

PhysicianUpdate

FOR HOPKINS CLINICAL FACULTY AND REFERRING PHYSICIANS

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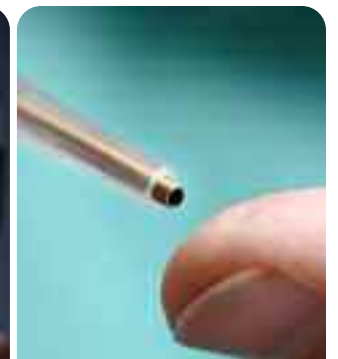
‘Neurosurgery’ on the Pancreas

Unconvinced that the swelling in his patient’s foot had a vascular origin, Michael Fox’s physician ordered a CT scan to see if a lymph node abnormality might be the culprit. The lymph nodes appeared to be fine. But to the consternation of both doctors—Fox is a Colorado Springs radiologist—the imaging showed a 4-centimeter mass on the head of his pancreas.

Fox spent the next 18 days researching his options. He underwent an endoscopic ultrasound with biopsy; he had an MR scan. Everyone agreed the tumor looked benign. And with a single exception, his colleagues said his sole treatment possibility was the Whipple procedure, which would remove not only the head of his pancreas but his gallbladder, common bile duct and part of his duodenum as well. Only the surgeon in his group practice, citing “a lot of morbidity and mortality,” advised against the operation.

“Finally,” says Fox, “someone said I should go to a major center: Sloan-Kettering, M. D. Anderson, Hopkins. For some reason, that last name stuck. I went to the Web and searched surgeons, organ, pancreas. Up came **Dana Andersen’s** picture and information on his duodenum-sparing procedure. I wondered if that might be my surgeon.”

Andersen, chief of surgery at Johns Hopkins Bayview Medical Center, understands why most physicians hear *pancreatic lesion* and immediately think *Whipple*. Although less drastic operations were introduced in the 1980s for benign and premalignant tumors or chronic inflammation on the head of the pancreas, they’re rarely performed in the United States. Andersen believes that should change. He’s developed a technique for excavating the central core of the pancreatic head and removing the



With the help of an instrument more familiar to brain surgeons, Dana Andersen can spare patients with benign pancreatic lesions from having to undergo a Whipple.

proximal main pancreatic duct while preserving the posterior capsule and neck of the pancreas. His “less-than-a-Whipple” means that because he’s resecting a smaller portion of the pancreas and none of the small intestine, morbidity is lower and patients are unlikely to have subsequent digestive problems or diabetes.

Still, Andersen says, “the pancreas is very vascular, so coring out the head is technically challenging.” To do that safely, he uses an ultrasonic aspirator and dissector, an instrument more commonly found in the hands of neurosurgeons. “It has a high-frequency pulse at the tip that shakes apart the tissue ahead of it, but in a minute area,” he says. “The tissue separates before you, like the biblical parting of the waters. You can see the blood vessels *before* you get to them. That’s why brain surgeons love it, but most pancreatic surgeons are unaware of its

utility for ‘our organ.’”

Andersen first used his excavation procedure to relieve chronic pancreatitis. He’s since shown that it’s also a godsend for patients like Fox. “By our standard,” Andersen says, “the Whipple is very safe and reasonable for bad disease of the pancreas but it may be overkill for patients without invasive cancers.”

Eager to learn if Andersen’s approach could apply to him, Fox e-mailed the Hopkins surgeon, then sent him his imaging studies. Andersen concurred that Fox’s tumor had all the radiologic characteristics of a benign lesion and thought he’d be a good candidate for excavation. One reason was size.

“We discover a lot of these lesions because more patients are having CT scans,” Andersen says. “Some lesions are very tiny, and we’re in no rush to remove them; benign little cysts can stay benign

little cysts. So, we follow them with endoscopic ultrasound or CT if they’re less than 2.5 centimeters. But once they get bigger, the risk for malignancy begins to rise.”

Fox, who finally felt he had enough information to make a decision, flew to Baltimore in October. He was discharged five days after the operation and stayed another week in a local hotel in case of complications (there were none). The 49-year-old still doesn’t know what’s wrong with his foot, but he has developed a mission.

“I teach residents at Colorado University,” he says. “I’m putting up my case for discussion, and I’m telling them that there are two treatment paths, not one. I’m also telling them that, unfortunately, they may be the only ones who know about this.”

☎ 410-550-2821 to learn more.

