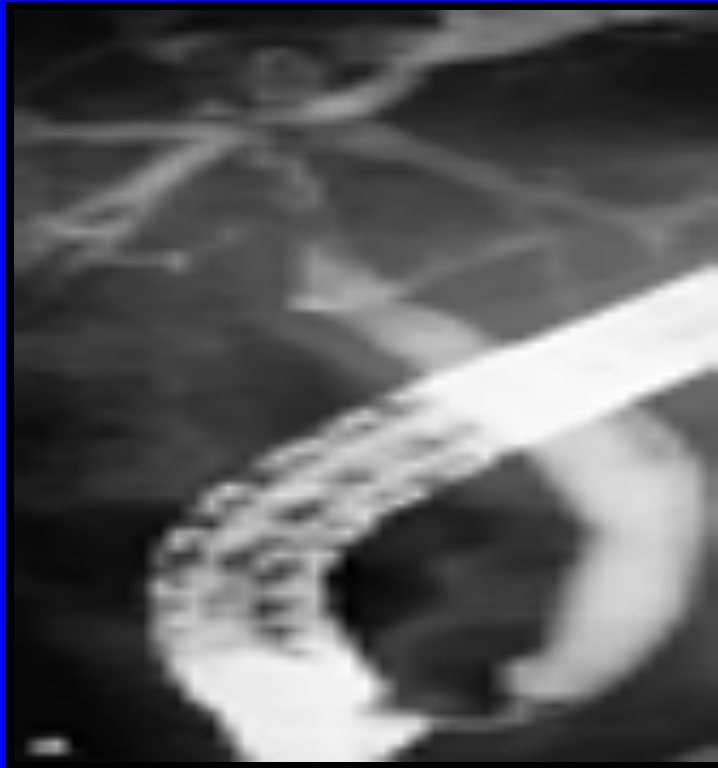
Cholangioscopy



Malignant Stricture



Benign Stricture



Diagnostic accuracy of conventional and cholangioscopy-guided sampling of indeterminate biliary lesions at the time of ERCP: a prospective, long-term follow-up study

Peter V. Draganov, MD,¹ Shailendra Chauhan, MD,¹ Mihir S. Wagh, MD,¹ Anand R. Gupte, MD,¹ Tong Lin, BS,² Wei Hou, PhD,³ Chris E. Forsmark, MD¹

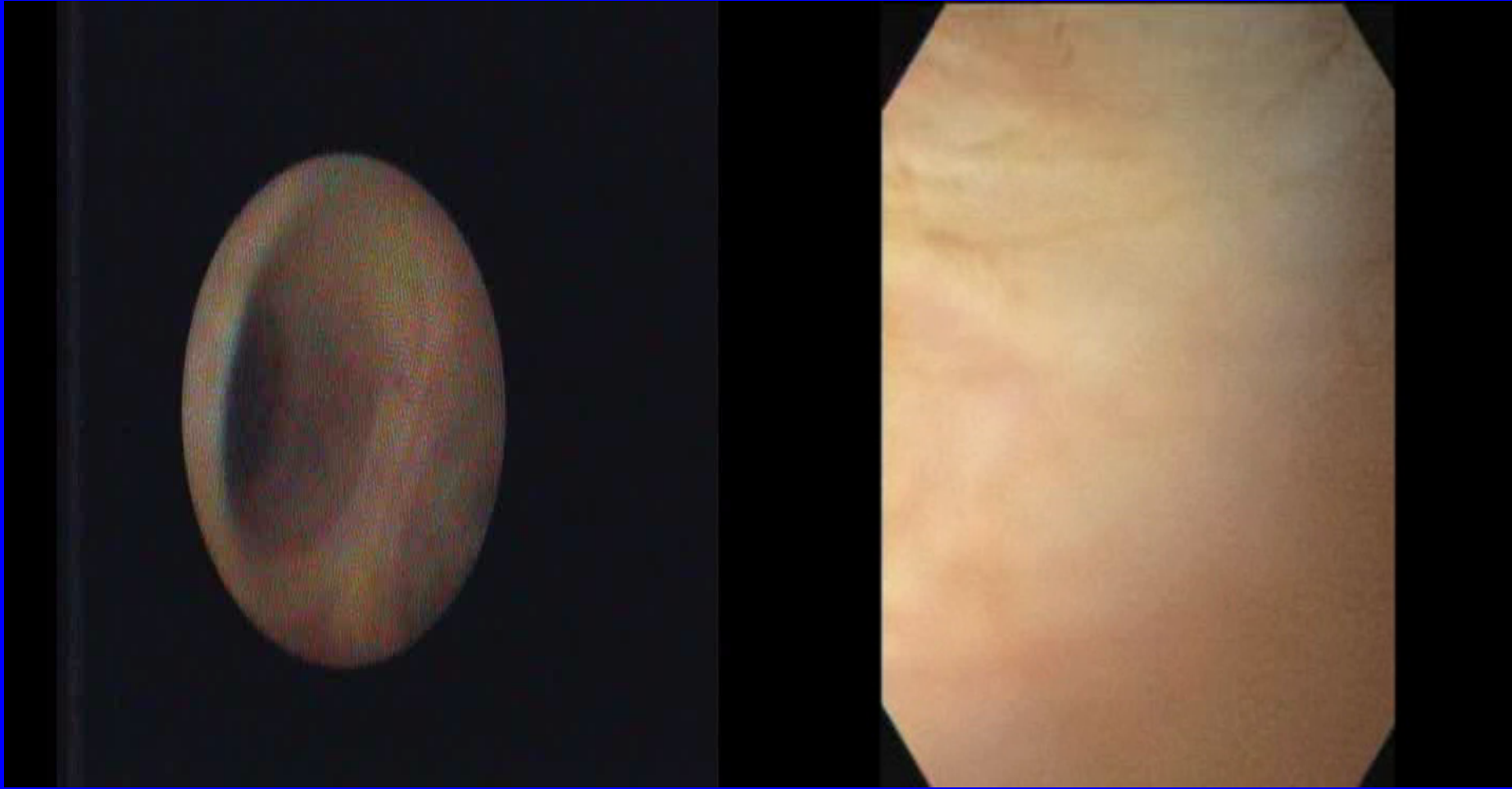
Gainesville, Florida, USA

- 26 patients with indeterminate biliary strictures

	Sensitivity	Specificity	NPV
Cytology brush	5.8%	100%	36%
Standard forceps biopsy	29.4%	100%	43%
Cholangioscopic biopsy	76.5%	100%	70%

