



Detecting a Silent Killer

Dr. Felix Song,
an interventional
neuroradiologist,
looks for signs of
brain aneurysms



Like Filling Potholes

Dr. Felix Song is one of three doctors in the Islands able to treat brain aneurysms

By Lynne Wikoff

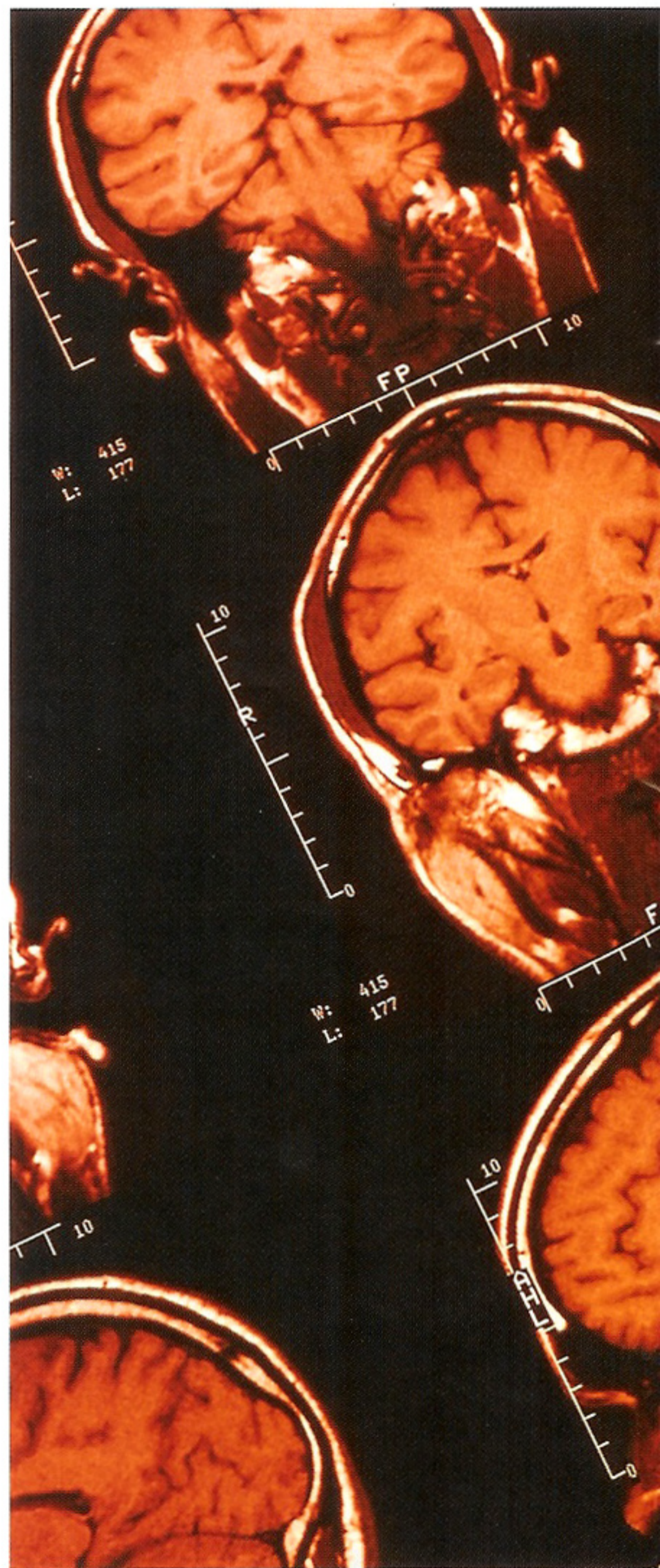
In April, Sharleen Kahalewai of Waialua received the startling news that she had a brain aneurysm—a blood vessel that had ballooned abnormally—which was discovered when she underwent an MRI scan for another problem. Her doctor explained that if the aneurysm ruptured (a hemorrhagic stroke) the result could be devastating.

“Sixty percent of hemorrhagic stroke sufferers die or become disabled, and half the patients who have a favorable outcome are unable to return to work due to neuropsychologic or cognitive deficits,” says Dr. Felix Song, a Honolulu interventional neuroradiologist. Interventional neuroradiology uses radiological procedures to treat neurological conditions. The earlier a ruptured aneurysm is treated, the greater the chance of recovery with mild or no aftereffects, says Song.

