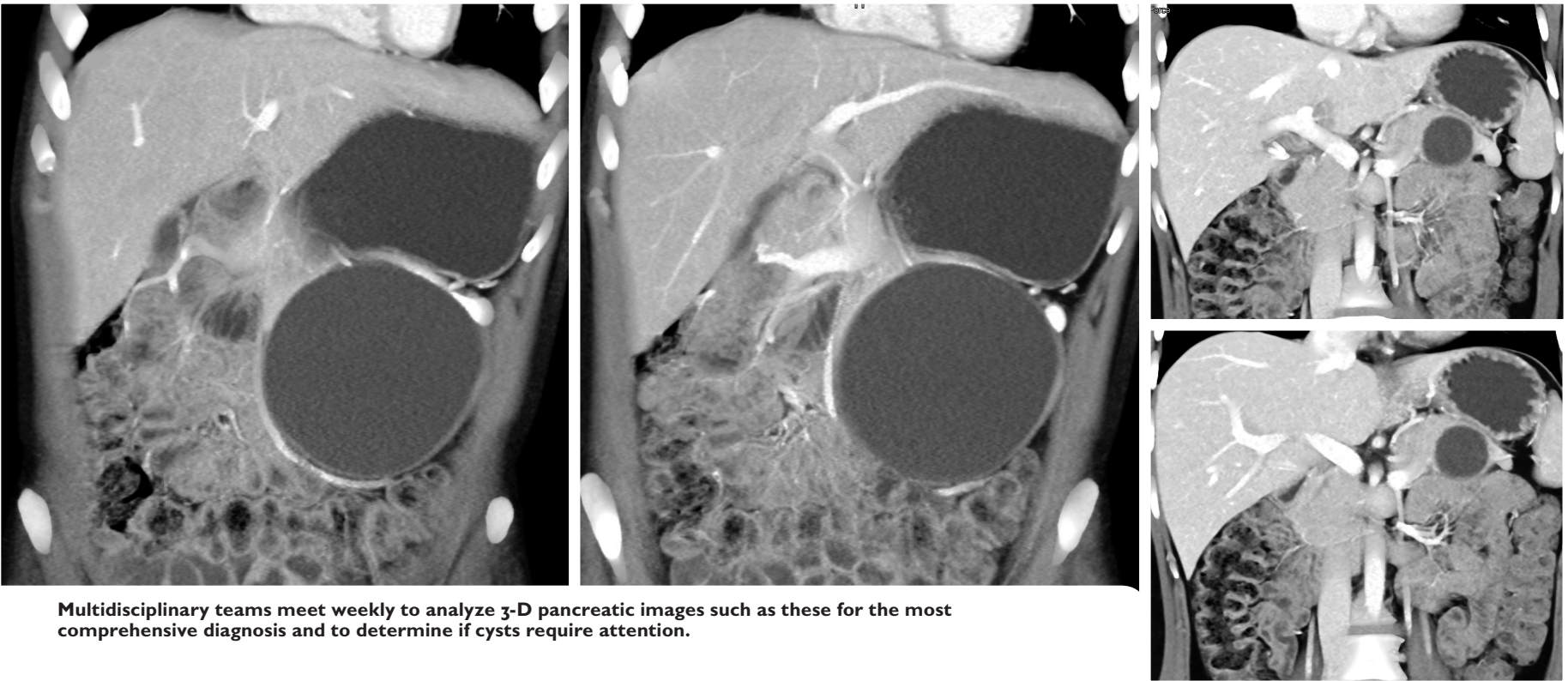


JOHNS HOPKINS InsideTract

FALL 2016

NEWS FROM THE JOHNS HOPKINS
DIVISION OF GASTROENTEROLOGY AND HEPATOLOGY



Multidisciplinary teams meet weekly to analyze 3-D pancreatic images such as these for the most comprehensive diagnosis and to determine if cysts require attention.

Pancreatic Cyst Clinic Gathers World-Class Experts

Late on a Monday afternoon, after dozens of endoscopies and colonoscopies, after hours over a microscope and after many surgeries, the multidisciplinary pancreatic cyst clinic gets underway.

The clinic gathers many of the world's leading authorities on pancreatic disease in one cluttered Johns Hopkins Hospital conference room. Surgeons, gastroenterologists, pathologists, radiologists, physicians assistants and even genetics researchers assemble weekly to collaborate on pancreatic cyst cases.