Draganov PV, et. Gastrointest Endosc 2012

Fiber-optic vs Digital Cholangioscopy



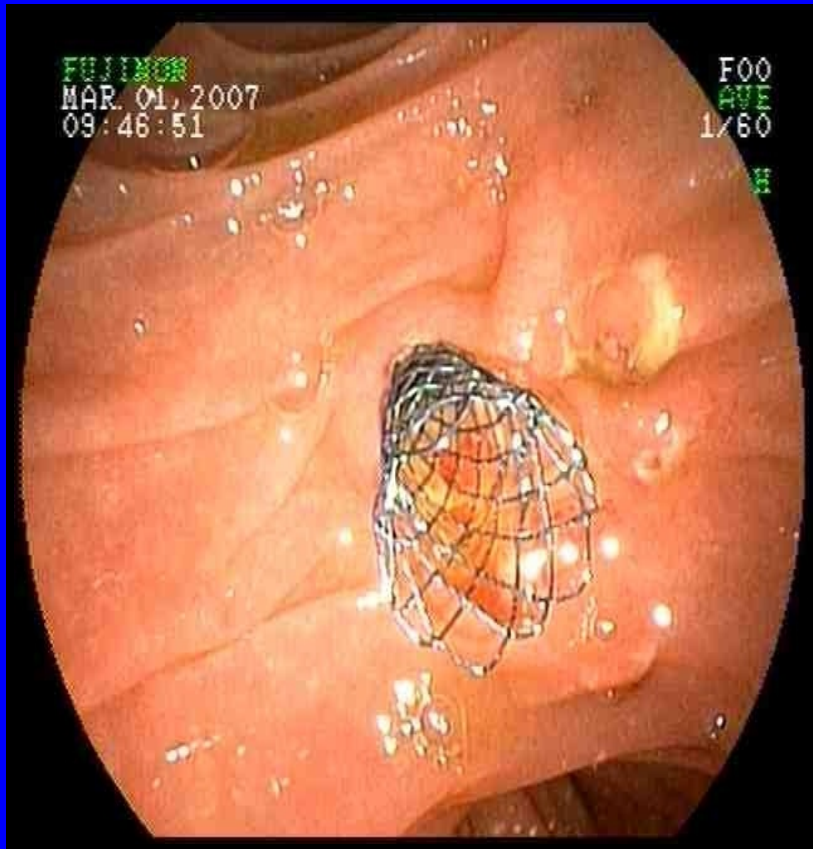
Pancreatic Adenocarcinoma

- The fourth leading cause of cancer-related death in the U.S.
- 30,000 deaths/year
- 15% are candidates for surgery
- Five-year survival following Whipple:
 - Node-negative: 25%
 - Node-positive: 10%

Palliation of Malignant Biliary Strictures

- Surgical bypass
- PTC
- Biliary stenting
 - Plastic
 - Metal

Metal vs. Plastic Stents



Covered metal versus plastic stents for malignant common bile duct stenosis: a prospective, randomized, controlled trial

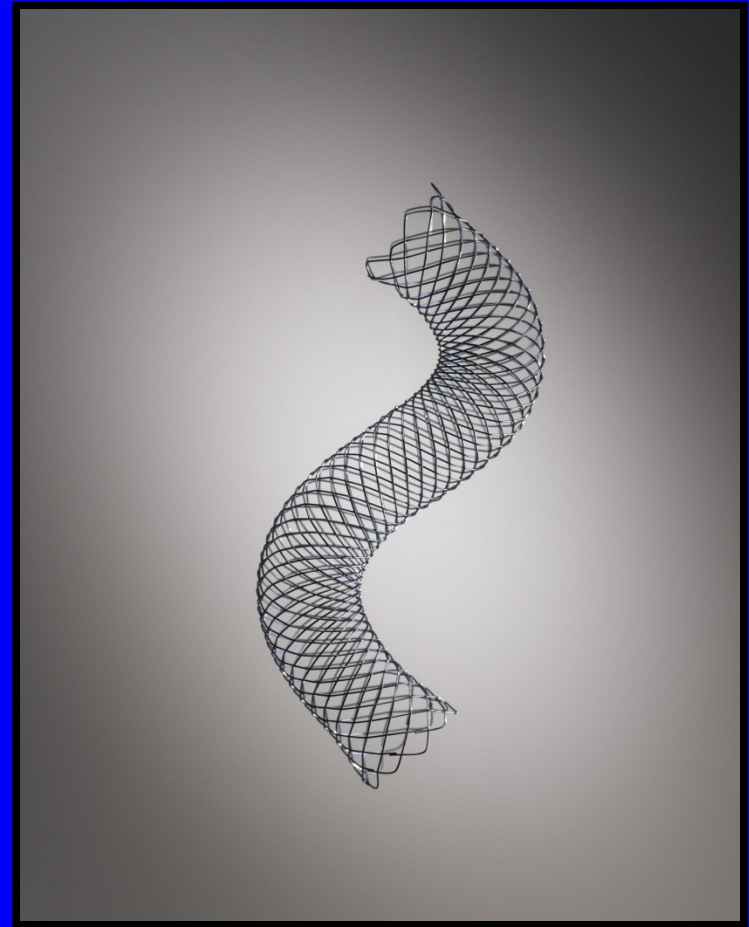
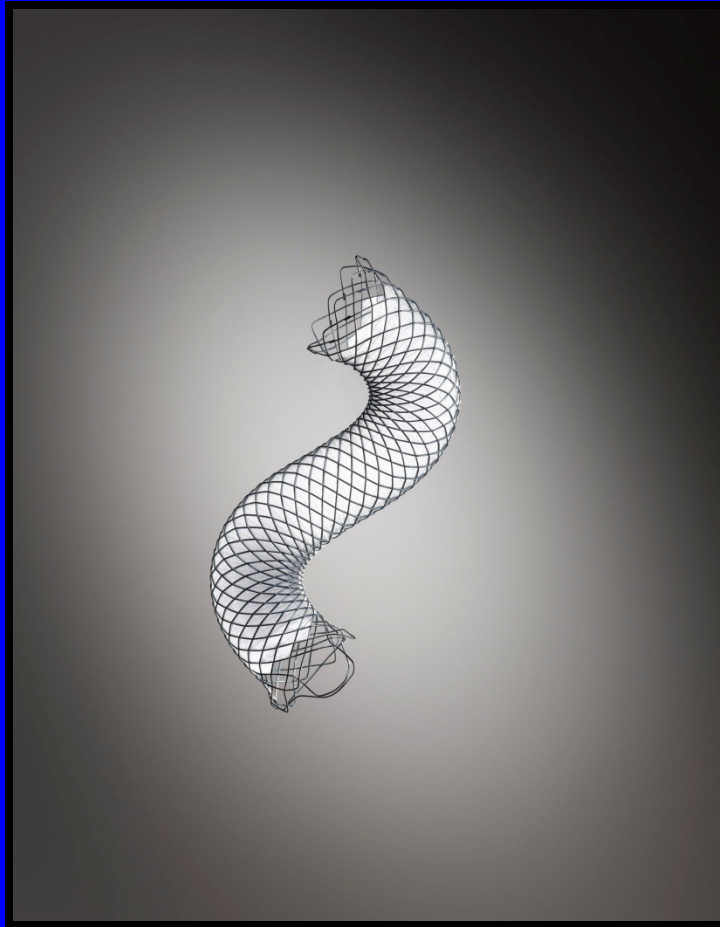
Claes Soderlund, MD, PhD, Stefan Linder, MD, PhD

Stockholm, Sweden

- 100 patients with malignant biliary strictures
- 51 plastic stents 49 covered Wallstents
- Stent failure at 1 month: 0 vs. 7
- Stent failure at 4 months: 6 vs. 14
- Stent failure at 10 months: 9 vs. 22
- Metal stents more cost-effective in patients with median survival >4.5 months

