

## Mae Miles

### Mae's "Change of Heart"

For Mae Miles, life was good. During the past couple of years, she had successfully lost 80 pounds through healthy dieting and exercise. She was enjoying her promotion to store manager at a fast food restaurant. Mae was also busy planning a very special day ... her marriage to Jim, a youth minister whom she'd met at church camp. Mae was looking forward to what many described as "a match made in heaven." But, shortly before she was to be wed, Mae experienced a "change of heart."



Mae's "change of heart" was no reflection of her feelings toward her fiancé or indicative of cold feet towards marriage. Mae's heart literally changed its pattern of beating.

"One day I experienced a headache like no other I've ever had," explains Mae. "Along with the pain, my vision was distorted and I felt nauseous and overly tired. I rested and things seemed to improve, but the next day, it happened again. I promptly made an appointment to be evaluated for what I suspected was a migraine headache," she recalls.

Mae's doctor in Mason City, Iowa, performed a routine physical and health history. "On a scale of 1 to 10 for past headaches, I rated the pain with my most recent headaches at 10," says Mae. During her appointment, Mae was surprised to learn that her heart was beating out of rhythm. "My heart was beating erratically. Just imagine an inexperienced band conductor trying to lead 30 grade school drummers who haven't a clue what his signals mean," she explains.

Mae's family physician hoped that medication could help restore rhythm, especially since Mae had no history of heart disease or known cause for her heart to suddenly go in to what is medically called "arrhythmia."

There are many types of arrhythmias. In Mae's case, the upper chambers of her heart (the atria) quiver, a condition called atrial fibrillation. Subsequently, the bottom chambers (ventricles) beat too rapidly due to the chaotic signals they receive from the atria. The ventricles are the heart's main pumps, responsible for the pulse.

### Lacking rhythm

Health care professionals often look for clues or indications of why a heart suddenly jumps out of rhythm. For example, in young adults a condition known as "holiday heart," may result in atrial fibrillation following a binge of alcohol. Other causes may be trauma to the heart, thyroid abnormalities or drug effects.

"I don't even drink alcohol," says Mae. "And although I had gone through some changes in the past few months, I didn't feel stressed out. I had no indication or symptoms that my heart wasn't beating in a synchronized fashion," she says. "Looking back, the only vague clue might have been that I would sometimes lose my heart rate when using the constant heart-rate monitoring feature on exercise equipment," she says. Because Mae had an excessively fast heart beat and was only vaguely aware of it, her heart muscle had started to weaken. This weakening of the heart muscle is usually reversible, if treated promptly.

When medicine, which made Mae tired and caused her heart to "pause," was not successful, she decided to make a trip to Mayo Clinic in Rochester. "I was only 25 years old, eagerly awaiting my marriage and longed to start a family right away," recalls Mae. "I didn't want to be on drugs, especially if I intended to

have children, or worry about the long-term effects of having an irregular heartbeat."

And while Mae was feeling for the first time in her life things were on track, she knew her heart wasn't. "This problem was seriously impacting the plans for my life," she recalls.

### **Getting on track**

At Mayo Clinic in Rochester, Mae was evaluated by cardiologist Paul Friedman, M.D. "It's not common for someone so young to have atrial fibrillation," says Dr. Friedman. "Typically, the majority of the patients who experience this type of arrhythmia are older."

Mae's condition was evaluated and the diagnosis of atrial fibrillation confirmed. While atrial fibrillation is the most common sustained arrhythmia, affecting more than two million Americans, it most often occurs in those over 50.

Mae was already experiencing adverse effects from her atrial fibrillation. "Her heart was slightly enlarged, which indicates she had this condition for some time," notes Dr. Friedman. "When the top chambers of the heart quiver, blood may form clots. In some cases, this can increase the risk of stroke." For this reason, Mae had been put on the blood thinner Coumadin.

The prescribed medications were not effective and were interfering with Mae's quality of life and future plans. Dr. Friedman reviewed treatment options with Mae, which included other medications and radiofrequency ablation. When medications are used to restore normal rhythm, a cardioversion is often required.

"Cardioversion is delivering a shock across the chest during general anesthesia to electrically restore a normal rhythm," explains Dr. Friedman. For Mae's condition, cardioversion was initially successful, but her heart quickly regressed to an abnormal beating pattern. As Mae's wedding day approached, she tried different medications, all of which seemed to affect her heart, but not with the intended results. Soon, her options narrowed down to ablation, a procedure that modifies the heart's electrical connections to either control the heart rate or to maintain normal rhythm.

"I was looking long-term," recalls Mae. "I'm young and wanted the whole package. My health. My wedding. Quality time with my new husband. The new job. The family."

"Basically, there are 'hot spots' in some people with atrial fibrillation that discharge rapidly to trigger and drive arrhythmias," explains Dr. Friedman. "These triggers are most commonly located in the veins that connect heart and lungs — the pulmonary veins." During ablation, a heart rhythm specialist isolates the hot spots so that they can no longer trigger fast heart beats. If present, other abnormal pathways are also treated to restore a normal heart rhythm.

Catheter based radiofrequency ablation cauterizes the abnormal heart tissue involved in arrhythmias without opening the chest. "One or more catheters (thin, flexible wires) are advanced into the heart through veins in the legs," explain Dr. Friedman. "When the catheter reaches abnormal tissue in the heart, electric energy is delivered to the catheter tip to cauterize the tissue." Most people do not feel the energy delivery or experience only temporary minor discomfort. The procedure is often done with a twilight anesthetic, although some patients prefer general anesthesia.

The procedure was performed a week after Mae's wedding. "I chose to spend my honeymoon in the hospital," says Mae. "I got the wedding and my new husband, but not quite the honeymoon we had planned."

But once again, Mae was looking long-term. The procedure was successful in restoring normal rhythm to Mae's heart and she no longer takes any medication.

"I had a beautiful wedding. I have the new management job. I'm married to a wonderful man ... and we're expecting our first child later this year. Who says you can't have all your dreams?"

