

Cheerleader's Comeback

Doctors help a teen overcome a severe and puzzling infection



Infections can be very dangerous, especially when they become resistant to the antibiotics usually used to combat them. And last year doctors at Westchester Medical Center's Maria Fareri Children's Hospital faced a particularly chilling example.

During the summer, then 14-year-old Harrison High School cheerleader Bianca Bogdany returned from a cheerleading camp complaining of pain in her right hip. "We thought it was just a muscle strain and gave her some Advil," recalls her mother, Stacie Bogdany, 54. But it turned out that Bianca's problem wasn't a muscle strain, but a potentially lethal infection called MRSA, methicillin-resistant *Staphylococcus aureus* that she acquired prior to arriving at the hospital.

"In the next few days, the pain grew worse," says Stacie. An X-ray, a CT (computed tomography) scan and an MRI (magnetic resonance imaging) scan failed to solve the mystery.

"As Bianca was going in for the MRI, she looked very sick," her mom recalls. "She was dragging her leg, and it was hot."

Finally a doctor drew blood for a test. When he saw the results, he called Stacie and told her to take Bianca to Maria Fareri Children's Hospital at Westchester Medical Center immediately. "He said she had a very serious infection," says Stacie. "I panicked. On the way there, Bianca asked, 'Am I going to be all right?'"

Gary Tatz, M.D., a pediatric critical care specialist, and Wallace Jenkins, M.D., a pediatrician and adolescent medicine specialist, took Bianca's case. They knew her condition was serious and treated her with strong antibiotics, but during her first night in the hospital she deteriorated dramatically.

"I was sleeping in the room, and her vitals were going down," says Stacie. "Suddenly there were 10 doctors and nurses in the room. Dr. Jenkins and Dr. Tatz pulled me out and said, 'We're going to the ICU. She's septic.'" (In sepsis, an infection triggers a potentially lethal whole-body inflammation.) That's when a new blood culture identified MRSA.

"That is one of the most dreaded infections," says Robert Cristofaro, M.D., a pediatric orthopaedic surgeon who was called in to assist with Bianca's care.

Indeed, Sheila Nolan, M.D., Maria Fareri Children's Hospital's Chief of Pediatric Infectious diseases, agrees that MRSA is a danger. "Although *Staphylococcus aureus* is found routinely on the skin of about 30 percent of people without causing harm, when it enters the bloodstream and affects deeper tissues and joints it can cause life-threatening infections," she says. (See "growing Success against a scary bug,")

Recalls Dr. Cristofaro: "the infection spread significantly and she got much sicker. I decided we needed to take her into surgery, basically to save her life."

The doctors kept Bianca's mom informed. "They told me that for the first 48 hours she would get worse before she got better," says Stacie. "I did a lot of praying."

In fact, Bianca required several surgeries over the next two weeks. In the first, on Sept. 17, Dr. Cristofaro opened Bianca from her abdomen to her mid-thigh. "The bacteria had eaten away at the muscles of her pelvis and thigh," he says. He drained the wound and removed dead tissue, leaving the site open and packed with antibiotic gauze. "She had a good response immediately," he says. "Her fever came down and her blood pressure stabilized."

He did the same cleaning-out operation three days later, and again three days after that. On Sept. 27, with the help of plastic surgeons, he partially closed the wound and wrapped it in a special dressing to help the healing process. On Oct. 1, he took one more look inside, cleaned it again, and closed her up for good.

"She had a rough go of it, but she pulled through," says Dr. Jenkins. "I was amazed at her resiliency."

During the ordeal, Stacie says, she was "overwhelmed by the care everyone gave us. I had to do something for the hospital." She had 1,000 cards printed and sold them to raise about \$4,000 for the child life and creative arts therapy program, which helps children and their families adjust to the hospitalization process.

Bianca was back home on Nov. 1. When her ordeal was over, she had lost about 25 percent of the muscles surrounding her right pelvis and about 35 percent of her thigh muscles. But you wouldn't know it now. "She has done really beautifully," Dr. Cristofaro says. Her case of MRSA was exceptionally virulent, he explains. "This was not typical. I have been at the Medical Center since 1980, and I have seen only two other cases like this."

Even so, her remaining musculature has compensated and strengthened to the point where she now has only a slight, occasional limp. "There are no major residual effects thus far, and no restrictions on her," the doctor adds.

Bianca was back in school by mid-November and now, at age 15, is even back on the cheerleading team. "She is really doing well, thank God," her mom says. "Without Maria Fareri Children's hospital, it would have been a totally different story." —D.L.



Growing Success Against a Scary Bug

MRSA stands for methicillin-resistant *Staphylococcus aureus*. The *Staphylococcus aureus* bacteria causes most staph infections, but the first two letters in the well-known initials describe this bug's resistance to the powerful antibiotic methicillin, as well as to its cousins oxacillin, penicillin and amoxicillin.

According to the Pew Health Foundation, MRSA is responsible for an estimated 19,000 deaths and 368,000 hospitalizations in the United States each year. Studies show that MRSA infections carry a much higher risk of fatality than do infections more amenable

to antibiotics. Nationally, annual costs of treating hospitalized MRSA patients are estimated at between \$3.2 billion and \$4.2 billion.

The Centers for Disease Control and Prevention (CDC) has made reducing MRSA in both healthcare and community settings a high priority—and the results have been encouraging. In 2010, a CDC study published in the *Journal of the American Medical Association* showed that invasive (life-threatening) MRSA infections in healthcare settings declined 28 percent from 2005 through 2008. It also showed a 17 percent drop in invasive MRSA infections that were diagnosed before hospital admissions (“community onset”) in people who had recently been in healthcare settings. And data from the National Healthcare Safety Network found rates of MRSA bloodstream infections occurring in hospitalized patients fell nearly 50 percent from 1997 to 2007.

The National Institute of Allergy and Infectious Diseases offers six tips for preventing the spread of MRSA and other infections:

- Practice good hygiene.
- Keep cuts and scrapes clean and covered with a bandage until healed.
- Avoid contact with other people’s wounds or bandages.
- Avoid sharing personal items such as towels, washcloths, razors or clothes.
- Wash soiled sheets, towels and clothes in hot water with bleach and dry them in a hot dryer.
- If a wound appears to be infected, see a healthcare provider immediately. Treatment may include draining the infection and antibiotics.

To learn more, visit cdc.gov/mrsa.

Sources: Pew Foundation, Centers for Disease Control and Prevention, National Institute of Allergy and Infectious Diseases