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approaches.



MD Anderson Oncology

Careful Examinations and Sentinel Node Mapping Bolster Melanoma Detection and Staging

by Beth Notzon

In the war on melanoma, the primary care physician is the first line of defense, wielding the shield of early detection to protect patients against the relatively unfavorable survival rates associated with late-detected regional and distant disease and an incidence rising 4% annually.

The primary care physician is an essential part of our melanoma team," said Jeffrey E. Lee, M.D., associate professor in the Department of Surgical Oncology and medical director of the Melanoma and Skin Center at The University of Texas M. D. Anderson Cancer Center.

"One of the most important things that the primary care physician can do is identify early stage melanomas," said Dr. Lee, referring to the opportunities these physicians have to detect melanoma at a highly curable stage. "This means," he said, "that every adult patient who undergoes a routine

(Continued on page 2)

[Image Redacted]

Melanoma

(Continued from page 1)

physical examination should undergo examination of the complete skin surface, and particular attention should be paid to pigmented lesions that fulfill one or more of the criteria for malignant melanoma.”

Eighty-two percent of malignant melanomas are diagnosed at a localized stage, which has a five-year survival rate of 95%, but rates dip to 61% when disease spreads regionally and plummet to 16% when disease spreads distantly. Overexposure to sun in early childhood and a resulting blistering sunburn are among the causes often cited for melanoma.

Improving staging since 1992 has been sentinel node mapping. Also called *intraoperative lymphatic mapping* and *sentinel lymph node biopsy*, the technique “represents the single most accurate way to stage the regional nodal basin in patients with early melanoma,” according to Dr. Lee. “It is a method for surgically identifying the regional lymph node which is most likely to contain occult melanoma metastases, if the melanoma has in fact spread.”

The technique was first tested at John Wayne Cancer Center in Santa Monica, California, and then evaluated at M. D. Anderson. In it, physicians inject a small amount of radioactive tracer and a vital blue dye at the primary melanoma site on the skin. Those regional lymph nodes that stain blue with the dye and contain focal gamma activity receive lymphatic drainage from the primary melanoma site and represent the regional lymph nodes most at risk for tumor spread.

“This new technique offers us an option which is more accurate than elective lymph node dissection because that single node can then be examined in great detail and also avoids the potential morbidity associated with elective lymph node dissection,” said Dr. Lee. Mapping can be performed before wide local excision, but generally not after it. Further advantages are that it can be performed on an outpatient basis and is extremely safe. It is generally performed in patients

Clinical Trials Offer Treatment for Advanced Melanoma

Melanoma clinical trials in progress at The University of Texas M. D. Anderson Cancer Center include the following. Contact the M. D. Anderson Information Line or visit the M. D. Anderson clinical trials site on the World Wide Web (see numbers and addresses below) for more information.

- Phase II evaluation of bryostatin-1 (NSC 339555) in metastatic melanoma. *Physician: Agop Y. Bedikian, M.D.*

Patients with metastatic melanoma ineligible for higher priority treatment are eligible for this study. Disease must be bidimensionally measurable. Although patients can have received one prior chemotherapy treatment for melanoma, three weeks must have elapsed since the end of it, and patients must have recovered from its toxic effects. In the case of mitomycin or nitrosourea therapy, six weeks must have passed since the end of treatment. Patients must have the following laboratory values: absolute granulocyte count, $\geq 1,000$ cells/mm³; platelet count, $\geq 100,000$ cells/mm³; bilirubin, ≤ 1.5 times the upper limit of normal; transaminase, ≤ 3 times the upper limit of normal; creatinine, ≤ 1.5 mg/dl, or creatine clearance, >70 ml/min.

Patients must have a Zubrod performance status of 2 or less and be expected to live for more than eight weeks.