"Seventy-nine-year-old female patient," begins a nurse, who announces each case to the room. "Family cancer history."

The experts discuss each case, weighing options and assessing risk. Radiologist **Atif Zaheer** rolls a computer mouse back and forth, displaying on the screen three-dimensional images of the patient's liver, gall bladder, pancreas and intestines.

"Right there," Zaheer says, pointing to a bubblelike protrusion in the middle of the screen. "That's the cyst on the main duct."

Advances in CT scans, MRI scans and other imaging have, in the past few years, shone light on a whole new world of pancreatic cysts.

Diagnoses of cysts involving the pancreas have increased enormously, thanks to the ever-evolving ability to see the organ.

Very often, patients with pancreatic cysts show no symptoms. But more and more, cysts on the pancreas are turning up on scans of other organs. Some of the cysts are precancerous and can eventually lead to a patient's demise. Others are completely harmless.

"They're pretty common," says **Ralph Hruban**, pathologist and director of the Sol Goldman Pancreatic Cancer Research Center. "We did a study with radiologist **Elliot Fishman** looking at everybody who came into Johns Hopkins who got a CAT scan that included the pancreas. About 2.5 to 3 percent had a cyst on their pancreas."

Hruban says that, given the complexity of pancreatic surgery, operating on all of those cysts would do more harm than good. So the goal is to find the formula: Which cysts need attention, and which cysts can simply be monitored?

The patient whose scans led off the multidisciplinary clinic will get a recommendation for an endoscopic ultrasound so that the team can get an even closer look. The experts in the room are unanimous that, as long as the ultrasound looks OK, the patient doesn't need surgery yet.

After the clinic, Zaheer says that input from such a diverse group of specialists makes the multidisciplinary clinic so effective.

"It's very useful to bring together this whole group to look at cases," says Zaheer. "I think we learn from one another and, ultimately, our patients get the best possible care." ■

"WE DID A STUDY LOOKING AT EVERYBODY WHO CAME INTO JOHNS HOPKINS WHO GOT A CAT SCAN THAT INCLUDED THE PANCREAS. ABOUT 2.5 TO 3 PERCENT HAD A CYST ON THEIR PANCREAS."

RALPH HRUBAN





Ann Marie O'Broin Lennon,
Director of the Multidisciplinary
Pancreatic Cyst Program

Welcome to the all- pancreas edition of *Inside Tract*.

We're excited to bring you the "latest and greatest" in pancreatic research at our institution. This issue highlights the broad scope of clinical care and research offered by Johns Hopkins Medicine. We're proud to offer patients the widest, most comprehensive range of pancreatic services in the U.S. and the world.

Our multidisciplinary clinics—both for cysts and for cancer—are something we're proud of. We gather gastroenterologists, surgeons, oncologists, radiologists, genetic researchers and other specialists together to review clinical cases. Patients can be confident that they're getting medically solid advice on how to proceed with their care.

This issue features an interview with surgeon Matthew Weiss, a member of the pancreas surgical team.

In the interview, Dr. Weiss ties today's surgery to the long, storied history of pioneering pancreas surgery at Johns Hopkins.

Finally, we offer a short section on just a small sample of recent research here. We're working to solve one of the toughest puzzles we face in pancreas cyst identification and diagnosis: a reliable algorithm to predict which cysts need immediate attention and which can merely be observed.

On behalf of my colleagues in the Division of Gastroenterology and Hepatology, as well as those across the spectrum of pancreas care, I hope you enjoy this issue of *Inside Tract*. As always, if you have questions or referrals, please don't hesitate to contact us at 410-933-7495.

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PANCREATIC SURGERY

Good Hands

Johns Hopkins pancreas surgeons performed 500-plus operations last year.

In the late 19th century, William Stewart Halsted pioneered early pancreatic surgeries at Johns Hopkins. Since then, the hospital has remained at the fore of the field of pancreas surgery, with today's survival rates hovering near 99 percent.

Patients who need pancreatic surgery face many difficult decisions. The first and most important is where to have the surgery.

Recent studies have shown that the best option for an optimal outcome happens at a so-called high-volume center.

