

Comprehensive Treatment and Surveillance for Gynecologic Oncology

Survivorship Program for Gynecologic Cancer Survivors

Gynecologic cancers affect the reproductive system, including the ovaries, uterus (endometrium), cervix, vulva, vagina, peritoneum and fallopian tubes. Together, these cancers are the fourth most commonly diagnosed in women in the U.S. each year.

With better detection of early malignancies and improved treatment modalities, thousands of women are surviving gynecologic cancers. And because many women are diagnosed when they're relatively young, they're often living for decades after their treatments end.

The Survivorship Program created by the Division of Gynecologic Oncology at Stony Brook University Cancer Center helps survivors cope with the unique physical, psychological, social, sexual, emotional, fertility, financial and quality-of-life issues that these women may have now or in the distant future.

A one-of-a-kind program

What makes this program so unique is its depth and comprehensiveness, and the degree to which it's personalized for each patient. That's possible because patients are

treated by an interdisciplinary team within the Division of Gynecologic Oncology. From the day of diagnosis to the end of treatment and through often multiple years of follow-up, all important details about a patient and her treatment are documented and shared within the team. This ensures consistent, quality care and reduces potential problems that can result from fragmentation of efforts.

"We know the patients and they know us. We form tight bonds. Patients know they can trust us to have their best interests at heart. And it's not just about medical issues related to cancer treatment, though that's a big part. It's also about helping a woman take back control of her life and her future."

— **Marlo Dombroff, PA, Director, Gynecologic Oncology Survivorship Program**

Three tiered: information, tools and support

A central element of the program is an all-inclusive, end-of-treatment report, delivered and thoroughly explained to each patient by Ms. Dombroff. The report is an individualized, detailed account of everything related to a woman's cancer, from the diagnosis to the dates and full descriptions of every treatment and medication received, to ways to reduce the risk of recurrence.

Ms. Dombroff goes through the entire report with the patient, line by line, adding explanations where needed and answering questions.

The report further explains what a woman should watch out for in the years to come, such as possible complications, long-term effects or toxicities resulting from treatment, or side effects that could occur months or even years after treatment has ended.

It provides a schedule of what types of follow-up care and surveillance will be needed, and provides referrals for screening for other types of cancers, if indicated, along with general health guidelines for mammograms, colonoscopies, osteoporosis screening and so forth.

Because fertility and sexuality, as well as general social issues, are frequent areas of concern for patients with gynecologic cancer, referrals may be given for fertility consults, sexual therapy, psychosocial support, genetic counseling or physical therapy.

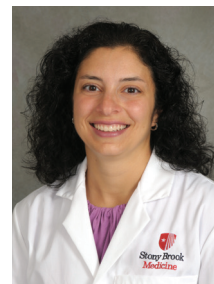
Additional resources provided can include access to support groups for cancer survivors, advice on possible lifestyle changes such as nutrition classes, weight loss programs, fitness programs tailored to gynecologic oncology patients, or smoking cessation help.

(Cont. on page 3)

The Importance of a Gynecologic Oncologist



Michael L. Pearl, MD



Melissa Henretta, MD, MPH



Joyce Varughese, MD

In the United States, there are only about 1,000 board-certified gynecologic oncologists — and three of these elite specialists are at Stony Brook University Cancer Center: Michael L. Pearl, MD, Director, Division of Gynecologic Oncology; Melissa Henretta, MD, MPH; and Joyce Varughese, MD.

A gynecologic oncologist is a board-certified obstetrician/gynecologist who specializes in the diagnosis and comprehensive treatment of reproductive organ cancers and premalignant conditions. To become a gynecologic oncologist, an obstetrician/gynecologist undergoes an additional three to four years of training, which includes learning the surgical procedures necessary to treat gynecologic cancer and

its complications, as well as learning how to prescribe the appropriate chemotherapy, and, when needed, how to coordinate radiation therapy with radiation oncologists.

Studies show that women treated by a gynecologic oncologist are more likely to have better outcomes than those treated by nonspecialists. This can be attributed, in part, to the comprehensive knowledge and skills developed by a gynecologic oncologist.

A specialist in gynecologic oncology also understands the impact of cancer and its treatment on all aspects of a woman's life, including future childbearing, sexuality, physical and emotional well-being, and her family.

