



Evolution[®] family of stents

Giving clinicians more control throughout the GI tract

Giving clinicians more control—and less stress—has been the driving force behind the Evolution Controlled Release stents since 2008. Now that same control is available for placing stents throughout the entire GI tract. Whether treating strictures in the esophagus, colon, duodenum or biliary tract, Evolution gives clinicians the unique ability to deploy, recapture and/or reposition the stent. That level of precision can make it easier to accurately place stents the very first time, and may reduce the need for repeat procedures.

All Evolution stents combine flexibility and radial force to conform to the patient's particular anatomical landscape. To reduce the risk of migration, the stents have proximal and distal flanges. Most importantly, Evolution stents give clinicians important new options for treating strictures throughout the GI system. In this issue of *The Channel*, you'll see clinical cases that utilize Evolution stents in the biliary tract (page 2) and colon (page 3).

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An official publication of Cook Medical.

4900 Bethania Station Road
Winston-Salem, NC 27105

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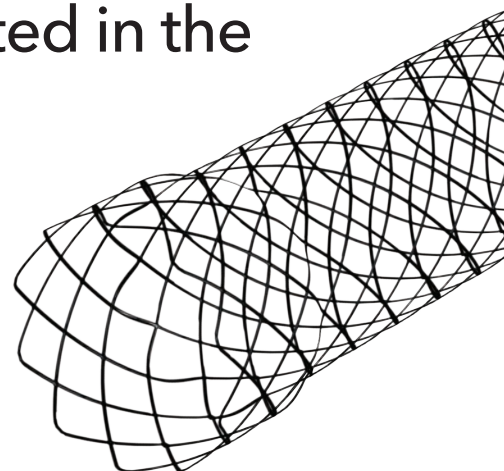
We welcome your comments and suggestions.

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Malignant tumor located in the head of the pancreas

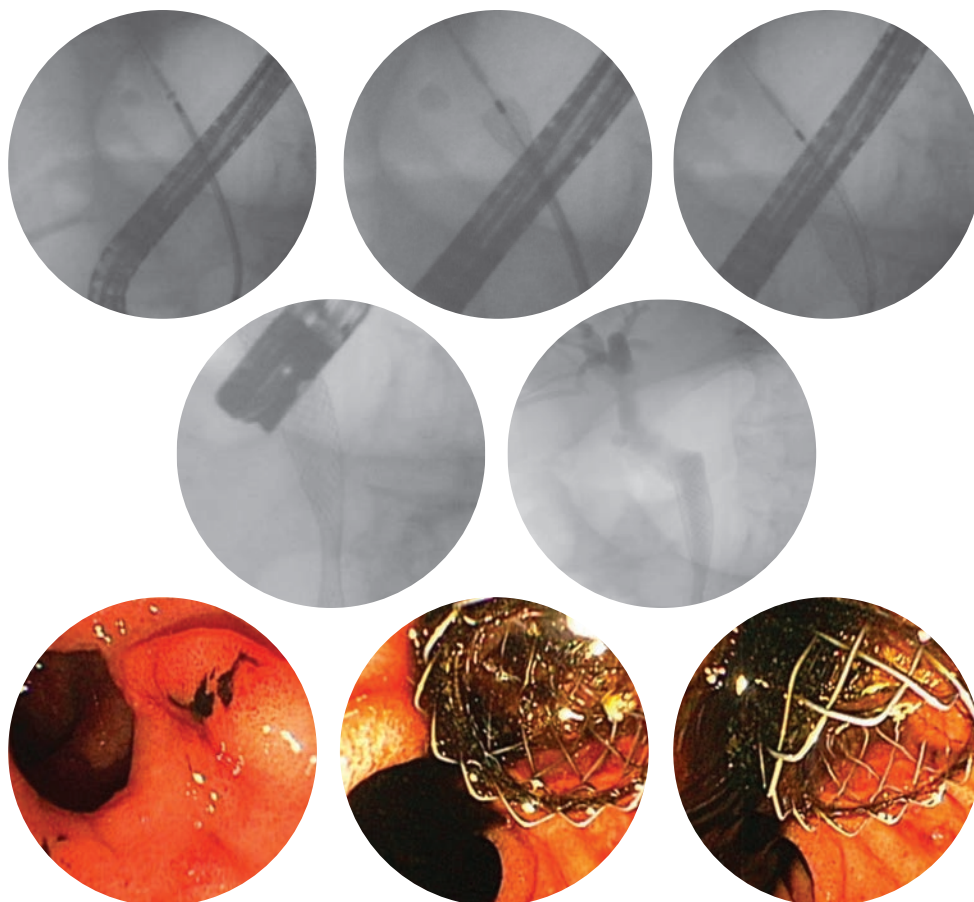


Fredrik Swahn, MD
Karolinska Universitetssjukhuset
Gastrocentrum Kirurgi
Stockholm, Sweden



Background: An 82-year-old patient presented with an inoperable pancreatic cancer and suffering from jaundice.

Case Information: The ampulla, which had no signs of bile, was difficult to cannulate but, after repeated attempts and a double-wire-guide technique, deep biliary cannulation and sphincterotomy was completed. The malignant stricture was located in the distal part of the common bile duct, just above the ampullary region, and the length was about 2-3 cm. A 60 mm Cook Evolution Biliary uncovered stent* was deployed over the wire guide with the distal end extended 5 mm through the ampulla. Black bile began to pour out of the SEMS. The patient was discharged the following day. ■



Images courtesy Fredrik Swahn, MD

*Pending 510k, not for sale in the USA.

Placement of dual Evolution® Colonic Controlled-Release Stents and stent-within-stent placement for obstructing synchronous colorectal cancer



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Division of Gastroenterology, University of Utah
GI Cancers Program, Huntsman Cancer Institute
Salt Lake City, Utah, USA*

Patient history and case assessment: A 65-year-old patient presented to his local primary care physician with anemia and fatigue. Over the next two months the patient developed abdominal cramping, rectal bleeding and diarrhea. A CT scan of the abdomen was concerning for colonic obstruction leading to overflow diarrhea. Colonoscopy revealed a near obstructing large mass at the recto-sigmoid colon, which was biopsy proven adenocarcinoma. A colonic stent was placed relieving obstruction from the tumor at that time.

