Whole-Body CT Screening: Scanning or Scamming?

By Andrew Holtz, MPH

The opinions of experts and medical societies are nearly unanimous: Individuals without symptoms or a family history of other specific risk factor should not get whole-body computed tomography screening scans, because there is no evidence there are any benefits that would outweigh the risks and costs. Yet newspapers, television and radio are filled with upbeat ads for CT screening.

When patients hear marketing over expert opinions, what can and should clinicians do?

One Scan Leads to Another

“We’ll get a request from a physician saying, ‘Patient had screening study. They recommended further procedures. Please do what they said,’” says radiologist Kendall Barker, MD, Section Head for CT scanning for Kaiser Permanente’s Northwest Region.

He doesn’t see much leeway at that point. “I feel like we are pretty much forced to do that,” he explained. “I guess there could be an occasional case where we could look at the scan and say, ‘Well, we just don’t agree with their interpretation. We don’t think it was anything to begin with.’

But a lot of the times findings are in fact indeterminate. We don’t know for certain what they are, and so you have to do something more to prove disease.”

In Dr. Barker’s experience, the suspicious findings in CT screening scans usually turn out to be benign cysts or hemangiomas.

“We’ve seen only a modest number of cases to date, but I have the impression that it is gradually picking up,” he said. While he says the health consequences of CT screening for an individual are almost always of no consequence, the potential cost and burden for the system are daunting.

At the most recent Radiological Society of North America Scientific Assembly and Annual Meeting in December, Dr. Barker heard a presentation by Giovanna Casola, MD, of the University of California, San Diego, on the results of 1,200 whole-body CT screening scans at a fee-for-profit facility in Southern California.

Three out of four of the individuals screened had referred themselves to the scanning center. There was at least one increasingly: The question for physicians is not whether CT screening is good or bad, but how to counsel curious patients, and then support and care for those patients who get screened...only to be given results that raise questions and fears.

On the Cover

A testicidal rendering of medical imaging composite of body, with x-rays, MRI, CT, and bone scan. © Scott Camazine/Photo Researchers, Inc.

breast cancer, cardiac events, stroke, and clots among women who were assigned to the treatment group were small. They do not state that the risk, at least of breast cancer, was not statistically significant and was based on statistical assumptions that could not render the conclusion invalid.

The piece in Oncology Times goes on to quote Dr. Robert Hoover, Director of NCI’s Epidemiology and Biostatistics Program, who noted that in 1989 a Swedish study suggested that combination HRT might not only not decrease the risk of breast cancer, but might actually increase it.

That study, by Bergkvist et al., The risk of breast cancer after estrogen and progestogen replacement (N Engl J Med) 339:293-297, reported a relative risk of 4.4 among women who used the combination for more than six years.

Two months after this article appeared in the New England Journal of Medicine, it was reviewed in the Harvard Medical School Health Letter (October 1999;14(12):1-3).

The reviewers commented: “There is a very important reason not to take this figure [RR=4.4] literally. There were only 10 women in this group, too few to provide a statistically reliable result. Indeed, on the basis of these 10 cases, the true value had a 95% chance of being 10% below the average, as high as 30 times average or somewhere in between.”

They go on to write: “Earlier research has given us no reason to expect finding in 87% of the scans. Recommendations for further testing or other follow-up work were entered in 32% of the records.

“You can imagine if your entire adult population in a health plan over a couple of years all went and got a screening study, and a third of them needed more work-up, then you’d be working up a third of your population for mostly benign disease. There’s a big cost to that,” Dr. Barker notes.

Proactive Approach

At the Weill Cornell Medical School in New York City, Dr. Robert Rosen, MD, urges physicians to take a proactive approach toward whole-body CT screening of individuals who do not have symptoms or other indications that might suggest disease.

Ideally, he says, physicians should communicate with radiologists at local facilities before patients undergo a screening scan.

