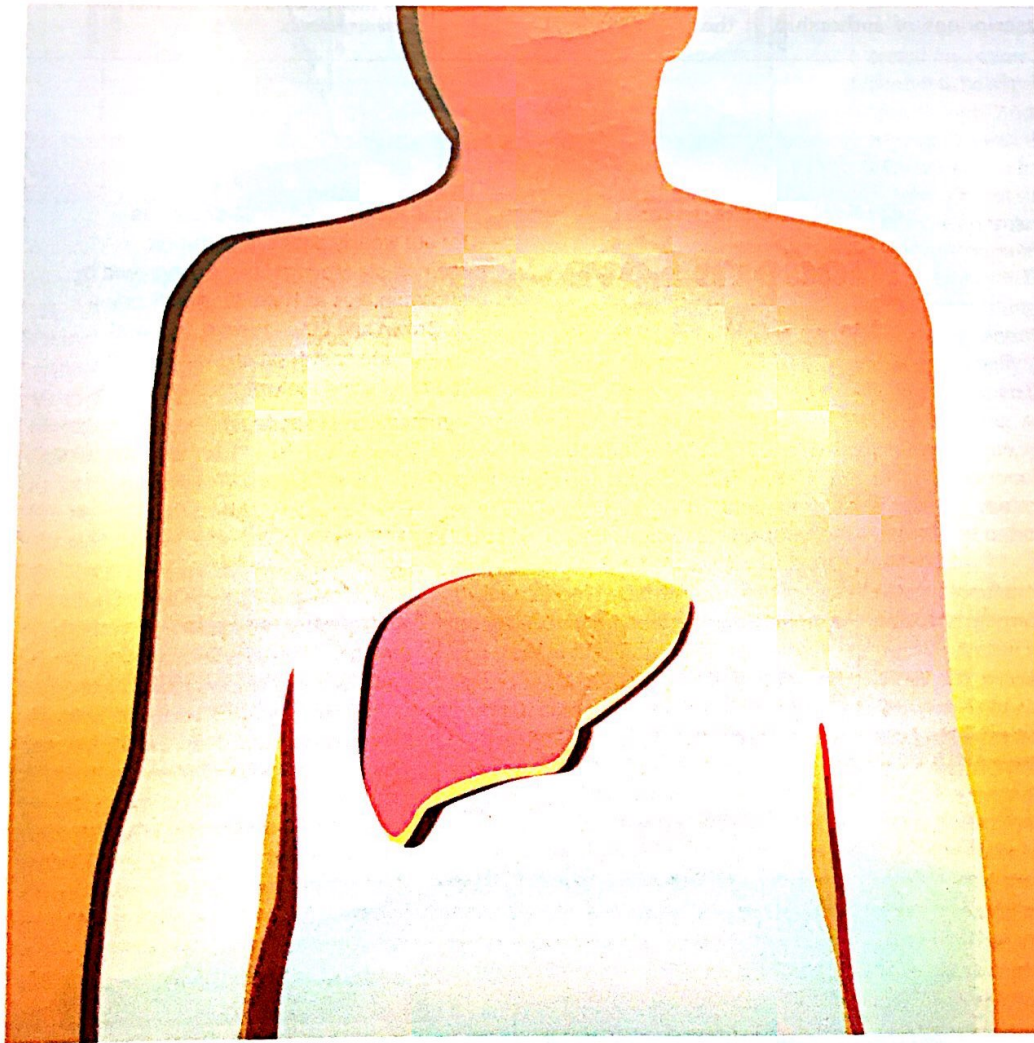


A routine test for life insurance turned up liver problems and led to further testing. Was it worth it?



The sound of his kids splashing in the pool and the wind off the ocean made it hard for the 44-year-old man to hear his doctor's voice on the phone. "Your blood tests got worse, not better," said the voice, referring to the levels of certain enzymes in the man's liver. The doctor was concerned enough to call his patient who was half an ocean away on vacation with his family. He would need to see a liver specialist as soon as he returned from Christmas break, the doctor instructed.

The man hadn't felt well for a couple of months. That fall, he caught strep throat from his kids. He went to a walk-in clinic and was tested and prescribed antibiotics. Though his fever and sore throat resolved, he still didn't feel completely better.

A few weeks before he got sick, he had blood tests for an application for life insurance. Days later, he heard from his doctor that his liver labs were a little off. There are enzymes in the liver that help with the organ's work of cleansing the blood. When the liver is injured, these hardworking chemical assistants leak into the circulatory system. The levels of these enzymes, his doctor explained, were double what they should be. Many things can cause an elevation; the doctor wanted him to repeat the tests in a few weeks to make sure the levels went back to normal. The patient was tested a couple of days before he and his family went to the Dominican Republic for wintertime sun. That's where he was when he got the doctor's second call.



Homework

Hearing the news, the man's wife started doing research. A quick internet search led her to a list of possible causes of this kind of lab abnormality. He rarely drank, so it wasn't alcoholic hepatitis. He didn't take any medications, so a reaction to drugs was unlikely. Viruses like mono or the alphabet soup of hepatitis strains can cause liver enzymes to go up, but he hadn't had anything but strep.