"There have been multiple studies showing that the higher the volume of pancreas operations an institution does, the better the patient outcomes," says **Matthew Weiss**, surgical director of the Johns Hopkins Pancreatic Cancer Multidisciplinary Clinic. "And we do more pancreas operations here at Hopkins than anyone else in the country."

Last year, Johns Hopkins surgeons performed more than 500 pancreatoduodenectomies, or Whipple



Recent studies show that high-volume centers have the best outcomes for pancreatic surgery.

patients get out of the hospital sooner."

In the surgical suites, Weiss says there can be three or four other Whipple operations being done at the same time. "We're all partners," he says. "We can help each other if we see something unusual."



"DR. CAMERON HAS DONE MORE WHIPPLE OPERATIONS THAN ANYONE IN THE WORLD," WEISS SAYS. "AND WE ALL LEARNED FROM HIM."

MATTHEW WEISS

procedures, which involve the removal of the head of the pancreas, along with the duodenum, part of the common bile duct and sometimes part of the stomach.

Many of these operations were done robotically or laparoscopically.

"Our center is the only one in the country that does pancreas surgery laparoscopically, robotically and open," Weiss says.

Surgical techniques and expertise have been handed down throughout the history of Johns Hopkins, beginning with Halsted to renowned innovator John Cameron to today's team of surgeons.

"Dr. Cameron has done more Whipple operations than anyone in the world," Weiss says. "And we all learned from him. Most of us now have moved on to minimally invasive, where there's less pain and the

But Weiss says the surgical outcomes are about more than just surgery.

"While we do have a great team of surgeons," he says, "it's so much more than that. Our nurses and our care team are the best around."

Patients leave the operating room and spend a night in the intensive care unit, where, says Weiss, "the nurses have taken care of thousands of our pancreatic surgery patients. So they know if things aren't quite right, and they know early. The nursing staff is great at early detection, since they've seen so many patients over the years.

"And then, God forbid, if there is a problem, we have an intern and we have an interventional radiologist who can fix problems with drains and things."

In the Johns Hopkins Pancreatic Cancer Multidisciplinary Clinic, individual cases are also looked at by a surgeon, medical oncologist, radiation oncologist, radiologist, pain specialist—even a nutritionist.

"The beautiful thing about that clinic is that

(continued on page 4)

Collaboration Is an Anchor of Johns Hopkins Research

The spirit of collaboration and collegiality among Johns Hopkins experts working on pancreatic disease extends beyond clinical care and all the way to research. Johns Hopkins researchers are breaking new ground all the time in the fight against pancreatic disease.

Promising Possibilities: Liquid Biopsies

Detecting cancer via a blood test has long been a goal in medicine. Advances in genomic sequencing are helping physicians at Johns Hopkins close in on that goal, especially as it relates to pancreatic and a few other gastric cancers.

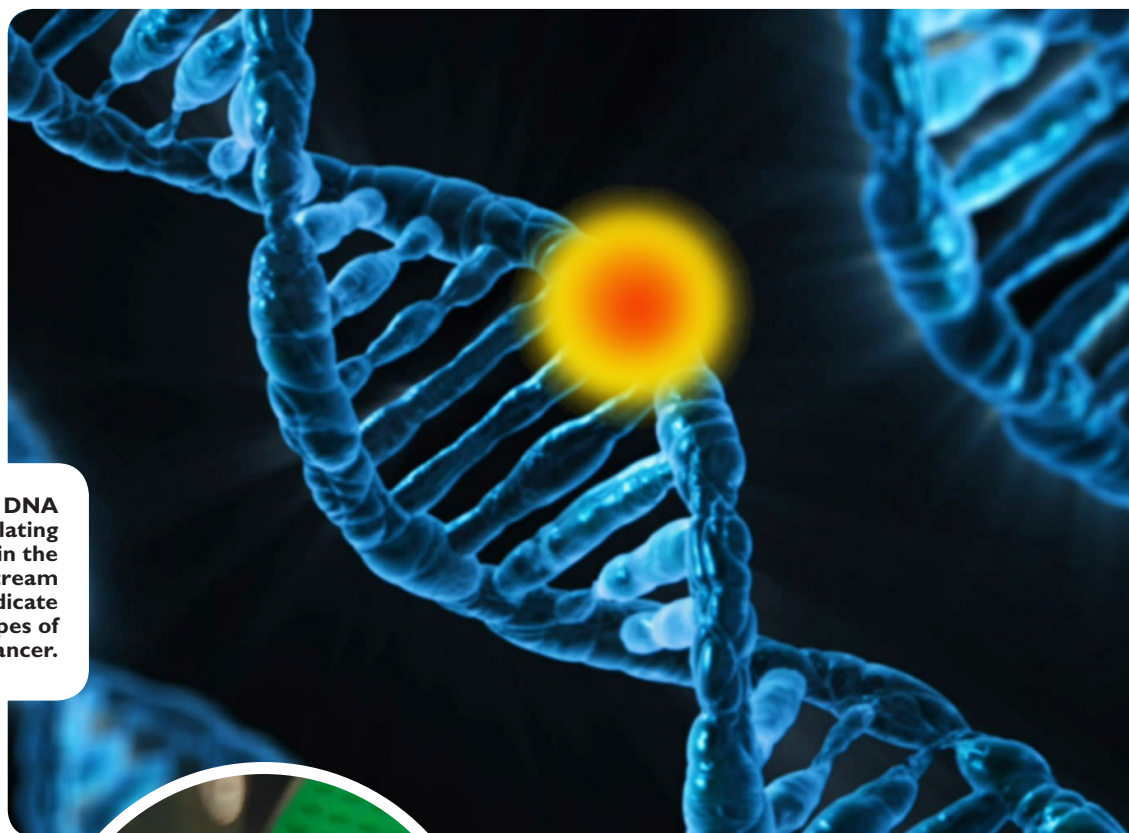
Since a landmark 2014 study of “liquid biopsies,” Johns Hopkins researchers and clinicians are gaining ground on this important diagnostic tool.