Three months later the patient began complaining of recurrent diarrhea symptoms and abdominal discomfort. A PET-CT scan revealed increased metabolic activity in the sigmoid colon within the existing stent and a second focus in the descending colon with upstream colonic dilation concerning for recurrent obstruction. A colonoscopy with possible repeat stent placement was recommended.

Procedure: The previously placed colonic stent was visualized in the recto-sigmoid colon with nearly complete lumen obstruction due to tumor ingrowth. The tumor was circumferential, measuring 8 cm in length and extending through the existing colonic stent (Figure 1). Because of the concern for a synchronous lesion, we elected to use a wire-guided 15-16.5-18 mm colonic balloon dilator to facilitate passage of the scope through the distal tumor (Figure 2). A second partially obstructing tumor was found in the descending colon, it was again circumferential and measured 3 cm in length (Figure 3).

The proximal mass was traversed using a .035 wire guide under fluoroscopic guidance and a 25 mm x 80 mm Evolution Colonic Controlled-Release Stent was passed through the scope, traversed the stricture and deployed under both fluoroscopic and endoscopic guidance (Figures 4 and 5).

On withdrawal of the colonoscope, the .035 wire guide was left in position in the descending colon and a second 25 mm x 60 mm Evolution Colonic Controlled-Release Stent was deployed within the existing colonic stent, relieving obstruction from the recto-sigmoid tumor (Figures 6 and 7). Immediate relief of obstruction was noted.

Outcome: During the procedure, immediate decompression was seen as the stents were deployed. The patient did very well post procedure and was discharged the same day. One month later in oncology clinic follow-up the patient denied any abdominal pain and was passing bowel movements regularly without difficulty.

Discussion: In this case the patient was not an immediate candidate for surgical resection. Colonic stenting is less invasive and preferred by most patients than passing stool into a colostomy bag.

This case illustrates the unique situation of synchronous obstructing colon cancers in the sigmoid and descending colon and tumor in growth obstructing a previously placed colonic stent. These were stented simultaneously using the new Evolution Colonic Controlled-Release Stent after balloon dilation of the first tumor to allow passage of the colonoscope into the proximal colon. ■

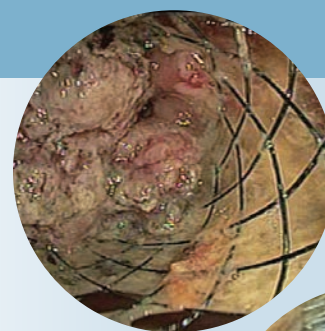


Figure 1

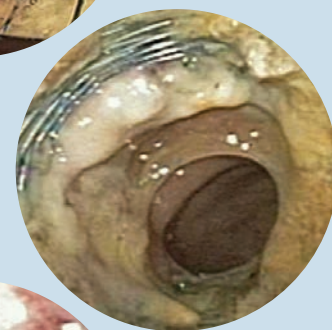


Figure 2

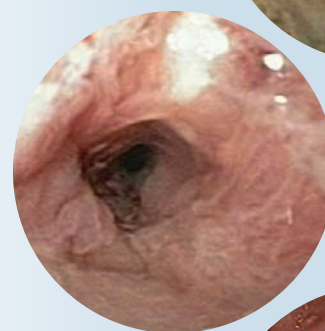


Figure 3

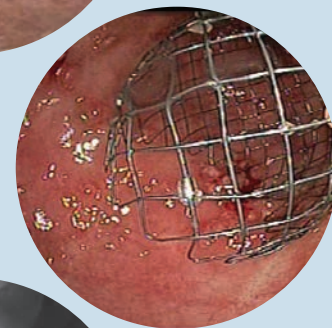


Figure 4

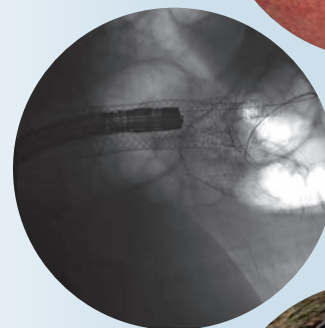


Figure 5

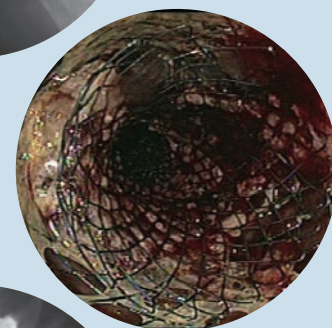


Figure 6

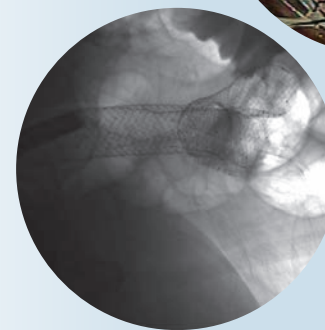
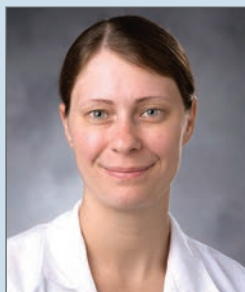


Figure 7

FNB of a solid pancreatic mass using EchoTip® ProCore™ needle



Rebecca Burbridge, MD
Assistant Professor of Medicine
Division of Gastroenterology
Duke University Medical Center
Durham, NC

A 77-year-old patient with a pancreatic mass on MRI presented for further evaluation. The patient had previously undergone an ERCP with brushings, as well as placement of a partially covered metal stent across a biliary stricture. The brushings of the stricture were read as atypical ductal epithelium, which was suspicious for malignancy. As confirmation of the diagnosis was required, an endoscopic ultrasound was planned. A 26 mm x 19 mm hypoechoic mass was identified in the pancreatic head. The mass was staged T3 N0 Mx by endosonographic criteria.

