Halifax Health
Expansion Meets Needs of Expecting Families

SPECIAL FEATURE:
Celebrating a New Comprehensive Breast Care Approach

COVER STORY:
Halifax Health
Expansion Meets Needs of Expecting Families
In gynecologic oncology surgeries, we lead the state. And, the state-of-the-art.

Welcome to Florida Hospital Orlando, where the nation’s best surgeons are constantly revolutionizing gynecologic oncology procedures. Using a multi-disciplinary approach, they’ve revolutionized surgical robotics for our patients while teaching these skills to surgeons at other hospitals. With outcomes and survival rates among the best in the nation, Florida Hospital Orlando continues to be a national destination for gynecologic oncology surgery.

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With the ultimate pregnancy goal of ‘healthy mother, healthy baby,’ parents-to-be and their doctors are charged with selecting the best facility for their maternity needs. This decision is becoming easier for families in East Central Florida thanks to national distinctions earned by Halifax Health. For two consecutive years, Halifax Health - Center for Women & Infant Health has been ranked highly for its level of maternity care and outstanding achievements surrounding mothers and their newborns. It received the HealthGrades Maternity Care Excellence Award,™ ranking among the top ten percent in the nation for maternity care in 2010 and in the top five percent in the nation in 2011. Halifax Health also received a five star rating in Gynecologic Surgery in 2011.

Breast cancer has an extremely high survival rate with an excellent chance for a high quality of life, yet there is still always a sense of emergency initially felt by the patient and her family. Olga Ivanov, MD is in constant communication with her team of medical partners every day. Thanks to Celebration Health’s ultimate cooperative approach, paired with their rapid treatment plans, these up-to-date conversations impact the actions saving the lives of their patients.
It is my pleasure to bring you a new issue of Florida MD. Mother’s Day is supposed to be one of happy times spent with family. Unfortunately, for some women and children in Central Florida, home life is anything but happy. They suffer an existence fraught with domestic violence and mental and/or sexual abuse. Accordingly, I have asked Harbor House of Central Florida to inform us about some of the programs they have and some of the services they offer that bring healing and hope, to women and children who are trapped in abusive relationships or have suffered physical trauma. If you suspect that one of your patients may be a victim, please pass along the information discussed below. I hope you will join me in supporting Harbor House and the good work that they do to save women’s lives.

All the best,

Donald B. Rauhofer
Publisher

A new mobile app from Harbor House of Central Florida is turning smartphones and iPads in hospitals and doctors’ offices into powerful screening tools that help identify victims of domestic abuse and direct them to the help they need. Domestic abuse is a chronic and potentially life-threatening condition that is both preventable and treatable. The app was created with the knowledge that screening for domestic violence and referring victims to advocacy services results in fewer violence-related injuries and saves lives. The R3 App, which stands for Recognize, Respond and Refer, is the first mobile domestic violence screening tool in the U.S. and leverages the HITS process created by Kevin Sherin, Director of the Orange County (Fla.) Health Department.

HITS uses four screening questions to assess if a patient has been a victim of abuse:

Over the last 12 months, how often did your partner:

• Physically Hurt you? • Insult you or talk down to you? • Threaten you with physical harm? • Scream or curse at you?

Using the new app, health professionals ask patients to respond to each of these questions using a 5-point scale: never (1), rarely, sometimes, fairly often, and frequently (5). Score values range from a minimum of 4 to a maximum of 20. A score over 10 alerts a professional to offer help to the patient, and allows the screener to access the contact information for the nearest domestic violence shelter in America by simply entering a zip code.

Harbor House hopes that EMTs and other emergency personnel, not only in America, but around the world will utilize the R3 App to offer assistance to anyone in need. The R3 app is currently available for download in iTunes and the Android Market.

For additional information please visit www.harborhousefl.com. There is also a 24-hour Hotline Number: 1-800-500-1119 to pass along to your patients.
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Halifax Health Expansion Meets Needs of Expecting Families

By Nancy DeVault, Staff Writer

“In’s the safest place to have your baby.”

In 2008, childbirth continued to be the most common reason for hospitalization in U.S. hospitals, according to The Healthcare Cost and Utilization Project, a data collection study sponsored by the Agency for Healthcare Research and Quality (AHRQ). Most births in the nation, approximately sixty-seven percent, were delivered vaginally with the majority of these deliveries completed without complications or serious procedures. With the ultimate pregnancy goal of ‘healthy mother, healthy baby’, parents-to-be and their doctors are charged with selecting the best facility for their maternity needs. This decision is becoming easier for families in East Central Florida thanks to national distinctions earned by Halifax Health. Though delivery complications are seldom, Halifax Health staff and physicians are trained to safely handle normal to complicated pregnancies through delivery and postnatal care thanks to advanced onsite capabilities.

For two consecutive years, Halifax Health - Center for Women & Infant Health has been ranked highly for its level of maternity care and outstanding achievements surrounding mothers and their newborns. Halifax Health received the HealthGrades Maternity Care Excellence Award, ranking among the top ten percent in the nation for maternity care in 2010 and in the top five percent in the nation in 2011. Halifax Health also received a five star rating in Gynecologic Surgery in 2011.

Established in 1928 as Halifax District Hospital, Halifax Health is now the area’s largest healthcare provider with a tertiary and community hospital housing 764 licensed beds and more than 500 physicians skilled throughout forty-six medical specialties. Halifax Health offers the area’s only Level II Trauma Center, Comprehensive Stroke Center, Neonatal and Pediatric Intensive Care Units, Pediatric Emergency Department, Child and Adolescent Behavioral Services, and Neurosurgical Services, among other signature specialties including Cardiac, Cancer and Orthopedic Services.

“As the only 24/7 Level II Neonatal Intensive Care Unit (NICU) in the Volusia and Flagler area staffed with board certified neonatologists, specialized neonatal nurses and respiratory therapists, our facility offers families the safest place to have their babies,” said Bonnie Wittman, Service Line Administrator for the Center for Women & Infant Health. “We’re prepared to handle premature deliveries as early as twenty-eight weeks, and newborns experiencing a variety of complications ranging from low birth weight (1,000 grams or 2.2 pounds) to serious heart and lung issues,” added Wittman, a neonatal trained nurse with over thirty-six years of healthcare experience. Halifax Health delivers more than 2,000 babies annually, which last year included 72 sets of multiple births (twins and triplets – traditionally categorized as high-risk pregnancies). According to Wittman, the NICU provides unique services for about 200 newborns per year that require intensive care due to prematurity or illness diagnosed around the time of delivery.