Two sources of valuable cancer-related information can be found circulating through a patient’s bloodstream: actual tumor cells and cell-free circulating tumor DNA, or ctDNA.

The study, led by neurosurgeon **Chetan Bettegowda** and co-authored by colleagues in gastroenterology, surgery and other fields, showed that many types of cancer could be detected with a blood test, as the test revealed ctDNA in bloodstreams. Bladder, colorectal, ovarian and gastroesophageal cancers were detectable via the patient’s blood 100 percent of the time, followed by pancreatic ductal cancer, at nearly 90 percent.

Other cancers were less reliably detectable through ctDNA. Thyroid cancer and glioma were detectable less than 20 percent of the time.

Tumor DNA circulating in the bloodstream can indicate many types of cancer.



To see a video in which Chetan Bettegowda discusses liquid biopsies to track cancer, please visit bit.ly/liquid_biopsies.

A Step Closer to a Pancreatic Cyst Algorithm

Researchers and scientists have called the idea of a formula or algorithm to determine which pancreatic cysts need surgery the “holy grail” of the field.

Anne Marie O’Broin Lennon, director of the Multidisciplinary Pancreatic Cyst Program, and her colleagues are working on such an algorithm.

Lennon and 35 Johns Hopkins colleagues published a paper in the summer of 2016 in the *Journal of the American Medical Informatics Association* reporting results of a study involving more than 1,000 Johns Hopkins patients with surgically resected pancreatic cysts.

Considering factors such as patient age and sex, and type, number and location of the cysts, along with symptoms such as abdominal pain, jaundice and weight loss, Lennon and her colleagues took a step closer to an algorithm physicians can use to determine the type of pancreatic cyst and whether resection or monitoring is the proper clinical approach.

“We felt that looking at a combination of

data factors might tell us more,” says Lennon, the study’s lead author. “Nothing is perfect, but we’re enthusiastic about the results.”

