Learning about Soft-Tissue Sarcoma. Why and How?
A Surgical Fellow’s Perspective

Stephen R. Grobmyer, MD

Every year we eagerly await the letter from Murray Brennan announcing who will be the Kristen Ann Carr Fellow for the next academic year. We wonder where the doctor hails from, where he or she was educated, and what his or her particular interest and expertise may be. Like every cancer patient, every cancer doctor has something unique about them. This is especially true, in our experience, about the surgeons who specialize in treating sarcoma. The first thing we learned about Stephen Grobmyer was from one of his colleagues among Memorial Sloan-Kettering’s surgical fellows. “He’s the one we all look up to,” we were told. Looking at this young surgeon’s credentials, especially his already impressive list of publications on sarcoma treatment, was sufficient. Meeting Dr. Grobmyer in person added to the impression. Here is a physician truly committed not only to studying sarcoma but to making a contribution to solving the many dilemmas and mysteries presented by these treacherous tumors. As a clinician, he is also concerned with the immediate lives of his patients. We feel fortunate to welcome him.

Dave Marsh and Barbara Carr

As residents and fellows at Memorial Sloan-Kettering, our exposure to patients with soft-tissue sarcoma is unique among surgical trainees. It is this exposure and strong mentorship that prepares us well to treat patients as we complete our training and transition into surgical oncology practice around the country.

My first encounter with soft-tissue sarcoma came as a third-year surgical resident rotating on Murray Brennan’s surgical service in 1999. That month I participated in the care of several young patients who had been unexpectedly and unexplainably afflicted. On daily rounds that month, under Dr. Brennan’s guidance, I developed an appreciation for the challenges that existed in treating patients with soft-tissue sarcoma. I was intrigued by the heterogeneity and complexity of the disease. I was fascinated by the ability of the surgeon to manage complex problems in all parts of the body. My research experience that month began with a report outlining the MSKCC experience with soft-tissue sarcomas of the perineum in adults. My initial enthusiasm for research in soft-tissue sarcoma generated at that time persisted and continues today.

Biking for a Cure

Bruce Shriver

Elizabeth (Liddy) Shriver was diagnosed with Ewing’s sarcoma in April 2002. She was 35 years old at the time—a bit young for cancer and a bit old for Ewing’s sarcoma. Her primary tumor was in the tibial nerve in her leg; this nerve supports the calf muscles and stabilizes the ankle. Murray Brennan of MSKCC removed her tumor and 8 inches of her nerve in a surgery in July 2002.

By August, Liddy’s husband, Tom, and the Shriver family knew that she wasn’t responding to the standard pediatric Ewing’s sarcoma chemotherapy protocol. By November they knew that she didn’t respond to the second- and third-line chemotherapy either. Her cancer had metastasized to her lungs, and over the months the tumors continued to grow in number and size. Facing such news, she began working on a list of things she always wanted to do. Liddy, who is a cycling enthusiast, told us, “On a bike, I get a sense of freedom that I don’t get any other way. Plus, I don’t limp when I bike. I always wanted to ride in a multi-day bike tour. It has to be somewhere flat, since I really only bike with one leg. And, I have to do it sooner versus later since my lung metastases were already giving me some problems in breathing.”

In April, Liddy and seven other friends and family members biked in
Leiomyosarcomas of the Uterus

Mario M. Leitao, Jr., MD

Leiomyosarcoma (LMS) is a rare cancer that arises from certain types of muscle cells. There are two main types of muscle cells: skeletal muscle cells, which form the muscles that we can control, such as our biceps, triceps, and hamstrings, and smooth muscle cells, which form muscles we typically do not have voluntary control over, such as the muscle lining the blood vessels, stomach, and intestines. The uterus is basically one large muscle composed mostly of these smooth muscle cells. It is very common for these uterine smooth muscles to overgrow and form non-cancerous tumors called fibroids (also known as leiomyomata). A malignant tumor, such as LMS, may develop in one to five out of every 1,000 women with fibroids, are commonly found at the time fibroids are removed during hysterectomy. Unfortunately, there is no accurate way to diagnose these leiomyosarcomas before surgery.