“Once the baby is born, the NICU is literally seconds away for advanced care to begin if needed. We’re able to keep our family units together at the same site which is a critical component for mothers and fathers,” Wittman described. Open since 1975, the 13-bed unit is led by Neonatologist Peter G. Taves, MD, with the support team of Halifax Health - Center for Women & Infant Health experts including Anesthesiologist Derrick Payne, MD, Neonatologist Mark Hudak, MD and a team of perinatologists.

For rare and extreme cases, such as babies requiring an extracorporeal membrane oxygenation (ECMO) for cardiac and respiratory interventions, Halifax Health coordinates treatment with
NEW OBSTETRICS EMERGENCY DEPARTMENT

The infrastructure of Halifax Health - Center for Women & Infant Health offers services from prenatal diagnostics to postpartum using advanced diagnostic techniques and ultrasound equipment for high-definition imaging (including 4D Ultrasound). The complete scope of care consists of prenatal care, birthing classes for mothers and partners, breastfeeding support, high-risk pregnancies provision, education on anesthesia and epidural, and nursery and NICU. In June, Halifax Health will open a new Obstetrics Emergency Department (OB ED) to further enhance urgent care capabilities for treatment of expectant mothers – both related to the pregnancy as well as any other medical condition not associated with the pregnancy such as heart disease, stroke, accidental injuries and any other serious health-related needs.

“Halifax Health recognized that when an expectant mother arrives in our emergency department, we have two patients instead of one; so aside from initial treatment through our ED physician and staff, this patient should also always be seen by a certified OB to ensure her health and the health of her unborn child,” said Wittman of the decision to open the only facility of its kind within Volusia, Flagler and St. Johns counties (the nearest OB ED for these East Central Florida residents was Holmes Regional Medical Center in Brevard county). “Thanks to our new OB ED physicians, we’ve eliminated any time gap in care for the mother and her baby because the patient no longer has to wait for her own OB to arrive onsite to assess the baby.”

To find the best medical professionals to launch and sustain the innovative services of the new OB ED, Halifax Health - Center for Women & Infant Health comprised an expert task force to select five board-certified physicians of obstetrics and gynecology and welcomed Brenda L. Harris-Watson, MD, Maria Asevedo, MD, Jose Rodriguez, MD, Donna Ivery, MD, and Manuel R. Quintana, MD – collectively offering an impressive one hundred years of medical experience.

“There is a true partnership between our hospital staff and area doctors. Physicians depend on us to present the safest place for their deliveries and be the best in serving their patients – mom and baby.”

FIRST-TIME MOM BECOMES FIRST OB ED CASE

While still in the launch phase, the response system and structure of Halifax Health’s OB Emergency Department was put to the test on March 14, 2012 with a potentially deadly scenario for an unborn baby. First time mom-to-be Antoinette Toombs had her regularly scheduled 36-week check up with her doctor, Dr. Linda Haddox, a physician at the practice of Volusia OB/GYN. Her pregnancy was proceeding as expected, however while driving home from this appointment, Toombs was in a serious car accident which would result in fast-tracking the delivery of her baby.

“I was bleeding and in shock. Then I realized that the baby had stopped moving,” recalls Toombs. Emergency responders quickly worked to cut her out of the vehicle and notified Halifax Health of the urgent situation; thus, OB and trauma teams collectively jumped into action. Immediately upon arrival, an ultrasound revealed that Toombs placenta had detached, depriving the baby of essential blood and oxygen. “My baby’s life was in jeopardy.”

Coincidently Dr. Haddox, who has delivered babies at Halifax Health for over 16 years, had just pulled into the parking lot of Halifax Health on her way to another patient’s scheduled delivery. “I received an emergency call about my patient (Toombs) and Halifax Health’s OB and trauma teams were already making preparations for the necessary emergency delivery. We had to move quickly since the baby was in distress; his heart rate had plummeted down to forty beats per minute (whereas normal is 110-160). Within minutes, we delivered the baby via C-section.
and began resuscitation. Had this fast response system and collaboration of the trauma and labor and delivery teams not been in place, I am certain that this baby would have died,” says Dr. Haddox, who served on the OB ED Task Force, as did other private doctors including John Vagovic, MD, John Meyers, MD, Pamela Carbiener, MD, Ted Robertson, MD and Paula Foust, MD. Toombs did suffer a broken arm which required surgery the following day; however both mom and newborn Amare, weighing six-pounds, were discharged a few days after delivery with no major complications. “It’s wonderful to see Halifax Health step into this vital role for our community. All the coordination has and will save lives,” says Dr. Haddox.

“OB is a high risk field of medicine, so experience counts,” added Wittman. Educational and workplace experience will also be supplemented for all OB ED staff through a training program called M.O.R.E. (Managing Obstetrics Risk Efficiently), a teaching program developed in Canada. The three year tool will offer OB physicians, hospitalists and nurses state-of-the-art training on the best medical practices in the country. M.O.R.E. instruction unites team members on the finest care for expectant mothers. “Our physicians and nurses will practice modules and drills together. Emergency responders and fire rescuers go through drills, so why shouldn’t we step up with this proven process, especially since we may only have seconds to react with an OB emergency to save a life.”

PAMPERING BEFORE THE PAMPERS

Halifax Health - Center for Women & Infant Health emphasizes a family-centered childbirth focus and strives to accommodate individual birth plans with goals to support home birthing experiences and a doula program. “We respect diverse birth plans, but offer the reassurance to parents that, should an emergency arise, the technology and high skill level of professionals at Halifax Health is here to provide.”