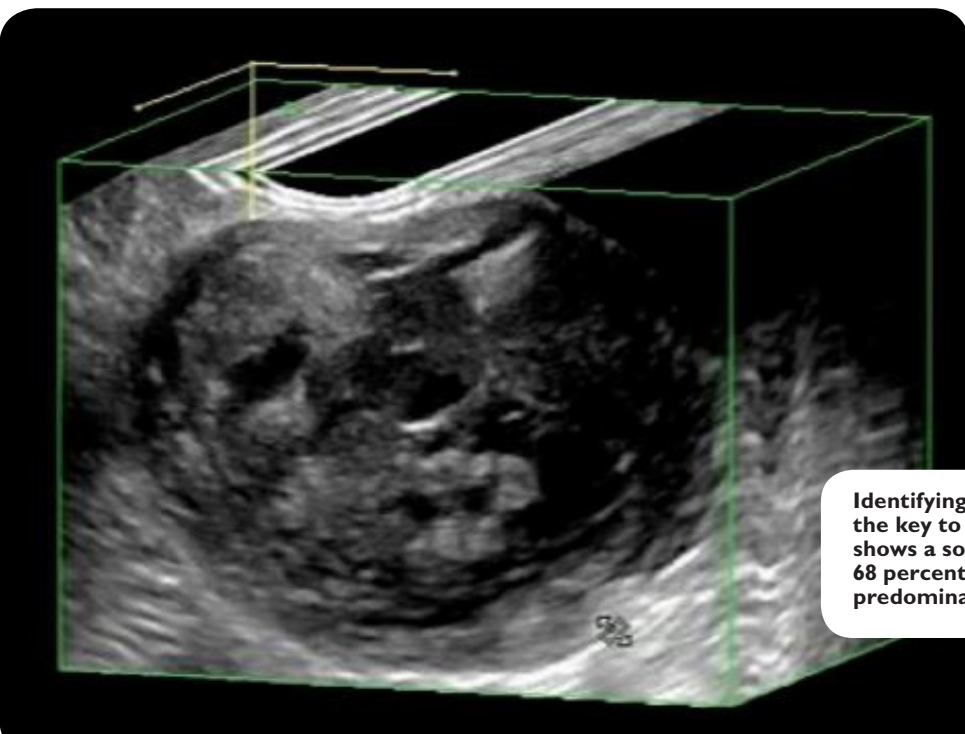
Because pancreatic surgery is invasive and recovery is lengthy, the Johns Hopkins team works to make sure pancreatic cysts present significant risk before choosing to operate.

There are four common types of pancreatic cyst: serous cystadenomas (SCAs), mucinous cystic neoplasms, solid pseudopapillary neoplasms (SPNs) and intraductal papillary mucinous neoplasms. They range in urgency from immediate to nonurgent.

Many have known for years that SPNs, common in women, should be surgically resected, given their local invasiveness and metastatic potential. But this study will help physicians identify those cysts sooner.

Women over 55 with pancreatic cysts who display signs of jaundice and unusual weight loss are, according to the study, likely to have SPN cysts and thus are candidates for resection surgery.

On the other hand, people 25 and under with abdominal pain and main pancreatic duct dilation often have SCA cysts that can be monitored. ■



Identifying the type of pancreatic cyst is the key to the right treatment plan. Image shows a solid pseudopapillary neoplasm, 68 percent solid cystic, 32 percent predominantly solid.

Good Hands

(continued from page 2)

patients come in and their cancer is treated ‘multimode,’” says Weiss. “It’s not just surgery, it’s not just chemo, and it’s not just radiation. Most people need at least two of those treatments.”

Weiss believes Johns Hopkins provides better outcomes because its clinicians recognize problems sooner.

“We know how to intervene, and we have surgeons, intervention radiologists, nursing staff and gastroenterologists, all of whom have taken care of these problems so many times. Between that and our constant work to get better, things in our clinic run just like clockwork.” ■

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Inside Tract is one of many ways the Johns Hopkins Division of Gastroenterology and Hepatology seeks to recognize and enhance its partnership with its thousands of referring physicians. Comments, questions and thoughts on topics you would like to see covered in upcoming issues are always welcome.

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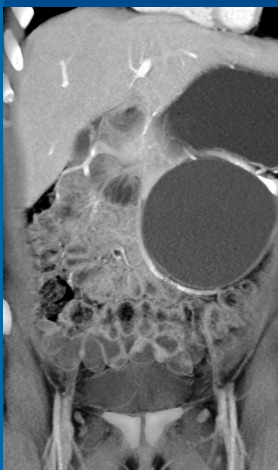
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MEDICINE

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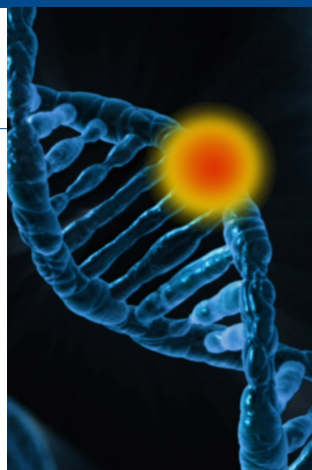
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