Uterine leiomyosarcomas are exceedingly rare and aggressive tumors. Only about 6.4 out of one million women will be diagnosed with this rare cancer in the US annually, with the average age at diagnosis being 51 years. The five-year survival rate is 50 percent for patients whose tumor is confined to the uterus. (The five-year survival rate for other gynecologic cancers is more than 90 percent, if the tumor remains in the organ of origin.) Obviously, better therapies need to be discovered but because LMS is so rare, it has been difficult to conduct large trials to help guide physicians toward the best possible treatment. Current options vary from surgery alone to surgery combined with chemotherapy and/or radiation therapy.

Surgery is the primary therapy for patients when they are first diagnosed with uterine LMS. Approximately 70-75 percent of the time, the cancer has not spread beyond the body of the uterus or cervix (stage I and II). All patients with uterine LMS should have a total abdominal hysterectomy (TAH) performed. Surgical removal of all tumors should be the goal in patients with cancer that has spread outside the uterus (stage III and IV).

Removal of both fallopian tubes and ovaries (known as bilateral salpingo-oophorectomy or BSO) is recommended for women who are menopausal or who have stage III or IV cancer. It is unclear whether it is necessary to remove the ovaries in younger women who have stage I or II cancers. Recently, we reported on 71 women with uterine LMS seen at MSKCC. Only 3 percent of these women had LMS cells found in the ovaries once they were examined under the microscope.

Many physicians have recommended BSO in all women with uterine LMS because of the fear that these tumors are stimulated by hormone (estrogen and progesterone) production from the ovaries. It is also feared that the chances of the cancer returning (known as a recurrence) are worse if the ovaries are not removed. This is a valid theoretical concern since the benign tumors, fibroids, will often shrink when there is no longer any estrogen present and grow in the presence of excess estrogen. However, this does not seem to be the case in LMS, as far as we can tell. The Mayo Clinic recently published a comparative study of 25 women who had their ovaries removed and 25 who did not have them removed. There was no difference between the two groups in cancer recurrence or in survival. We have also recently learned that the receptors for estrogen and progesterone are found less often in LMS than in benign fibroids. The presence or absence of these receptors was not associated with the chances of survival.

Removal of the ovaries will make women menopausal immediately. Menopause, especially one that is induced so quickly, can create significant symptoms, including hot flashes, mood changes and the risk of bone loss or osteoporosis. These can often, but not always, be controlled somewhat with medications. All of this must be carefully considered when making the very difficult and personal decision about whether to have a complete hysterectomy.

The necessity of “staging” procedures, in which lymph nodes are assessed, is also controversial. The rate of lymph node involvement in 27 patients with stage I and II uterine LMS seen at MSKCC was less than 3 percent. None of these patients went on to have a recurrence in the lymph node regions. These results are similar to a larger trial reported in 1993. We feel that it is not beneficial to perform another surgical procedure to sample lymph nodes in patients whose diagnosis has been confirmed after hysterectomy and in whom there was no obvious evidence of cancer spread outside the uterus. Such operations have associated risks and will not change the management of this cancer.

There has been no proven overall benefit of using any further chemotherapy or radiation therapy after complete surgical removal of all visible uterine LMS. Chemotherapy and/or radiation therapy given after complete surgical removal of all tumors is known as “adjuvant” therapy. Adjuvant radiation to the pelvis has been shown to decrease the chance that the cancer will come back in the pelvis. It does not change the chance of the cancer returning in other areas, such as the lung or liver; this happens nearly 80 percent of the time when a recurrence develops. We do not routinely offer pelvic radiation to all patients who have all the cancer removed. However, some physicians and patients do elect to try radiation therapy continued on page 7
MSKCC Post-Treatment Resource Program Spotlights Dynamic Survivors