“We have some doctors in the Boston area who are integrating this into their practice,” Dr. Rosen said. “We had a couple come in, and their doctor happens to be across the street from me. He came over when I was ready to review the scan with them, sat with them for 10 or 15 minutes as we reviewed the scan, and was really part of the discussion and part of the process.

“Obviously that only works in certain situations, but I think it’s very reasonable for patients to discuss with their doctors whether they should have the scan, and then, with the patient’s permission, have the radiologist call the primary care doctor.”

Of course, everyday practice does not always match that ideal collaborative scenario. Dr. Rosen admits some (continued on page 6)
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physicians are less than pleased when they learn patients have been screened at his center.

“Sometimes when I’ve called doc- tors before, one of their patients was here, the initial response has a bit of an edge to it,” Dr. Rosen concedes.

“But I think because I am calling them and communicating with them directly, that edge disappears in about 10 seconds. And the conversation always finishes up with, ‘Thank you very much for taking care of my patient, and thank you for calling me.’ I can’t stress enough how important that communication is.

One resource oncologists cannot easily turn to are practice guidelines for investigating findings on CT screening scans.

Be Well Body Scan is a not-for-profit operation affiliated with Beth Israel Deaconess Medical Center in Boston. “We feel that this is an extension of our academic department; so we would not do anything here that we would not feel comfortable doing at the hospital,” Dr. Rosen said.

Unlike the marketing materials produced by some commercial, for-profit scanning centers, Be Well’s Web site emphasizes that CT screening is not for everyone.

Also, Dr. Rosen says there needs to be more awareness of the fact that “abnormalities” on a sophisticated scan image are indeed normal in healthy individuals.

‘Something’ is Almost Always Nothing

At Johns Hopkins Medical Institutions’ Advanced Medical Imaging Laborat- ory, Elliot Fishman, MD, goes further to downplay the significance of “find- ings” on CT screening scans.

“Most of the time, and I mean 90% of the time, if there is something seen on one of these studies, it is something that is of no significance or something that is not important,” Dr. Fishman said.

Nevertheless, he strongly advocates CT as a useful tool in the context of a comprehensive medical care program. “If I do a study, and we do a great study, and we don’t see anything, that’s good. But realistically, if you are a male of a certain age, you need a PSA. If you are a woman, you need a mammogram. There are so many things you need that are part of the whole process.”

However, self-referred whole-body CT screening scans lack the proper con- text, Dr. Fishman warns, urging physi- cians to be wary.

“My first word of advice is to pro- ceed slowly, without going into the mega-work-up,” he says. “Say a report comes back: ‘possible metastasis in the liver or solitary mass right lobe’ Well, seven to 10 percent of women have lesions in the right lobe that are heman- giomas.

So before you start working up the patient and running their bowel and doing x, y, and z to look for the primary tumor, say, ‘Wait a second, there’s a good chance this could be a hemangioma.’ Do not put the pedal to the metal. You are not dealing with a biopsy. I’m very, very cautious.”

Dr. Fishman says the first step by a physi- cian should be to consult a radiologist he or she regularly works with, in order to get an independent review of images taken at a scanning center.

“If it were up to the leading profes- sional organizations of radiologists, whole-body CT screening of asymp- tomatic individuals would not be done outside of clinical trials.

Who Pays?

As a policy statement of the Amer- ican College of Radiology (ACR) puts it, “To date, there is no evidence that total body CT screening is cost efficient or effective in prolonging life.”

James Borgstede, MD, Vice Chair of the ACR Board of Chancellors and the Chair of ACR’s Patient Safety Task Force, says the college issued its cau- tionary statement in response to a ris- ing number of questions from mem- bers.

Despite the skeptical approach to CT screening, he recognizes that once a screening study has been done, the situ- ation is changed. “Now we are dealing with the reality of a finding on an examination, and while we may not have recommend- ed it, we are stuck. To begin with, we are confronted with the finding and have to take the next step,” Dr. Borgs- tede says.

