Clinical Photography and Patient Care at Memorial Sloan-Kettering Cancer Center

MEMORIAL Sloan-Kettering Cancer Center in New York City has long been a destination for cancer patients around the world seeking excellence in medical care. And here they find it, along with an impressive record of success treating cancers of every type. Here, too, they will find clinical photography applied with a sophistication unique among medical practices; closely integrated into diagnostic and treatment procedures and playing an important role in patient care.

Nowhere is this more evident than in Dermatology Services, which under the direction of Dr. Allan Halpern wagers a relentless battle against the rising rate of melanoma. And for the past 14 years, clinical photography has been an important ally in staying one step ahead of this potentially deadly disease.

A Close Watch on High Risk Patients

A key element of this defense is the consistent use of total body photography for patient monitoring. At the first visit, high risk patients are imaged head-to-toe in one of MSKCC’s specially designed photography studios. This session creates a high resolution body map covering the entire area of the patient’s skin; a base line against which future visits will be compared. Additional close-up pictures document areas of particular interest, and their locations are tagged to the corresponding body map photographs. This process allows a level of monitoring that would not be possible in any other way.

To Dr. Halpern, the benefits are numerous. “There is a lot of data that says when you follow patients this way, a very high percentage of the early melanomas you find are because of having access to baseline photographs.”

— Allan Halpern, M.D.
The Promise of a Continuing Evolution  

Dr. Halpern first became involved with body mapping at the University of Pennsylvania, where he directed the Pigmented Lesion / Melanoma Clinic. His mentor at the time, Dr. Wallace Clark, had pioneered a film based photography system to track patients with numerous atypical moles. Their challenge was to find the “needle in a haystack”, the ones that had to come out, and in the process they amassed a huge archive of slides.

When Dr. Halpern arrived at MSKCC in 1997, digital photography was in its ascendency, and he recognized the enormous potential for improved image capture and management. Over the next few years, he led an initiative to develop a completely integrated, enterprise wide infrastructure for clinical photography. Supported by a networked installation of medical imaging software, this system now gives every MSKCC location immediate access to a patient's photographic records.

The future of clinical photography in melanoma care, as envisioned by Dr. Halpern, offers even greater promise. “We see the potential in developing a system of 3D total body photography. The notion is that instead of taking a series of pictures and fitting them together, we would take a single 3D image.” But that would be only the beginning. “Ultimately there has to be a better way of monitoring changes than the human eye. Given the advances in computer vision and image analysis, we could have an automated system. From the point of view of tracking melanoma, smart systems are the ultimate solution.”

Bringing this vision a step closer to realization, in 2011 Dr. Halpern secured an “Academic-Industry Partnership Grant” from the Melanoma Research Alliance. Under this grant MSKCC will partner with Canfield Scientific, Inc. to develop a comprehensive diagnostic imaging system for melanoma detection. This system will combine 3D total body photography, sequential digital dermoscopy and specialized software to improve the detection of thin melanomas. The goal of this project is to develop an easy to use system that will decrease melanoma mortality through early detection while preventing unnecessary biopsies.

A fully functional 3D enabled total body imaging system is already being used in Framingham, MA where MSKCC is working with the public school system and the Harvard School of Public Health. Using an imaging system developed specifically for this purpose, the SONIC (Study of Nevi in Children) project is monitoring hundreds of children in a multi-year study. Using the 3D images from this study, they hope to learn how normal moles change in response to sun exposure and other variables. This understanding could lead to more effective practices in the prevention and treatment of skin cancer.

“For me, it would be absolute folly if photography did not become the standard for documentation, as opposed to verbal description” Dr. Halpern concludes. “This would integrate well into an electronic medical records system, and could be used for all surgical, plastic surgery, cosmetic surgery and dermatology treatments. We are looking at monitoring not only melanoma, but rashes. And ultimately, computers can be used to analyze all of this information as well.”