The recently renovated labor and delivery suites at Halifax Health, encompassing two dedicated floors, offer a safe and pampering environment to mothers-to-be through comfortable private rooms and an infant security system to ensure the protection of their child. Other special amenities present an enjoyable and memorable birthing experience for moms during their stay including the option for massage therapy, professional photography services, a gourmet meal for mom and dad, and personalized instruction with a lactation consultant. Thanks to guidance of this experienced advisor, approximately seventy percent of new moms at Halifax Health - Center for Women & Infant Health choose to breastfeed – higher than the average for the state of Florida.

Parents are reassured prior to discharge that the superior care for babies at Halifax Health extends into the Betty Jane France Center for Pediatrics, home of Halifax Health’s general pediatric unit; Speediatrics, and the only Pediatric Intensive Care Unit (PICU) in East Central Florida. This youth focused ED, designated for infant patients through 18 years of age, is staffed with board certified pediatricians and trauma surgeons, ED physicians and intensivists; and works closely with a multidisciplinary team in the PICU. PICU aims to fully care for young patients, from physical to emotional to spiritual and accomplishes this task through critical care nurses, respiratory therapists, rehabilitation therapists, pharmacists, dietitians and medical social workers. Parents can trust the comprehensive team caring for their child to administer size-appropriate IVs, dispense medications, initiate advanced tests and utilize enhanced monitoring systems.

“The mission of Halifax Health is to be the community healthcare leader through exceptional talent and superior patient centered service delivered in a financially sustainable manner. Thanks to this responsibility paired with the reliable infrastructure of our programs like the Center for Women & Infant Health Services, moms love us and doctors trust us,” stated Wittman.
A New Surgeon and a New Center come to Celebration Health

Florida Breast Health Specialists at Celebration Health, a brand new premier, multidisciplinary center providing comprehensive breast cancer treatment and surgery, welcomes Olga Ivanov, MD, FACS. Dr. Ivanov brings hope and reassurance delivered with advanced breast cancer-fighting technology to the Central Florida community.

Dr. Ivanov is a board-certified and fellowship-trained surgeon who specializes in the surgical treatment of breast disorders. She developed a revolutionary breast care and treatment plan that is recognized for its 24 to 48-hour turnaround time for implementation and 95% completion rate for radiation. She has mastered the art of breast health, as well as five languages.
In the high-cost world of advertising, how do you know you’re spending your dollars in the right place? Tracking your advertising and marketing results is incredibly important to ensure your campaign is not only branding your medical practice (making noise), but it’s also driving viewers/readers to your office (getting results). Better still, if you know what’s working you’ll be able to really drill down and focus your campaign that much more, bringing in more patients and more dollars to your practice.

So, how can you judge if your advertising is effective or not? Here are a few simple tips you can start using today:

**PAY-PER-CLICK**

If your practice is using an online pay-per-click (PPC) strategy to generate hits via Google AdWords or a similar program, you can track your ads down to the keyword level to see what people were actually searching to land on your ad. This is an extremely helpful technique and will help determine what your practice’s potential clientele are interested in, and how you can tailor your ad campaign to further meet those interests. Although this tracking technique can only be applied online, it is crucial for planning future strategies to lure in potential patients. These campaigns can be pricey though and you should have a budget outlined before starting any campaign.

**SPLASH PAGES**

Let’s say you’re running a fancy new promotion and giving away free Botox samples if people go to your website, fill out a survey and schedule a consultation. Instead of just having that survey on the main page, create a special splash (or sub) page for it. This is beneficial for several reasons. For one, you can now advertise this special page (www.YourOfficeName.com/Botox-Survey, for instance) on all of your advertisements, social media sites and in your office. This will help keep the survey from cluttering your website’s main page and, more importantly, allow you to track the number of views for that particular page, where the links are coming from, viewers vs. entries, what program they’re viewing your website from and much more. This information is invaluable when scheduling further ad campaigns and other give-aways, cluing you into just what your patients are interested in. This method can be expanded across the board to include any other promotion your practice is running. By creating different splash pages for different promotions, you can compare which your patients are most interested in and which are a waste of your time. We suggest using Google Analytics to keep track of your web statistics.

**DEDICATED NUMBERS**

Does your practice run ads in area publications? No problem, tracking these is incredibly easy as well, thanks to dedicated phone numbers and/or free tools like Google Voice. You can set up dedicated phone numbers through your phone company that will forward directly to your main line. Then, simply insert one of the new number in “Advertisement A” and another in “Advertisement B” so you can tell where you’re getting more calls from. This will tell you which has a higher return on investment (ROI) for your medical practice marketing efforts. This is an extremely easy way to keep track of which advertisements are cost effective and which are just wasting your effort, money and time.

You can also set up Google Voice numbers for free and have them forward to any number you like. Then you just check your Google Voice account to see what number(s) are receiving the most calls. Again, this is an extremely easy way to monitor what is generating your business. Note that while this method is free, there will be a short message from Google requesting the caller hold for a moment while Google Voice locates the user. Using a dedicated number also works for radio and television ads, although not many practices are found via these mediums.

The above methods of tracking your advertisements are just some of the many ways available for you to make sure you’re spending your medical practice marketing dollars in the right place. And like with any money spent, you want to make sure you’re not wasting it. Remember that whenever you’re spending money on advertising, a tracking method should be included on your “to do” checklist. Neglecting to do so could mean losses in advertising dollars and your time, and you would never know unless you were quantitatively tracking your results.

After your advertising money is spent, you want to make sure the noise your making is reflected in the results your practice is seeing.

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LOOKING FOR MORE INFORMATION?

Contact Jennifer Thompson today for a free consultation and marketing overview at 321.228.9686 or e-mail her at Jennifer@InsightMG.com.

Jennifer Thompson is president of Insight Marketing Group, a full-service healthcare marketing group focused on digital and social media administration, referral and partnership development, creative services and graphic design, online reputation management/development and promotional products. She is co-author of Marketing Your Medical Practice: A Quick Reference Guide and an avid Twitter user, regularly posting medical practice marketing tips, articles and more at www.Twitter.com/DrMarketingTips. You can learn more about her and her company at www.InsightMG.com.

Coming next month:
The cover story focuses on Central Florida Pulmonary Group. Editorial focuses on Allergies and Sleep Disorders.

