

For nearly a year now, I've had this weird sensation. I suppose that it's there all the time, but I'm more aware of it at certain times than at others. It's a feeling of fullness—sort of pressure or swelling—in my abdomen. Sometimes it feels as if it might pop right open. It's uncomfortable, but, strangely, it's not painful."

There, even though I feel foolish, I've finally told my internist, Dr. Harley Friedman, about my concern. Mercifully, he doesn't even smile. The thing I like most about Dr. Friedman is that I am pretty sure he's really smart. Of course, all the doctors at DHMC are smart, or they wouldn't be here. But I once heard him explain the applications of chaos theory to medicine at Grand Rounds, so I know that he is a lot smarter than I am.

"Putting that together with the fact that you have lost 10 pounds in the last three months," said Dr. Friedman, "I think that we had better schedule you for a CAT scan." A CAT scan ("CAT" stands for computerized axial tomography) is a series of sectional x-rays taken at very high speeds that—when assembled into a single picture by a computer—has the ability to visualize the interior of the body in exquisite detail. I had thought that there were good explanations for the fact that I'd lost those 10 pounds during the most brutal winter Hanover had seen in 30 years—including a bout with pneumonia and the need to get up a couple of times a night to keep the woodstove going 24/7. We'd also had a disastrous flood that eventually led to the loss of all our first-floor flooring and necessitated turning off the furnace for a week. Moreover, our youngest son was in Kuwait in a unit on the front lines, waiting for the word from the White House. Still, I was relieved that we were going to do something about my belly.

An alternative to doing a CAT scan would have been an MRI (which stands for magnetic resonance imaging), but since the last time I'd had one of those, I had acquired a pacemaker. Pacemakers can't function in the strong magnetic fields required for an MRI, so that was out.

The CAT-scan machine looks something like the MRI machine, but you don't have to be wheeled completely into a claustrophobic torpedo tube. For an abdominal scan, you only have to go partway into the machine. First, you have to drink multiple glasses of a contrast media—to make the parts of you they want to look at stand out on the image—and they also put in an intravenous line.

Smith, the Irene Heinz Given Professor of Pharmacology and Toxicology Emeritus, joined the Dartmouth faculty in 1960. His byline appears regularly in DARTMOUTH MEDICINE, but he usually writes about current faculty research (see page 4 in this issue for his latest such piece) rather than about his own medical travails.

Once you're in the machine, they tell you to hold your breath and a wheel spins around taking pictures of you from all angles. After a while, they inject another radiopaque dye, telling you that you will experience a sensation of warmth. I imagine that what I felt must be something like the hot flashes of menopause, so I am now more sympathetic toward women in that phase of life. The scans are then repeated.

A week later, I was back in Dr. Friedman's office. "Well, they found two things," he said, "both of which are probably nothing. But they are so small that they can't tell exactly what they are. There is a kind of a shadow in the intestinal wall. Since you are due for a colonoscopy anyway, we should schedule that, and they can take a much closer look at that particular area. The second thing is a growth on your pancreas. It might be a cyst or it could be something else." That got my attention. The "something else" would certainly include cancer, and pancreatic cancer is a particularly nasty kind. Friedman laid out several options as to how we might proceed. I decided on the least invasive one—wait three months and repeat the CAT scan to see if the growth had gotten any bigger.

In the meantime, I had the colonoscopy. It was my third or fourth one, so I knew what to expect. The worst part is drinking the gallon of electrolyte fluid the night before to cleanse your bowel. The next day, the gastroenterologist comes in wearing rubber boots and a rubber apron, as if prepared to deliver a calf. The scope is said to be flexible ("flexible sigmoidoscopy" is the official term for the procedure), but it doesn't feel like it is. This time, my attempt to be jocular—I commented, as the scope was poised for its journey, "There are members of 40-some consecutive classes of Dartmouth medical students who would love to be in your shoes today"—did not elicit a grin.

After a week, the report arrived, full of fancy color photographs of the interior of my bowel. It was mostly negative: no lesions, no inflammation, no polyps. However, the gastroenterologist was obviously puzzled by one finding: my colon was swollen. "What is the significance of that?" I asked.

"I have absolutely no idea," was the reply.

"Could it account for my weird sensation of abdominal pressure?"

"Haven't the foggiest."