- Adjuvant therapy for melanoma patients with regional lymph node metastases with interferon- α -2B versus biochemotherapy using cisplatin, vinblastine, dacarbazine, interferon, and interleukin-2. *Physician: Agop Y. Bedikian, M.D.*

To be eligible for entry into this study, patients must be less than 66 years old and have had malignant melanoma with regional lymph node metastases eradicated by surgery. Some older patients in excellent health may be accepted. Patients must be expected to live 12 or more months and have no intercurrent illness. Patients cannot have had previous chemotherapy or interferon and interleukin-2 therapy, though previous local adjuvant radiotherapy is acceptable. There should be no clinical evidence of cardiac or pulmonary dysfunction. The following laboratory values are required for study entry: creatinine, ≤ 1.5 mg/dl; bilirubin, ≤ 1.2 mg/dl; hemoglobin, >10 g/dl; white blood count, $>3,000$ /mm³; platelet count, $>100,000$ /mm³. Patients must be willing to return for follow-up visits for at least five years after treatment ends.

- A comparative trial of chemotherapy using cisplatin, vinblastine, dacarbazine,

whose melanomas are at least one millimeter thick.

Formerly, to evaluate the regional lymph nodes, physicians had to rely on physical examination findings, which are not always reliable. As Dr. Lee pointed out, “Physical examination is a relatively insensitive way of determining whether a patient’s disease has spread to the regional lymph nodes, and regional nodal involvement will be missed at least 20% of the time in patients with clinically early melanoma,” he said.

To be safe, physicians can perform elective lymph node dissection. “It is a more aggressive approach than leaving the lymph nodes alone,” said Dr. Lee. “It involves removing the

lymph nodes in a defined group of patients based on tumor thickness and other prognostic variables.” But that meant some patients would undergo surgery and face subsequent morbidity unnecessarily.

Sentinel node mapping helps physicians spare their patients these problems. “It allows surgeons to make two decisions,” according to Dr. Lee. “First of all, it allows them to decide who should have additional surgery in the form of a complete lymphadenectomy. Patients who have evidence of metastases in their sentinel node generally should at a minimum undergo a complete lymph node dissection.” Patients without

and biochemotherapy using dacarbazine and interferon plus interleukin-2 in the treatment of advanced melanoma. *Physician: Sewa S. Legha, M.D.*

To enter this study, patients must have surgically untreatable advanced melanoma, not including brain metastasis, and be between 16 and 70 years of age. Patients must have an expected survival of at least eight weeks, a Karnofsky performance score of 40% or better, and an East Coast Oncology Performance Score of 0 to 3. Following are laboratory values required for entry into the study: white blood count, $>3,000/\text{mm}^3$; platelet count, $>100,000/\text{mm}^3$; creatinine, $<1.6 \text{ mg/dl}$; bilirubin, $\leq 2 \text{ mg/dl}$. No significant intercurrent illness or significant cardiac or pulmonary dysfunction should be present. Patients may have had prior interferon therapy if it was administered as adjuvant therapy. Patients may have had radiotherapy but must have fully recovered from the toxicity. A six-week stay in Houston is required, and patients must be willing to return to M. D. Anderson for follow-up visits.

- Pilot study of allogeneic peripheral blood stem cell transplantation for patients with metastatic malignant melanoma. *Physician: Sergio Giralt, M.D.*
To be included in this study, patients with metastatic malignant melanoma

must have measurable or evaluable sites of metastasis. Patients must be between 18 and 50 years of age. Disease may be stable, or patients may either be relapsing after biochemotherapy or in partial remission. Patients must have a Zubrod performance score of 0 or 1 and an expected survival of 12 or more weeks. Patients must have an HLA-compatible relative for a donor. Following are the laboratory values required for study entry: white blood cells, $>3,000/\text{mm}^3$; platelet count, $>100,000/\text{mm}^3$; creatinine, $<1.5 \text{ mg/dl}$; total bilirubin, aspartate aminotransferase, and alanine aminotransferase, <3 times normal. Cardiac function (left ventricular ejection fraction, $>50\%$) and pulmonary function (carbon dioxide diffusing capacity, $>50\%$ of predicted value) must both be adequate. Patients must have no evidence of active hepatitis or cirrhosis, effusion, or ascites of higher than grade II before drainage. Patients must also be free of the human immunodeficiency virus and not pregnant.