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Where Framingham Scores Fall Short

Ask cardiologist **Roger Blumenthal** whether traditional assessments really nail the patients who are likely to develop coronary artery disease and he pulls no punches. “The standard Framingham Estimate is dummed down,” he says. “It low-balls the future cardiovascular risk, especially in women. And if you follow the American College of Cardiology/American Heart Associations guidelines, most women less than age 70 don’t even qualify for aspirin or lipid-lowering therapy.”

One problem with these gauges, says the director of Hopkins’ Ciccarone Preventive Cardiology Center, is that their lists of heart disease risk factors stop too soon. Framingham, for example, relies on such well-known factors as age, cholesterol level, systolic blood pressure and smoking status, yet ignores weight, exercise habits, triglycerides and family history of premature cardiovascular disease. And two years ago, Blumenthal, cardiologist **Erin Michos** and other colleagues showed that this gold-standard assessment seriously underestimates the number of women who are actually vulnerable.

In that study, they calculated the Framingham scores of women without heart disease symptoms themselves but who had a sibling who’d been hospitalized for a coronary event. Only 2 percent of the women were judged to be at intermediate risk; the remainder scored as very low risk. But when the researchers mea-



Roger Blumenthal: Traditional ways to gauge heart disease risk don’t measure up.

sured arterial calcium buildup using cardiac CT scan measurements, they found atherosclerosis in a third of the supposedly very-low-risk women. In 12 percent, the condition was advanced, and in another 6 percent it was severe.

Since cardiac CT scans make little sense for all patients with low Framingham scores, Blumenthal and his group

began seeking other signs that correlate with a high coronary calcium score. What they learned is that patients who have two or more risk factors, such as obesity, smoking or metabolic syndrome, plus a family history of heart disease, are likely to have a significant level of arterial calcium buildup. For these patients, Blumenthal says, a cardiac CT scan can

confirm the presence and severity of atherosclerosis and provide firm footing for starting preventive therapies such as daily aspirin and a statin.

The importance of factoring family history into every cardiac disease risk assessment—especially in women—was underscored this year when a study evaluating the predictive value of more than 35 risk factors showed that a coronary event in a parent or sibling doubles a woman’s likelihood of arterial disease. That report, using data from the U.S. Women’s Health Study, also flagged high blood levels of C-reactive protein (which is highly correlated with suboptimal dietary and exercise habits as well as overweight status) as another significant predictor of risk.

Blumenthal considers these findings compelling, and he’s called for an expansion of assessment criteria to more routinely take into account a person’s family history of cardiovascular disease

“We have the tools—imaging, blood studies—to find early cardiac disease and intervene,” he says. “Now we need to stop classifying so many people as very low risk when they’re clearly not. Everyone needs to try to improve their lifestyle habits, but some adults should qualify for medications at an earlier age than what traditional risk assessment would say.”

☎ 410-955-7376 to learn more.

NEUROSURGERY

The Key to Brachial Plexus Repair? **Act Fast**

Denise McCreery came to at 11:16 that morning in the front seat of her car, which was pressed up against a left guard rail on I-95 in Maryland. She was covered in fine bits of blue shattered glass, with the chill March wind blowing easily through the jagged space where her windshield used to be. The engine was still humming, the radio still on. Noticing that she couldn’t move her left side, she dialed 911 on her cell phone with her right hand.

That was two years ago. The 31-year-old educator had been struck in the left shoulder by a 13-pound brake drum that had broken off a truck ahead of her. The hurtling hunk of metal had bounced off the asphalt, penetrated deeply into her left shoulder and sliced through the intricate

brachial plexus area of her upper torso. It broke McCreery’s collarbone, two ribs and six vertebrae, paralyzing her left shoulder and arm down to the wrist. After weeks of physical therapy, a spine specialist near her home in Virginia imparted the bad news: Injuries to the brachial plexus complex are notoriously unresponsive to even the most skillful medical interventions: “I’m afraid there’s no way you’re going to get your arm back.”

Such predictions are all too common, according to neurosurgeon Allan Belzberg. What happens then is that patients or their caretakers fail to seek out proper help within an adequate time frame. “Don’t wait,” Belzberg says. “The earlier we get the patients, the better our results.”

Denise McCreery is a good example of what he’s talking about. Just three weeks

after her accident, McCreery sought a second opinion that brought her to Belzberg’s multidisciplinary team. “Her arm was hanging,” he recalls. “Her hand just hung by her side. The hand is almost useless if the arm can’t bend.” But what McCreery recalls most about that meeting is Belzberg’s description of the wonders of nerve transfer. “We’ll see what we can do,” he told her.