Four passes were made with the 22 gage EchoTip ProCore needle (3) and with the 25 gage ProCore needle (1) using a transduodenal approach. The core specimen was transferred into a formalin bottle

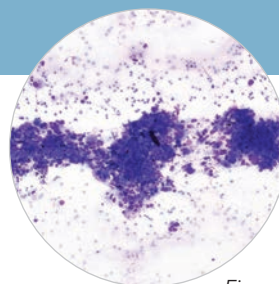


Figure 1

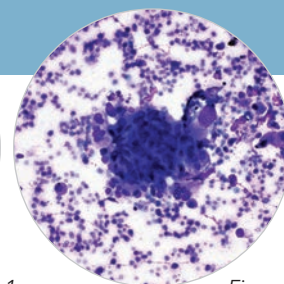


Figure 2

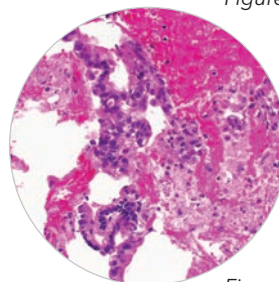


Figure 3

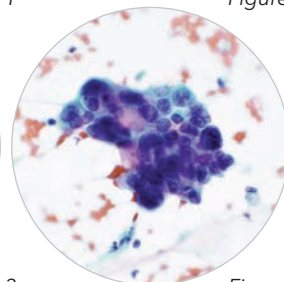


Figure 4

for histological processing. The remainder of the non-core specimen was smeared and submitted for cytology. On-site cytological analysis revealed that a diagnostic specimen was obtained on the first pass on Diff-Quik™ stain (Figures 1 and 2). The subsequent passes were acquired for the cell block. Histological analysis of the core specimen showed pancreatic adenocarcinoma tumor on H.E. stain (Figure 3) as well as alcohol preparation (Figure 4). Based on this precise tissue diagnosis, the patient underwent neoadjuvant chemotherapy surgery followed by successful resection of the tumor. ■

Not pictured: Svetang Desai, MD, Advanced Endoscopy Fellow, Medical Instructor of Medicine, Duke University Medical Center, Durham, NC

What's Up DOC?



John Baillie,
MB, ChB, FRCP, FACC
Carteret Medical Group
Morehead City, NC

A 40-year-old patient presents with a year of episodes of recurrent acute pancreatitis. The patient is status post-cholecystectomy (at age 32) with no evidence of bile duct stones or sludge (microlithiasis). In the absence of any other obvious cause for pancreatitis, the patient's pancreas divisum anatomy (Figure 1) is assumed to be the cause of the recurring attacks of pancreatitis and the patient is offered minor papillotomy. This is performed as an outpatient by needle knife incision over a straight, flanged, 5 Fr pancreatic duct stent placed in the dorsal pancreatic duct (Figure 2). The patient is instructed to have a plain abdominal X-ray (KUB) two weeks later to check for stent migration versus retention. The patient has this done in a local radiologist's office. The KUB is reported as showing "no pancreatic stent." You advise the patient that no follow-up will be required unless there are further problems with pancreatitis. Nine months later, the patient returns complaining that for the last month there has been increasing epigastric and mid-back pain, similar to that experienced during the patient's previous episodes of pancreatitis, but now constant. Blood tests show mild elevations of serum amylase and lipase. A KUB is repeated (Figure 3).

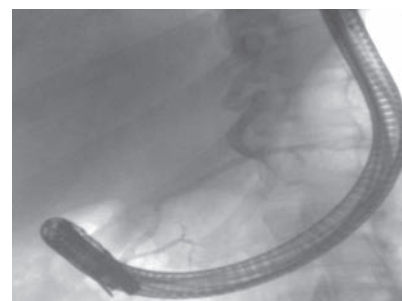


Figure 1

Questions:

What does the repeat KUB (Figure 3) show?

What is the explanation for this finding?

Why did this patient develop pain eight months after the original ERCP?

How could this problem have been avoided?

To confirm your diagnosis, click on newsletter button on endoscopy homepage of www.cookmedical.com.

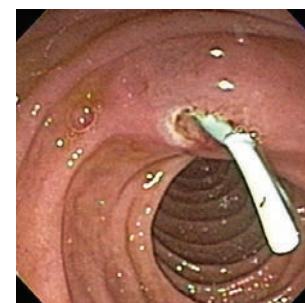


Figure 2



Figure 3

We are looking for more submissions and welcome your participation. If you want to submit an image with a written case history and clinical explanation, please contact Kevin Chmura at kevin.chmura@cookmedical.com.

Deep histology can reveal when cancer mimics achalasia



Thomas Togliani, MD
Unità Operativa di Endoscopia Digestiva
Azienda Ospedaliera Carlo Poma
Mantova, Italy

Background and aims: Tumors of the cardia can clinically mimic achalasia, but upper GI endoscopy, radiology and esophageal manometry can generally get a correct differential diagnosis. Sometimes, however, these tumors can show a prevalent submucosal growth, leading to diagnostic troubles; we wanted to show that EUS and EUS-guided histology can help diagnose these atypical cases.

Procedure: A 64-year-old patient with dysphagia and weight loss was sent to our center with an endoscopic, radiologic and manometric diagnosis of achalasia; we were asked to perform endoscopic dilations. We repeated an upper GI endoscopy that showed an esophageal dilation, a mild stenosis of the cardia and a rigid semi-circumferential thickening of the subcardial region. No mucosal alterations were visible (Figures 1 and 2).

This aspect made us question the diagnosis of achalasia. A CT-PET scan demonstrated a 3 cm thickening of the wall of the cardia, with high metabolic activity (Figure 3). We carried out an EUS, that proved an irregular hypoechoic full thickness lesion of the cardia, with interruption of the serosa. The left hepatic lobe seemed infiltrated in some small areas. A 6 mm regional hypoechoic lymph node was visible; this aspect was referable to a T4a/T4b N1 tumor (Figure 4).

After EUS we performed some endoscopic biopsies deeply in the mucosal lacerations of the cardia that occurred, but histology resulted unrevealing. So, we performed an EUS-guided needle biopsy of that lesion. After a 20 mm TTS balloon dilation of the cardia, to allow the passage of the linear probe, we made an histological needle biopsy (3 passages with a 19 gage EchoTip ProCore needle) that showed the presence of adenocarcinoma (Figure 5).