- Phase II study of doxil in patients with metastatic melanoma. *Physician: Sewa S. Legha, M.D.*
To be eligible for this study, patients must have advanced or inoperable melanoma. Patients may also have ocular melanoma. Disease must be measurable. Patients must be expected to survive for at least eight weeks. They must also have a Karnofsky

performance status of at least 50% and a Zubrod performance status of 0 to 2. The following laboratory values are required for study entry: white blood cell count, $\geq 3,500/\text{mm}^3$; absolute neutrophil count, $\geq 1,500/\text{mm}^3$; platelet count, $>100,000/\text{mm}^3$; creatinine, $\leq 1.5 \text{ mg/dl}$; bilirubin, $<1.2 \text{ mg/dl}$. Patients must be free of any serious intercurrent illness, including a serious infection or congestive heart failure (ejection fraction, $<45\%$), and have no evidence of advanced brain metastases. Patients may have had prior interleukin-2 or interferon- α therapy as well as prior chemotherapy. Patients who have had radiotherapy are also eligible for entry, but the site of metastasis cannot have been irradiated, and the patient must have recovered from the side effects of radiotherapy. Patients must be willing to return for follow-up.

FOR MORE INFORMATION about these clinical trials, physicians or patients should call the M. D. Anderson Information Line. Those in the United States, call (800) 392-1611; those in Houston or outside the United States, call (713) 792-6161. Visit the M. D. Anderson Cancer Center clinical trials Web site at <http://www.clinicaltrials.org>.

melanoma metastases to their sentinel node can be spared the potential morbidity of complete lymphadenectomy.

He continued, "Second, sentinel node mapping is also a way of selecting patients for additional treatment, not just surgical treatment of the regional lymph nodes but also for adjuvant therapy, in particular treatment with high-dose interferon."

High-dose interferon therapy, the product of a search for better postsurgical therapy for metastatic melanoma, was approved in 1996 by the U.S. Food and Drug Administration for patients without clinical evidence of disease but at high risk of recurrence. Outcomes in patients

given standard chemotherapies for metastatic melanoma generally have been disappointing.

In biochemotherapy, another new approach, standard chemotherapeutic agents are given in combination with interferon and interleukin-2. Also under investigation at M. D. Anderson are novel therapies, including vaccines made from the patient's own melanoma (an autologous vaccine) and synthetic melanoma peptide vaccines, which are being evaluated in Dr. Lee's laboratory. •

FOR MORE INFORMATION, contact Dr. Lee at (713) 792-7218 or call the M. D. Anderson Information Line at (800) 392-1611 or (713) 792-6161.

Detecting Melanoma

Of the three types of skin cancer—squamous cell, basal cell, and melanoma—the first two are more common and more easily cured than the third. Because melanoma metastasizes in 15% of patients who present with clinically localized disease, it is a particularly serious skin cancer.

The criteria for recognizing a melanoma have been condensed into a mnemonic device, **ABCDE**:

- A** Asymmetry
- B** Border irregularity
- C** Color variation
- D** Diameter greater than six millimeters (the width of a pencil eraser)
- E** Enlargement

M. D. Anderson Plastic Surgeons Restore H

At The University of Texas M. D. Anderson Cancer Center, patients disfigured not only by their cancer but also by ablative surgery are made whole again—functionally and cosmetically with reconstructive plastic surgery.

“Our main strategy is to help the cancer patient who without the plastic surgeon’s help will have some severe functional and cosmetic problems,” said Geoffrey Robb, M.D., chairman of the Department of Plastic Surgery and director of the Surgical Specialties Center.

Unlike ablative surgeons who concentrate on performing surgery in specific regions of the body, plastic surgeons literally work from head to toe—from surgery for head and neck cancer, to breast reconstruction, to reconstruction of a foot after removal of an extensive malignant melanoma.

Improving quality of life for the patient is the ultimate goal of the reconstructive plastic surgeon, according to Dr. Robb. This may involve restoring the ability to chew and swallow, to jog, or to wear a swimsuit that flatters. These are not unreal expectations, he said, and they are ones plastic surgeons at M. D. Anderson are well equipped to help patients realize.

“The plastic surgeon is almost always needed to provide a number of solutions, and one is to cover vital organs, whether bone or blood vessels,” Dr. Robb said. When extensive surgery requires removal of part of the cranium and thus exposes the brain, plastic surgeons work with neurosurgeons to reconstruct the cranium and reestablish the internal barriers between the brain and sinuses and other structures of the head.