Soderlund C, et al. Gastrointest Endosc 2006

Covered vs. Uncovered

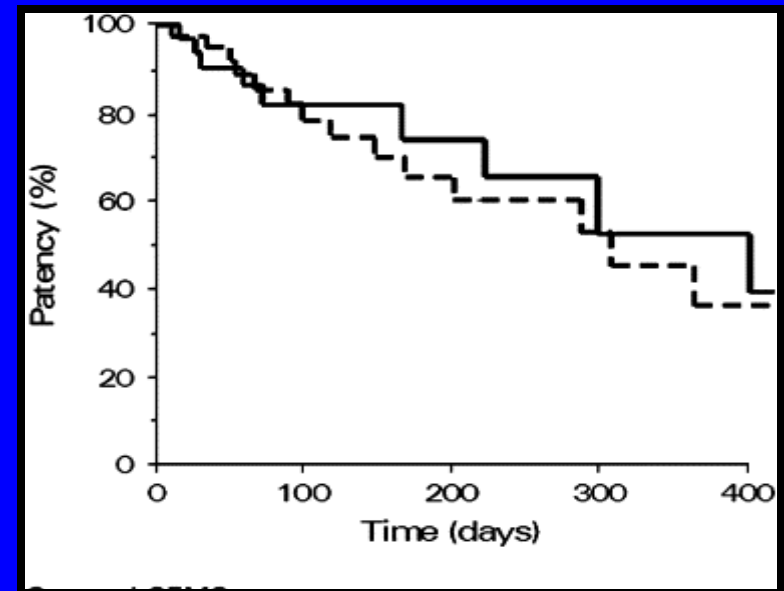


A comparison of covered and uncovered Wallstents for the management of distal malignant biliary obstruction

Won Jae Yoon, MD, Jun Kyu Lee, MD, Kwang Hyuck Lee, MD, Woo Jin Lee, MD, Ji Kon Ryu, MD, Yong-Tae Kim, MD, Yong Bum Yoon, MD

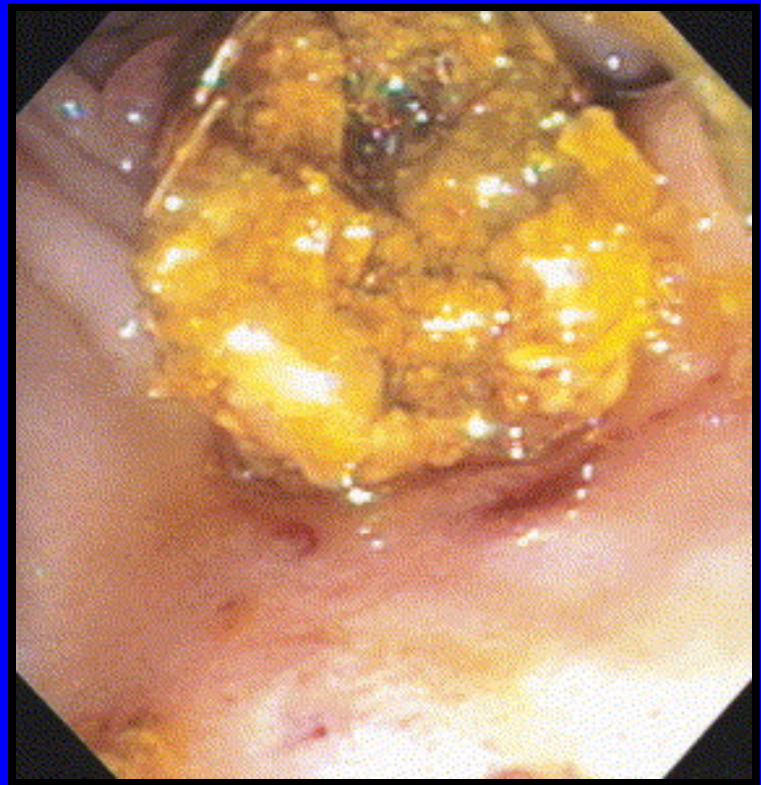
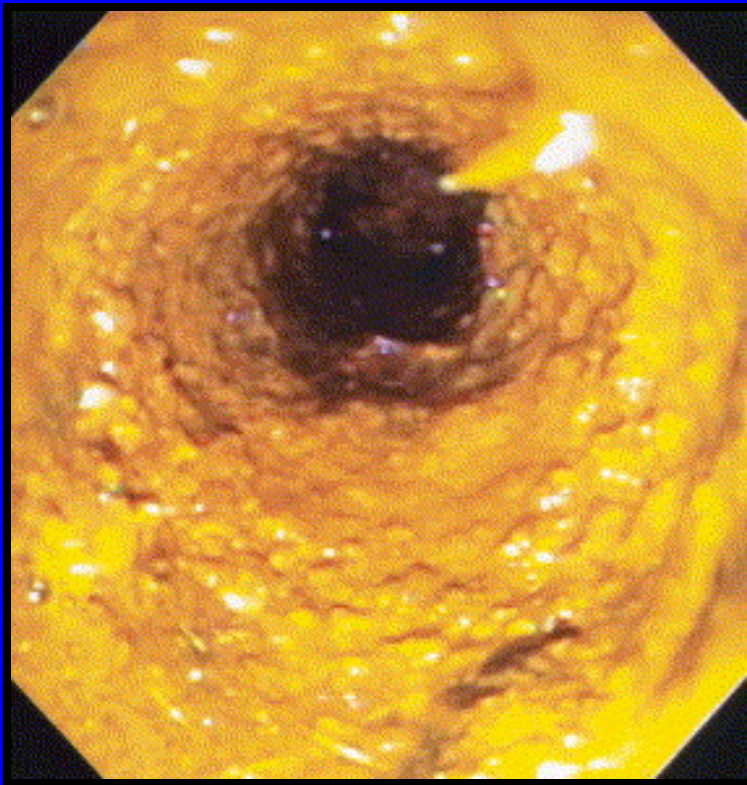
Seoul, Korea

- Retrospective study: 77
- Covered wallstents: 36
- Uncovered wallstents: 41
- Cholecystitis: 1 (covered)
- Stent migration:
 - Covered: 3
 - Uncovered: 1



Yoon WJ, et al. Gastrointest Endosc 2006

Covered Stent Occlusion



Use of Expandable Metallic Biliary Stents in Resectable Pancreatic Cancer

Sanjeev M. Wasan, M.D.,¹ William A. Ross, M.D., M.B.A.,¹ Gregg A. Staerke, M.D.,²
and Jeffrey H. Lee, M.D.¹

¹Departments of Gastrointestinal Medicine and Nutrition; and ²Department of Pathology, MD Anderson Cancer Center, Houston, Texas

- 55 patients with borderline resectable pancreatic CA
 - Metal stent: 13
 - Plastic stent: 42
- Pre-op chemoradiation given to most patients
- Stent occlusion while waiting for surgery
 - Metal group: 2/13 (15%)
 - Plastic group: 39/42 (93%)
- 38% in plastic group required 3 or more ERCPs

Hilar Strictures

- Bilateral vs. unilateral
- Metal vs. plastic
- Preoperative staging and procedural planning
- No injection of contrast into undrained ducts