A surgical resection of the tumor was attempted but the evidence of peritoneal carcinosis, which was not seen by the CT-PET scan, made the surgeons desist. A 12 cm partially covered stent prosthesis was then positioned and the oncological treatment was started (Figure 6).

Conclusions: Pseudo-achalasia due to tumors of the cardia can be a tricky diagnostic challenge. When such lesions have a mostly deep extension, either upper GI endoscopy with superficial biopsies or radiology can be falsely negative. In these cases EUS could reveal a pathologic thickening of the wall of the cardia and a deep EUS-guided biopsy is an accurate method to confirm the presence of a tumor. ■

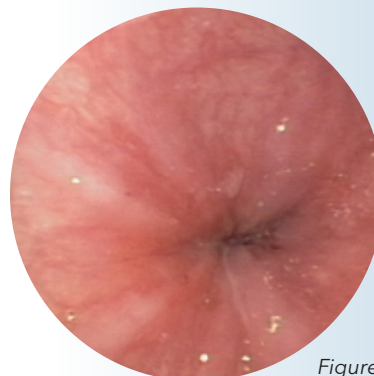


Figure 1

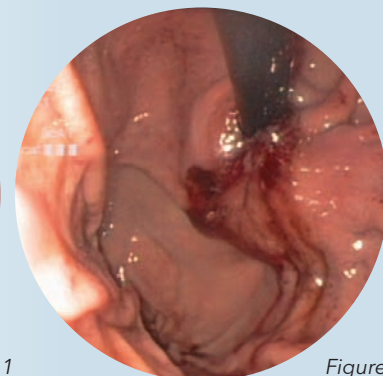


Figure 2



Figure 3

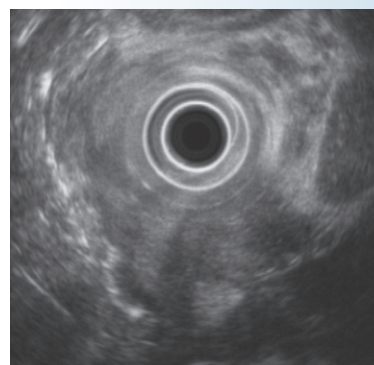


Figure 4

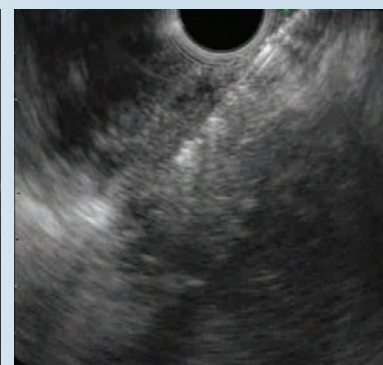


Figure 5

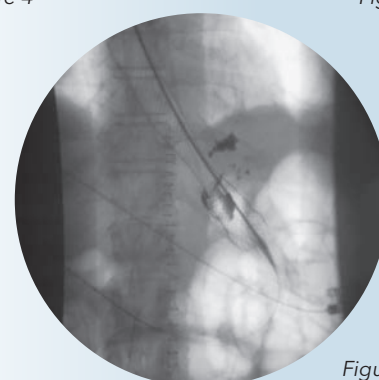


Figure 6

The University of Oklahoma Medical Center

Adult Endoscopy Services

Another level of medicine

When a 60-year-old patient presented with a closed esophagus following radiation cancer treatment, his greatest wish was to swallow—*anything*. He could not even down his own saliva. Fortunately, he had been referred to the Adult Endoscopy Services at the University of Oklahoma Health Sciences Center, in Oklahoma City. There, endoscopists used an Esophagus Plasty Rendezvous, and opened the closed esophagus with a relatively simple procedure.



Dr. William Tierney

"The patient told us afterward," says Professor of Medicine William Tierney, MD, "that he felt joy just drinking a cold glass of water." Although the procedure was far from routine, Dr. Tierney, Director of Endoscopic Ultrasonography, and his colleagues have successfully treated six patients over last two years with a closed esophagus due to radiation cancer treatments.



Tammy Hogue,
RN, MS, CGRN

Collaborating for positive outcomes

Those are just six cases of approximately 6,200 patients the busy program handles annually in two locations. Tammy Hogue, RN, MS, CGRN, Director, Adult Endoscopy Services, explains that the staff rotates working at the OU Physician's Building Endoscopy Center, which comprises a four-suite endoscopy unit that performs esophago-gastroduodenoscopies, colonoscopies and EUS procedures.

In addition to the Endoscopy Center, physicians serve the hospital-based OU Medical Center Endoscopy Unit, which has two endoscopy suites and a new ERCP suite, which receives high marks from the staff. Unit Director Hogue notes: "The clinicians particularly like having their own fluoroscopy suite, which means no more traveling to radiology to do procedures. They have all the equipment they need at their fingertips." These facilities have allowed the staff to perform new and enhanced procedures.

Breaking new procedural ground

"Our physicians perform a variety of procedures and frequently try new techniques and new equipment," continues Ms. Hogue, "and collaborations of the Advanced Endoscopy



Advanced endoscopy team: Carol Clark RN, Dr. William Tierney, Dr. John Maple and Dr. Sam Hong

team with other specialties have resulted in positive patient outcomes."

John Maple, DO, Assistant Professor of Medicine and Director of Interventional Endoscopy, specializes in advanced endoscopic procedures such as ERCP, EUS and endoscopic cyst gastrostomy. He and his colleagues have pioneered numerous endoscopic procedures in Oklahoma and the surrounding area. For example, he was the first in the state to do radio frequency ablation for dysplastic Barrett's esophagus. The physicians also brought to Oklahoma advanced procedures in EUS and ERCP, such as direct pancreatoscopy, endoscopic necrosectomy and EUS-guided biliary drainage procedures.