Peter Ebright

On Saturday, October 18, 2003, the Post-Treatment Resource Program of Memorial Sloan-Kettering Cancer Center held a conference entitled “Celebrating Survivorship: A Conference for Young Adults with a History of Cancer,” presented in conjunction with the Lance Armstrong Foundation. The program was mainly directed toward young adult cancer survivors but was also attended by the families, friends, and loved ones of those survivors. Although the conference did not focus on specific types of cancers, there was a lot of important information that sarcoma patients/survivors could benefit from.

According to Karrie Zampini, the Director of the Post Treatment Resource Program, the specific goal of the conference was the promotion of education, advocacy, and peer support and the bringing together of young adult cancer survivors. Accordingly, the day-long conference was replete with seminars addressing such issues. Eight seminars addressed issues such as:

- Long-term healthcare
- Insurance, Legal Rights, and Employment
- Dating and Disclosure/Sexuality and Intimacy
- Fertility: Issues and Options
- Activism and Action: The Changing Face of Cancer Advocacy

Charles Sklar, Director of the Long Term Follow-Up Program in the Department of Pediatrics, presented a lecture addressing survivors’ long-term healthcare needs and concerns, with information that is particularly useful for sarcoma patients and survivors. Dr. Sklar mentioned the need to have a simply written record detailing the patient’s diagnosis, surgery, names and doses of chemotherapy (or sites and doses of radiation treatment), and long-term risks associated with the types of treatment. Also critical are screenings to monitor for complications and the need to have a general practitioner/internist who knows this history and how to provide the proper follow-up screenings. While it is important for the general population to have annual checkups and a healthy lifestyle and to perform regular preventative measures (e.g. self exams), such practices are even more important for sarcoma patients and survivors.

With medical advancement comes better treatment methods and as a result there is an ever-increasing number of people living with a history of cancer. This has brought about a new era in treatment where addressing issues of cancer survivorship has achieved greater importance. Whereas cancer has historically been associated with death, over time it is becoming linked with survivorship. Accordingly more and more survivors are turning to each other, learning from others’ experiences and finding other survivors whose stories they can use for guidance and inspiration.

Ms. Zampini explained that the conference was meant in part to address the process of moving forward with grace and to facilitate adjustment and adaptation. “Who better to do this than the patients themselves? This is a time to look back and to recognize what happened to them. Everybody needs to tell their tale,” she said.

In keeping with the theme of allowing the cancer survivors to tell their tales, the seminars for the most part were led by people with a history of cancer. The day began with a keynote speech by Wendy Schlessel Harpham, the author of several books about both the physical and emotional aspects of survivorship confronted by patients and their families. Dr. Harpham used a humorous Power Point presentation to address the issues confronted during and after cancer treatment from the perspective of both a patient and a doctor.

Following Dr. Harpham was a panel of four survivors who each told their stories. Jonathan Pearlroth, Amy Blumenfeld, Arthur Candido, and Mary Gregory all explained how cancer had affected their lives. All of their stories were notable for their realistic yet still positive focus and for the fact that none of these four allowed their battle with disease to hinder their progress. In fact, the panelists were all alike in that they allowed their experience to be a springboard to a productive and satisfying life. Each person’s tale was uniquely fascinating, but the panel as a whole was notable for the fact that it revealed that indeed each person who is affected by cancer has his or her own uniquely fascinating story.

Acting as a bookend to this first panel discussion of the day was the day’s concluding panel which also consisted of a group of cancer survivors who used their experience as a springboard. The panel consisted of Samantha Eisenstein, Doug Ulman, and Randi Rosenberg. Ms. Eisenstein, co-founder and director of operations of the SAMFund (www.thesamfund.org), an organization that she helped found after having been diagnosed with cancer while a student at Brandeis University. The goal of the organization is to assist young adult survivors of cancer with their transition into a successful post-treatment life by providing finan-

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Biking for a Cure

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Cycle Zydeco, a 200-mile, four-day bike tour in the Cajun part of Southern Louisiana. They called themselves “Team Sarcoma” and they raised more than $14,000 for sarcoma research. Even before the Cycle Zydeco ride had been completed, Liddy and her dad and mom were setting the plans for the Shriver Family Bike Tour for Sarcoma Research in Denmark.