Benign Biliary Strictures

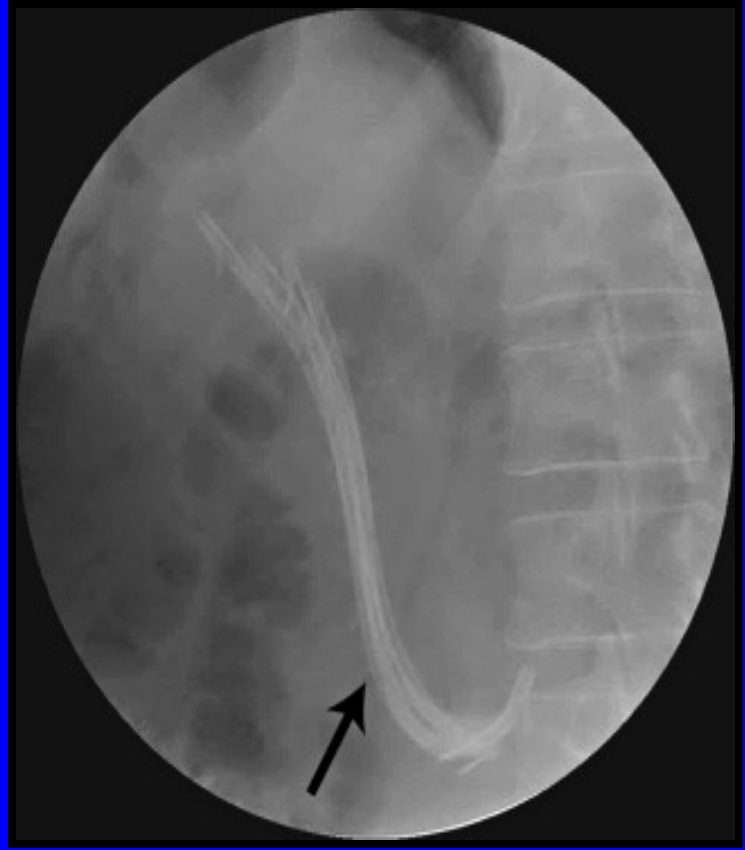
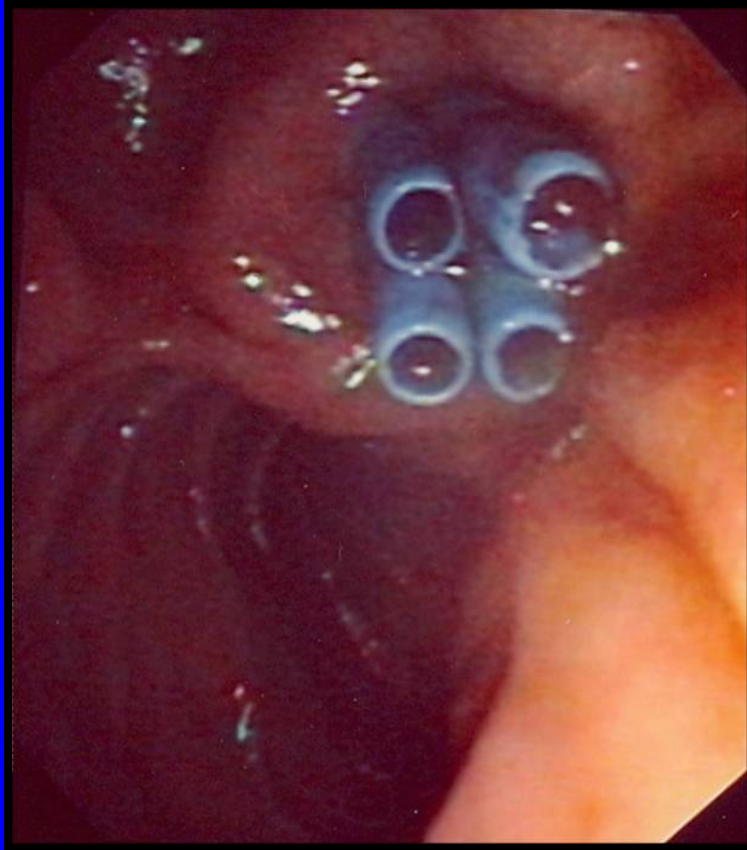
Long-term results of endoscopic management of postoperative bile duct strictures with increasing numbers of stents

Guido Costamagna, MD, FACP, Monica Pandolfi, MD, Massimiliano Mutignani, MD, Cristiano Spada, MD, Vincenzo Perri, MD

Rome, Italy

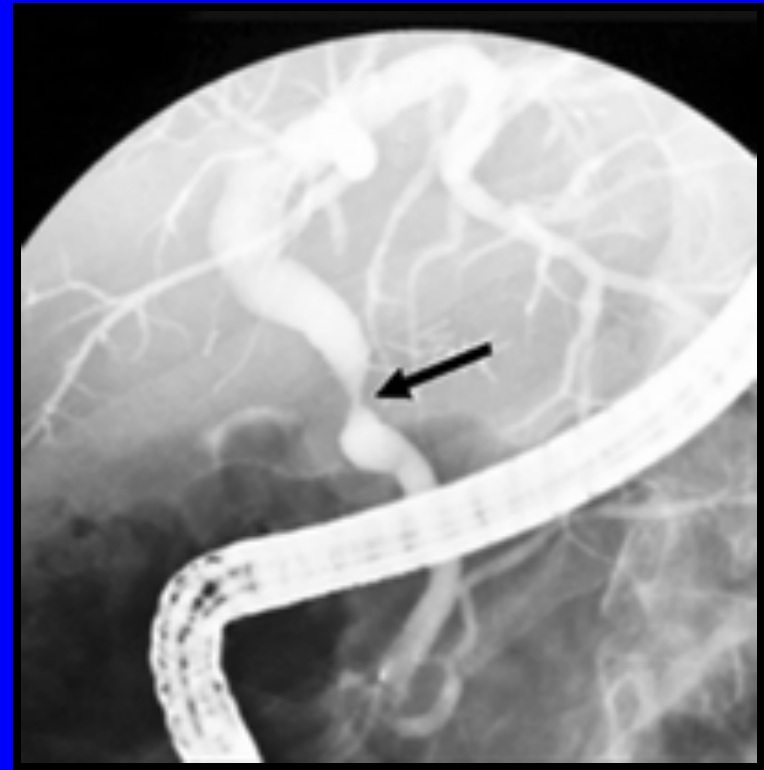
- 45 patients with post-operative biliary strictures
- All underwent balloon dilations and placement of maximal number of stents every 3 months
- Mean number of stents: 3.2
- Mean duration of treatment: 12.1 months
- Success rate: 89% (40/45)
- Complications: cholangitis (3) pancreatitis (1)