Dr. John Maple

OU Endoscopy Services Key Statistics

Procedures (annual totals):	
EUS	650
EGD	2,100
ERCP	400
Colonoscopies	2,600
Endoscopic cyst-gastrostomy	25
Barrett's esophagus procedures	>100

Other key procedures:

- Placing enteral stents
- Endoscopic ampullectomy

Endoscopy Services also introduced ex vivo endoscopy simulators to demonstrate procedures. Additionally, professional actors simulate patient symptoms in an Objective Structured Clinical Examination (OSCE). Trainees ask questions, receive feedback and diagnose gastroenterology problems. "Endoscopic simulators and OSCE examinations allow our fellows to develop their clinical and endoscopic skills in a risk-free learning environment," explains Dr. Maple.

The OU Medical Center Advanced Endoscopy Team also includes Sam Hong, MD, Assistant Professor of Medicine and Nurse Navigator Carol Clark, RN.

Wide-ranging research projects

The center conducts a broad range of research from basic studies to complex GI cancers. Researchers from the section have written more than 100 papers on various topics.

OU Medical Center's GI physician team

William M. Tierney, MD,
FASGE

John T. Maple, DO

Tauseef Ali, MD

Gary D. Dunn, MD

Javid Fazili, MD

Ralph T. Guild, III, MD

Sam Hong, MD, MSCI

Courtney W. Houchen, MD

Donald J. Kastens, MD

Philip B. Miner, Jr., MD

"Our objective is to translate the research to a clinical setting and establish long-term therapies," says Dr. Maple. Recent studies have examined the success of patient outcomes based on protocols, how specialty drugs affect patients with liver disease and how medicines affect patients preparing for colonoscopies and other procedures.

In the advanced endoscopy section, research projects are underway for:

- Creating a registry of patients who have pancreatic cystic neoplasms
- Collecting and storing pancreatic cyst fluid collected at EUS-FNA for future biomarker analysis to better predict cyst behavior
- Finding the best in-treatment protocols during RF ablations
- Also underway is research on patients with dysplastic Barrett's syndrome and early esophageal cancer.

Teaching the next generation

As an academic medical center, the OU program features a three-year comprehensive Gastroenterological Fellowship Program, directed by Dr. Tierney. It is tailored to develop and foster trainees based on ACGME and meets all qualifications of the competency board. The program is fully accredited and, during the last academic cycle, it received a full six-year commendation with no citations. "Overall," says Dr. Tierney, "we want to help trainees focus on current environment and enable them to focus on patient safety."

Dr. Maple focuses on teaching fellows the use EUS to facilitate access to the bile duct when the usual procedures have failed. Both physicians foresee enhanced use of EUS for therapeutic procedures, including biliary procedures that were formerly handled by interventional radiologists and continuing use of direct EUS access from the stomach or duodenum.

A flagship for the state

Drs. Maple and Tierney credit a team approach with the success of the Adult Endoscopy Services and OU Medical Center. "Our nursing and administrative staffs are well organized and dedicated to continually improving patient care," says Dr. Tierney.

Dr. Maple concludes, "OU Medical Center is an outstanding place to work. The staff has good morale. We have a collegial environment. It is unique in the state—a flagship for the state. The leadership of OU Med is very supportive of our section, as is the Oklahoma State Legislature. We're doing good things out here in the plains." ■



The University of Oklahoma Health Sciences Center

The mission of the University of Oklahoma Health Sciences Center, as a comprehensive academic health center, is to educate students at the professional, graduate and undergraduate levels to become highly qualified health care practitioners, educators and research scientists; to conduct research and creative activities for the advancement of knowledge and care; and to provide continuing education, public service and health care of exemplary quality.

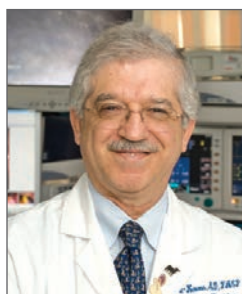
More than 4,500 students are enrolled in more than 70 health professions, undergraduate and graduate degree programs in the Center's colleges. Approximately 165 students are admitted to the medical school annually. The Center employs 4,600 faculty and staff.

The University of Oklahoma Health Sciences Center is one of only four comprehensive health centers in the nation with seven health professional colleges: Medicine, Public Health, Dentistry, Pharmacy, Nursing, Allied Health and Graduate.

The service area includes Oklahoma, North Texas, Arkansas, Northeast Missouri and Kansas. OU Medical Center is the state's only Level One Trauma Center. It also includes the Oklahoma Transplant Center—comprehensive liver, pancreas and renal transplant for adults and children.

Endoscopy Directors Meeting:

A forum to improve endoscopy unit management



By Firas Al-Kawas, MD
Professor and Chief of Endoscopy
Division of Gastroenterology
Department of Medicine
MedStar Georgetown University Hospital
Washington, DC



In 2008, Dr. William Brugge (Director of Gastrointestinal Endoscopy at Massachusetts General Hospital) and I recognized the need for a forum of endoscopy unit directors, nurse managers and other industry members to discuss the increasing complexity associated with endoscopy unit management in the US. The first meeting was held at Georgetown University Medical Center in Washington, DC in April 2008 and provided a unique opportunity to review current status and provide recommendations, which were published as a white paper, "Report of the First Endoscopy Directors Meeting," in *Gastrointestinal Endoscopy*¹. Since then, four annual meetings, co-sponsored by Georgetown University Hospital and Massachusetts General Hospital, have been held in Washington, DC and Boston.

Last spring the fifth annual meeting was held at Georgetown University Conference Center, providing more opportunities to identify and address important issues related to the management and operation of endoscopy units in the US. It was also a chance to follow up on the recommendations and progress since the first meeting. Seventeen national and international speakers participated in the meeting, addressing the topics: Endoscopy Unit Management; Efficiency; Inventory Control; Network and Data Management; and Quality Assurance. SGNA President Leslie Stewart, BA, RN, CGRN, presented nursing perspectives. Industry representatives provided their perspective on several issues related to endoscopy unit efficiency and inventory control.

The 102 attendees included physician endoscopy directors, nurse managers and administrators from the US, Brazil, Venezuela, Saudi Arabia and Germany. The audience was updated by the faculty on many topics important to endoscopy unit management, including: using computer modeling to measure efficiency; data management; device needs and cost; and specific quality measurements for colonoscopy, ERCP and EUS.