 Shortly after getting off a train that took her from Aarhus, Denmark, to Odense on July 1, 2003, Liddy and 23 other cyclists who formed the new Team Sarcoma donned their biking clothes, mounted their bikes, and began the Shriver Family Bike Tour for Sarcoma Research. These cyclists came from Denmark, Germany, Hong Kong, Norway, Switzerland, and the United States. They were joined by cyclists in seven other countries and in more than fifteen states in the U.S. as they embarked on a four-day “worldwide” cycling event in an effort to raise public awareness of sarcoma and to raise funds for sarcoma-based research.

Since everyone couldn’t come to Denmark to participate in the actual bike tour on July 1-4, the Shrivers came up with the idea of a “Virtual Bike Tour” (VBT) for people who wanted to support their goals but couldn’t be with them. Virtual Bike Tour cyclists committed to bike on the very same days Team Sarcoma biked in Denmark and reported to the Team Sarcoma Web site how far and where they biked. And, VBT cyclists committed to tell their family, friends, neighbors and co-workers about sarcoma. There were VBT teams in Japan, Portugal, Serbia, Slovenia, Ukraine, and the U.S. and the U.K. There were individual VBT cyclists in Ireland, Italy, and a number of other countries and more than a dozen states. It took only a few cyclists from many areas to make an impact. The 24 Team Sarcoma cyclists and their VBT cyclist counterparts totaled more than 260 people. From July 1-4, they formed a unified, coordinated international group focusing their energies on biking for a cure.

With the help of many friends, the Shriver Family Bike Tour cyclists raised more than $75,000 for the Sarcoma Foundation of America—funds that will be used to sponsor sarcoma-related research. All 16 of the Shrivers joined Team Sarcoma including Bruce and Bev (Liddy’s dad and mom); their three sons, Bruce Jr., Mark, Matthew, and their families; and Liddy and Tom.

What’s important is that there were lots of other people who shared the Shriver’s goals and who were willing to devote time and effort to help raise money and make people aware of this wretched disease. People of all ages and lifestyles became VBT cyclists. They ranged from a 70-year-old bike enthusiast and 60-year-olds who had not biked in more than 30 years to a group of 20 to 30 young Boy Scouts biking in Portugal, a 7-year-old boy biking in Japan, and a pediatric oncologist in Ukraine. Some rode tandems across the Louisiana flat lands while others rode mountain bikes in the Alps of Slovenia. Dr. Brennan and several of his colleagues biked as VBT cyclists in Central Park and elsewhere. Bicyclists rode bikes in cities such as Kiev and London and in rural areas in Ireland, Florida, California, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Carolina, Vermont, and Washington. And, some rode stationary bikes in their local gyms! All biked for a cure.

Since the bike tour, Liddy’s cancer has metastasized to her brain. In August she had a craniotomy to remove two tumors in her frontal lobes. Remarkably, within two weeks of the operation, she was riding a stationary bike in the hospital! She had whole-brain radiation and for the large tumor in her lungs. After she recovered from these treatments, she and Tom were on their bikes again (with an oxygen tank close at hand), this time to the New England states to see the fall foliage and visit friends. Liddy has just started another radiation therapy regimen to treat a tumor that has developed outside of her lungs. She has the will and determination to survive. Her family hopes that medical science can match it with treatments that finally arrest the growth of her tumors.