A Commitment to Better Care  

An hour’s drive to the east of MSKCC’s New York office, Dr. Ashfaq Marghoob heads the Dermatology Section at their Hauppauge, Long Island facility. A leading authority on dermoscopy, Dr. Marghoob has been working with a recently developed attachment for an ordinary smartphone. Coupling to the internal camera, this device turns the cell phone into a high tech dermatoscope, capable of capturing, displaying, storing and transmitting highly magnified images of specific lesions. This presents a new dynamic in melanoma monitoring.

“There are two avenues of development” Dr. Marghoob explains, “The first is physician to physician, allowing for remote consults with experts in dermoscopy. This is already happening.” The second avenue, what he calls “Patient driven”, would use mobile technology to give the patient easier access to physicians and greater involvement in monitoring their own lesions. This would reduce the frequency and length of office visits by allowing patients to perform a simple procedure – capturing images of their own lesions. Images of isolated lesions that are concerning to the patient can be captured by the patient and then sent electronically to a physician for an opinion.

Another potential application of patient driven imaging is for lesions subjected to short term digital monitoring. Short term monitoring involves obtaining a baseline dermoscopic image of a lesion and then capturing another image of the same lesion 3 months later. “Today, when the patient comes in for follow-up, a nurse takes the picture of the lesion of interest. Then I look at the image and compare it to the baseline picture of the same lesion. Usually I find that the lesion (Continued on Page 4)
New VECTRA® XT and 3.7 Software

With the VECTRA XT and version 3.7 software, Canfield once again sets a new standard for 3D imaging and aesthetic simulation. Introducing a host of innovative features, as well as numerous improvements, the new system provides the ultimate plastic surgery consultation tool for breast, face and body procedures. With a versatile and robust hardware design, combined with a powerful new software package, this VECTRA 3D system assures fast image capture and compelling patient communications with minimal staff training.

New features include:

- **Enhanced 3D capture module**  On screen illustrations show correct patient positioning, with detailed instructions available for every step of the capture. The result – better consistency with any operator and improved patient experience.

- **Automatic breast assessment**  Automatic breast land-marking improves work flow, reducing the time needed to produce a simulation. Vectra XT provides implant recommendations based on breast measurements to streamline the visualization of different options. And your patients will immediately relate to Vectra XT’s new cup size estimation.

- **Virtual clothing**  A click of the mouse dresses your patient in a stylish top so she can see what she’ll look like when out and about. Virtual clothing is also available in printed reports that can be shared with friends and family.

The new software is also available as an upgrade for existing VECTRA systems, and will be provided at no cost to all users with current Support & Upgrade agreements. Eligible practices are also listed in the “Doctor Locator” on our consumer facing aesthetic education website, SculptMyDream.com. Another reason why practices know they can “Invest with confidence” with a VECTRA 3D system from Canfield.

Custom Studio Design

Among health care professionals worldwide, Canfield is known for leading edge clinical photography products. From the hand held DermScope™ to full body VECTRA 3D imaging and aesthetic simulation, there is a Canfield solution for almost every photographic need. There are, however, situations where a practice needs something special, or even unique. And that’s when our Technical Applications Group gets the call.

The “A-Team” of clinical photography, this group specializes in the design and installation of customized studios and imaging systems. Their clients include solo practices, multi-site institutions and everything in between, with requirements from the basic to the complex. But for every client, the process always begins with an in-depth consultation to evaluate their specific needs and determine the most practical and cost effective solution.

Because floor space is often at a premium, the group specializes in designing studios that make the most efficient use of an existing facility. Lighting systems are typically mounted to the walls or ceiling with careful consideration given to camera positioning and patient comfort. When necessary, some modifications are made to the room construction and customized support systems are installed. While some clients already own the cameras and lighting, Canfield specialists can both specify and source the equipment needed to complete the studio installation.

For plastic surgeon Barry DiBernardo, M.D. of Montclair, NJ, Canfield’s custom studio design made all the difference to clinical photography in his practice. Having worked as a professional photographer, Dr. DiBernardo knows what it takes to get professional results. But he also understands the importance of specialization, and because his is medicine, he turned to Canfield to build his studio.