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Knee replacement surgery is an effective treatment for degenerative conditions. Osteoarthritis, rheumatoid arthritis, post-traumatic arthritis, and avascular necrosis are all examples of conditions that can be severe enough to necessitate full or partial joint replacement surgery. Recently, exciting technological advancements have allowed doctors to improve implant positioning which can ultimately improve patient satisfaction and implant longevity. This is called Custom Fit knee replacement surgery using ShapeMatch technology.

**KNEE SURGERY PRIOR TO SHAPEMATCH TECHNOLOGY**

After a careful exposure of the joint, the surgeon machines the end of the femur (thigh bone) and the tibia (shin bone). This is done by placing cut blocks on the bone during surgery. The cut blocks contain slots and a saw blade is placed within the slots which shapes the bone allowing the bone to accept the prosthetic implant. The cut blocks are then removed. Surrounding skin, ligaments and tendons are carefully preserved during surgery. The freshly machined bone and implant fit together like a puzzle with the worn cartilage removed during this process. The implants, which are typically made out of cobalt chromium (steel), titanium, and ceramic coated alloys (oxinium) are bonded to the bone using either cement or cementless techniques. A polyethylene (plastic) insert is snapped into the joint. This provides a smooth low friction surface between the metal components.

We have known for decades that implant alignment has a huge impact on clinical outcomes. If the components are cemented improperly, load transfer will be uneven. If the artificial joint surface is not loaded evenly, certain areas within the joint will see undue stress which can lead to early mechanical wear. Wear of the polyethylene ultimately leads to implant failure and revision surgery. In addition to mechanical wear, suboptimal implant position or sizing causes inappropriate tension on soft tissue structures. This can lead to pain, stiffness and instability. Take the medial collateral ligament (MCL) for example. If the implants are not appropriately aligned (“crooked”), than the MCL may be over tensioned which can stimulate nerve fibers that transmit pain impulses to the brain.

Placement of the cut blocks is a key part of the surgery. The traditional method of aligning the cut blocks is mechanical jig navigation. For the femoral component, an alignment rod is placed within the femoral shaft. The cut block is attached to the alignment rod. Then, the cut block is pinned into place on the femur. Stated differently, the cut block is positioned based on using the alignment rod as a frame of reference. The tibia is handled in a similar manner.

Computer navigation (Robotic Arm) was a major technique designed to aid in implant position. The surgeon utilizes a tracking device to collect anatomic data points which are transmitted wirelessly to the computer during surgery. A computerized image is formed that gives the surgeon information on where to place the cut blocks. Using the femoral component as an example, the computer takes the place of the intramedullary alignment rod.
One potential downside is the use of the computer system itself. Feeding the anatomic data into the system is generally a streamlined set of tasks, but it does add time to the surgical procedure. Another constraint is the added cost of the computer system.

**SHAPEMATCH SURGERY DIFFERENCES**

The traditional method is time tested and often yields good to excellent results. However, it typically is considered a “one size fits all” solution to implant alignment. Each knee has subtle anatomic difference, therefore it seems natural to use customization techniques during implantation.

Custom Fit ShapeMatch technology is a major breakthrough because it creates individual cut blocks based on data obtained prior to the surgery. No surgical steps are added and the use of intra-operative computers are not required. All of the necessary anatomic data is gathered by obtaining a special pre-operative MRI. Through secure channels, the MRI scans are sent to the implant manufacturer. The images are used to create cutting blocks that are individualized for each person’s knee utilizing 3D imaging software.

Two weeks prior to surgery, the surgeon actually logs on and reviews images online that show the patient’s MRI pictures, the planned bony cuts and how the implant looks in relation to host bone. After approval, the company makes the cutting blocks and ships them to the medical center in plenty of time for the surgery.

Potential benefits of custom knee replacement surgery include a more natural feeling knee joint, improved stability, shorter operating time, quicker recovery time and faster return to desired activities including sports such as golf, hiking, cycling, horseback riding, water skiing and others. Most importantly, this technique is easily applied to modern minimally invasive knee replacement techniques. All major brands including Stryker™, DePuy™, Smith and Nephew™, and Biomet™ currently have FDA approved custom knee replacement options available (Table 1).

ShapeMatch Custom Fit knee replacement surgery has fit nicely into my current minimally invasive knee replacement surgical practice. The versatility of these techniques plays a valuable roll in serving an active high demand patient population. For example, customization can be applied to both fixed and rotating platform implants and for both full and partial knee replacement styles.

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LYMPHANGIOLEIOMYOMATOSIS
(LAM)

By Daniel T. Layish, MD and Marilyn Glassberg, MD

LAM is a rare and fascinating lung disease that primarily affects women of child bearing age with a median survival between 8 to 10 years from diagnosis. The pathology demonstrates proliferation of atypical pulmonary interstitial smooth muscle cells and cyst formation that occurs around and within the pulmonary lymphatics, venules, and airways. The lungs take on the appearance of Swiss cheese. Unfortunately, women with sporadic, pulmonary LAM (s-LAM) are often misdiagnosed with asthma or COPD because it can cause air flow limitation. There are approximately 1,300 patients with LAM in North America. The prevalence is estimated to be between 1-2.6 cases per million women. Caucasians are affected more commonly than Asians or individuals of African descent.

Approximately 50% of women with Tuberous Sclerosis can develop LAM-like lung disease (TSC-LAM). Tuberous Sclerosis is an autosomal dominant disease that affects the skin and the central nervous system. The tumor suppressor genes TSC1 and TSC-2 have been implicated in the etiology of sporadic LAM. TSC1 encodes hamartin, a protein that plays a role in the organization of the actin cytoskeleton. TSC2 encodes tuberin, a protein with roles in cell growth and proliferation.

Because LAM is predominately found in women, accelerates during pregnancy, does not present prior to menarche, and presents after menopause in women who have taken hormone replacement therapy, estrogen is believed to play a role in the development and progression of LAM. The average age at onset of symptoms, (in a registry of over 240 patients with LAM) is 39 years of age, with an average age of diagnosis of 41 years.

