

# c.cam: The Patient Favorite

While a patient may never look forward to a nuclear cardiac imaging test, Siemens' c.cam cardiac gamma camera ensures that the experience will be as comfortable as possible while providing superior image quality.

By Sameh Fahmy

## DESIGN AWARD WINNING

gamma camera: the reclining chair provides increased patient comfort, leading to better image quality and increased diagnostic confidence.



"Think of the c.cam like a recliner in terms of how a patient sits in the chair," says Dr. Keith Churchwell, partner in the Page-Campbell Cardiology Group in Nashville, Tennessee, and an assistant clinical professor of medicine in the cardiology division at Vanderbilt University Medical Center. "They recline to an angle of about 20 degrees. So they sit in the chair and it's like they're sitting at home in front of the TV."

The reclined position is particularly beneficial to patients with back pain, lung disease, arthritis, or obesity who find lying flat in a

supine position uncomfortable. A more comfortable patient is less likely to move and fidget, which allows the c.cam to deliver improved image quality that gives cardiologists increased diagnostic confidence. Fully integrated software enables the analysis of ejection fraction and wall motion.

An 8 x 8-foot system footprint makes the c.cam fit into most exam rooms without the need for costly remodeling and retrofitting, and it offers the choice of four chair colors – red, yellow, blue, or white – to blend with an office's interior design.

Patients and physicians have taken notice of the c.cam, and so have design magazines. In its 50th annual design review in August 2004, *International Design* (I.D.) magazine recognized the c.cam for its design distinction in the equipment category. *Appliance Manufacturer* (AM) magazine gave the c.cam its 2004 Excellence in Design Award in the medical appliances/laboratory equipment category in May 2004, and c.cam was also featured in *BusinessWeek* in June 2004, recognized as a 2004 Industrial Design Excellence Award winner for medical equipment. c.cam was most recently recognized



**KEITH CHURCHWELL, M.D.**, of the Page-Campbell Cardiology Group of Nashville, Tennessee, was the first worldwide to work with the c.cam cardiac gamma camera. "The more comfortable the patients are, the less movement they will perform," he says.

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with a 2004 Good Design Award by the Chicago Athenaeum.

The Page-Campbell clinic was the first worldwide to use the c.cam, and Medical Solutions recently sat down with Dr. Churchwell to discuss the benefits he has observed from the system.

**MEDICAL SOLUTIONS:** Dr. Churchwell, the Page-Campbell clinic was the earliest adopter of the c.cam when it was introduced in 2003, and you were a big supporter of the product then. What were your expectations of the c.cam, and have they been met?

**DR. CHURCHWELL:** Our expectations were that we would be able to fit it into our clinic without any significant difficulty, that the imaging characteristics would be as good if not better than the other product we use – which is the conventional emission camera – and that our patients would appreciate and benefit from the experience in terms of an improved comfort level. The c.cam has met all three of those criteria extraordinarily well.

**MEDICAL SOLUTIONS:** What clinical advantages for the patient stem from the design of the c.cam?

**DR. CHURCHWELL:** I think the biggest advantage, in terms of imaging, is that patient motion is significantly reduced. The more comfortable the patients are underneath the camera, the less movement they will perform during the imaging, which leads to less artifacts. When we did our comparison studies, we did see that there was less horizontal motion of the patient than with the conventional system.