By comparison, ischemic strokes, which are caused by clots and account for about 70 percent to 80 percent of strokes, may result in less serious outcomes. According to American Heart Association statistics, 29 percent of ischemic stroke sufferers die within the first year following their stroke. Among survivors, 50 percent to 70 percent regain functional independence.

Approximately 2 percent of Americans harbor an intracranial aneurysm, and about half will develop symptoms, mostly as a result of intracranial bleeding. Those who are lucky, like Kahalewai, have their cerebral aneurysms diagnosed before they rupture. However, aneurysms rarely reveal symptoms before they rupture, so the most common way to find an unruptured one is when the person is being evaluated for something else. According to specialists at the Massachusetts General Hospital Brain Aneurysm and AVM Center, aneurysms carry a risk of rupture of 1 percent to 2 percent per year.

As is most often the case, Kahalewai’s aneurysm was a small, sack-



shaped protrusion rising from a vessel wall. Her doctors recommended a relatively new, noninvasive procedure called endovascular embolization, in which the “bubble” of the aneurysm is packed with coils.

“I was really scared,” Kahalewai recalls. “At first I was against the coiling procedure, but the doctors did an exceptional job explaining it to me and showing me pictures. The technology is really amazing.”

Endovascular embolization is a “cousin” to an-



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gioplasty, the treatment of blocked arteries in the heart. A microcatheter inserted in the patient's artery, generally in the groin, is guided through the body all the way up to the brain. When it reaches the site of the aneurysm, the "bubble" is packed with tiny flexible coils, which are delivered through the catheter. The coils are usually made of platinum and come in different sizes and shapes. Once in place, the coils—and the blood that clots around them—form an obstruction that prevents blood from flowing

into the aneurysm sac. As a result, the threat of rupture or re-rupture—and the substantial threat of death or serious disability—is all but eliminated. "It's like filling a pothole in the road," says Song.

The procedure is an alternative to microsurgical clipping, which has been the mainstay of treatment for brain aneurysms, both ruptured and unruptured, for several decades. In this approach, the surgeon exposes the affected artery, then applies a metal clip to the base of the aneurysm to block blood flow into it.

Song performs endovascular embolization at Kaiser Moanalua Medical Center, The Queen's Medical Center and Tripler Army Medical Center. He is enthusiastic about the procedure, which has been available at a limited number of medical centers only since 1991. "For patients for whom surgery is too risky because of poor medical condition or advanced age, or whose aneurysms are complex or in difficult locations, or those with brain aneurysms that have not yet ruptured, endovascular repair is an option," he says. "Consultation with a neurosurgeon is necessary to determine whether surgery or endovascular treatment is the best choice for an individual patient."

Endovascular embolization, performed under general anesthesia, requires only an overnight hospital stay, and recuperation time is minimal. Surgery requires a slightly longer hospitalization.


In 1999, Nancy Kini of Lanikai learned she had an aneurysm when she had a CT scan to diagnose the cause of excruciating headaches that were continually interfering with her life. Her "Christmas gift" that year was endovascular embolization. "It was miraculous," says Kini. "I went home the next day like nothing had happened." Since then, she's had only an occasional "ordinary" headache, and has resumed a normal life.

Risk factors for brain aneurysm include advancing age, high blood pressure, cigarette smoking and excessive alcohol consumption. Also, Asian populations seem to be at greater risk than whites. Family history may also be a factor, and Song recommends that close relatives of people who have had ruptured brain aneurysms consult with their physicians about whether they should be screened.

Song has been in Hawai'i nearly two years. A Chicago native, he received his medical training at Washington University in St. Louis, and was recruited for his position here on completion of his fellowship in interventional neuroradiology.

In the past, only four to six endovascular repairs a year were done on O'ahu. Many patients in need of the procedure went to Mainland centers to have it done. Since Song's arrival, the count is up to about 26 of these delicate procedures a year. A second interventional neuroradiologist, Dr. Gregory Reinking, is now practicing at Kuakini Medical Center on O'ahu, and a third, Dr. Christopher Neal, practices on Maui.

Song explains that the classic symptom of a hemorrhagic stroke is a sudden, severe headache with no known cause—"the worst headache of my life"—especially together with vomiting and/or a stiff neck. If this occurs, immediate medical attention should be sought.

Symptoms of ischemic stroke include sudden numbness or weakness of the face, arm or leg, especially on one side of the body, sudden confusion, trouble speaking or understanding, sudden trouble seeing in one or both eyes and sudden trouble walking, dizziness, loss of balance or coordination. These symptoms also require immediate medical attention. 

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