Maximal Stent Placement

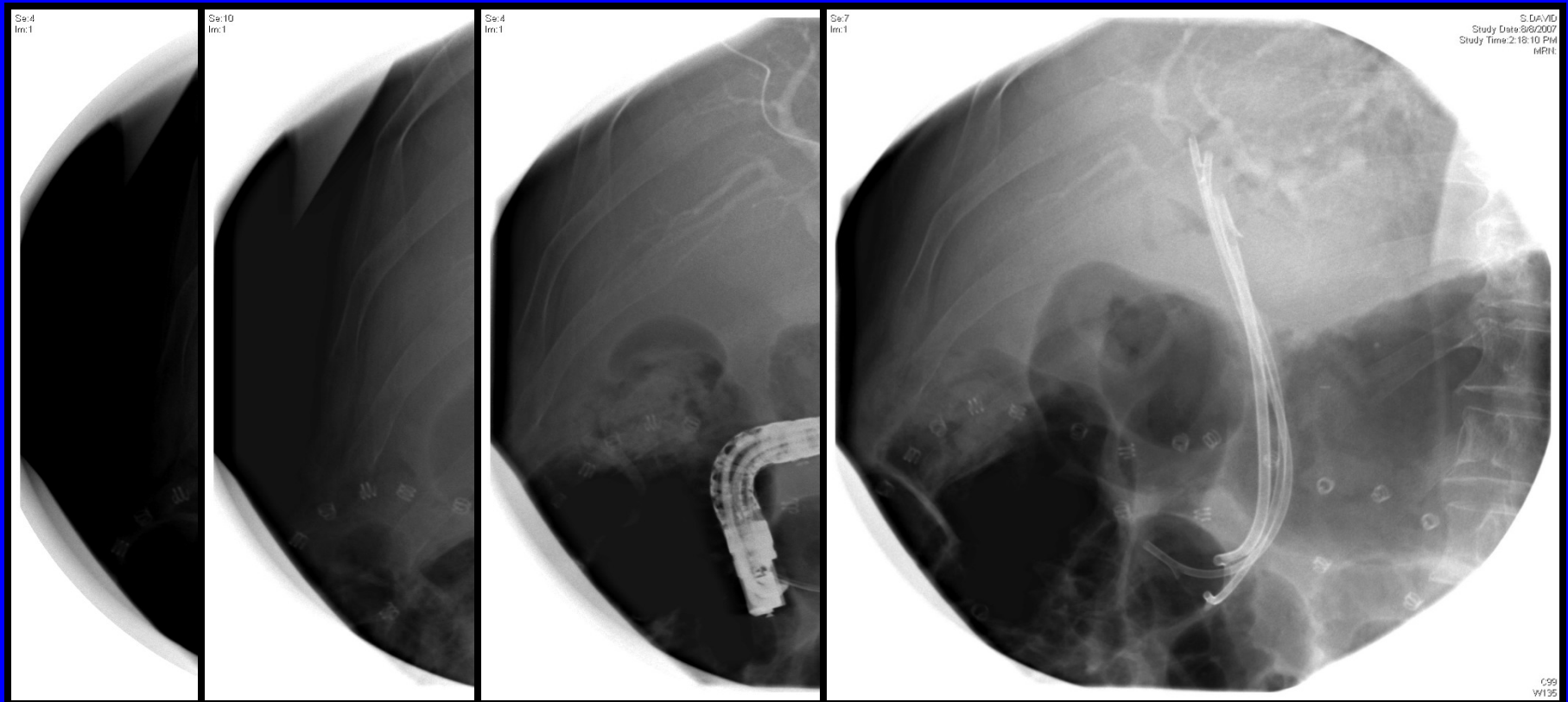


Post-Transplant Biliary Strictures

- Most common biliary complication after LT
- Incidence: up to 25%
- **Anastomotic and non-anastomotic** strictures
- Primary management: endoscopic therapy



Anastomotic Biliary Strictures



Temporary placement of covered self-expandable metal stents in benign biliary strictures: a new paradigm? (with video)

Michel Kahaleh, MD, FASGE, Brian Behm, MD, Bridger W. Clarke, MD, Andrew Brock, MD, Vanessa M. Shami, MD, Sarah A. De La Rue, PhD, Vinay Sundaram, MD, Jeffrey Tokar, MD, Reid B. Adams, MD, Paul Yeaton, MD

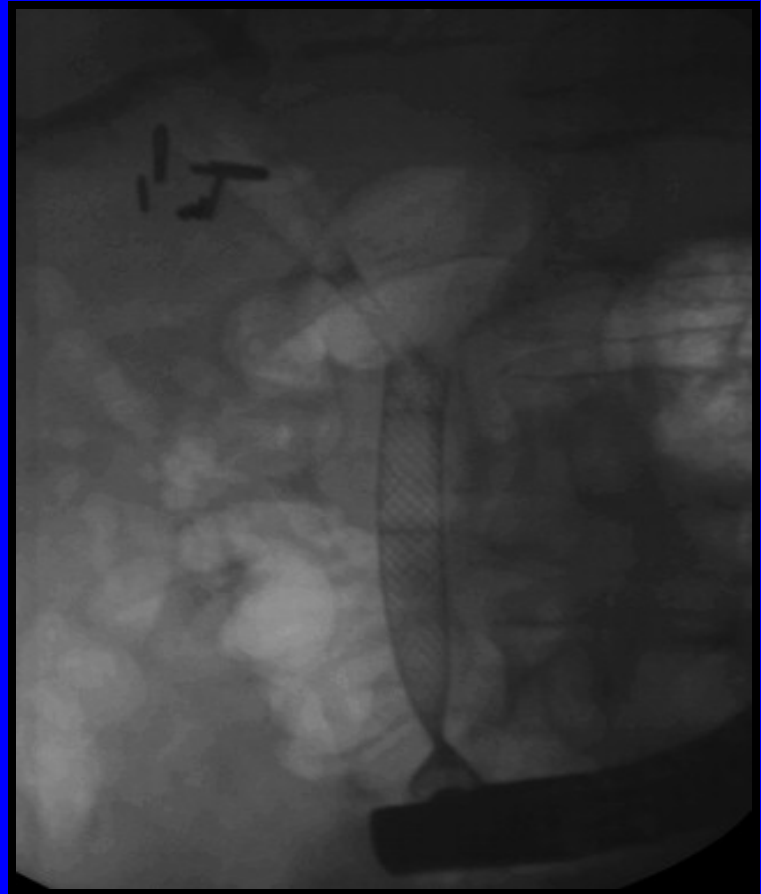
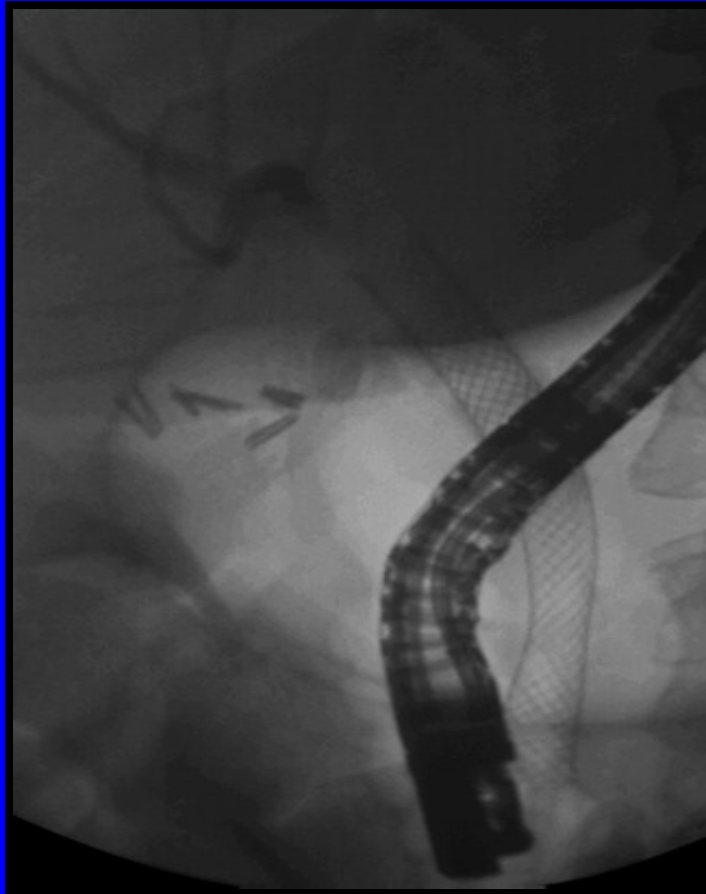
Charlottesville, Virginia, USA