Probably most familiar of the plastic surgeries following ablative procedures is breast reconstruction after mastectomy. Less well known

but significant at M. D. Anderson is plastic surgery to restore form and function after disfiguring head and neck surgery. For these patients, surgery may cure, but the results may be devastating. The tumors often require extensive removal of not only internal structures of the head and neck—the esophagus, tongue, jaw—but also external features as well—the mouth, the nose, a cheek, an ear. Such tumor wounds cannot be closed with a simple skin closure, and the emotional wounds may take longer to heal than the physical ones. Part of the person has been removed. That is why, Dr. Robb noted, an important objective of plastic surgeons, beyond restoring form and function, is to restore a patient’s self-image.

“We give patients an injection of hope,” he said, “but it is hope tempered by reality.” He acknowledges that many patients cannot expect complete restoration to their original appearance. To avoid unrealizable expectations and disappointment with the results of plastic surgery, the surgeons are completely frank

with patients about what they believe surgery can and cannot achieve.

M. D. Anderson surgeons, Dr. Robb said, are known worldwide for the head and neck reconstructive surgery they perform. “The kind of head and neck care that is found here is really state of the art,” he said. “Anderson has established a standard of care that’s hard to match.”

Foremost among the reasons for M. D. Anderson’s success is its ability to pull together a first-rate team experienced in working together. It begins, according to Dr. Robb, with a top-notch team of plastic surgeons—Drs. Michael Miller, Greg Reece, David Chang, Stephen Kroll, and Gregory Evans—who possess the surgical expertise and the interaction skill crucial to meeting patients’ needs successfully. In head and neck procedures, interaction skills gain significance as the team swells to include head and neck surgeons, neurosurgeons, occupational therapists, and prosthodontists.

Putting together a team of “multiple crew members is something that Anderson is really organized to do,” Dr. Robb said, explaining that the Surgical Specialties Center physicians interrelate with all the specialists needed to treat the patient’s cancer and then to reconstruct the head

A Smile Reclaimed

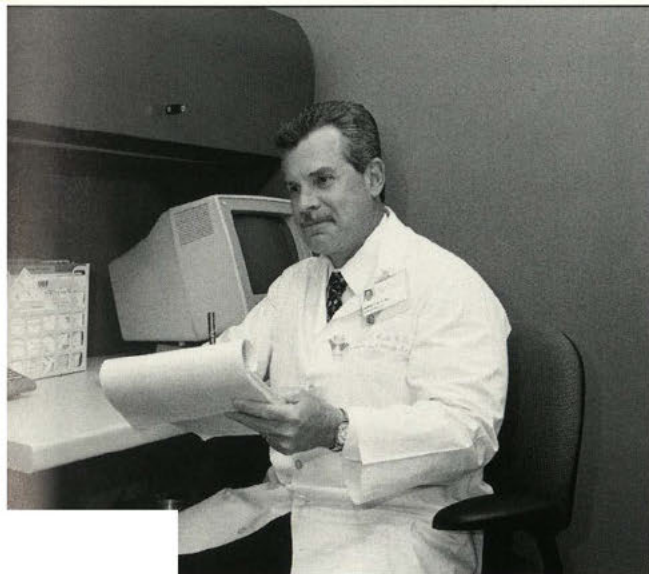
This young woman’s ability to smile (left) was contorted by nerve damage caused by a tumor. After microvascular surgery (right), her smile returned to normal.

[Image Redacted]

ope Along With Function and Appearance

by Beth Notzon

[Image Redacted]



In breast reconstruction cases, Dr. Geoffrey Robb utilizes the initial patient interview to answer questions and to allow the patient to gauge her emotional readiness.

and neck. The team has the expertise and skill born of extensive experience and a concerted effort to find the best ways to surgically reconstruct the head and neck. For this reason, these procedures are a significant component of the work of plastic surgeons at M. D. Anderson. More straightforward procedures such as breast reconstruction are also performed at M. D. Anderson.

Reconstructive team surgery requires painstaking planning. Such procedures as head and neck reconstruction are frequently done in

stages, with careful plotting at each stage. The team that plans the procedure works together in the operating room. In Dr. Robb's view, this has the advantage of "keeping everyone on the same page" throughout the patient's treatment and recovery.