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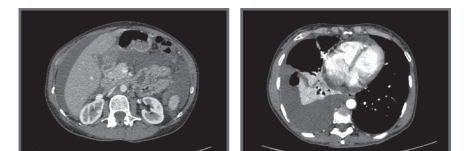
The Importance of a Gynecologic Oncologist

Case Study: Complex Pelvic Mass

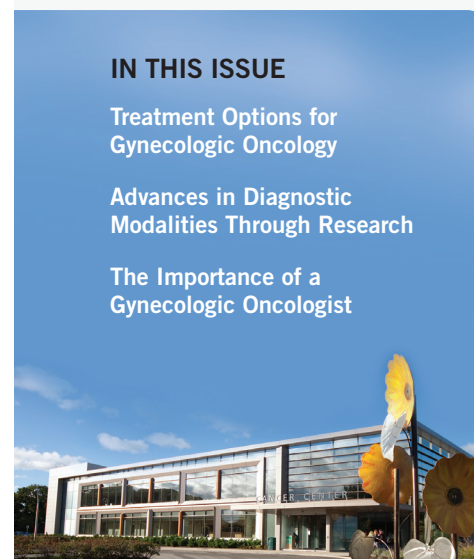
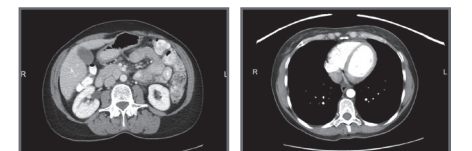
A 48-year-old female patient presented with bilateral pleural and pericardial effusions, hilar, subcarinal and paraaortic lymphadenopathy, ascites, peritoneal carcinomatosis and a complex 15 cm pelvic mass.

She underwent surgery with radical tumor debulking demonstrating high-grade serous carcinoma of gynecologic origin. She received 9 cycles of adjuvant Taxol®/carboplatin chemotherapy and had a complete clinical response.

Pre-treatment: CT scans of abdomen and chest



Post-treatment: CT scans of abdomen and chest





Message From the Deputy Director

Samuel Ryu, MD
Deputy Director, Clinical Affairs
Stony Brook University Cancer Center

It might surprise you to learn that there are only about 1,000 gynecologic oncologists practicing in the U.S. I'm proud to say that we have three of these highly skilled specialists right here at Stony Brook Cancer Center.

The Gynecologic Oncology Management team annually treats approximately 800 new patients, performs more than 500 surgical procedures and totals nearly 4,000 office visits. While the statistics are quite impressive, I am more gratified to hear the countless testimonies from our patients who attest to the superb, compassionate care they have received from our team.

Within this issue, you'll read about our robust surgical program and the advancements we've made in medical and radiation oncology. We've also highlighted two current research projects that show promise for the development of new diagnostics for these types of cancers.

Additionally, the Gynecologic Oncology Survivorship Program is featured. This program is advantageous to both our patient and her referring and/or primary physician. Based on the success of this process, we are developing a similar, multifaceted oncology support program by integrating survivorship, psychological and palliative care, as well as various educational activities, across the full spectrum of care at the Cancer Center.

As a parent member of the NCI-funded Gynecologic Oncology Group (GOG), the Gynecologic Oncology Management team's impact reaches well beyond Long Island. The team supervises five GOG-affiliate member sites. We also participate in more than 25 chemotherapy trials for women with a variety of gynecologic cancers, including trials aimed at finding more effective and less toxic treatments.

The Cancer Center staff and I look forward to collaborating with you in providing excellent patient care.

Did You Know?

Women with ovarian cancer treated by gynecologic oncologists have better clinical outcomes than those who are not. Despite this evidence, as few as 33 percent of women with ovarian cancer receive treatment from a gynecologic oncologist in the U.S.

Treatment Options for Gynecologic Oncology at Stony Brook University Cancer Center

The Division of Gynecologic Oncology, the only academic subspecialty practice of its kind in Suffolk County, provides comprehensive, multidisciplinary care for women who have or are suspected of having gynecologic cancer. The team offers the full range of cutting-edge treatments, including traditional, laparoscopic and robotic-assisted surgical procedures, sophisticated chemotherapy regimens and advanced radiation therapy.