Liddy recently said, “Perhaps the best thing about the bike tours is that for several days, I really don’t feel much like a cancer patient. My last chemo is far enough in the past that I feel good. No worry about scans and their results. It’s wonderful while it lasts.” Each of the Team Sarcoma cyclists and their VBT cyclist counterparts had his or her own personal hopes and dreams for the impact that their bike ride might bring about for sarcoma. Liddy and her dad and mom are planning two bike tours for next year. Liddy died shortly after the article was written, but that the family is continuing to raise money for sarcoma research. If you would like to become a VBT cyclist, please send a note to biketour@theshrivers.us.

Bruce Shriver (Liddy’s father) and his wife live in Ossining, New York. They have four adult children. Mr. Shriver is a computer scientist who teaches at the University of Tromso in Norway and at the University of Hong Kong.
Understanding the Impact of Adjuvant Chemotherapy Through the Power of the MSKCC Sarcoma Database

Fritz Eilber, MD

The impact of chemotherapy on the outcomes of patients with soft-tissue sarcoma has been limited and is the subject of ongoing scientific investigation. The inability to clearly define who may benefit from the use of chemotherapy has led to differing approaches to the treatment of patients with soft-tissue sarcoma and can cause confusion for patients who often receive several different treatment recommendations. In an effort to clarify some of these issues, the sarcoma disease management team have begun analyzing the MSKCC Sarcoma Database with the intent of defining which patients are likely to benefit or not benefit from treatment with chemotherapy.

The ability to perform such an analysis is only possible because of the MSKCC Sarcoma Database. This unique database keeps track of all patients with soft-tissue sarcoma treated at MSKCC and was begun by Murray Brennan in 1982. Beyond having the largest number of sarcoma patients prospectively entered over a 20-year period, it is meticulously maintained through a weekly meeting of the staff to ensure that the data are correct and accurate.

Surgery remains the mainstay in the treatment of patients with soft-tissue sarcoma. In addition, radiation therapy, when it can be administered safely, improves the local control of this disease. The combination of these two treatment modalities is successful in treating a majority of patients with soft-tissue sarcoma. The question of chemotherapy is centered around the patients with “high-risk” sarcomas. The term “high-risk” is used to define patients who are at increased risk of developing metastatic disease. Through analysis of the MSKCC Sarcoma Database, these patients with large, high-grade tumors have been well characterized. Adriamycin (doxorubicin)-based chemotherapy was the primary adjuvant chemotherapy used to treat soft-tissue sarcoma from the late 1970s to the early 1990s. Multiple clinical trials have been performed using adriamycin with no clear improvement in survival. These frustrating results were obtained in the face of every conceivable attempt to maximize this therapy such as combining it with other agents, intra-arterial delivery, preoperative treatment, etc. Ifosfamide-based chemotherapy for patients with primary soft tissue sarcoma was introduced in the early 1990s as a promising treatment based on the responses generated in the treatment of metastatic disease. Unfortunately, the few clinical trials performed using ifosfamide led to differing conclusions and were limited in their impact due to the small number of patients that were treated in these studies. An additional problem in drawing conclusions from any of these studies is that they look at the impact of chemotherapy on a multitude of very different tumor types which has been done because soft-tissue sarcomas are relatively rare tumors. Thus the impact of ifosfamide-based chemotherapy remains controversial and its impact on individual histologic subtypes is not defined.

In an effort to tackle this difficult issue the sarcoma disease management team have begun looking at the impact of ifosfamide-based therapy in patients within a specific tumor type. The initial tumor type we chose to look at was synovial sarcoma. Synovial sarcoma is a tumor that tends to develop in young adults, comprises about 15 percent of soft-tissue sarcomas, and is the third or fourth most common histology found in the extremity. By definition the synovial sarcoma histology is considered high grade, and patients with this sarcoma carry a high risk of recurrence and metastasis. In addition to the aggressive nature of this sarcoma and its tendency to occur in young adults, it was chosen for this analysis because it has been noted to be particularly responsive to ifosfamide chemotherapy when the tumor has spread.

