News
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*****Pain-free gallstone lithotripsy now under investigation

DALLAS -- A new painless outpatient procedure to fragment gallstones is now being tested at The University of Texas Southwestern Medical Center at Dallas. The procedure using the Richard Wolf Piezolith 2300 biliary lithotripter releases pain-free pulse waves. Unlike older machines that require sedation or a general anesthetic, the innovative German-made machine requires no analgesic.

UT Southwestern/Parkland Memorial Hospital researchers lead a national multicenter trial to test the Piezolith 2300 for use in the United States. Medical centers collaborating in the Food and Drug Administration trial include Duke University Medical Center, the University of Utah, Indiana University, the University of Alabama, Brigham and Women's Hospital in Boston and the Medical College of Virginia.

"European researchers have treated over a hundred patients with gallstones using the Piezolith 2300," says Dr. William W. Turner Jr., associate professor of surgery and principal investigator of the biliary lithotripsy trial.

"The early European studies suggest that biliary lithotripsy is safe and effective in selected patients. However, some questions remain unanswered, such as whether or when gallstones or symptoms will recur. We will be attempting to answer these and other questions," Turner says.

Working with Turner as members of the UT Southwestern biliary lithotripsy team are urologist Dr. Glenn M. Preminger, gastroenterologists Drs. Lyman Bilhartz and Justin McCarthy, and radiologist Dr. George L. Miller III.

Martelle Doyle, 45, a patient from Fort Worth who received two treatments to fragment her gallstones, said "If I hadn't seen my gallstones being shattered on the ultrasound monitor I would have thought nothing was happening to me." She went Christmas shopping immediately after her first treatment and went back to work after the second treatment performed a few days later.

Preminger explains that the Piezolith 2300 can be used to fragment both gallstones and kidney stones. Following pulverization, gallstone fragments are

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eliminated with the bile through the digestive system while kidney stones are eliminated with the urine.

"We expect that some gallstone patients will find that biliary lithotripsy offers a successful alternative to surgical removal of the gallbladder," says Turner.

He adds that patients participating in the FDA trial must have symptoms that are related to gallstones. Patients with gallstones discovered incidentially, when no symptoms exist, are not eligible. Patients must be 18 years or older and not be pregnant. They must meet other criteria concerning the size and type of gallstones.

As part of the study, patients are given the drug ursodiol (Actigall) to take by mouth for three months following the lithotripsy procedure. Ursodiol will aid in the dissolution of gallstone fragments that exist after lithotripsy, Turner says.

The Piezolith 2300 incorporates significant improvements over earlier lithotripters. Instead of using a spark plug to generate pulse waves, the Piezolith 2300 uses 3,800 piezoelectric crystals that line a dish at the base of a small pool of water. An electrical current causes the crystals to vibrate rapidly, producing pulse waves that focus on a gallstone. These pulse waves pass painlessly into the patient, while the process is monitored by ultrasonography instead of X-rays.

"There is no need to immerse the patient into a water bath, as is common among older lithotripters," says Turner. "Instead, the patient lies on a lithotripsy table, positioned so that the upper abdomen is the only part of the body to be in contact with the pool of water. The water is the medium through which the pulse waves travel."

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Note: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.