The diagnosis of LAM in a woman with dyspnea includes characteristic pulmonary function tests (PFTs) and findings on a high resolution CT (HRCT) scan of the chest. PFTs typically reveal an obstructive pattern, often with hyperinflation. HRCT scanning is much more sensitive than a routine chest x-ray in terms of demonstrating the cystic nature of LAM, and the HRCT findings can be highly suggestive of LAM. Tissue confirmation via transbronchial lung biopsy or video assisted thorascopic surgery may not be necessary when HRCT findings demonstrate multiple cysts of varying sizes that show no preference for any region of the lung. Renal angiomyolipomas, a prominent feature of Tuberous Sclerosis, can occur in approximately 40 to 60% of patients with LAM. Women with LAM may also have a higher incidence of meningiomas. More recently, serum VEGF-D (Vascular Endothelial Growth Factor-D) level above 800 pg/ml in a female with typical findings of LAM on HRCT correlates with the presence of LAM, and higher levels seem to correlate with more severe disease. However, the sensitivity is only about 70 per cent so a normal VEGF-D level does not exclude LAM.

Approximately 40% of women are diagnosed with LAM when they present with a spontaneous pneumothorax. They can also present with chylous pleural effusions. Chylothorax results from obstruction of the thoracic duct or rupture of lymphatics into the pleural or mediastinum by the proliferating smooth muscle cells. Chyle has a characteristic milky white appearance with a triglyceride level above 110 mg/dl. Chylothorax can be difficult to treat and is associated with nutritional deficiencies and compromised immune function due to loss of lymphocytes. Mild to moderate hemoptysis can also occur in LAM.

Sirolimus, an mTOR inhibitor used in the immune management of lung transplant recipients, has been recently studied in comparison with placebo in a randomized trial of 89 patients with moderate pulmonary impairment due to LAM/TSC-LAM. Sirolimus was started at 2 mg per day with the dose adjusted to

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maintain a trough level between 5 and 15 mg/ml. The patients who received Sirolimus had improvement in forced vital capacity, functional residual capacity, quality of life, and performance status. Serious short term adverse effects were rare, but serious toxicity can occur with long term therapy including pneumonitis, renal insufficiency, bone necrosis, hemolytic-uremic syndrome, esophagitis and increased risk for lymphoproliferative disease. Historically, hormone related management has failed to affect the clinical progression of LAM. Thus, oophorectomy or hormone manipulation (including progesterone) is not routinely indicated in patients with LAM.

Lung transplantation remains the only available successful treatment for LAM. Overall, selection criteria and outcomes are similar to those for other end-stage, oxygen-dependent lung diseases. However, pleural adhesions (related to previous therapy for spontaneous pneumothorax or chylous pleural effusions) can present a particular challenge in LAM. Of interest, in one report, LAM has been documented to recur after lung transplantation. This phenomenon appears to be related to cellular aggregates derived from recipient cells, suggesting hematogenous migration of LAM cells as the mechanism for recurrent disease.
Hopefully, advances in the understanding of the pathogenesis of LAM will result in new therapeutic options that will delay or eliminate lung transplantation. Most recently, other immune modulators as well as the readily available antibiotic doxycycline, a matrix metalloproteinase inhibitor that affects smooth muscle cell migration and angiogenesis, are being studied for use in the treatment of LAM. LAM patients have provided critical support that continue to drive research in the understanding and treatment of their disease.

Daniel Layish, MD, graduated magna cum laude from Boston University Medical School in 1990. He then completed an Internal Medicine Residency at Barnes Hospital (Washington University) in St. Louis, Missouri and a Pulmonary/Critical Care Fellowship at Duke University in Durham, North Carolina. Since 1997, he has been a member of the Central Florida Pulmonary Group in Orlando. He currently serves as Medical Director of the Intensive Care Unit, Respiratory Therapy and Pulmonary Rehab at Winter Park Memorial Hospital. Dr. Layish serves as the director of the Orlando Clinical Resource Center for the Alpha-1 Foundation.

Dr. Layish may be contacted at 407-841-1100 or by visiting www.cfpulmonary.com.

Marilyn Glassberg, MD, is a Professor of Medicine and Surgery, Director of Rare and Interstitial lung diseases, Division of Pulmonary, Allergy, Critical Care, and Sleep, University of Miami Miller School of Medicine.

The Last Diet Your Patients Will Ever Need


Pathology Lab Results — Patient: SP  Age: 63  Sex: Male

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Body Scan Results

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<td>9/24/10:</td>
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<td>78,045</td>
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Please Note: Gain of 441g of muscle and a fat loss of 5,415g in 30 days! Individual results may vary.

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Florida Hospital Celebration Health: Celebrating a New Comprehensive Breast Care Approach
Florida Hospital Celebration Health: Celebrating a New Comprehensive Breast Care Approach

Breast Health Center Offers Innovative Intraoperative Techniques

By Nancy DeVault, Staff Writer

“While sometimes it can be challenging, my goal is to help my patients understand that they will be okay even after a cancer diagnosis.”

Breast cancer is the second most common type of cancer among women in the United States, following skin cancer. According to the American Cancer Society, this year an estimated 227,000 women and 2,200 men will receive a diagnosis of breast cancer. Established in 1997, Florida Hospital Celebration Health, part of the not-for-profit healthcare system operated by Adventist Health System, specializes in the health and wellness of women, with a new concentration on providing premier care surrounding breast health.

The resort-style hospital located in the Disney-planned town of Celebration focuses on ‘treating the mind, body and spirit’ of patients with a 172-bed, state-of-the-art facility by offering a broad range of services for diabetes, heart health, orthopaedic well-being, spine care, weight management and bariatric surgery, in addition to Seaside imaging, emergency services and prevention programs. Celebration Health has quickly earned a trusted reputation for delivering highly efficient care through several dedicated female-specific centers such as The Baby Place, Endometriosis Center, and Center for Complex Abdominal and Pelvic Pain Syndrome (CAPPS). The most recent designated center, the Comprehensive Breast Health Center at Florida Hospital Celebration Health, opened its doors in October 2011 to serve residents of Osceola, Orange, Polk and Lake counties, and patients from around the world.

With 15,540 new cases of breast cancer in Florida alone, Florida Hospital Celebration Health sought innovative leadership to launch the area’s first comprehensive breast center. Olga Ivanov, MD, FACS, a board certified and fellowship-trained breast surgeon, was named Medical Director of the expanding center. Recently becoming a fellow of the American College of Surgeons, Dr. Ivanov has received national distinctions earning honors in the 2010 Consumers’ Research Council of America’s Top Surgeons and 2010 Patient’s Choice Award as one of Illinois’ Favorite Physicians.