- 65 benign biliary strictures
- Stents removed after 4 months
- Stricture resolution in 59/65 (90%)
- Stent migration: 5/65 (8%)

Kahaleh M, et al. Gastrointest Endosc 2008



Covered Metal Stent Removal



Covered Metal Stent Removal



Fully Covered Metal Stents

Advantages

- Superior patency
- Maximal dilation during first ERCP
- Reduce number of procedures

Disadvantages

- Migration
- Cholecystitis
- Expense

Multiple plastic stents versus covered metal stent for treatment of anastomotic biliary strictures after liver transplantation: a prospective, randomized, multicenter trial

Andrea Oliver Tal, MD,¹ Fabian Finkelmeier, MD,¹ Natalie Filmann,³ Leena Kylänpää, MD, PhD,⁵ Marianne Udd, MD, PhD,⁵ Ilaria Parzanese, MD,⁴ Paolo Cantù, MD, PhD,⁴ Alexander Dechéne, MD,⁶ Volker Pennedorf, MD,⁶ Andreas Schnitzbauer, MD, Professor,² Mireen Friedrich-Rust, MD, Professor,¹ Stefan Zeuzem, MD, Professor,¹ Jörg G. Albert, MD, Professor⁷

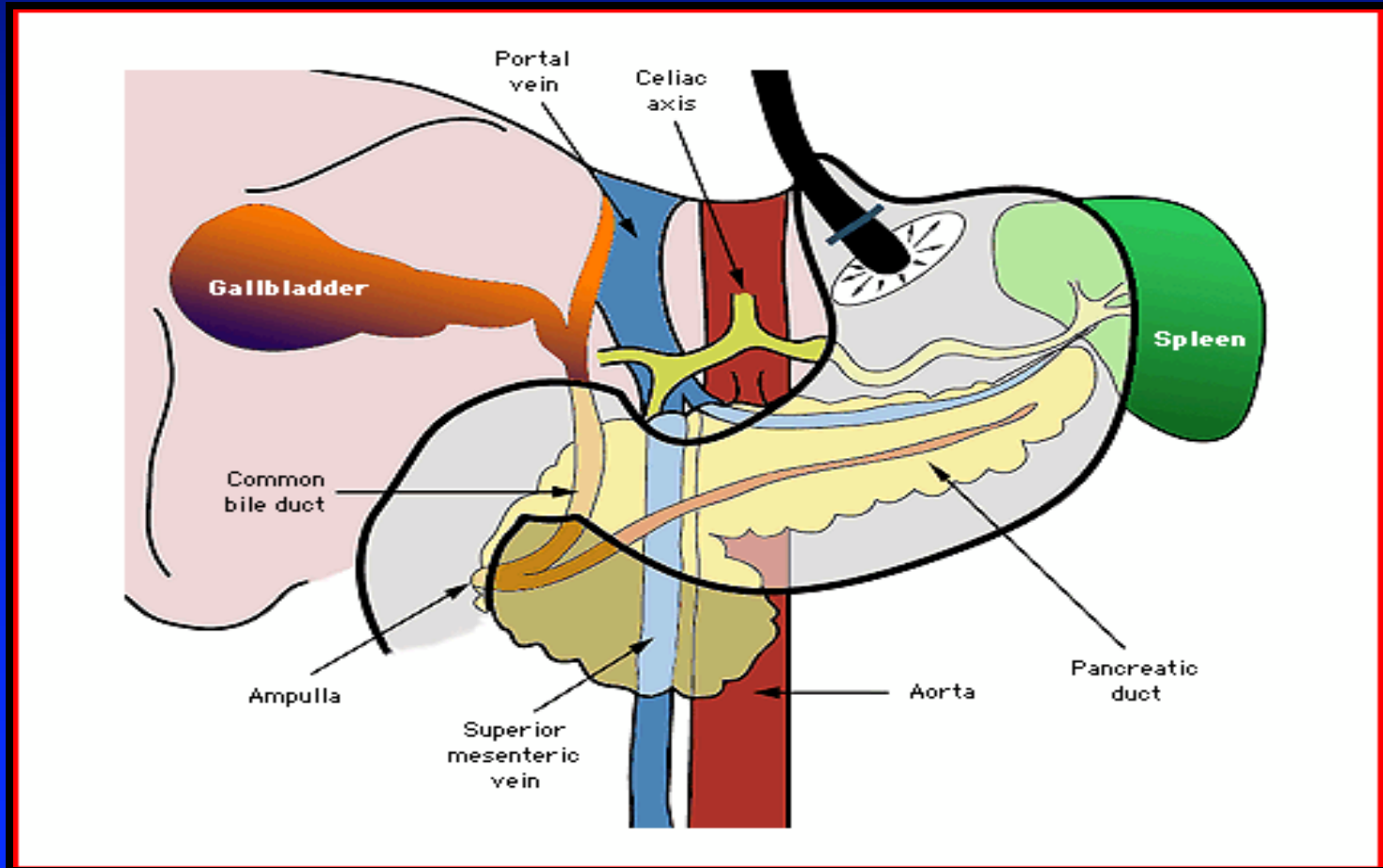
Frankfurt, Germany; Milan, Italy; Helsinki, Finland; Essen, Germany; Stuttgart, Germany

- 48 patients: MPS (n=24) cSEMS (n=24)
- Initial treatment success: MPS: 96% cSEMS: 100%
- Median number of ERCPS: MPS: 4 cSEMS: 2
- Stricture recurrence: MPS: 20% cSEMS: 20%