“I can’t begin to tell you what a great job they did” exclaims Dr. DiBernardo. “High quality photography is extremely important to me, and with the studio that Canfield installed that’s one less thing I have to worry about.” As Dr. DiBernardo’s practice grew, he eventually had to relocate to a larger facility, creating a new photographic challenge. “I was concerned about losing consistency between photographs taken at the new and old locations. To my relief, Canfield was able to recreate the original studio environment, and the photographic results are identical.”

If your practice has a photographic challenge, or if you want to see how good your clinical photography can be, contact a Canfield Technical Applications specialist at 800-815-4330 or by email at (CISTechnicalApplications@CanfieldSci.com).
If you’d like to learn more about how facial imaging system can improve your bottom line, and how to choose one that’s right for you, call our Customer Service department at 1-800-815 4330 or send an email to Info@CanfieldSci.com.

(Continued from Page 2)

has not changed, and I tell the patient I’ll see him/her at the next appointment. It’s logical that someday this is going to be patient driven, with the patient perhaps using a smart phone to take and deliver the follow up images. The physician can then examine the side-by-side images, and only if a change is detected would the patient be asked to come to clinic for a biopsy.”

Beyond patient monitoring, Dr. Marghoob believes photography has an important role in surgical procedures. “It’s useful to document where a biopsy was taken. Say you biopsy five lesions on the abdomen and two of them come back as cancer. How do you know where they came from? Photography is the best way to assure that it’s the right biopsy site you’re subjecting to surgical excision.”

While the appreciation for clinical photography at MSKCC is evident, equally clear is the rationale. Underlying it all is a commitment to provide their patients, they simply put it, “The best cancer care anywhere.”•

AAD Highlights

At the American Academy of Dermatology (AAD) annual meeting this year, Canfield introduced a number of exciting innovations for the skin care professional. Included are significant improvements to both the hardware and software of Canfield’s leading skin imaging systems.

• The new Sixth Generation VISIA® Complexion Analysis System has been redesigned inside and out. An entirely new lighting system provides ultra-clear, highly detailed facial photographs in both standard light and cross polarized modes. New multi-zone masking allows skin care professionals to target specific facial areas for optimized skin analyses, and a eyelash analysis has been added to track lash improvement regimens.

• At last year’s AAD meeting, Canfield turned heads with the revolutionary DermScope for iPhone 4. This incredible feat of engineering turns a smartphone into a state of art digital dermatoscope, with highly magnified on screen viewing, one touch image capture, an integrated patient database and more. A new version now has enhanced lighting for improved rendition of lesions and other skin features, and a distinctive “medical white” case for a more professional appearance.

• The completely new VECTRA hand held system brings 3D imaging to any practice. Designed for small field and facial imaging, this compact, easy to use system includes many of the features that have made VECTRA the world’s leading 3D clinical imaging system. This completely self contained camera can be used on any part of the body, and transmits pictures wirelessly to a host PC or network server.

Also on display at AAD were Canfield’s complete line of clinical imaging products for dermatology practice and research, including VISIA-CR, IntelliStudio, OMNIA and custom photographic solutions. •

Tips from the Sales Department

Macro Photography

Getting crisp, clean macro, or close-up, images is one of the great photographic challenges in dermatology. But by following a few simple guidelines, you can consistently take macro images that maximize clinical information.

Here’s how:

• Use a macro lens or the macro setting on your camera. If you are using a Single Lens Reflex camera, (SLR), a dedicated macro lens will provide the best results. If using a Point-and-Shoot camera (PAS), make sure you engage the macro setting when shooting. Remember to turn it off when you are done.

• Use the flash. Flash does three things: keeps the exposure time short, standardizes lighting and allows the camera to use a small aperture, increasing depth of field. PAS cameras trend to overexpose flash pictures at close range, so maintain a distance of ~12” and zoom in to frame the lesion. Canfield manufactures a close-up scale for several cameras for this express purpose.

• Don’t use Auto mode. Take control of your macro photos! Use an exposure mode that allows you to set a smaller aperture (f/8 for PAS, F/16 for SLR).

• Check your work. Zoom in using the camera’s LCD display for a closer look at your images. On a small screen, images that are out of focus can often appear to be good. •