“The fear of the unknown is two-fold igniting concerns impacting not only the physical health of the breast and body, but many aspects of her psychological health as well,” said Dr. Ivanov, who received her medical degree from the Medical College of Ohio, completed her residency in general surgery at Loyola and, in 2005, completed her fellowship training at Northwestern Memorial Hospital.

THE OPERATION OF COOPERATION

In recognizing the ‘whole-body’ implications of breast cancer, Dr. Ivanov established a multidisciplinary plan for fast and effective treatment through a devoted collaborative approach involving an array of medical specialists. This eleven person squad includes Pathologist, Radiologists, Medical Oncologists, Radiation Oncologists, Plastic Surgeons, Nursing and Genetics Teams, Patient Navigators, Dietitians and Exercise Physiologists.

“I am in constant communication with my team of medical partners every day. Thanks to Celebration Health’s ultimate cooperative approach, paired with our rapid treatment plans, these update-to-date conversations impact the actions saving the lives of our patients,” expressed Dr. Ivanov.
The Comprehensive Breast Health Center at Celebration Health provides a full range of care aiming to combat breast cancer through an early stage diagnosis, either identified onsite (through abnormal mammograms) or through referring associates at area imaging centers, primary care physician offices and Obstetrics and Gynecology practices.

“After the initial early diagnosis, we work to ease their anxiety by reassuring that they will be fine. It is important to stay positive during treatment and about life,” said Dr. Ivanov, who says that she takes the time to explain a detailed outline of exactly what will happen during the patients course of care. “It can be one of the most traumatic times in her life with so many questions. I explain who they will see, when steps will take place, what we will do starting from time of diagnosis through the five-year mark (a survival milestone). Most importantly, we work to educate my patients on their treatment choices.” This discussion, paired with her expert advice on achieving optimum results, starts the prompt implementation of treatment interventions.

Dr. Ivanov says that early stage intervention (categorized as stage 0, I and II) accounts for approximately seventy-seven percent of her patient population, with the remaining twenty-three percent of patients initial treatment commencing after a late stage breast cancer diagnosis (stage III or IV). Currently the majority, about seventy percent, of those diagnosed with early stage breast cancer opt to have a lumpectomy, a breast conserving surgery combined with radiation; with the remaining thirty percent choosing a more aggressive approach with a mastectomy, removal of the entire breast containing the tumors or cancerous cells.

“A patient’s lifestyle can play a big part in deciding which option is best for them; especially considering the advantages and disadvantages of each method,” Dr. Ivanov adds. Women sometimes select a mastectomy to avoid weeks of follow-up and radiation therapies. “Sometimes a woman elects for the mastectomy over a lumpectomy because she doesn’t feel she can commit to the needed time of radiation. Patients who are mothers often think ‘who will take care of my family during that time’; especially if she experiences side effects that temporarily impact quality of life.”

A RADIATING EVOLUTION OF RADIATION

The medical community is constantly striving to enhance treatments, techniques and procedures for improved outcomes and added benefits to patients. Despite the success of traditional radiation therapy, Dr. Ivanov says that developments were essential for patient convenience, a contributing factor in one’s care.

“Following a lumpectomy, patients typically would require six weeks of radiation treatment. The logistics of following up every day for what is just about a minute procedure can be a strain for many patients. As a result, up to one-third of patients nationwide instructed to receive radiation do not complete this follow-up treatment,” she explains. “Unfortunately the health of these women can then be compromised. Thirty-five to forty percent of such patients who did not complete radiation experienced a recurrence of breast cancer, compared to the possible five percent of those who did.”

The Comprehensive Breast Health Center at Celebration Health typically has an impressive 24 - 48 hour turnaround time in assessing the breast health condition, devising a course of action (with input from the ‘Tumor Board’ comprised of the team of medical specialists) and scheduling of appropriate procedures. “Though the early stage of breast cancer for the most part may not be a life or death emergency, we know that our ‘no wait time’ is best for the patient, especially emotionally.”

One of the cutting-edge approaches spearheaded by Dr. Ivanov at Celebration Health is treatment utilizing Intraoperative Radiation Therapy (IORT), a relatively new cancer technique performed at only about twenty sites nationally. One of the first, Little Company of Mary Hospital in Chicago, was launched by Dr. Ivanov, who served as Medical Director and her previous colleague, Adam Dickler, MD, Radiation Oncologist. Dr. Ivanov says that during breast surgery, she first will ‘remove the cancerous tumor, and then the radiation oncologist administers the Intraoperative Radiation Therapy during the surgical procedure.’ A high dose of radiation is delivered within minutes through concentrated electron beams directly into the affected tissue area. Including IORT into a lumpectomy procedure can add approximately thirty minutes to total surgery time.

“With IORT, we radiate the area around the lump after removing it, but before closing the incision,” Dr. Ivanov explains. “It
gives women the same effective dose of radiation in one 20-minute session as they would get in six weeks of daily radiation therapy after surgery.”

Dr. Ivanov and Dr. Dickler completed a clinical study showcasing data collected over a four-year trial period involving seventy-five patients treated with IORT. The results of their research, published in Annals of Surgical Oncology in February 2011, mirrored similar positive outcomes conducted in larger scale European research trials which illustrated that IORT was as effective as or better than traditional external beam radiation therapy in eliminating residual cancer cells and reducing the risk of breast cancer reoccurrence. Dr. Ivanov says there are many benefits for eligible patients who receive IORT treatment. Since higher, yet tolerable, radiation dosages are delivered directly into cancer bed, healthy tissue is shielded from exposure; hence a safer application for other organs compared to traditional radiation treatments. Additionally, IORT is a faster procedure that administers the necessary amount of radiation needed or can boost the radiation process to limit the length of external radiation follow-up. Thus, Dr. Ivanov’s completion rate of radiation is 95 percent, greatly higher than the national average.

