

Chapter Seven

The Case of the Asthmatic Teenager



“Too tired to talk” the sullen girl texted, and held up her cell phone for me to read. I sighed as I realized I was dealing with another surly teen.

I had been called to the pediatric emergency room to admit a girl who was having a severe asthma attack. Asthma can be deadly, and all of us pediatricians have a healthy respect for this common but frightening condition.

Theresa was 16 years old and was well known to our emergency department; she had been in the ER several times in the past year with asthma exacerbations. This one was worse than usual, and she was going to need admission.

The story I got from her mom and from the ER doctor who had been treating her was pretty straightforward. Her cough had developed over a couple of days, and in spite of using her inhaler, she had gotten worse. She had been seen that morning by her pediatrician, had gotten a couple of breathing treatments in his office, and was then transferred to our emergency department. The ER doctor had started an IV, and had given her some extra fluids as well as IV steroids to lessen the lung inflammation that always goes along with an asthma attack. She then got a couple of hours of breathing treatments to open her tight lungs. A chest x-ray looked suspicious for a streaky right lung pneumonia, so she had been given a dose of antibiotics.

When I examined her after all this treatment, she was breathing more easily, but she was still full of wheezes and was still breathing with more effort than usual. She was lying on a stretcher in the ER with an oxygen mask on her face, listlessly texting friends while her mom and I talked. When I’m taking care of teenagers, I like to talk directly to them, ask them the questions, and treat them like young adults, but Theresa was not interested, held the phone up for me to read, and then returned to her silent texting.

“I’m worried about her.” Her mom told me, her forehead wrinkled with concern. “She has had a lot more asthma trouble this year and I don’t know why, doctor. And another thing”, she added, almost as an afterthought as I was halfway out of the door. “I think she has anorexia.” Well, that was a different twist, so I asked more questions and listened to mom’s concerns. Theresa had lost 20 pounds in the past 6 months, since school had started. She seemed to have lost interest in eating. She would eat a decent breakfast, and said she sometimes ate lunch at school, but her mom couldn’t get her to eat an after-school snack, and she skipped dinner many nights. She preferred to nap after school. I wondered if poor asthma control was making her fatigued, or if she, like so many teenage girls, was body-conscious and focused on becoming rail-thin. Nobody eats well when they can’t breathe well, so I decided to watch and see how she did after we got her asthma under control.

Overnight, she got frequent breathing treatments to open her lungs, extra oxygen and more steroids. By morning she was much better and breathing easily. But she declined breakfast. I asked lots of questions about her eating patterns and got very few answers. She was not talkative, answered my queries with short replies, and seemed bored. She did tell me she just didn’t like swallowing.

I decided to get a Barium Swallow, an x-ray test to evaluate the esophagus. Sometimes the esophagus can get blocked with a chunk of food, scar tissue, or a tight spot that makes it hard to swallow. Having a patient swallow a cup of liquid barium (which will show up white on x-ray and outline the esophagus) can help show these problems. And if that test was normal, we could continue to work on the thornier issue of anorexia.

A few hours later I got a rushed call from the Radiologist. “I had to abort the Barium Swallow!” she exclaimed. “Your patient aspirated a lot of the barium and is in respiratory distress! I sent her back to her room, but I think you should go check her out.”

As I hurried to her room, my mind raced. Theresa was a normal teenager, apart from her asthma. It is very uncommon for a neurologically normal teenager to aspirate liquids. Usually, when swallowing, coordination keeps air going down your trachea and food going down your esophagus (and never the twain shall meet). Aspiration means that something has gone wrong with the coordination of the throat muscles and nerves, and liquids have poured into the lungs. Did she have a problem with her nervous system?

