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DIAGNOSIS

## Vision Quest

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### 1. SYMPTOMS

“I can’t see a doggone thing. It started off as a [headache](#), and now I can’t see.” The middle-aged man’s face was flushed and shiny beneath a mop of prematurely white hair. His clear, blue eyes were shaded by a brow pulled together by worry. “I’d rather cut off my leg than lose my sight,” he told the slender, dark-haired doctor at his bedside. Three days ago he was at work at a local animal hospital when his head began to pound. “It was like there was someone inside my head trying to get out.” He made it to the end of the day, then went home and straight to bed.

The headache was still there the next morning when he got up. He took his coffee and the Sunday newspaper to the living room and — as was his habit — turned to the obituaries. The page was a sea of gray. He couldn’t read it. He couldn’t even make out the headlines.

He went to see his doctor, who sent him to an ophthalmologist. The ophthalmologist sent him to the emergency room. Hearing that his patient was being admitted to a hospital, the primary-care doctor promptly called Dr. Lydia Barakat, an infectious-disease specialist at Waterbury Hospital in Waterbury, Conn. The 58-year-old man had a high [fever](#), he reported, and the thick optic nerves that connect the eyes to the brain were visibly swollen from some kind of increased pressure inside the skull.

Barakat was worried. Infections in the brain carry a high risk of death and disability. “If you lose a nerve cell, it doesn’t come back,” she said. Infections involving the brain, she told me, were those most likely to keep her up at night. These were the infections where you couldn’t afford to miss anything. “If you’re not just a little scared when you see these patients, then you are either arrogant, indifferent or just plain ignorant.”

The patient had [diabetes](#) and [high blood pressure](#), but he took his medicines regularly, and they hadn’t caused him trouble for years. He didn’t smoke and didn’t drink. He had been married for 38 years.

### 2. INVESTIGATION

On exam, his skin was warm and damp from a fever of 101, and he still had difficulty seeing. The rest of his exam was unremarkable. Dr. Barakat reviewed the studies that had already started to fatten up the patient’s chart. He’d had routine blood work, a [CT scan](#), an [M.R.I.](#) All were normal. The spinal tap, however, was not. When the doctor first placed the needle into the sac surrounding the spinal cord, pale liquid, which normally comes out one drip at a time, gushed out, confirming that the patient had elevated pressure in his central nervous system. And the normally cell-free fluid contained a handful of white blood cells.

It was clear that the patient had [meningitis](#), an infection in the tough tissue that envelops the brain. It was also clear he probably didn't have the deadliest type. The most aggressive types of meningitis can kill within hours, and this man had been sick for several days.

The most common causes of meningitis are viruses. These are usually less severe infections and will often resolve without treatment. But it would take days to confirm this diagnosis, and there were other, more unusual possibilities where [antibiotics](#) would be essential.

Could this be [Lyme disease](#)? Although the tick-borne infection was most common in warmer months, and there was still snow on the hard, frozen ground, this was Connecticut, and the disease was endemic. So Lyme had to be considered. Ditto the mosquito-borne [West Nile virus](#). This kind of vision loss wasn't classic for either of those infections, but both agents cause fever and frequently invade the central nervous system.

Or did the patient have a more colorful personal life than he was allowing? [Syphilis](#) could cause vision loss. Usually the loss of sight came on gradually, and a fever would be rare. Still, if he did have syphilis, antibiotics could save his vision. A recent infection with [H.I.V.](#) could also cause a meningitis-like illness. The patient didn't have any H.I.V. risk factors, but when Dr. Barakat suggested he be tested — just to be certain — the patient refused. Was he hiding something?

Finally, the patient told her he was bitten by a cat two weeks earlier. [Cat-scratch fever](#) rarely causes meningitis, and he had none of the swollen, tender lymph nodes usually seen in this kind of infection. Still, he would need to be tested for each of these possibilities. And Dr. Barakat would ask him again about the H.I.V. test. In the meantime, he was already on high doses of two antibiotics that would cover the other bacterial causes of meningitis on her list.

By the next morning, the patient's fever had come down and the headache, while still present, had improved. His vision, however, was just as bad. The patient's first questions, when Dr. Barakat visited him, were about his sight. Would he be able to read again? Would he be able to work again? She tried to be optimistic but explained that it's hard to predict what will happen without a diagnosis. She asked him again about the H.I.V. test. "I love my wife and I always have," the patient told her simply. He had never been unfaithful. And he was certain the same was true for his wife. An H.I.V. test was unnecessary. Dr. Barakat nodded. It was hard to believe he would withhold this kind of information when the stakes were so high.

The results of the studies trickled in over the next few days. It wasn't Lyme. It wasn't syphilis or West Nile. But the test for *Bartonella henselae*, the bacteria that usually causes cat-scratch fever, was interesting. Since *Bartonella* is difficult to grow in a petri dish (which is how most bacterial infections are identified), the testing looked instead for the presence of [antibodies](#) to the bacteria. If he had ever been exposed, the test would pick up some antibodies, but if he had the infection now, the number of antibodies should be high. This patient had antibodies, but they were in the normal range. Was this the earliest stages of infection, when the antibodies are only beginning to be produced? Or were these antibodies left over from an earlier exposure?

Cat-scratch disease, as it is now known, is usually characterized by [swelling](#) at the site of the bite or scratch, with fever and enlarged tender lymph nodes. It's generally seen in children and transmitted by kittens. In this case, both the cat and the patient were in the wrong age group. The only way to know for certain was to retest him in a few weeks. If cat-scratch disease was the culprit, the measured antibodies should be much, much higher. Dr.

Barakat stopped all the antibiotics except the one for Bartonella. This was likely a virus, but cat-scratch disease was still a contender.

### 3. RESOLUTION

The patient's headache disappeared after three or four days, but his vision remained poor. He was started on prednisone to reduce the swelling in his optic nerves and sent home to finish up his antibiotics by mouth. Over the next two weeks, the patient's sight improved, and he went back to work at the animal hospital. His diagnosis was still not clear. "They told me I had a meningitis, and they didn't know what caused it," he told me.

The answer finally came a month later when a second blood test revealed sky-high levels of antibodies. It was cat-scratch disease. "It's funny," the patient said. "I had to get well to get an answer."

It's been a year since his stay in this small community hospital, and although he still has a little trouble with his color vision (he can't tell white from yellow), the way the patient tells it, his illness simply confirmed his longstanding position in the great dog-versus-cat debate. "I've always hated cats," he said. "They give me the creeps." He usually works only with dogs. But on that day, he told me, he was the only extra pair of hands available, and so the vet asked him to hold a cat that needed a shot. The needle-sharp teeth penetrated the skin between his thumb and forefinger. "It hurt like the blazes, but my hand never got red, never got infected." He paused, then smiled broadly. "And I thought 'Cat Scratch Fever' was just a song. Who knew it could just about kill you?"

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