The Scan Changes Everything

“One you embark upon this course, you have a commitment that you really have to evaluate, from an ethical point of view, from a medical-legal point of view, and from a purely health care point of view; you have to go ahead and find out what this abnormal- ity is,” Dr. Borgstede notes.

“First, physicians need to reassure their patient that they are going to take

When individuals decide to get a CT screening scan, they usually pay out of pocket. A scan of the chest, abdomen, and pelvis in a mobile CT scanner can be had for $398. At the other end of the scale, a Hawaiian resort spa and scanning center offers airport pick-up, lei greening, spa treat- ments, meals, and two nights lodging, in addition to five imaging tests and other exams, all for $4,000.

That hit to the wallet does damp- en public enthusiasm for CT screen- ing. According to a market survey performed by Be Well Body Scan in the Boston area, cost was the most common reason people cited for not wanting a CT scan.

Recognizing that an initial test often raises new questions, Be Well includes a limited amount of follow-up testing in the basic package.

“If somebody has something, particularly in the liver or the kidney, sometimes in the CT scan it looks like a cyst, but you just can’t be 100% sure; we will do an ultrasound to clar- ify that finding or the abnormality in the liver or the kidney, as part of the exam without charging extra for it. We are doing it so people leave with as few loose ends as possible,” Be Well’s Medical Director, Max Rosen, MD, says. But he concedes that scan- ning centers cannot offer a full work- up after every scan that shows some sort of abnormality.

Radiologist Jim Borgstede, MD, Vice Chair of the ACR Board of Chancellors, says the initial scans are not the problem—“The real problem is the false positives that come out of that screening scan. Who pays for that?” he asks.

“You know, the patients will come in and pay the money for the scan, but then as soon as something is found in the scan, which is typically a false-positive finding, then their insurance kicks in. And if you have a health care plan, now suddenly some- body in your plan gets one of these scans, that changes the profile of your health care plan, and that, in effect, changes your premiums. So I think we have to think about this from an epidemiologic and a population basis.”

Some experts go even farther, arguing that until CT screening proves its worth, individuals who opt for CT scans in the absence of symp- toms or clear risk factors should bear the full cost of the consequences.

Elliot Fishman, MD, Head of the Advanced Medical Imaging Laboratory at Johns Hopkins Medical Institutions, notes that a positive scan often leads to a steady stream of regu- lar follow-up scans, a cash cow for scanners, but a drain on health plans.

“As far as I’m concerned, they ought to do this: If you self-referral, you are responsible for everything,” he argues. While he supports coverage of screening ordered by a physician as part of comprehensive care, Dr. Fishman warns about the cost to soci- ety of uncontrolled CT screening.

“Truthfully, it could break the system. You start running up these costs chasing nonsensical things,” he predicts. “I’m not here to have my insurance rates go up because people then you’ve got a commitment that you really have to evaluate, from an ethical point of view, from a medical-legal point of view, and from a purely health care point of view; you have to go ahead and find out what this abnormality is,” Dr. Borgstede notes.

“First, physicians need to reassure their patient that they are going to take

The potential price tag for self- referred CT screening is as uncertain as potential health benefits. In a ple- nary session debate on CT screening at December’s Radiological Society of North America Scientific Assembly and Annual Meeting, Bruce Hillman, MD, Chair of Radiology at the Uni- versity of Virginia, said yet-to-be-published results of a study of CT scanning indicated that screening healthy 50-year-old individuals 30 times a year with CT scans could cost $150,000 per year of life saved.

On the other hand, Michael Brant-Zawadzki, MD, Medical Director of Radiology at Hoag Memorial Hospital in Newport Beach, CA, pointed to other analyses of more lim- ited screening for lung cancers that predict CT screening might cost less than $50,000 per year of life saved.