Dr. Ivanov and her multidisciplinary team of experts at the Comprehensive Breast Health Center have begun another Intraoperative Radiation Therapy clinical trial at Celebration Health. “Our initial IORT clinical studies seem to be standing the test of time however, we are looking forward to gathering more data and achieving success rates a decade out.” Eligible candidates to be considered for inclusion in the research study will match specific selection criteria such as diagnosis level (early stages) and age (60+ years of age). Sites throughout the country are now exploring the use of IORT to treat other forms of cancer including cervical, colon, esophageal, ovarian, pancreatic and skin. “If I can offer patients fighting cancer the option to forgo the hassle and pain associated with radiation and chemotherapy, I know that I’m making a difference in that person’s life – the overarching goal of any doctor.”

Fluent in Ukrainian, Russian, French and Spanish, Dr. Ivanov is excited to now be receiving international referrals to the Comprehensive Breast Health Center at Celebration Health. “There used to be a misguided understanding that cancer was a guaranteed death sentence, so getting mammograms was viewed as pointless. We still may not know how to fully prevent getting breast cancer, but we now know better ways to treat and cure cancer, especially when identified in the early stages of the disease.”

Currently specialties, in addition to IORT, included at the Comprehensive Breast Health Center at Celebration Hospital are consultation and clinical examination, abnormal mammogram evaluation and management, breast surgery, ultrasound and stereotactic breast biopsy, oncoplasty, high-risk management, benign and malignant breast disorders, gynecomastia and Accelerated Partial Breast Irradiation (APBI).

“While these specialties are essential to our program, our wellness strategy is a comprehensive mind, body and spirit approach. This ‘whole-body’ method incorporates individualized plans inclusive of fitness, nutrition and massage. I do actually write prescriptions for Yoga,” says Dr. Ivanov. She is coordinating with Florida Hospital leadership to expand upon these female-specific comprehensive opportunities. “Our vision is to open the Celebration Health Institute for Women, a fully inclusive medical facility. The project could break ground as early as summer of this year and open its doors the following summer in 2013.”

Dr. Ivanov setting up to perform a stereotactic biopsy.

Dr. Ivanov performing a lumpectomy for breast cancer.

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Celebration, FL 34747
Phone: (407) 303-4760
www.FloridaBreastHealthSpecialists.com
Review Employment Contracts Now Because of the New Med Mal “Tail” Markets

By Matt Gracey

Danna-Gracey – The Malpractice Insurance Experts

Many doctors’ employment contracts require malpractice-insurance-policy “tails” to be purchased so as to effectively turn a claims-made policy into a more desirable occurrence form of coverage. In the last year, for the first time ever, a healthy market for optional stand-alone tail policies has developed. Instead of only being able to purchase a tail policy from the incumbent insurer, there are now many choices. The pricing can be greatly reduced, but most often the lower pricing means coverage compromises as well as possible big differences in the insurers’ financial ratings and standings. The biggest policy-term difference we are seeing is the reduced term of the tail-policy coverage.

Most standard-insurer tails offer coverage for any claims that are made in the future, but the lesser-priced tails often offer only from one to three years in coverage, which can be a significant difference in states with much-longer liability periods, such as Florida, which has a liability period that goes out to four years or, in child cases, out to the insured’s eighth birthday. Other policy differences are a less-desirable policy “trigger” and unfavorable consent to settle provisions.

Many of the insurers offering optional stand-alone coverage are in the excess and surplus markets, some are not well rated, and some are small, newer insurers with no A.M. Best rating.

Given that many employment contracts require a tail to be purchased, make sure that your contract language clearly defines your expectations so that inferior tail coverage from an inferior insurer does not qualify unless all parties agree to that.

Matt Gracey, Jr. is a medical malpractice insurance specialist with Danna-Gracey, an independent insurance agency based in downtown Delray Beach with a statewide team of specialists dedicated solely to insurance coverage placement for Florida’s doctors. To contact him call (800) 966-2120, or email: matt@dannagracey.com.
Can Avoidable Hospitalizations Among Nursing Home Residents Be Significantly Reduced?

By Mark Bobek, MD

The short answer is a resounding “YES!” There is widespread evidence that hospitalizations among nursing home residents can be avoided. According to data presented in April by CMS’s Medicare-Medicaid Coordination Office and the Center for Medicare & Medicaid Innovation, studies have estimated that from 30% to as many as 67% of hospitalizations among this population could be prevented with well-targeted interventions (Jacobson, et. al, 2010). Medicare-Medicaid enrollees make up a significant percentage of this population. In fact, CMS’s data shows that reducing potentially avoidable hospitalizations by 1/3 could save Medicare over $1 billion annually.

Dr. Joseph Ouslander, one of the country’s most committed advocates for furthering geriatric care, recognizes this issue as being essential to improving the quality of care for frail elderly and reducing costs. Ouslander is the creator of Interventions to Reduce Acute Care Transfers (INTERACT), a tool designed to help nurses and nurses’ aides working in nursing homes identify clinical problems and manage them more effectively, to reduce the rate of unnecessary hospitalizations. Ouslander has published over 200 original articles and book chapters and is a co-author of Essentials of Clinical Geriatrics and Medical Care in the Nursing Home, and an editor of Hazzard’s Geriatric Medicine and Gerontology. He served as an Associate Editor of the Journal of the American Geriatrics Society for ten years.

“What we do know for sure is that past interventions throughout the country have proven effective. For example, according to CMS, several interventions for nursing home residents stand out:

- Evercare reduced hospital admissions by 47% and emergency department use by 49% (Kane, et. al, 2004).
- A nursing facility-employed staff provider model in New York reduced Medicare costs by 16.3% (Moore & Martelle, 1996).
- INTERACT II reduced hospital admissions by 17% (Ouslander, et. al, 2011).

Indeed, the necessity to improve communication is not new. In 2009 the American College of Physicians, Society of General Internal Medicine, Society of Hospital Medicine, American Geriatric Society, American College of Emergency Physicians and Society for Academic Emergency Medicine jointly issued a Consensus Policy Statement describing ten principles for care transitions, many of which revolve around communication. Of particular importance to the skilled nursing environment is Principle # 5: The sending provider maintains responsibility for the care of the patient until the receiving provider confirms that the transfer is complete. The sending provider should be available to clarify issues of care, and the patient should be able to identify the responsible provider.