So I sought a second opinion: "If there are no signs of inflammation," I was told, "don't worry about it." That sounded good to me. I had plenty of other things to worry about, especially my pancreas.

The three-month CAT scan showed that the growth on my pancreas was exactly the same size. I

Having major surgery is no game, despite the advances made by modern medicine. Even a patient who spent 40 years as a researcher on the Dartmouth Medical School faculty found himself awed by the complexity of what happened both in and out of the OR when he was scheduled for surgery.

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was ready to exchange high fives with Dr. Friedman, but he wasn't satisfied. We should have another one at six months, he said, just to be sure.

The next time, the news was not so good. It had definitely gotten bigger. Now the options were fewer and included a biopsy. In order to prepare for the biopsy, I had to stop taking warfarin (a drug also known by the brand name Coumadin). Warfarin is an anticoagulant—or blood-thinner—that I have been on for about 10 years as a stroke preventative. It would not do to be anticoagulated during a biopsy, since one of the risks of any surgical procedure is bleeding. So I stopped taking warfarin four days before the procedure's scheduled date. On the appointed day, they checked my prothrombin time—a test that measures how long it takes your plasma to clot—to see if I was back to normal from my usual therapeutic, anticoagulated state. The results were reported as an INR (international normalized ratio), and my number was in fact normal.

So I was put under anesthesia, and then (so they told me) the surgeons lowered a probe into my stomach and, with the aid of ultrasound, positioned it over the growth on my pancreas. Next, they shot a needle through my stomach wall to retrieve some tiny pieces of tissue from the growth. It took a week for the pathology report to come back. It was negative: only normal tissue was found. One would have thought that that would be good news, but a negative finding isn't decisive. Cancer could actually be there, but the sampled tissue by chance simply didn't include any of the cancer cells.

Suddenly, I found myself talking to a no-nonsense general surgeon, Dr. Richard Barth. How did that happen so fast? Barth insisted that I look at

“the thing” on my six-month CAT scan. It meant diddly to me. But I agreed with him that it looked as if it was sitting right on top of my pancreas. Dr. Barth summed up his opinion this way: “It's there, it's getting bigger, and it ought to come out.” Besides smart, I like decisive. He then went through the various possibilities of what he might find when he had the gland in his hands. And for each of the possibilities, he had a surgical approach. They all sounded drastic, but worst of all was the “Whipple,” a procedure first performed in the 1930s by Dr. Allen Whipple. A Whipple involves a massive rerouting of the intestines and hours and hours on the operating table. Please, please, I implored the fates, don't let it be a Whipple.

I'm not a very good risk for major surgery in any case, and it looked like I was facing something of that sort, even if not a Whipple. I was at that time 71 years old, I have a pacemaker, and, most worrisome of all, I have chronic obstructive pulmonary disease. I'm basically functioning on one lung. Nevertheless, we set a date and I started trying to psych myself up for it. Two weeks before the scheduled operation, I went in for a preop physical exam with a physician's assistant. Dr. Friedman joined us near the end. I told him my concerns about my lung function, and I mentioned that my sputum had been looking a little “ugly” for the past several days. Just to be safe, he suggested a five-day course of antibiotics. But when you are on warfarin, you have to be very careful about adding other drugs to your regimen. Some drugs counteract warfarin's effects, while others magnify them. For example, erythromycin would be a poor choice of antibiotic for someone on warfarin, as it is known to dangerously increase its anticoagulating effect. Dr. Friedman was careful to select azithromycin; it is chemically related to erythromycin, but at least three textbooks that I consulted said it was compatible with warfarin. Since I had to again stop the warfarin four days before the operation, the azithromycin and warfarin would only overlap for a day or so anyway. What could possibly go wrong?

The big day finally arrived, as all big days have a way of doing. I reported to the admissions office at the hospital and went through the elaborate ritual of checks and balances. I reported to a prep room, stripped, and put on one of those ridiculous johnnies that never seems to conceal anything. Then another set of checks and balances: right time, right patient, right doctor, right operating room, right procedure. The stars seemed appropriately aligned. They were getting ready to put in an intravenous line when Dr. Barth walked in. “I can't operate on you today,” he said. “Your INR is just as high as it was before you stopped taking the war-

farin.” The operation had to be cancelled. I put my clothes back on and headed home.