Theresa was sitting up in bed, breathing rapidly, looking worse than she had before the x-ray procedure. A quick bedside x-ray showed impressive white streaks in her lungs, evidence of the white barium down in the airways, where it shouldn’t be. I began a rapid assessment of her nervous system. As I examined her, I peppered her mom with questions. I discovered Theresa couldn’t hold her eyes shut tight if I tried to pull them open, she couldn’t wrinkle her forehead

if I asked her to frown. She had difficulty sticking her tongue all the way out and wiggling it around. I asked her to purse her lips and blow her cheeks out with air. “Oh”, her mom laughed, “she hasn’t been able to do those things for months. In fact, when she eats, she chews by holding her hand under her chin and pushing her mouth up and down. She doesn’t like anything hard to chew because of that. She’s so lazy!” I continued my nervous system exam and found she could only weakly shrug her shoulders. All the muscles of her head, face and neck were weak, abnormally so! Clearly there was something wrong with the nerves controlling those muscles!

More questions. Was she different in the morning than in the afternoon? I already remembered she ate breakfast better than dinner. She nodded when I asked her if she had more trouble brushing her teeth at night. Mom agreed she seemed more tired after school. In fact, mom mentioned, Theresa had recently dropped out of ROTC because the after-school calisthenics and marching were just too much for her. She spent most afternoons after school on the sofa. Mom thought she was just lazy.

Now it was all falling into place and I had a hunch I knew what was wrong. First, I had to transfer her to the Intensive Care Unit, due to her worsening respiratory distress. As I spoke to the ICU doctor who would care for her, I suggested he call the Neurologist to see her, and explained my suspicions.

I waited with bated breath over the next few days, while Theresa recovered from aspirating the barium and the Neurologist’s test results came back. The Neurologist had the same suspicion I had, and had performed an electromyogram (EMG), which was distinctly abnormal. Theresa had Myasthenia Gravis.

Myasthenia Gravis is an autoimmune disorder, caused when the body creates antibodies that disrupt the electrical impulse between nerves and muscles, so muscles don’t get the messages as they should. It is not common, and onset is usually in the 20-30’s. Onset in childhood is unusual, affecting about 2 patients in a million. The symptoms are usually fluctuating muscle weakness. Classically, the symptoms start with weakness of the eye muscles, so the person has trouble holding their eyes open, and their lids seem to be at half-mast. It sometimes affects other muscles of the head and neck, weakening swallowing muscles as well as respiratory muscles, like I saw in Theresa. Myasthenia Gravis is usually less severe in the morning, and gets worse as the day goes on and the muscles get more fatigued. It is subtle, and often isn’t diagnosed until it has been going on for a while.

Now Theresa’s story was clearer. Her worsening asthma over the last year was probably chronic aspiration, due to weakened swallowing muscles. And that chest x-ray in the ED that looked like early pneumonia- that likely represented chronic aspiration. That was what was giving her

worsening respiratory issues, not asthma. Her weight loss and “anorexia” were actually due to the progressive weakness of the muscles she needed for chewing and swallowing. Hence the reluctance to eat dinner and the 20 pound weight loss. Her afternoon fatigue, classic for myasthenia, showed up in the long afternoons on the couch, and her dropping out of ROTC.

Why didn't we figure out this diagnosis sooner? Myasthenia Gravis is distinctly rare in pediatric patients, and we pediatricians are all disposed to think of things we have seen recently, (we call this “Availability”- if the last 10 patients I saw with wheezing had asthma, I'm more likely to think of asthma). There's also something call the Framing Effect- we are all highly influenced by how something is presented to us, or “framed”. So, when Theresa's mom said she was worried about anorexia, we were predisposed to think more about this than other causes of weight loss. Additionally, us doctors are human, and have emotional reactions like the rest of you. When confronted by a teenager who preferred to text to me rather than talking, while I was standing right in front of her, I was not predisposed to think she actually was too fatigued to talk.

Theresa improved rapidly after she was treated for her Myasthenia Gravis, and was soon discharged from the hospital. Her “asthma” has disappeared now that she is no longer aspirating, and she has regained the weight she lost. And I am ready to think much more broadly, the next time a teenager in front of me wants to text me instead of talk to me.