Tissue engineering was Dr. Robb's response when asked about what is on the horizon for reconstructive surgery.

"This is a very exciting area of research," he said. The technique captured national interest a few years ago when a photograph of a mouse

with an ear growing on its back appeared in newspapers.

"It is an interesting marriage," Dr. Robb pointed out—one that has wedded the work of basic scientists laboring in laboratories with that of plastic surgeons working in operating rooms. At M. D. Anderson, it has proved a productive marriage, with some early promising results. Bone flaps and nerve tissue regeneration are the effort's primary focus.

As Dr. Robb explained, a reconstructive flap may be of skin, bone, muscle, or any other tissue transferred from one part of the body to another. But flaps have several disadvantages:

- Transferred flaps do not always match the tissue they replace.
- Patients' risk is high postoperatively because they must recover from surgery at two or more sites and are at risk for complications at all sites.
- Such procedures may take 12 hours or longer to perform.

Substituting engineered tissues could eliminate these problems, Dr. Robb said. The tissue grown would be identical to the tissue replaced, and risk would fall because no or limited surgical trauma would be required to produce the replacement tissue. The time required to place such tissue would also be much less.

Although skin, bone, and cartilage tissues are, for now, the only practical applications beginning to emerge from tissue engineering research, Dr. Robb said important groundwork is under way at M. D. Anderson's Laboratory of Reparative Biology, headed by Charles Patrick, Jr., Ph.D. With future advances, it may be possible to grow a new pancreas, new nerves, a new breast, and even a new ear by such means. ●

FOR MORE INFORMATION, contact Dr. Robb at (713) 792-8907, or call the M. D. Anderson Information Line at (800) 392-1611 or (713) 792-6161.

[Image Redacted]

A Tumor Rebuffed

This Texas preteen's plexiform neurofibroma had destroyed her right eye after the nonmalignant vascular tumor spread to involve all of her right face (left). Multiple surgeries were able to restore to her face a more normal contour (right).

Breast Supercenter Consolidates Medical, Surgical, and Radiological Services

In line with its commitment to offering the best possible patient care by the multidisciplinary team approach, The University of Texas M. D. Anderson Cancer Center created the new Nellie B. Connally Breast Center as a supercenter for breast cancer care.

The center is the crowning touch to a multidisciplinary concept of care that began to take shape three years ago, according to Richard L. Theriault, D.O., associate professor of medicine and medical director of the center.

"We actually have used the center concept for about three years, bringing together physicians from all involved areas to consult on breast cancer cases," Dr. Theriault explained, "but there have been some logistical constraints." Needed was a centralized facility for all services related to breast cancer care—and that concept became a reality with the opening of the Connally Center last fall.

On the sixth floor of M. D. Anderson's Clark Clinic, the Connally Center combines medical, surgical, and radiological oncology services in one place. Physicians are conveniently accessible to each other and to the patients.

"This approach is theoretically more practical and beneficial," Dr. Theriault said. "If a surgeon needs to speak to a radiologist, that person is right here." Patients are also saved long walks from appointment to appointment, he said.

A strategic advantage of the Connally Center is its proximity to both screening and diagnostic services. Next door to the center is the Ben and Julie Rogers Breast Diagnostic Clinic, where such procedures as mammography, ultrasonography, fine-needle aspiration, and core biopsy are performed. Down the hall is the Cancer Prevention