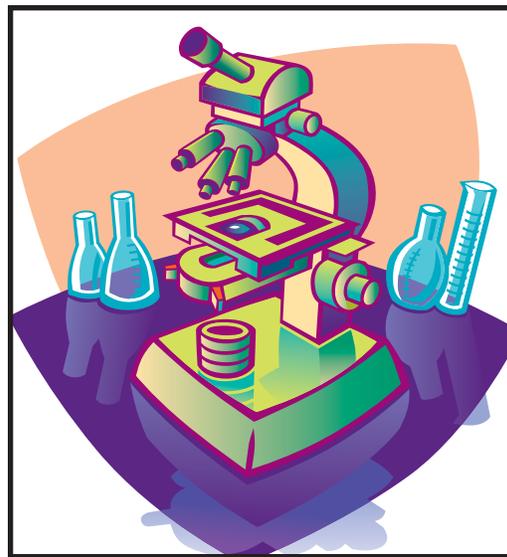
How could that have happened? The only difference between the biopsy, when stopping the warfarin had worked fine, and the operation, when stopping it had not worked, was the supposedly safe antibiotic. But people are different and thus respond to drugs in different ways. Vitamin K is a warfarin antagonist—meaning it counteracts the drug’s effects—and some of the vitamin K in our bodies comes from diet but some is made by friendly bacteria in our gut. Dr. Friedman speculated that the azithromycin had wiped out just enough of the bacteria in my gut to decrease my vitamin K levels just enough to allow the warfarin to continue its anticoagulant effect.

That was a Tuesday. As luck would have it, Dr. Barth had had a cancellation for the next Monday, and I was rescheduled into that slot. He gave me an injection of vitamin K, and I continued to stay off the warfarin. In a few days, my INR was back to normal. The stars were again aligned. Back we went through the whole admissions and prep rigmarole. But this time I woke up in the recovery room. The operation had gone well. The location of the growth was such that it had been fairly easily removed. Whew, no Whipple.

The next morning, Dr. Barth arrived on rounds with a squad of residents. As they trooped in, for some reason I was reminded of Parris Island. They all sported buzz cuts and dazzling white T-shirts—and could those scrubs really be starched? “We want you to start walking today,” ordered Dr. Barth (who, it was obvious, was worshipped by the residents). He was not kidding. The platoon did an about-face and marched out in close-order drill.

I had tubes coming out of almost every natural orifice, as well as from one that was not previously there. But the nurses, both men and women, were wonderful. They got me, my tubes, and all the rest of my gear out of bed. I started shuffling down the hall as one of them followed me, pushing a chair. I felt like I was a kid once again and my parents were teaching me to ice-skate. We only went a dozen steps, but it was a start.

Meanwhile, the removed tissue was examined by a pathologist, Dr. Daniel Longnecker, an expert in pancreatic cancer. He concluded that it was “an intraductal, papillary, mucinous neoplasm.” Although benign at that stage, it was the sort of tumor that has a tendency to become malignant down the line. The right decision had been made. I have a foot-long souvenir that runs down the middle of my belly, but I am a very lucky man: Not only was my tumor found early, but I have good insur-



ance coverage and access to excellent medical care.

Several themes emerged from this experience. First, I have read that fairly often the original complaint that leads a person to consult a physician is a red herring. But when modern physicians apply today’s powerful technology to an older patient, they usually find something that needs fixing—something that neither of them previously suspected was there. And a corollary is that even the best doctors still find things that they do not understand and cannot explain.

Second, when you are a hospital patient, there are many more people involved in your direct care, whom you never see, than ever gather around your bedside. For example, the “secret service” of caregivers includes the radiologists and the pathologists who study your x-rays and your tissue samples. It includes the clerks who file the x-rays so the radiologists can find them, and the technicians who prepare the samples so the pathologists can view them. It includes a whole laboratory full of people who run clinical tests on your blood and urine. An entire pharmacy staff, dedicated to making sure you get the right drugs, in the right dosages, at the right times. A huge cafeteria with dieticians who make sure you eat the right stuff, cooks who prepare it, and aides who deliver it. And on and on.

Finally, for major surgery to come off without a hitch, aligning all the stars correctly is a miracle of planning, coordination, and execution (no pun intended). The invisible people who do all the scheduling are miracle workers, too. And when the stars are not properly aligned, the true test of the caliber of your advisors is whether they have the good sense to call it off and start over again at square one. ■

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