



## Interventional Endoscopy Enhances Care for Pancreatic and Biliary Cancers

Ordinarily, pancreatic and bile duct cancer patients find themselves caught in a vicious cycle. Because there are rarely symptoms in the early stages, they are usually diagnosed too late for curative treatment. At the same time, conventional diagnostic methods aren't effective at finding early-stage tumors even in at-risk patients.

However, recent advances in interventional and diagnostic endoscopy are dramatically changing the course of treatment, from more accurate diagnosis and staging for surgical purposes to more effective delivery of palliative treatments.

As one of the highest volume centers for endoscopic procedures in the nation, the University of Virginia Health System's Center for Digestive Excellence is a leader on all those fronts. Combining innovative research, the expertise of a multidisciplinary team and state-of-the-art technology, UVA offers a range of diagnostic and treatment options matched by few other medical centers.

"We function as a well-organized team, meeting twice weekly to develop treatment plans for individuals with complex gastrointestinal malignancies," says Reid B. Adams, M.D., chief of hepatobiliary and pancreatic surgery and director of the gastrointestinal oncology program. "The gastrointestinal oncology team comprises experts from gastroenterology, medical oncology, radiation oncology, surgery, pathology, interventional and diagnostic radiology, and palliative care who are all specialists in difficult-to-treat GI cancers."



Reid Adams, M.D., chief of hepatobiliary and pancreatic surgery, and Vanessa Shami, M.D., director of endoscopic ultrasound, work on UVA's gastrointestinal oncology team to diagnose and treat pancreatic and biliary system cancer.

### ADVANCED APPROACH TO DIAGNOSIS AND STAGING

Diagnostic accuracy is critical to developing an effective treatment plan for patients with pancreatic cancer. Until recently, this was difficult without exploratory surgery. As a result, survival has been poor compared to other types of cancers because it is usually diagnosed at an advanced stage, when surgery is not an option. However, endoscopic ultrasonography (EUS) has made earlier-stage diagnosis possible, especially in patients who present with obstructive jaundice and/or have small (less than 2 cm) tumors that may not be seen on a CT scan. Because EUS provides high-resolution images of deep-seated organs like the pancreas and biliary system, physicians are able to identify smaller tumors than was possible using standard imaging methods.

In addition, EUS enables physicians to evaluate whether the tumor has invaded surrounding structures, such as major blood vessels and lymph nodes. UVA's doctors can also use EUS to biopsy the lesion and determine resectability. "Endoscopic ultrasound enables us to identify, diagnose and stage the tumor, which has both diagnostic and prognostic value," says Vanessa M. Shami, M.D., director of endoscopic ultrasound at UVA. "We can then determine which patients are most likely to benefit from surgical therapy and those for whom palliative treatment is most appropriate."

### EXPANDED SURGICAL OPTIONS

From a treatment standpoint, surgery provides the best chance for a cure. For this reason, accurate pre-operative testing methods are critical to identify eligible patients and rule out

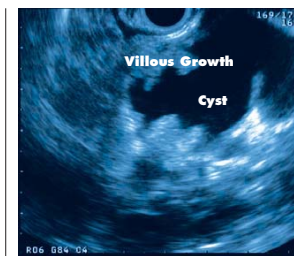
surgery for those who would not benefit.

The staging accuracy of EUS allows physicians to determine which patients may become surgical candidates following preoperative therapies. "Some patients with pancreatic cancer may not be resectable at the time of initial diagnosis. However, using a preoperative chemoradiation approach, these individuals may become operative candidates following this treatment," Adams says. "In addition, we have become increasingly aggressive about resecting these patients' tumors. Even if patients have some vascular involvement, we pursue resection, using techniques of vascular resection and reconstruction."

The most common pancreatic surgery is the Whipple procedure, in which surgeons remove the head of the pancreas, all of the duodenum, a portion of the bile duct and sometimes a portion of the stomach. Afterward, they reconstruct what remains of the pancreas and the digestive tract. A study published in the *Annals of Surgery* (April 2003) suggests that institutions should perform a minimum of 10 Whipple procedures annually to maintain the level of expertise and skills required by this complex surgery. In 2004, UVA performed 25 Whipple procedures – more than double that benchmark and three times more than were performed at any other institution in Virginia.

Less common malignancies in the body and the tail of the pancreas can be treated laparoscopically in some cases. "We are still one of the few programs in the country performing laparoscopic pancreatic surgery," Adams reveals. "An open operation remains the standard at most hospitals."

In 2004, UVA accounted for the largest volume of total pancreatic cancer patient discharges of any hospital in Virginia. UVA's complication and mortality rates also were better than those of Virginia hospitals as a whole, when comparing the actual number of



Endoscopic ultrasound image of a pancreatic cystic lesion. EUS provides the opportunity for earlier diagnosis and staging of pancreatic and biliary system tumors.

deaths to the expected number based on risk-adjusted measures.

### INTERVENTIONAL ENDOSCOPY

Because relatively few pancreatic or bile duct cancers are diagnosed at a surgically treatable stage, much treatment is aimed at either palliating symptoms or offering novel therapies.

Endoscopic Retrograde Cholangiopancreatography (ERCP) is one of the most effective ways to treat obstructive jaundice, a common complication. Originally diagnostic in nature, ERCP is now a principal tool to treat biliary obstructions and tumors of the bile duct, as well as pain related to pancreatic cancer. If a blockage is detected during ERCP,

for instance, a stent can be inserted to relieve the obstruction, allowing the bile to drain into the intestine. Left untreated, bile duct obstruction can lead to infection and liver failure, both potentially fatal. In addition, relief of jaundice typically restores a patient's sense of well-being, resulting in improvements in appetite and energy.

For biliary cancer patients, stenting procedures also can improve drainage and prolong survival. In some of those cases, stents are used in conjunction with photodynamic therapy (PDT), which research has shown to be effective in relieving biliary cancer symptoms and improving quality of life. During PDT, patients are given a light-activated drug that collects in tumors. The drug makes the abnormal tissues sensitive to light so that when a laser light shines on the drug-saturated tumors for a period of time, it causes the tumors to shrink. "Right now, by draining those patients, they can live three to six months longer," says UVA interventional endoscopist Michel Kahaleh, M.D., director of UVA's PDT program. "We're hoping that by adding laser treatment to those patients that they can live beyond six months and actually go beyond one year."

For a consultation or to refer a patient to the Gastrointestinal Oncology Program, call 800-552-3723.

### METAL STENTS EFFECTIVE FOR PANCREATIC CANCER OBSTRUCTIONS

Patients at the UVA Health System were among the first in the nation to receive the next generation of stents for treating obstructive jaundice – a major complication of pancreatic cancer.

Between March 2001 and November 2004, UVA doctors inserted the new, more durable metal stents in **80 patients** with bile duct obstructions from malignant cancer. The stents were still open in **90 percent** of the patients after three months and in nearly **80 percent** of patients after one year.