During panel discussions, attendees interacted freely with the faculty and raised important issues in the management of endoscopy units. After the introductory lectures, each attendee was assigned to one of two small discussion groups, addressing specific issues

related to quality assurance and efficiency, as well as network and inventory control. Each small group included a mixture of physicians, endoscopy directors, nurse managers and industry representatives. Panels were given specific questions to discuss and were asked to briefly review where we stand and to provide specific recommendations. At the end of the meeting, both groups presented their conclusions and recommendations to the entire group, then we had further discussion before final recommendations were made.

Addressing inventory control issues

Dr. Priya Jamidar (Professor of Medicine and Director of Endoscopy, Yale University Section of Digestive Diseases, New Haven, Connecticut) summarized the findings of the inventory-control group, noting that current inventory control in most US endoscopy units is predominantly manual. Few institutions have yet to employ an automated system with barcoding, and for those that have, barcoding, nonetheless, has proved disappointing primarily because of inconsistent and unreliable scanning by endoscopy personnel. Some endoscopy units have adopted a consignment approach for expensive items such as self-expanding metal stents (SEMS). The advantage of a consignment system is that only stock that is used is paid for and costs for expired inventory is eliminated. The key to successful implementation is negotiating a good contract with agreed upon upfront costs and terms.

Issues with the currently available inventory systems include a limited buy-in, as well as a lack of education and accountability by physicians and personnel. Current bar code scanners are often unwieldy and clunky. Radiofrequency identification (RFID) systems are expensive. Manual systems are very labor-intensive and prone to errors. Currently, systems are not integrated across care points. The ideal inventory system needs to be automated and should interface seamlessly with the electronic medical record (EMR) as

Continued on page 11

Brazilian father and son make endoscopy a family affair

The Cook Medical Endoscopy division was recently visited by a group of Brazilian endoscopists in its Winston-Salem, NC headquarters. During a break in a training session, The Channel spoke with a father-and-son team of physicians from Rio de Janeiro. Their comments reveal much about the advanced state of endoscopy in Brazil and about generations of medical specialists working together in a practice.

Jose Flavio Coelho, MD, PhD, who was educated and teaches at Federal University of Rio de Janeiro (see side bar), knew from his first year in medical school that he wanted to pursue a career in gastroenterology. One of his favorite professors at the school—a GI specialist—encouraged Jose toward the specialty. Thus, after graduation in 1969, he opened his practice, and by 1976, added advanced endoscopic procedures to his skill set.

Jose's second of his three children, Djalma Coelho, MD, PhD, was educated and teaches at Estacio de SA University (see side bar). After graduating from medical school in 1992, he became a general surgeon specializing in endoscopy, joined his father's practice and accumulated twenty years of endoscopic experience. His particular interests are in EUS and biliary diseases. He and his wife, an anesthesiologist, have three children.

Rio de Janeiro patient demographics

"Our patients come to us exclusively from the state of Rio de Janeiro, Brazil," said Dr. Jose Coelho. "Most are older than forty years, and we see many biliary cases, especially among the elderly. But occasionally, we also treat children."

In their practice, the two specialists treat and diagnose GI diseases with ERCP (fifty per month); and EUS (40 per month). Although the father-and-son team work in a sometimes intense medical environment, they operate with few conflicts. "Our shared philosophy of focusing strongly on patient care helps us work well together," explained Dr. Jose Coelho.

In addition to his practice and teaching career, Dr. Djalma Coelho conducts research projects in biliary, pancreatic diseases and general endoscopic surgery. He is author or co-author of numerous articles published in Brazil and internationally. He cited a memorable EUS case: A 26-year-old patient developed breast cancer; after six years the cancer had spread to the pancreas. "It was interesting that the patient had the same type of histology for both cancers," commented Dr. Coelho. "We used a Cook EUS needle to diagnose and take samples in both instances."

Dr. Jose Coelho experienced an even rarer case, in which a 52-year-old patient suffered an ocular melanoma. Ten years later, the



Djalma Coelho, MD, PhD and Jose Flavio Coelho, MD, PhD

melanoma migrated to the thorax. In an EUS procedure, using a Cook EUS needle, Dr. Coelho biopsied the migrated cancer. "The process was very good to obtain samples," he noted.

Impressed with Cook Medical craftsmanship

Both physicians were intrigued by the manufacturing process of the Cook Medical equipment they use. "We viewed the production and were impressed by the craftsmanship," Dr. Jose Coelho said. "Everything is hand-made. The technicians put forth a great effort to assemble the devices."

Dr. Djalma Coelho added: "I like the spirit of the Cook family, which emphasizes the commitment and involvement of people."

Noted advances in endoscopy

Over their combined fifty-plus years of endoscopic experience, the physicians have noted important advances in endoscopic devices and procedures. They mentioned improvements in wire guides, balloon dilation, metal stents and imaging. "Today, we have the ability to see clearer, to gain more information and to treat patients more accurately," said Dr. Jose Coelho. "And as for the future, I predict that I will learn even more EUS techniques—from my son!"

Dr. Djalma Coelho responded: "That is only fair. My father taught me ERCP!"

An even more likely prediction concerns expanding the "family" practice. Dr. Jose Coelho's granddaughter, Caroline, interned last summer, assisting Dr. Djalma Coelho with EUS procedures. This fall, she started medical school and reportedly has ambitions in the endoscopic field. ■

Federal University of Rio de Janeiro

- The university is one of the largest federal universities in Brazil.
- In addition to its main campus in Rio de Janeiro, it has two other campuses within Brazil.
- The university employs almost 8,500 and has serves approximately 48,000 students.
- The Faculty of Medicine was created in 1808 by a decree of King D. Joao VI.

Estacio Universities:

- The universities are owned by a private educational company.
- It is Brazil's second largest university with more than 278,600 students spread across 54 campuses.
- The universities employ 13,548.
- Estacio de SA University includes a highly rated medical school.

