beam and we can see exactly where the target is, and the MR also monitors the temperature within the fibroid. We also can monitor normal tissue to make sure it isn’t damaged.

The availability of 3-D scanning allows the radiologist to make sure no bowel lies between the transducer and the target tissue. Later, results of the procedure are checked by injecting a contrast agent that is not absorbed by dead tissue, which shows up as a black spot on the radiograph.

A total of 149 patients were treated at five centers, including Johns Hopkins Hospital, Baltimore; the Mayo Clinic; the Lahey Clinic in Boston; and Radnet Management in Beverly Hills, Calif. Of these, 105 were treated under the initial guidelines, and 44 were treated under the expanded guidelines. The mean age in both cohorts was about 45 years and 90% of the women were white. Symptom improvement was based on the Uterine Fibroid Quality of Life Questionnaire. A healthy person without fibroid symptoms would score about 22 on the document, which ranges from 1 to 100. Dr. Fennessy explained.

"Patients we evaluated for this trial had a mean baseline score of 62. At 3, 6, and 12 months, symptoms were reduced by nearly half, falling to 35 at 3 months and to 33 at 6 and 12 months," she said, adding that the percentage of patients with significant improvement went from 76% under the initial protocol to 86% in the expanded protocol.

"We also found that the greater the fibroid volume treated, the better the outcome. The goal is not to get rid of the fibroid altogether, but rather to kill the tissue in the center of the lesion so that it can collapse in on itself. And we found no difference in outcome whether we treated a single fibroid or multiple fibroids. Time was the limiting factor; we treated as many as we possibly could within the 3-hour time period allowed by the FDA when we did the study," Dr. Fennessy said.

Now that the system—the ExAblate 2000 (InSightec Inc.)—is available commercially, longer treatment periods are possible, she said. The only adverse events the researchers encountered were position-related discomfort and sonication-related pain, which disappeared immediately after treatment stopped.

Patients may still choose myomectomy, which removes the problem completely, but MRgFUS is an option for those who prefer a less invasive treatment, she said.

Though the desire for future pregnancy was exclusionary in this trial, a handful of patients who underwent MRgFUS have since become pregnant. "At the Brigham and Women’s Hospital, two of our treated patients had full-term deliveries without problems, and throughout the world, there have been additional babies delivered to women who have undergone this procedure," Dr. Fennessy said.

## Embolization Radiation Exposure Safely Minimized

**BY JANE SALODOF**

Southwest Bureau

**NICE, FRANCE —** German investigators significantly reduced radiation exposures with out causing complications in 64 women undergoing uterine fibroid embolization.

Bilateral embolization was possible in 63 patients, Dr. Dietrich Vorwerk reported at the annual meeting of the Cardiovascular and Interventional Radiological Society of Europe. Embolization failed in a single uterine artery in just one woman.

No "specific complications" were found, according to Dr. Vorwerk of the Klinikum Ingolstadt (Germany).

"Strict adherence to simple radiation protection rules decreases dose area product significantly. Dose reduction per image significantly decreases dose but does not increase fluoroscopy time," he said.

From January 2004 through June 2005, he and his colleagues treated 64 patients 32-48 years of age with a unilateral, subradical embolization approach.

In the first consecutive group (group A) of 26 patients, Dr. Vorwerk used pulsed radiation at 7.5 images per second and digital subtraction angiography (DSA). Radiation doses were reduced by 1.2 µGy per image for group A; the protocol included collimation. Besides DSA runs before and after embolization on each side, aortography was done as the final run.

For a second group of 29 patients, the protocol was revised to a dose of 1.2 µGy per image and maximum collimation with a 40-cm intensifier. DSA runs were done only before catheter placement for group B. There was no aortography.

For the final group of nine patients, the dose was further reduced by 0.48 µGy per image. The investigators also avoided oblique runs.

The physicians maintained average fluoroscopy time at 20.2 minutes, 21.3 minutes, and 19.8 minutes. Area dose product declined significantly from 52.7 Gy cm² (A) to 20.3 Gy cm² (B) to 12.2 Gy cm² (C).

Published studies cited by Dr. Vorwerk had reported mean fluoroscopy times of 11.8 and 22.5 minutes and average dose area product of 59.5 Gy cm² and 85.47 Gy cm².