And then there was cancer. Liver cancer and pancreatic cancer can cause liver enzymes to rise. She spoke to a doctor friend who told her that this kind of abnormality was common. Her husband should see a specialist when he got home, but they shouldn't ruin their holiday with worry. Despite the reassurance, she was haunted by the possibility of a terrible cancer diagnosis.



The Numbers Worsen

The man and his wife got home to New York City on a Saturday. By Monday morning, they were at Mount Sinai Hospital consulting with a liver specialist. The doctor was young and energetic. How did the patient feel? Worried, he reported. An extensive history and exam didn't suggest any obvious cause of the abnormal lab findings. The specialist sent the man for one more blood draw, and then the couple picked up their children to go to the Christmas Spectacular at Radio City Music Hall. For the first time in days, the man and his wife were able to put their concerns aside completely and enjoy their children's pleasure at the extravaganza.

It was late afternoon when the liver specialist called. The man needed to go to the hospital right away. His liver was getting worse, and it wasn't clear why. On New Year's Eve, the patient went to the emergency department at Mount Sinai and was admitted. The hepatologist came to see him that night. These lab abnormalities were not uncommon, he told the man. But over the course of the past 10 days, his enzymes went from 200 to 300 — almost five times the upper limit of normal — into the thousands, indicating potentially severe liver damage. If they kept rising at this rate, he might even need a transplant.



Running Through Possible Causes

Now the patient was really concerned. The doctors said they'd track his enzyme levels and run some tests to look for the cause of the hepatic injury. There were several inherited diseases that could affect the liver: Wilson disease, which causes a buildup of excess copper; hemochromatosis, which causes a buildup of excess iron; and celiac disease, in which a toxic reaction to gluten can damage the entire gastrointestinal tract, including the liver. They would also check him for autoimmune diseases — his own white blood cells could attack and destroy the liver. Finally, they would get imaging of the liver to look for a rogue gallstone trapped in the liver or cancer.

It seemed to the patient as if blood was taken every couple of hours as if blood was taken every couple of hours that first night and day. And in the morning, he had an ultrasound of his liver and then an M.R.I. But none of it provided an answer. There

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was no cancer in his liver or pancreas. He didn't have any of the viruses the doctors worried about; they found no overload of copper or iron and no celiac disease.

There were still two possibilities, the specialist told him. It could be autoimmune hepatitis. Blood tests looking for this disorder were mildly abnormal, although that could also be a result of an overly enthusiastic response by his immune system to some unknown insult. A second possibility was that some medication he took injured his liver. This is one of the most common causes of mild liver injuries, but this injury was more than mild, and the patient was on no prescribed medications.

The only way to know for certain would be to perform a liver biopsy. It was an important diagnosis because the treatments for these two disorders are significantly different. If the injury was caused by a medication, then all they could do was wait to see if the patient — and his liver — recovered. If instead this was autoimmune hepatitis, then the man would need immediate — and possibly lifelong — immune-suppressing medications.



Hospital Holidays

The man wanted to have the biopsy done as soon as possible. But it was New Year's Day, so they would have to wait, the doctor explained. Although illness is indifferent to time and holidays, doctors and

medical staff are not. They could probably get the biopsy done the next day, but it could be a few more days before the pathologist would be back to read it.

The next day, a catheter was inserted into the jugular vein in the patient's neck and threaded down through his chest and into his liver. Bruce Springsteen crooned softly over the speakers as several small fragments of tissue were collected. And then the waiting began.



An Unlikely Culprit

It was days before the doctor came back with the pathologist's findings. In either type of hepatitis, the biopsy would show white blood cells amid the liver cells. White blood cells are the body's usual response to a perceived threat. If that threat was from a drug, lymphocytes, a type of white blood cell, would rush to the area of injury — the infantry of the immune system sent out to destroy all invaders. If it was autoimmune, the white blood cells would tend to be plasma cells, highly specialized cells looking to destroy only the part of the liver cell that had been accidentally targeted. The biopsy showed primarily lymphocytes, meaning it was a drug-induced hepatitis. But what was the drug causing the problem? The antibiotic prescribed to the man for his strep throat was not known to cause liver injury. The doctor asked whether he was sure that he had not taken anything else when he was sick? No acetaminophen? No herbs or supplements? The man was certain. Moreover, his labs were abnormal even before he took the antibiotics. The doctor hypothesized that the man's liver had been a little inflamed from some minor injury — maybe a virus or other exposure — and the antibiotic, which is cleared through the liver, somehow added insult to injury.

There was nothing to be done except to watch and wait for the liver to recover. The patient was discharged that night. Six months later, in June, his testing showed that his liver was almost back to normal, and he feels great. When I spoke to the patient, he noted that the outcome would have been the same if he'd never known about the liver injury. It was discovered because of an incidental blood test. The only real difference was the worry it caused. ♦