**MEDICAL SOLUTIONS:** How will the addition of the attenuation correction arm add value to c.cam imaging?\*

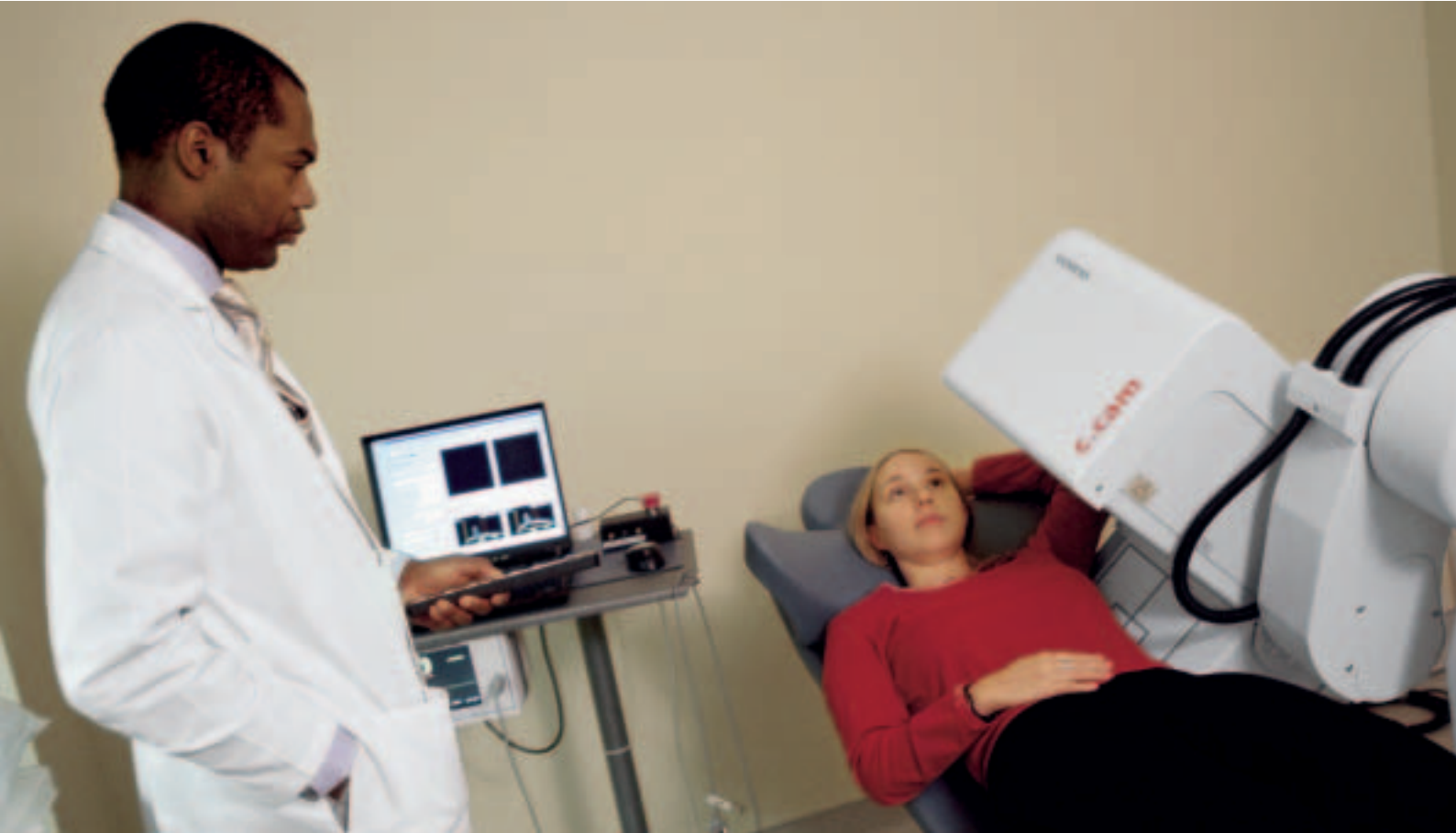
**DR. CHURCHWELL:** Attenuation correction adds value, I think, to any SPECT imaging system, and the c.cam will benefit – as will any SPECT system. When it comes to limiting the problems of artifacts that can impair our ability to evaluate cardiac images, attenuation correction has played and will play a significant role. You get more accurate imaging and truer images, in this particular instance, of the heart.

**MEDICAL SOLUTIONS:** Word of mouth can be a powerful marketing tool. Do you think patient comfort on the c.cam has affected the referrals you receive?

**DR. CHURCHWELL:** Our cameras have remained very busy. Our patients have referred their family members to us when they've needed imaging, and they've told them how comfortable the experience is.

**MEDICAL SOLUTIONS:** Not only does the c.cam's design provide a relaxing imaging position for the patient, it also offers a unique environment for patients who are unable to be imaged any other way. Can you share a patient example like this?

**DR. CHURCHWELL:** A great example is a patient who just cannot lie flat, who has severe lumbar disc disease. We recently had such a patient, and this person was quite comfortable in the c.cam chair. We were able to image, and the patient was able to stay quiet with very little motion and very little discomfort. The other options for that patient would have been possibly giving him medications – such as analgesics for pain control – to make him more relaxed. If that didn't work, he would have to have been hospitalized for the possibility of an invasive procedure to evaluate his cardiovascular system. We've been able to deal with a remarkably wide spectrum of patients – from those with severe lung disease, arthritis, or lumbar disc disease to very obese patients. We just had a patient this week who weighed more than 370 pounds, and we got great images. And that's the true test of the quality of the camera.



| **C.CAM'S RECLINED POSITION** is particularly beneficial to patients with back pain, lung disease, arthritis, or obesity.

**MEDICAL SOLUTIONS:** With the growing elderly population in the U.S. and the heightened awareness of cardiac health maintenance, your patient volume has probably increased significantly. How would you describe the reliability of the c.cam system as it sees maximum patient throughput?

**DR. CHURCHWELL:** It has been extremely reliable. We have not had any significant downtime with our c.cam, and the imaging has been excellent. And this is even more remarkable when you realize that it remains the very first camera of its type installed in the world for clinical application.

**MEDICAL SOLUTIONS:** In terms of clinical workflow, what productivity efficiencies have been realized so far as a result of having this system?

**DR. CHURCHWELL:** Well, in our case, we now have two camera systems that are both dual head, which has increased throughput significantly. We've also reduced the amount of time a patient is underneath the camera while achieving higher count rates and better imaging. In addition, we're able to schedule

more patients during the day and take walk-ins or other non-scheduled patients who come into the clinic and need to be evaluated that day efficiently and quickly. We get the information back to the patient before they leave the office in a very reasonable time.

Using our previous camera system, the day would end for our technicians, patients, and doctors after five o'clock. Now, with the same number of patients, and even more patients in terms of our scheduling, we are usually done by three-thirty or four. And that's with the patients being seen, evaluated, their scans read, the information given to the patients, and the patients out the door.

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\* The information about attenuation correction is preliminary. Attenuation correction is under development and is not commercially available in the U.S., and its future availability cannot be ensured. However, the c.cam system has been available for sale in the United States since 2003.