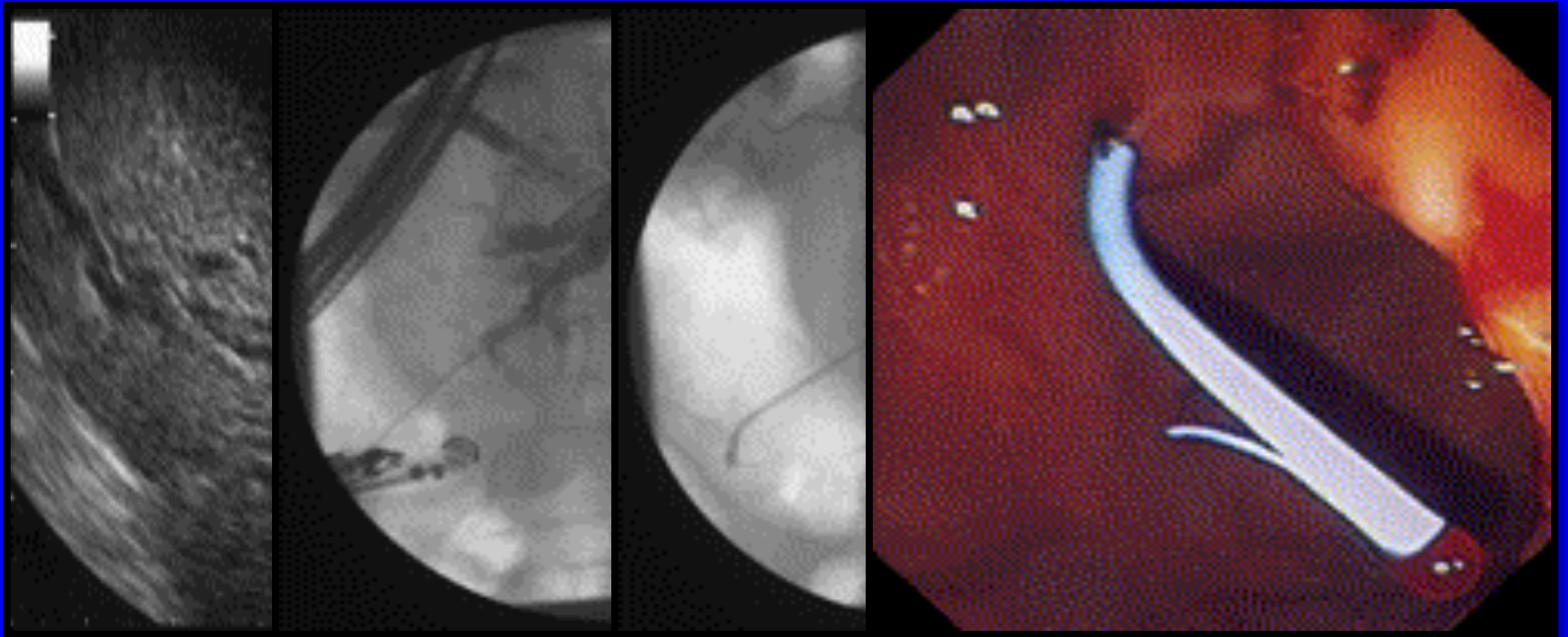
EUS-Guided Biliary Drainage

- Success rate for ERCP for biliary decompression exceeds 90%
- Potential reasons for failure
 - Prior surgery
 - Peri-ampullary diverticulum
 - Tumor infiltration
- Options: Percutaneous vs. surgical drainage