A detailed analysis of all extremity synovial sarcomas in the MSKCC database, specifically looking at treatment variables, generated several interesting findings. As was found by the large number of previous clinical trials, adriamycin-based therapy is not associated with an improvement of survival. However, ifosfamide-based therapy does appear to be associated with a significantly improved survival in patients with high-risk primary extremity synovial sarcoma. Although ifosfamide-based therapy did not impact the local recurrence rate in these patients, it was associated with a significantly lower incidence in the development of metastasis. This analysis is prompting the development of a treatment protocol to confirm these exciting findings.

A final component of this synovial sarcoma study will be to examine the tissue in these pathologic specimens. There has recently been tremendous progress in the ability to characterize the genetics of soft-tissue sarcoma with synovial sarcoma being a model tumor for such analysis. Much of the work that has been done to characterize the genetics of synovial sarcoma has been performed here at MSKCC. With such expertise as a springboard we will be looking at the molecular and genetic characteristics of these specimens to determine if we can identify patients who are more likely to benefit from such therapy.

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Soft-Tissue Sarcoma
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Most residents in general surgery might encounter one or two cases of soft-tissue sarcoma in a five-year general surgical residency. As a result they have little familiarity with the disease and its management. Many factors come together at MSKCC that allow the Surgical Oncology fellows to develop significant experience in the management of soft-tissue sarcoma. The high patient volume at MSKCC is essential to allow us to witness the multiple types and presentations. In a given month, a Surgical Oncology fellow might participate in the care of up to 30 patients with soft-tissue sarcoma at various stages of the treatment process. Seeing patients in the outpatient clinic allows us to gain significant experience in dealing with complex issues such as diagnosis, pre-operative evaluation, pre-operative treatment, management of treatment-related complications, and management of metastatic and locally recurrent sarcoma. The high volume of patients seen at MSKCC also allows us to gain significant operative experience as we assist the attending surgical staff in the operating room. This experience allows us to begin to develop the surgical judgment necessary to care for patients. Participating in the post-operative care of patients teaches us about the recovery and rehabilitation process of sarcoma patients.

Sarcoma management often involves multiple treatment modalities including radiation and/or chemotherapy. Understanding the role of these modalities is essential to being a sarcoma surgeon. As surgical fellows, we each spend a dedicated month to learning about radiation therapy. We develop an understanding of the roles of radiation therapy and chemotherapy through close interaction and collaboration with radiation oncologists and medical oncologists. Participation in multidisciplinary weekly conferences allows us to develop an understanding of how surgery is optimally integrated with radiation therapy and chemotherapy in the management of patients with sarcoma.

An essential ingredient in helping the fellows focus on important issues related to sarcoma is the mentorship for the surgical fellows led by Murray Brennan, Sam Singer, Robert Maki, and others. Participation in research projects with our mentors is another important component of how we learn about sarcoma. Projects range in scope from basic science research to retrospective reviews to multi-institutional collaborative studies. These projects challenge us to think about new ways to potentially diagnose and treat soft-tissue sarcoma. For instance, I am currently involved with projects designed to better understand the natural history of extremity liposarcoma, to better understand the role of pre-operative chemotherapy in patients with extremity soft-tissue sarcoma, and to characterize the incidence and patterns of multiple primary soft tissue sarcomas. Completion of these projects allows us to represent MSKCC at large national meetings such as the American Society of Clinical Oncology, the Society of Surgical Oncology, and the Connective Tissue Oncology Society. The meetings are valuable forums where we can have our results formally critiqued and analyzed. At these meetings we have the opportunity to meet, interact with, and learn from other national/international leaders in sarcoma.

Successful completion of training as a fellow at MSKCC brings about the realization that learning about soft-tissue sarcoma is a life-long endeavor. We are fortunate to have been provided at the highest level with the tools necessary to continue this learning as we care for patients in our own practices. It is only through such continued learning that we can improve treatment for sarcoma patients. I am certainly looking forward to the challenges ahead after completion of the fellowship and the opportunity to contribute to improving the treatment and lives of those patients and families confronted with soft-tissue sarcoma.