Bilharzia and the gastrointestinal tract (GI)



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Bilharziasis (also known as schistosomiasis) is a prevalent parasitic infection caused by blood flukes known as schistosomes (Figure 1). This disease has been known for 4,000 years since the time of the Egyptian pharaohs. According to the World Health Organization (WHO), 200 million people in at least 76 countries have active infection, with 85% of the estimated number of infected people in Africa.

The name of the disease came from a young German pathologist, Theodor Bilharz, who discovered the worm in 1851. There are three main species which infect humans: *schistosoma haematobium*, which causes urinary schistosomiasis; *schistosoma mansoni*; and *japonicum*, which causes intestinal schistosomiasis or bilharzia of the GI tract.

Schistosomiasis is a man-made disease since man is both the source of infection as well as the victim of the disease. The parasite lives in a fresh water snail (the intermediate host) in the form of a sporocyst from which cercaria, the free-moving infective stage is released (Figure 2). Human beings come in contact with infected water through bathing, swimming, etc., where the cercaria penetrate the skin and enter the blood stream after losing their tail. Although most infections occur in residents of endemic areas, it has been clearly documented that brief freshwater exposure is sufficient to establish infection; thus, travellers may also be infected.

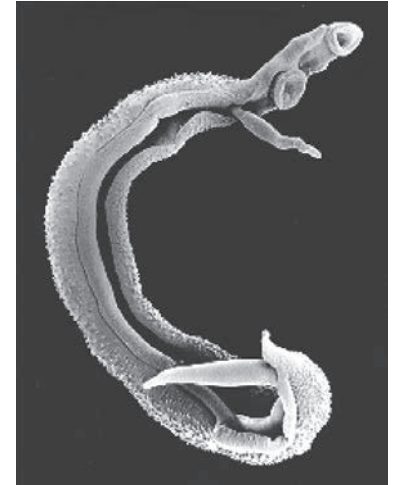


Figure 1.
Male and female schistosomes

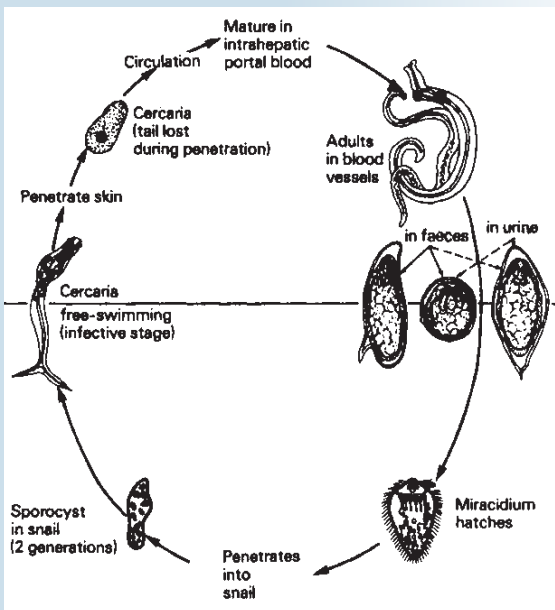


Figure 2. *Schistosoma* life cycle

In the blood, *s. mansoni* and *japonicum* travel with the stream to mature as adult worms in the intestinal veins where they start to produce eggs. *Schistosoma mansoni* produces several hundred eggs per day, and a proportion of these eggs are trapped in hepatic tissues and in presinusoidal venules. Eggs are the damaging stage of the disease as they promote formation of granuloma with fibrosis around them and around the portal tracts (Figure 3). The sequel of this process is periportal fibrosis (PPF) which causes portal hypertension with development of collateral circulation and enlargement of the spleen (Figure 4). Lethal disease due to hepatic periportal fibrosis occurs in 2-10% of subjects infected by *schistosoma mansoni* in endemic regions such as Sudan. Patients with PPF usually present with GI bleeding from oesophageal varices which could be fatal if not managed promptly and effectively (Figure 5).

The mainstay of management of these patients is resuscitation and blood transfusion and patients are then referred for control of bleeding with medical and endoscopic methods. Endoscopic treatment is either by injection sclerotherapy or band ligation which is performed by trained endoscopists with the aim of stopping the ongoing bleeding. Patients are then scheduled for repeated sessions to eradicate the varices and are maintained on drug treatment in form of B blockers to decrease portal

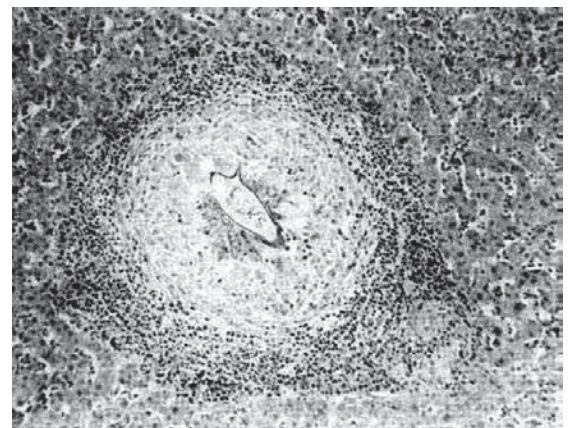


Figure 3. *Schistosoma* egg with granuloma around



Figure 4. Collateral circulation secondary to PPF and portal hypertension

pressure. Treatment of the worm itself with praziquantel oral tablets is recommended, especially if the patient lives in an endemic area. This drug decreases the worm load leading to a decline of egg load which has been shown to decrease the degree of PPF.

In the large intestine granulomas around the eggs are formed in the wall of the intestine and patients tend to present with abdominal pain, bloody diarrhea and colonic polyps seen on colonoscopy. Bowel ulcers and strictures can also develop and rarely, an inflammatory mass can lead to bowel obstruction. Acute appendicitis has also been described in one case report.