Surgical Options

Robotic-assisted and laparoscopic procedures

The Division of Gynecologic Oncology has an active minimally invasive surgery program. All three surgeons, Michael L. Pearl, MD, Director, Division of Gynecologic Oncology, Melissa Henretta, MD, MPH, and Joyce Varughese, MD, are trained in laparoscopy, and Drs. Henretta and Varughese are also certified in robotic-assisted laparoscopic surgery. The robotic platform (da Vinci® Surgical System) is primarily used for surgical management of endometrial (uterine) and cervical malignancies, as well as for other procedures in women who are obese. The robotic system provides patients with less invasive surgical options and decreased side effects than from traditional surgery. In 2014, the

Medical Oncology Advancements

Recent advancements in medical oncology have provided significant improvements in life expectancy and quality of life for patients with advanced or metastatic gynecological malignancies, including cervical and ovarian cancers.

Chemotherapy for cervical cancer

Until recently, the recommended treatment for women with advanced-stage recurrent or persistent cervical cancer has been chemotherapy using paclitaxel (Taxol®) together with either carboplatin or topotecan. Now, recent studies conducted by the Gynecologic Oncology Group (GOG) have concluded that adding bevacizumab (Avastin®) to the standard chemotherapy regimen can substantially improve overall survival to 16.8 months versus 12.9 months without bevacizumab — a 30 percent extension with no negative impact on quality of life. The FDA approved Avastin for this use with cervical cancer in 2014 and it is likely that paclitaxel, carboplatin and bevacizumab will become the standard mode of treatment.

Chemotherapy for ovarian cancer

For advanced epithelial carcinoma of the ovary, the recommended management is surgery with full staging and debulking followed by chemotherapy with paclitaxel and

carboplatin-based chemotherapy, typically given together on a three-week cycle.

Vaginal hysterectomies

A hysterectomy, which removes a woman's uterus, can be performed through the vagina, through the abdomen or laparoscopically, with or without robotic-assistance. For early cervical or endometrial (uterine) cancer, the American Congress of Obstetricians and Gynecologists has determined that a vaginal hysterectomy is often the safest and most economical course. Dr. Pearl, who is recognized throughout the region as an expert in vaginal surgery, agrees. "The technique has improved dramatically over the years, so it's easier on the patient," he said. "There's no incision on the belly, the patient can usually go home the same day, and resume full activities within a week or two." ■

A recent Japanese GOG study tested administering dose-dense paclitaxel every week plus carboplatin every three weeks. Their results showed an improvement in overall survival (100.5 vs. 62.2 months) compared to the conventional therapy for patients with epithelial ovarian cancer. This regimen is now being tested by the GOG in the U.S. The GOG's published results, expected by the end of 2015, have shown similar improvement in survival. Dose-dense paclitaxel every week plus carboplatin every three weeks was also tested with the addition of bevacizumab, which showed no added benefits.

Another course of treatment is intraperitoneal (IP) chemotherapy, which involves administering chemotherapy drugs through a surgically implanted port directly into the abdominal cavity. Data from a GOG study comparing intravenous paclitaxel plus cisplatin to intravenous carboplatin plus intraperitoneal cisplatin and paclitaxel demonstrated an improvement in survival (65.6 vs. 49.7 months). However, IP chemotherapy was associated with substantially greater toxicity and a declining quality of life. Consequently, IP chemotherapy has not gained wide acceptance.

"Women with these advanced cancers are very ill," says Michael L. Pearl, MD, Director of the Division of Gynecologic Oncology.

Options in Radiation Oncology

The Gynecology Oncology Management team includes radiation oncologists who work in tandem to tailor a treatment plan for each patient. Radiation can be administered externally by clinical linear accelerators and/or internally by brachytherapy.

For patients with gynecologic cancers, the goal of radiation therapy is to deliver a high dose of targeted radiation to kill or sterilize cancer cells while sparing healthy tissue and minimizing damage to surrounding areas, especially the bladder and rectum. Radiation is used primarily for cervical and endometrial cancers, as well as for select cases of other gynecologic malignancies, including recurrent vulvar and ovarian cancers.

Radiation therapy for cervical cancer

For women who have not had a hysterectomy, the protocol for advanced cervical cancer is radiation, often with simultaneous chemotherapy.