The operation was scheduled for just over three months post-accident. “A good window,” says Belzberg. When the surgical team opened McCreery’s brachial plexus structure, they had to navigate around formidable stretches of inflexible scar tissue that had rendered some portions of nerve material unusable. But they also identified working nerve portions they could use for nerve transfers. During

the 10-hour surgery, the team redirected one nerve headed for the scapula to a shoulder muscle, one nerve headed for the triceps to a second shoulder muscle and one nerve headed for the hand to the biceps muscle.

For a time, Belzberg explains, the transferred nerves “remember” their old functions, so McCreery would have to think “make a fist” to raise her arm. But with time, the plasticity of the nervous system would allow the movements to come automatically.

Belzberg’s predictions proved right on. Seven months post-op, McCreery could lift her left arm over her head. Today, she can hold her 23-pound niece aloft. “We got in early,” Belzberg says, “and were able to rewire the system.” ☎ 410-614-9923 to learn more. ■

The Real Trauma of Traumatic Brain Injury

They're nobody's baby." Psychiatrist **Vani Rao** says that of more than a few of the patients who see her after their auto accidents, falls or assaults resulted in brain damage. At some point, losing consciousness and/or memory got them rushed to an emergency room, and then surgeons were quick to address what they could. "But after rehab and follow-up visits," says Rao, who heads Hopkins' Brain Injury Clinic, "these patients are often left on their own because, supposedly, their acute problems have been tended to."

For many of the 1.4 million annual survivors of traumatic brain injury (TBI), however, that's when the real trauma begins. "Neurological effects usually improve or become stable with time," Rao says, "but emotional, mood and behavior disorders can persist over months or years." Anxiety, apathy, a whittled attention span and other cognitive and psychiatric problems aren't rare. Hair-trigger anger or unbridled bluntness, for example, redefine some survivors' personalities. "Before long, their families' patience fades. Then everyone suffers." TBI raises the risk of death by suicide to four times that of the general population.

Because the need for therapy is great, Rao set up the Brain Injury Clinic some six years ago as part of Hopkins' community psychiatry program. And because TBI is "understudied and underdiagnosed," Rao has found herself one of few U.S. psychiatrists working to define its mental effects and clarify the problems that follow.

How does the clinic help?

Rao first addresses the biology. "Some problems clearly stem from the injury," she says. Frontal cortex damage or short-circuited deeper brain circuits can make patients impulsive or bring on major depression. Antidepressants can ease the latter, which affects a third to a quarter of TBI patients. Other drugs may tighten attention, memory or executive function.

"But to say it's *all* biology," Rao says,



Highly individualized treatment helps Vani Rao's patients "rescript" their lives.

"accentuates the disease at the expense of the person." There are psychosocial aspects: TBI's dramatic onset, for exam-

ple, often swamps patients' coping abilities. It widens hairline cracks in family relationships. And patients' sudden drop in self-awareness—common in prefrontal injury—distresses everyone. Abnormal social or sexual behaviors, for example, may surface as inhibition fades, and suggestive remarks or inappropriate touching can really send life downhill fast, she says, especially when a patient's self awareness is weak

So Rao assesses the new vulnerabilities and ways patients respond to what life hands out. "We help patients see that they're easily frustrated, for example, and teach ways to avoid situations that play on that." Targeting troublesome behavior that's within patients' control is also useful, Rao says. "People need to know that their problems are common after TBI, that they're not a sign of moral weakness, and that they can become whole in a new way."

☎ 410-550-0019 to learn more.

ENDOVASCULAR SURGERY

A Gentler Fix for Broken Aortas

It's the sort of injury that smart trauma teams look for whenever they receive the survivors of a high-speed car crash. Though the patients' broken bones might be instantly obvious, the deadliest culprit may lurk within—a torn aorta, either actively leaking blood into the chest or about to come apart. The complication typically propels surgeons into an urgent open-chest procedure.

But what happens when a patient is too fragile to survive heavy surgery and further blood loss?

Such a case presented itself on a Tuesday evening, when 72-year-old Raymond Sheffler was brought into the Emergency Department at Johns Hopkins Bayview Medical Center bleeding heavily from five cracked ribs and other injuries sustained in a head-on collision minutes earlier. During exams, Sheffler complained of nausea. A sharp-eyed radiologist then detected the torn aorta next to Sheffler's heart, accompanied by a telltale bulge in the great vessel.

Sheffler's age and other injuries made him a high-risk candidate for emergent open-chest surgery, yet his stars



Mahmoud Malas takes a different route to the injury.