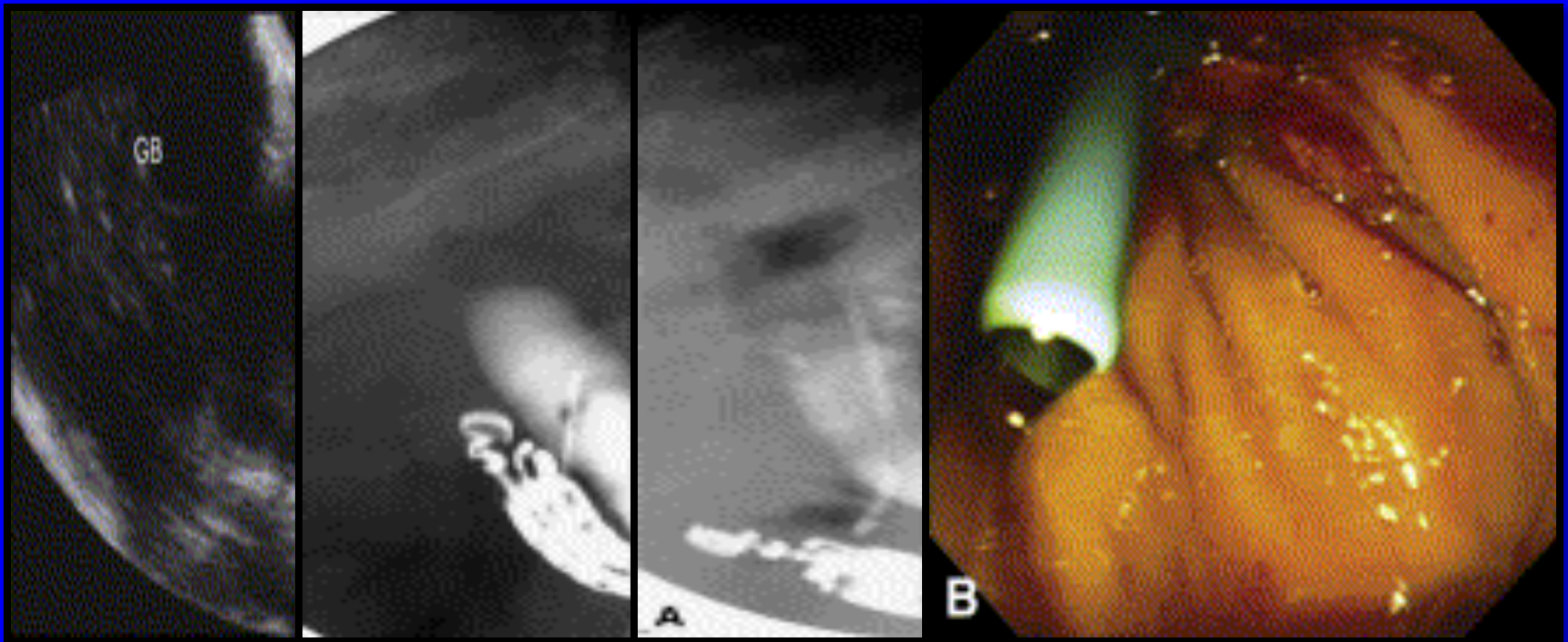
Normal Pancreaticobiliary Anatomy



Hepaticogastrostomy



Choledochoduodenostomy

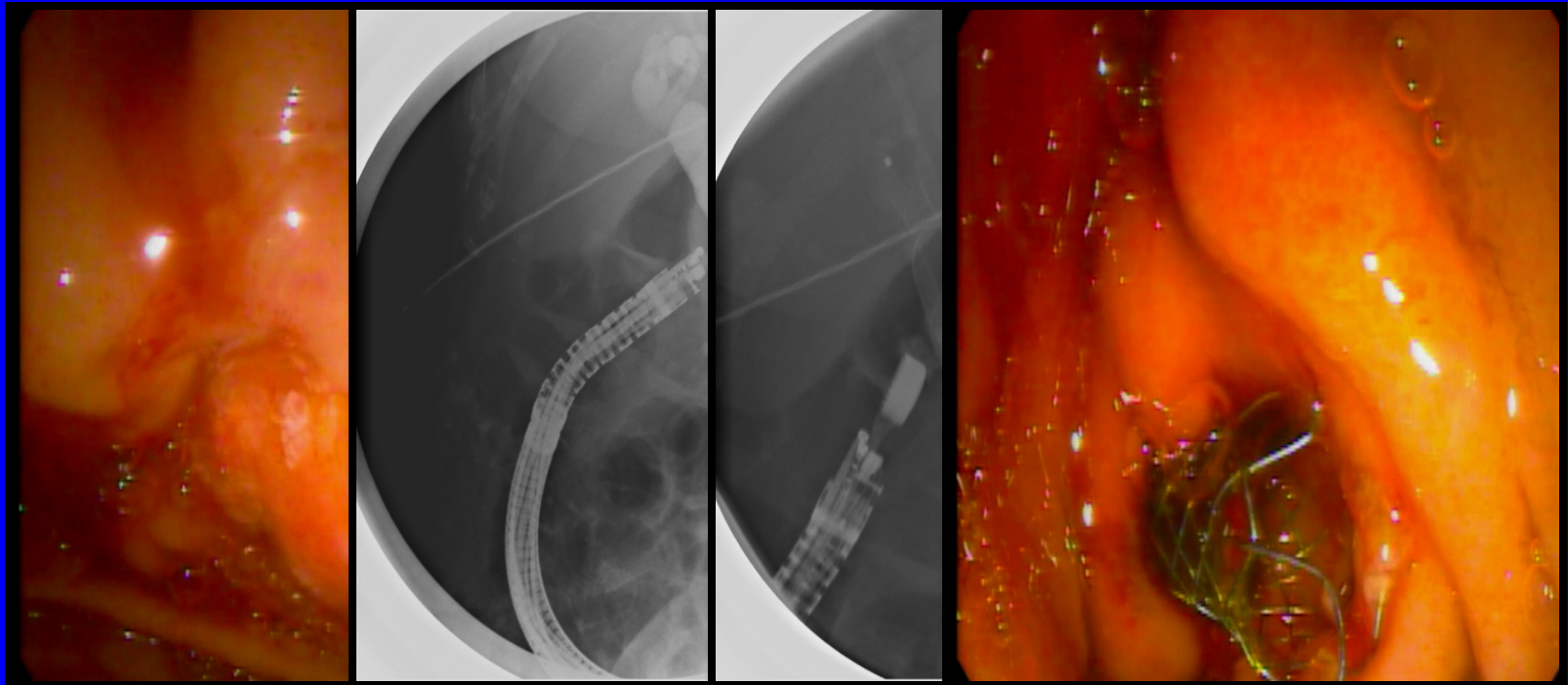


80 year old female with obstructive jaundice

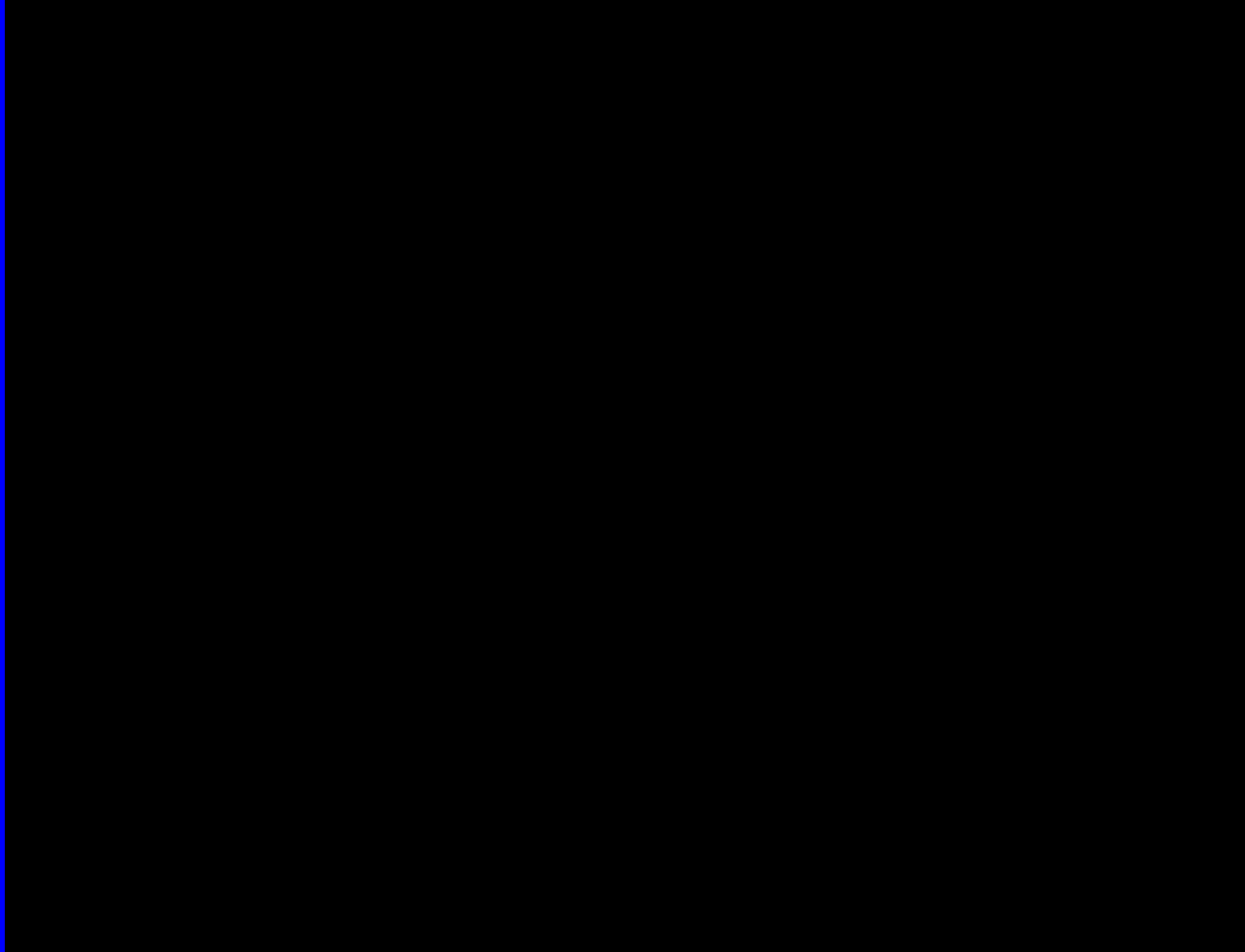


- Call IR for PTC?
- Call Dr. Melvin?
- EUS-guided biliary drainage

Choledochoduodenostomy



Choledochoduodenostomy



Choledochoduodenostomy



Take Home Points

- Metal stents should be placed in patients with inoperable malignant biliary strictures, especially in those with expected survival >4 months
- Metal stents should be considered for patients with potentially resectable pancreatic cancer, especially if surgery is not immediate
- Covered and uncovered biliary metal stents have similar patency rates

Take Home Points

- ERCP with dilation/maximal stent placement is effective in treating patients with benign biliary strictures
- Covered metal stents should be considered in patients with difficult benign biliary strictures
- EUS-guided biliary drainage is a reasonable option after failed ERCP

Thank you for your attention