External beam radiation therapy (EBRT) is administered to the pelvis, along with tandem and ovoid brachytherapy. In brachytherapy, a small metal tube is placed inside the uterus under general anesthesia and a pair of circular shaped tubes are placed at the top of the vagina on either side of the cervix. Radioactive material is passed through the tandem and the ovoid at different times to ensure that the entire region is properly treated. For this purpose, a state-of-the-art 12-channel, high-dose rate (HDR)

Survivorship Program *(cont. from cover)*

Valuable information for referring physicians

Many times, a woman's primary care physician or gynecologist receives progress notes but otherwise has limited participation in the treatment a woman receives. The Gynecologic Oncology Survivorship report, which is also provided to the woman's referring physician, gives that doctor crucial

"Giving them extra time with a reasonable quality of life is a dramatic improvement." ■

brachytherapy unit was recently installed in the Radiation Oncology Department.

Radiation therapy for endometrial (uterine) cancer

For advanced endometrial cancer, surgery is often followed by vaginal cylinder brachytherapy, which delivers radiation at or close to the cancer site. With this procedure, a cylinder is placed in the vagina, and radioactive seeds are inserted into the cylinder to deliver high-dose radiation.

Continuing technological advances

Stony Brook Cancer Center is committed to staying in the vanguard of radiation therapy through advanced knowledge and technology, and improved facilities.

The Department is expanding the use of stereotactic body radiation therapy (SBRT) to treat advanced residual or recurrent cancer. SBRT delivers higher doses of radiation with less frequency, and is better tolerated by most patients. Within the next few months, a state-of-the-art Varian® linear accelerator for image-guided radiotherapy (IGRT) for recurrent and metastatic cancer will be installed in the Department. This will allow greater accuracy and better ability to treat a wider range of patients.

"The outlook is very positive," says Edward Valentine, MD, Clinical Assistant Professor, Radiation Oncology. "Most patients respond very well to radiation treatments with about a 70 percent recurrence-free survival rate for cervical cancer, and close to a 90 percent cure rate for endometrial cancer." ■

details, offers guidelines on long-term care and follow-up, and alerts the doctor to known medical complications to look out for, such as cardiac events, lymphedema or a secondary malignancy.

"We want the program to give a woman the tools and support to empower her future as a survivor," concludes Ms. Dombroff.

Focus On Clinical Trials and Research



Advances in Diagnostic Modalities Through Research

Two current, investigator-initiated research projects propel novel diagnostic protocols forward:

Cancer Cell Enrichment Platform: Phase II
PIs: Michael L. Pearl, MD, and Wen-Tien Chen, PhD

Recent studies suggest that circulating tumor cells (CTCs) could represent cancer stem or progenitor cells emigrated in blood and provide a potential alternative to biopsies for the detection, molecular characterization and monitoring of non-hematologic cancers.

Recently, the research team successfully isolated and identified the invasive subpopulation of CTCs (iCTCs) and identified a panel of tumor progenitor (TP) cell markers, which were specific for iCTCs in the blood of colon, breast and ovarian cancer. The team demonstrated that inoculation of TP cells isolated from blood, ascites and primary tumor in patients with ovarian cancer could generate metastases in severe combined immunodeficiency (SCID) mice, supporting the role of TP cells including iCTCs in metastasis.

The goal of this study is to lead to the development of non-invasive blood tests for the characterization of different types of epithelial cancers.

This research study is funded by grants from the National Institutes of Health and Stony Brook's Gynecologic Oncology Research Fund.

Development of a Genomic Test for Early Detection of High-Grade Serous Ovarian Cancer

PIs: Scott Powers, PhD, Kenneth Shroyer, MD, PhD, and Michael L. Pearl, MD

Recent studies support the proposal that most high-grade serous ovarian cancers (HG-SOCs) result from small cancerous lesions called tubal intraepithelial carcinomas (TICs), which exist in the lining of the fallopian tube.

The goal of this research is to develop a genomic test for early detection of TICs, so they can be treated by relatively simple surgical procedures before they develop into HG-SOCs. Such a test would likely be developed in the context of screening a population at high risk of developing the disease, i.e., BRCA1 mutation carriers. Successful early detection would follow the paradigm established by the Pap test, which detects microscopic premalignant lesions and has reduced cervical cancer deaths by more than 90 percent.

This research study is funded by a grant from the Babylon Breast Cancer Coalition.