What's in a Name? The Nellie B. Connally Breast Center

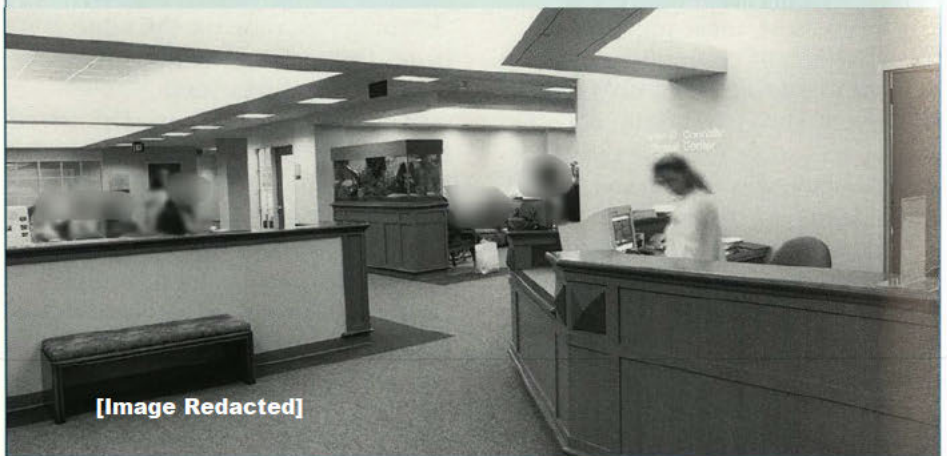
What's in a name? In Connally find *ally*, and that's what former Texas first lady Nellie B. Connally has been to The University of Texas M. D. Anderson Cancer Center since she joined the University Cancer Foundation Board of Visitors in 1984.

A breast cancer survivor herself, Connally has demonstrated remarkable success in garnering financial support for M. D. Anderson and an unrelenting commitment to breast cancer awareness that prompted creation in 1989 of the Nellie B. Connally Breast Cancer Fund. The Nellie B. Connally Breast Center and the Nellie B. Connally Chair in Breast Cancer, to which Gabriel Hortobagyi, M.D., has been named, are the newest creations of the fund. Research initiatives, early detection efforts, new therapies, rehabilitation programs, and genetic and other basic science studies are also supported by it.

"She has been a champion for making women aware of their breast cancer care options and a strong supporter of the institution's fight against cancer," said Mary Kathryn Cooper, director of development for special programs. Cooper said Connally's commitment springs from her desire to give all women confronted, as she was, with breast cancer a host of life-saving options.



Nellie B. Connally



[Image Redacted]

Center, where cancer screening, nutrition counseling, and information on health, cancer, and cancer prevention are available.

The centerpiece of the 18,941-square foot center is a large waiting room that opens out onto five suites.

"We wanted the center to have a friendly feel to it," Dr. Theriault said.

In an education room, patients can review literature and videos,

and, in a separate area, view on line information about breast cancer on a computer.

"The goal is to provide patients with the privacy and full-service support they need at a critical time," Dr. Theriault said. ●

FOR MORE INFORMATION, contact Dr. Theriault at (713) 792-2817 or call the M. D. Anderson Information Line at (800) 392-1611 or (713) 792-6161.



Keep Skin—and Cancer Risk—Under Wraps During Summer

FROM M.D. ANDERSON CANCER CENTER

Summer is almost here, and that means pools and parks will soon be filled with people enjoying warm weather and bright sunshine. We all look forward to summertime pleasures, but too much fun in the sun can increase skin cancer risk.

This is because the number one cause of most skin cancers is repeated overexposure to sunlight. Before diving into summer, review the following skin cancer facts and learn how to protect yourself and your children—who are especially vulnerable—from the sun's harmful rays.

Skin Cancer: The Risk Is Real

Skin cancer is the most common cancer. People living in the United States have a one in five risk of having skin cancer sometime during their life. For people living in the Sunbelt—the southern portion of the United States—the risk increases to one in three. There are three types of skin cancer: basal cell carcinoma, squamous cell carcinoma, and melanoma. Basal cell carcinoma and squamous cell carcinoma account for about 95% of skin cancer cases. These cancers grow slowly, rarely spread to distant parts of the body, and are rarely life-threatening.

Melanoma, the third type, is a very serious cancer. It tends to spread rapidly, and once it has spread to distant parts of the body, cure is very unlikely. Melanoma accounts for only about 5% of skin cancer cases, but it is responsible for more than 75% of skin cancer deaths.

Protect Yourself From the Sun

How can you enjoy the summer sunshine without increasing your skin cancer risk? Take these precautions:



- **Close the door.** Try to avoid outdoor activities between 10 a.m. and 3 p.m., when the sun's rays are most intense.
- **Shield the skin.** When you must be out in the sun, cover up or use sunscreen. Wear a long-sleeved shirt, pants, and a hat with a wide brim. On exposed skin, use sunscreen with a sun protection factor (SPF) of at least 15. Use sunscreen even while you swim, and reapply after swimming or sweating. The sun's rays can reach through three feet of water. Remember—you can get sunburned even on a cloudy day.
- **Flip the switch.** Do not use sun lamps at home or in tanning salons. The ultraviolet radiation from sun lamps and tanning beds can be just as harmful as the sun's rays.