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care of the patient, whether they agreed or disagreed with the decision to get the initial scan. I think there is some value in reassurance of the patient that a lot of these findings are false positives, in some situations up to 90% of the lung scan findings, for example, are false positives.”

He also suggests that physicians consult with radiologists within their medical group or hospital to decide what, if any, steps should be taken to answer questions raised by the CT screening scan.

**Guidelines Lacking**

One resource oncologists cannot easily turn to are practice guidelines for investigating findings on CT screening scans. At the American Society of Clinical Oncology, a spokesperson said that ASCO does not have a policy position or guidelines regarding body scans of asymptomatic individuals who do not have identifiable risk factors.

Meanwhile, some other specialty groups have taken steps to help their members navigate the aftermath of CT screening. In recently revised guidelines on the management of chronic stable angina, the American College of Cardiology and the American Heart Association included guidelines for workup of asymptomatic patients following CT screening, not as an endorsement of the screening, but merely acknowledgment of “the clinical reality that such patients often present for evaluation after such tests have been performed.”

The guidelines go on to suggest which, if any, follow-up tests or procedures should be considered, based on the patient and the finding on the screening scan.

**If it were up to the leading professional organizations of radiologists, whole-body CT screening of asymptomatic individuals would not be done outside of clinical trials.**

For example, the updated guidelines point out in which circumstances a stress echocardiogram is preferable to an exercise electrocardiogram. That sort of specific consensus advice is not yet readily available to oncologists or other physicians faced with a mass on an abdominal CT image.

**Is Resistance Futile?**

In the absence of practice guidelines, oncologists are left to pick and choose from the advice offered by individuals in the field. Dr. Rosen at Be Well Body Scan suggests physicians become familiar with the scanning centers in their area.

“Find out who is doing screening in their area, call up the medical director or one of the radiologists at the site, and say, ‘I’d like to come see what you are doing, I’d like to talk with you, and I’d like to maybe start thinking about how, for my patients who want the service, how I can integrate this into my practice.”

“It doesn’t have to be for all their patients. They don’t have to be recommending it to everybody. But for the patients who are interested in it, I think it can actually be a very useful tool for the clinician,” he says.

Dr. Borstede of the American College of Radiology agrees that local research, including tours of local screening centers, can be useful; in part to help build a persuasive argument against screening CT.

“It’s always better to have knowledge. If that gives the primary care physician some knowledge so they can comment to their patient, that’s probably better, I think it will give them more credibility. I think it will also give them credibility with their patients if they

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One morning last spring, Thomas A. Conley, RRPT, CHP, got an early-morning surprise when reading the newspaper: “There was a huge color four-page ad for screening all over Kansas. That was the first I’d heard of it.” As the Director of the Radiation and Asbestos Control Section of the Kansas Department of Health and Environment, he is supposed to know about all the CT scanning operations in his state.

What made the ad especially surprising, he said, is that it promoted a mobile CT screening operation that does not employ on-site physicians. “In Kansas, screening is illegal,” Mr. Conley explained. “The regulations basically say that any human exposure has to be specifically and individually ordered by a physician after an examination.” As elsewhere, mammography is exempted from the Kansas screening ban.

Mr. Conley ordered an inspection of the mobile screening operation. “People would call in and schedule it and then they’d have a doctor in Florida electronically sign an order that they faxed to the truck that the scanner was on.”

The screening operation was run by technicians. “They electronically sent the images back to Florida to be read by their radiologist and then they would mail a report,” he said.

What’s more, the mobile scanner would not accept customers with symptoms or other indications suggesting disease, a position diametrically opposite to that of the Kansas rules that say individuals should be exposed to CT radiation only when there is reason to suspect something is awry.

Last August, Kansas regulators and CATScan 2000, the company running the mobile screening centers, signed a consent agreement. CATScan 2000 paid a $5,000 fine and rolled out of Kansas. The company still operates six mobile CT scanners in 14 states. Radiation control officials also sent notice to CT scanner operators around the state that (continued on page 11)

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