Stephen Grobmyer attended medical school at the University of Texas Southwestern Medical School in Dallas. He completed training in General Surgery at the New York Presbyterian Hospital-Cornell Medical Center. He has been a research fellow at the University of Pennsylvania in Cell Biology and Weill Cornell Medical College in Immunology. In 2003, he won a merit award from the American Society of Clinical Oncology for his work on the treatment of high-risk extremity sarcomas. He is currently the Chief Administrative Surgical Fellow at MSKCC and the recipient of the Kristen Ann Carr Sarcoma Fellowship (2003-2004).

Dynamic Survivors
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special support through the distribution of grants and scholarships. Mr. Ulman is the president and founder of the Ulman Cancer Fund for Young Adults and is also the Director of Survivorship for the Lance Armstrong Foundation. He also speaks to groups about coping with cancer, awareness and prevention, and how to cope with the adversity in a way that allows a person to achieve his or her full potential. Ms. Rosenberg is the president of the Young Survival Coalition, an international network of breast cancer survivors and supporters dedicated to the critical concerns and issues unique to young women and breast cancer. Each of these organizations addresses a different concern for cancer survivors, but the panelists all shared the fact that they each saw their cancer experience as a call to action and as an opportunity to do something to help others.

All of these panelists had their own story to tell, but many of their experiences were universal. As explained by Ms. Zampini, “Young cancer survivors become wise before their time and beyond their years as a result of going through a crisis and confronting their mortality. The young adult conference provided a platform for many of these survivors to impart some of their wisdom.”

Peter Ebright is a cancer survivor. He is an attorney practicing insurance litigation in New York. He resides in Manhattan and can often be found jogging with no particular destination.
Leiomyosarcomas
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to reduce the chance that the tumor
returns in the pelvis. This is done with an
understanding that the chances of surviv-
ing are no different than for those who do
not get radiation therapy.

The use of adjuvant chemotherapy
has also not yet been proven beneficial.
The largest randomized trial of adjuvant
chemotherapy in patients with all types
of uterine sarcomas, using one of the
most active drugs, doxorubicin, showed
the chances of recurrence and survival
were the same in patients who either
received or did not receive doxorubicin.
Currently, we do not recommend the use
of routine adjuvant chemotherapy,
except in the context of a clinical trial.
Recently, investigators at MSKCC
demonstrated that a combination of two
other drugs, gemcitabine and docetaxel,
produced a dramatic response in
patients with recurrent or advanced uter-
ine LMS. A trial was opened at MSKCC to
study this combination in the adjuvant
setting. Patients on this trial are given
gemcitabine and docetaxel to hopefully
decrease the possibility of recurrence
and improve the chances of survival.

Despite complete surgical removal,
approximately 70 percent of patients will
develop a recurrence within an average
of eight to 16 months after the initial
diagnosis. This presents a very difficult
situation to manage. Responses to radia-
tion therapy are minimal, and most
chemotherapy drugs have been disap-
pointing. The most active drugs in the
past, doxorubicin and ifosfamide, pro-
vided a 30 percent response rate when
used in combination. A recent trial com-
pleted at MSKCC using the combination
of gemcitabine and docetaxel found a 55
percent response rate in patients with
advanced, primary, or recurrent and sur-
gically unresectable uterine LMS. Other
drugs have been used with disappoint-
ing results. In addition, the average time
until the tumor progresses or recurs after
using any of these drugs, including the
most active ones, is less than one year.