Children Need "Sun Smarts" Too

Protecting yourself from the sun should be a lifetime habit, but "sun smarts" are especially important in childhood. The reason is this: people who have a severe, blistering sunburn before the age of 18 may have a higher risk of melanoma, the most serious form of skin cancer.

Children tend to spend more time outdoors than adults. In fact, most people in the United States get 80% of their lifetime sun exposure before the age of 18. This means that childhood is a prime time to reduce sun exposure.

To help children learn the proper sun protection habits, try these techniques:

- **Start early.** Children who learn sun safety early may be more likely to practice it throughout life.
- **Keep it up.** Insist that children follow sun protection guidelines. With practice, applying sunscreen can become as automatic as putting on seat belts in a car.
- **Practice what you preach.** Follow the sun safety guidelines yourself. By doing so, you demonstrate that you think protection from the sun is important. Sometimes actions speak louder than words.

Infants younger than six months need special protection because their skin is so delicate. They should be kept out of direct sunlight as much as possible. Sunscreens that contain para-aminobenzoic acid (often shortened to PABA on labels) or oxybenzone are not recommended for infants. Sunscreens that contain zinc or titanium oxide are a possibility, but check with your baby's doctor before using them.

For more information, contact your physician or contact the M. D. Anderson Information Line:

 (800) 392-1611 within the United States, or

 (713) 792-6161 outside the United States.

May 1998

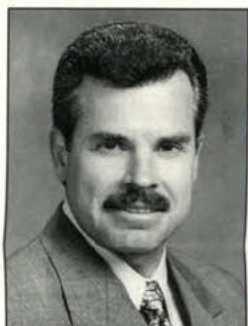
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DiaLog

Reconstructing More Than the Breast

Geoffrey Robb, M.D.
Director, Surgical Specialties Center

In Michelangelo's paintings in the Sistine Chapel, the hands of the biblical characters capture our imagination. At once delicate and strong, they tell the beauty of the human condition.



Hands relax and clutch, caress and strike, repel and reach toward others. In the caring hands I can imagine a physician's hands responding to a patient.

As a surgeon who performs breast reconstruction surgery, I encounter many patients who need more than what the hands of a physician can do for them. Many are reeling from the disfiguring blow cancer has dealt them. When cancer requires that a breast be removed, the deformity remains a constant reminder of disease. They grieve their loss, they curse their disfigurement, and they struggle to recover their self-esteem.

Immediate breast reconstruction, which averts the psychological trauma of living without a breast, is possible for patients with in situ, T1, or T2 breast cancers and for some with T3 cancers. Combining it with the new technique of skin-sparing surgical resection escalates the quality of the cosmetic result, and our multidisciplinary research indicates that the approach is not characterized by rates of local recurrence, distant

metastases, and death significantly different from those of treatment without skin-sparing reconstruction.

But the hands of the surgeon can only do so much. Perhaps the foremost physical sign of female sexuality and femininity, the breast is the source of sustenance for the infant, literature's seat of the soul, and the soft place of comfort to the weary. To the preteen girl and her parents alike, breast development is a coming of age, a passage to womanhood. Mastectomy disconnects women from these images integral to a woman's sense of feminine self.

Reconnecting to that self is important to these patients. And it has to be, because achieving a breast that has the appearance, color, roundness, and softness of a woman's natural breast may take up to a year. Microsurgery, introduced in the mid 1970s, allows surgeons to vascularize the patient's transferred tissue and optimizes breast reconstruction so that perfection without clothes, not just with clothes, is feasible. A maturation of technology and a tailoring of techniques combined to make it possible.

Their wholeness restored, patients can shift their focus from disease and recommit themselves to the things they love—their families, their work, and the world around them. They can leave behind their preoccupation with themselves, their disease, and their loss. And their hands and our hands can reach out to others.

Beth W. Allen contributed to this column.

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