Bilharziasis or schistosomiasis is a major endemic problem in many parts of the world and control of infection is achieved with health education, provision of safe water supply, as well as good sanitation. Snail control and mass treatment with praziquantel, which is the drug of choice to kill adult worms, is also of paramount importance. ■



Figure 5. Bleeding oesophageal varices

References:

D. Engels et al, *The global epidemiological situation of schistosomiasis and new approaches to control and research. Acta Tropica* 82 (2002) 139-146

Mohamed Ali Q, Elwali NE et al, *Susceptibility to periportal (Symmers) fibrosis in human schistosoma mansoni infections: evidence that intensity and duration of infection, gender, and inherited factors are critical in disease progression. J. Infect Dis.* 1999 Oct; 180(4):1298-306

Endoscopy Directors Meeting, Continued from page 8

well as the supply chain and other areas. Ideally endoscopy report generation should track devices used for accurate billing, automatic reordering as well as other facets of inventory control. The general and widespread adoption of large electronic medical record systems presents a significant opportunity for integrating report software into the EMR as well as for inventory control.

The group recommended the development of stronger relationships between hospitals and the supplier community and to automate and integrate inventory management with endoscopy reports, EMR systems and supply chain so that as inventory is used and reports generated, reordering is immediately triggered. Institutions should also encourage suppliers to adopt GS1 standards. Each endoscopy unit should consider generating report cards for employees and physicians focusing on education as well as financial and peer recognition as possible rewards. Inventory control should continue to be a discussion item in monthly endoscopy unit staff meetings until this process becomes second nature and endoscopy units should consider a "time out" at the end of each procedure in which used inventory packages are scanned/recorded before leaving the room.

Quality assurance conclusions

Dr. Douglas O. Faigel (Professor of Medicine, Division of Gastroenterology and Hepatology, Mayo Clinic, Scottsdale, Arizona) summarized the findings of the quality assurance group, reporting that most units are currently tracking specific QA measures. Cecal intubation, adenoma detection rate (ADR) and withdrawal time during colonoscopy were the most commonly used QA measures. QA measures for ERCP included deep cannulation of duct of interest, complete CBD stone extraction, prophylactic pancreatic stent insertion and post-ERCP pancreatitis rates. There was little enthusiasm to using QA measures during upper endoscopy and no consensus on what parameters to use is available in view of lack of data. Difficulties in data collection and personnel commitment are encountered with all measures with no clear consensus on what to do with results. No clear consensus was made on who should be responsible for collecting data. The group concluded that quality measurements are here to stay and that used metrics should be objective, linked to better outcome and inexpensive to implement. All units, it was decided, should have a process for follow-ups and plans of action in response to issues identified by QA reviews.

Next meeting scheduled

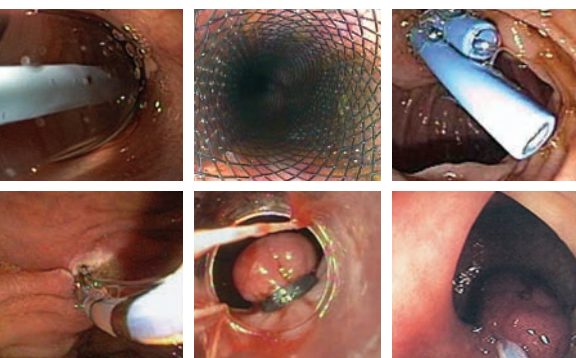
The next Endoscopy Directors meeting will be held at Cedars Sinai Hospital in Los Angeles, CA on April 6 and 7, 2013. Preliminary plans for the meeting include dedicated sessions on how to manage an endoscopy unit with best-practice examples. Collaboration with industry will continue so that technology solutions can be identified to assist endoscopy directors with efficiency, cost savings and improved quality assurance. All endoscopy directors are invited to attend the meeting.

Major industry sponsorship by Cook Medical and Pentax has provided needed important support to maintain these meetings. Over the years, Boston Scientific, Olympus, Fuginon, ERBE and Ethicon have also provided additional support. The meetings were also endorsed by ASGE. ■

¹Al-Kawas FH, Brugge WR. *Report of the First Endoscopy Directors Meeting: March 29-30, 2008. Georgetown University Conference Center, Washington DC. GIE* 2008;68:1043-50

GI 360

EDUCATIONAL PROGRAMS



Cook Medical has long understood that optimal patient care is your focus, and it continues to be our focus as well. That's why for more than twenty years we have assisted healthcare professionals in learning the latest in endoscopic GI technology and related disease information.

That tradition continues as Cook Medical, in partnership with HealthStream (an accredited provider of continuing nursing education), offers two educational activities:

Upper GI Bleeding Management

Barrett's Esophagus

These activities are presented without charge by your Cook Medical district manager. Educational activity descriptions, objectives and the related accreditation information can be found at http://www.cookmedical.com/esc/educationResource.do?id=Educational_Activity.

Contact your Cook representative for more information or to arrange a presentation opportunity.



A continuing nursing education activity sponsored by HealthStream. Grant funds provided by Cook Medical.

Upcoming Events

DECEMBER

Dec 4-5	UCI Hands-on ERCP for GI Nurses & Techs Course	Orange, CA
Dec 5-8	APDW (Asian Pacific Digestive Week)	Bangkok, Thailand
Dec 6	Endoscopic Techniques in Barrett's Esophagus	St. Louis, MO
Dec 8	Gastroenterology at the USF	Tampa, FL
Dec 11-12	UCI Hands-on EUS for GI Nurses & Techs Course	Orange, CA
Dec 11-13	27th International Workshop On Therapeutic Endoscopy at the Chinese University of Hong Kong	Hong Kong
Dec 19-22	NYSGE	New York, NY

JANUARY

Jan 25-27	Pancreatic & Biliary Endoscopy - Simon Lo	Los Angeles, CA
Jan 31-Feb 2	15th Düsseldorf International Endoscopy Symposium	Düsseldorf, Germany
Jan 31-Feb 2	XVII Curso Internacional de Gastroenterologia	Bogota, Colombia

FEBRUARY

Feb 15-16	Interventional Endo Course for GI Nurses & Tech (Parsons)	Las Vegas, NV
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MAY

May 19-21	Digestive Disease Week	Orlando, FL
May 19-21	SGNA	Austin, TX

SEPTEMBER

Sept 20-22	EndoFest	Las Vegas, NV
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OCTOBER

Oct 13-15	ACG	San Diego, CA
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