We recently published our experi-
ence with surgery in patients with recur-
rent disease. Patients appeared to do
better if the tumors were completely
surgically removed or if no disease left
behind was greater than 5 mm in size.
Also, the outcome appeared to be better
for patients who had been disease free for
more than a year. The survival reported
in our review of these patients appeared to
be greater than that reported in trials
using chemotherapy alone. However, we
cannot directly compare this experience
with other published trials, since the
patients may be completely different in
terms of their disease biology. Attempts
at surgical removal of recurrent disease
should be considered, if it is thought to
be possible, based on clinical exam and
radiologic imaging.

The best way to treat patients with
uterine LMS needs to be continuously
and aggressively investigated, and we
strongly encourage all our patients to
consider participation in clinical trials.
There are clinical trials currently under-
way at MSKCC and at other specialized
institutions. In addition to the trial of
gemcitabine and docetaxel, patients with
uterine LMS may be eligible to participate
in trials investigating newer drugs for all
types of sarcomas. Further information
on uterine LMS and other sarcomas, as well
as available clinical trials, may be obtained
through our Web site (www.mskcc.org) or
other Web sites such as www.cancer.gov/
cancerinfo/types/uterinesarcoma,
Uterine LMS is an aggressive cancer. It is
also a rare cancer that requires special-
ized care. All patients should seek the
opinion of physicians who are trained to
treat this disease, such as gynecologic
oncologists or specialized surgical
oncologists. They will best be able to
help guide patients in making difficult
treatment decisions.

Mario Leitao is the senior gynecologic oncolgy
fellow at Memorial Sloan-Kettering Cancer
Center and will be completing his fellowship this
June. He went to medical school at UMDNJ-
Robert Wood Johnson in New Brunswick, NJ, and
did his residency training at Beth Israel Medical
Center in NY. He has taken a faculty position at
UMDNJ-New Jersey Medical School and will
start there on September 1st.

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By using a similar analysis we hope
to further define the impact of ifos-
famide on the other tumor types, and
new therapies as they arise. Although
ifosfamide-based chemotherapy appears
to be associated with an improved
survival in synovial sarcoma, it may not
be associated with such benefits in
other tumor types. However, just as it is
valuable to define who will benefit from
treatment, it is as valuable to define who
will not benefit from treatment—to
prevent patients from receiving unnec-
essary and ineffective therapy. As such,
we hope to provide a tumor-specific
therapy for each individual sarcoma
patient.

Fritz Eilber completed both medical school
and his surgical residency at the University of
California, Los Angeles. He is currently a sec-
ond-year surgical oncology fellow at MSKCC.
His long-standing interest is soft-tissue sarcoma
and that was the primary driving force behind
his striving to do his fellowship at MSKCC with
Dr. Brennan.

We Want to Hear From You!
Sarcoma Update is designed to educate you and
answer your questions and concerns about
issues related to sarcoma. While our primary
goal is to provide information regarding the
medical and psychological aspects of sarcoma,
we also hope to provide a forum for patients
and caregivers. We invite those readers who
have had sarcoma as well as their family
members and friends to share experiences
with other readers. Send your stories, thoughts,
comments, and concerns to:

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We look forward to hearing from you!

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#### Medical Services
- **Physician Referral Service**  
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#### MSKCC Support Services
- **Department of Social Work**  
  212-639-7017
- **Post-Treatment Resource Program**  
  212-717-3527
- **Department of Psychiatry and Behavioral Sciences**  
  212-639-3900
- **Genetic Counseling**  
  212-434-5149
- **Integrative Medicine Center**  
  212-639-4700
- **Chaplaincy Service**  
  212-639-5928
- **Cancer Information Service**  
  800-4-CANCER
  *General information provided through a National Cancer Institute-funded program. Callers from outside the New York State office's service area will reach another regional office.*
- **Patient Representatives**  
  212-639-7202
  *For issues relating to MSKCC service to patients and families*

#### Support Services Outside MSKCC
- **American Cancer Society**  
  212-586-8700
- **Cancer Care, Inc.**  
  212-302-2400
- **National Coalition for Cancer Survivorship**  
  888-650-9127