Malas made a 2-inch incision into Sheffler's femoral artery. He deployed a delivery sheath into the artery to smooth the way and threaded it up close to the aorta's injury site. He then inserted a catheter through the sheath. The tip of the catheter was equipped with a 4-

inch self-expanding stent composed of a corrugated Gore-Tex hose reinforced with thin metal wire. Malas used intraoperative imaging to guide his placement of the endograft, triggering its expansion after it straddled the aorta's rupturing section.

Once the endograft was deployed, blood again flowed securely through Sheffler's biggest blood vessel. Sheffler was sent home three days later. An open chest procedure would've easily required a weeklong hospital stay and extensive rehab.

Malas says he's bullish about the endograft procedure because it's proving safer than open-chest techniques: It also reduces the risk of diminished nerve function to the limbs that can accompany open procedures. "This procedure only took two hours," he says of the Sheffler case. "And he only lost 10 ounces of blood, about one-tenth of what he would have lost in an open-chest procedure." ☎ 410-550-5332 to learn more.

Malas quickly determined that Sheffler could die without a rapid aortic repair, which is traditionally performed by sawing through the patient's ribs and replacing the torn portion of the vessel with an artificial graft. But Malas decided Sheffler was the perfect candidate for a minimally invasive approach much like the one used in common cardiac stenting procedures.

Malas says about 8,000 Americans suffer from ruptured aortas annually—mostly from high-speed collisions—and that up to 90 percent of them die at the scene. He adds that, of the remaining 10 percent who make it to the ED, half of them die because their condition isn't recognized. (Malas credits more than a dozen of his colleagues for correctly diagnosing Sheffler's injuries at critical stages.)

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Consultation with Mary L. Harris

Associate Professor of Gastroenterology

For both women and men with inflammatory bowel disease, any wish to become a parent often looms as a can't or a shouldn't. Whether these beliefs stem from fear, misinformation or both, IBD expert Mary Harris meets them with frankness—and armloads of data.

Most patients are hit with ulcerative colitis or Crohn's disease during their child-bearing years. They're probably taking medication; many undergo surgery. Are these factors that can push people away from the idea of having a family?

Absolutely. You need confidence and self-esteem to have an intimate relationship in the first place. IBD patients may be afraid they'll be incontinent during intercourse. They can have body-image problems due to fistulae, perineal disease, stoma surgery, hirsutism and other medication side effects. Women, especially if they have fistulae, may find intercourse painful. A small percentage of men who've had a proctocolectomy experience erectile dysfunction. Part of what I do is bring up these issues to help patients deal with them.

Beyond intimacy itself, what else makes IBD patients skittish about conceiving?

One of the most common worries is that they'll pass on their IBD, and some factors do increase the possibility: being



IBD and pregnancy can co-exist, says Mary Harris.

Ashkenazi Jewish or having Crohn's rather than ulcerative colitis. If both parents have IBD, there's a 35 percent risk that their child will too.

What about fertility?

When a woman's disease is in remission, conception shouldn't be a problem.

Active Crohn's, however, could affect her ability to conceive, and an ileal pouch anal anastomosis could result in an 80 percent drop in fertility. Certain IBD drugs can also interfere with spermatogenesis, impair motility or reduce sperm count.

Do patients have to stop their medications before and during pregnancy, and postpartum if they plan to breast-feed?

I know some physicians get that deer-in-the-headlights look if they have an IBD patient who's contemplating pregnancy, but the fact is, disease activity is far more dangerous to mother and child than most drugs. I've prepared a packet of abstracts, for patients and their obstetricians, on all the different IBD medications that are safe in pregnancy and breast-feeding, and I go over all of them with patients. That shouldn't be a deal breaker. The key is education and planning—patients should be in remission at least three months before conception. I also see them during each trimester and six to eight weeks postpartum, when there's a heightened chance of relapse.

So, reassurance is everything?

Of course. This is about quality of life. Patients are reinvigorated and rejuvenated knowing they can lead a normal or near-normal reproductive life.

☎ 410-955-4081 to learn more.

Your Vital Links

Johns Hopkins Medicine offers the following links to physicians in the surrounding community. It also urges M.D.'s to use its Physician Liaison Service to offer suggestions and comments. Good communication, we believe, is vital.

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Hopkins Access Line (HAL): Physician-Only Line for Consultations, Referrals and Patient Transfers

1-800-765-5447 (Continental United States)

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Online Referral Directory

www.hopkinsmedicine.org

Physician Liaison Service:

Concerns or Suggestions for Hopkins Medicine

1-800-759-7734 (Continental United States)

410-502-2737 (Baltimore area and international calls) jhmcares@jhmi.edu

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www.hopkinscme.org

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