“We realize that care transitions (i.e. when a patient transitions from hospital to skilled nursing or visa-versa) are critical times in the patient care continuum and can often be fraught with gaps in communication. At our facilities, we pay particular attention during these times of transition to ensure that we support communication among the providers to avoid service duplication, patient safety issues and the sometimes inappropriate and avoidable use of the emergency room and acute hospital,” said Cary Smith, Vice President of Regional Operations at Adventist Care Centers, a not-for-profit, long term care organization.

As the largest hospitalist group in the region, practicing at multiple Hospitals and Skilled Nursing Facilities throughout Central Florida and discharging over 40,000 patients per year, Central Florida Inpatient Medicine (CFIM) also committed itself to exploring its own role in advancing communication among the “sending and receiving providers” in the community.

To that end, CFIM partnered with Adventist Health Systems...
and other community players to come up with new ideas for providing enhanced care and coordination to long term nursing home residents with the ultimate goal of reducing avoidable hospitalizations for this population. Among the concepts emerging from the group are:

- Improving communication and formalizing handoff between Hospital and Nursing Home physicians
- Enhancing technology tools and staff training to support the implementation of INTERACT
- Educating nursing home staff to implement non-pharmacological behavioral interventions
- Coordinating and communicating Advanced Care Planning
- Working hand in hand with other professionals, such as Pharmacists and Mental Health providers

CFIM, along with other community players, have applied for CMS funding in support of a program to further their proposed interventions for nursing facility residents. If successful, the proposal will test a new model of enhanced care and coordination for long term nursing home residents, including service delivery and payment methodologies. As the number of new Americans living to advanced age increases, any seeds we can sow to prepare our communities to deliver better geriatric care, will bear the fruits of improved quality of life, better outcomes and reduced costs for all of us.

Dr. Mark Bobek is the Medical Director for CFIM’s Skilled Nursing Division, which attends 23 Skilled Nursing Facilities in the Central Florida region. He attended medical school at The University of Miami and completed his residency in Family Practice at St. Vincent’s Medical Center in Jacksonville, Florida. As CFIM’s SNF Medical Director his responsibilities include collaborating on clinical consultations alongside practice physicians, addressing complex patient and family concerns and writing and implementing compliance program initiatives. One of his most important tasks is detecting patterns of infection within facilities and developing protocols to rid the infection spread area. His communication between the SNFs’ administration and staff is also vital to our mutual success.

By Phillip G. St. Louis, MD

INTRODUCTION

Minimally Invasive Surgical (MIS) techniques in the lumbar spine (as compared to published open procedure studies) result in longer operative times, lower overall hospital costs, and improved patient satisfaction.

METHODS

From August 2008-February 2011, one hundred six patients were treated with MIS Lumbar Spine Surgery and followed for an average of 18 months.

The average age was 55 years and Body Mass Index was 29.78 (overweight by U.S. Dept. of Health and Human Services). Results were obtained by review of perioperative data and validated outcome measurement tools (ODI, SF-36, and patient satisfaction surveys) completed pre and postoperatively. Patients were categorized into groups by surgical procedure: Group 1- Microdiskectomy (63 patients), and Group 2- Posterior lumbar decompression with instrumented anterior and posterior fusion (43 patients).

RESULTS

All patients experienced longer operative times, earlier mobilization, statistically significant shorter hospital stay (P= 0.0001), lower estimated blood loss (and need for transfusions), and lower narcotic use postoperatively as compared to published results in open procedure studies (Table 1 and 2). Patient satisfaction surveys showed that 61% (N=16) of patients were very satisfied with their surgical experience and 44% (N=16) of patients disclosed that they were no longer taking, or taking less pain medication postoperatively. Results of the SF-36 Health Survey indicated a statistically significant improvement in the Physical Functioning domain (95% CI, 0.9, 42.5). Improvement was also noted in Role Limitations-Physical Health (95% CI, -11.6, 41.6), Bodily Pain (95% CI, -1.3, 37.9), and Oswestry Disability Index (95% CI, -22.1, 14.7).

CONCLUSIONS

Although attractive, Lumbar MIS has a steep learning curve, and longer operative times than standard open procedures. The reduced tissue disruption with this technique confers less risk of requiring blood transfusions, earlier mobilization, less post-operative complications and infections. Additionally, these patients (inclusive of overweight and obese individuals) have a shorter hospital stay, decreased postoperative narcotic use, and an overall reduced hospital cost as compared to published literature of open lumbar procedures. Outcome assessment tools utilized in this study indicated greater than 80% improvement in Physical Functioning, Role Limitations, and Bodily Pain (SF-36) and an overall 67% physical improvement (ODI) at an average of 18 months postoperatively.

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*Elder (2008)

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* Isaacs (2005)
LEARNING OBJECTIVES

1) Lumbar MIS procedures result in statistically significant lower narcotic use immediately post operatively, earlier mobilization, shorter hospital stay, and high patient satisfaction

2) Lumbar MIS procedures are as effective in the overweight and obese population

3) Lumbar MIS may result in reduced overall hospital costs

REFERENCES


Dr. St. Louis is Board Certified in Neurosurgery by the American Board of Neurological Surgery and is also a Fellow of the American College of Surgeons. His neurosurgery training and education were completed at the Cleveland Clinic Foundation, where he received the William E. Lower Fellowship Thesis prize for the most outstanding thesis on a clinical subject. He also completed additional training in Pediatric Neurosurgery as a Fellow at the Hospital for Sick Children in Toronto, Canada.

He has been active in the practice of Neurosurgery in Orlando and Central Florida since 1983 and has held numerous leadership roles in the Neurosurgical community. Dr. St. Louis has special concentration in the management and treatment of adult hydrocephalus and neurorestorative treatment. He also has expertise in the management of complex spinal disorders utilizing minimally invasive surgical techniques and a particular interest in emerging technologies and techniques in the management of brain tumors and hemorrhages.

Dr. St. Louis practices at Associates in Neurosurgery located at 532 Virginia Dr. in Orlando. He may be contacted at (407) 898-9644 or by visiting www.ain.md.

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Hormone Replacement Therapy

By Jill Weinstein, RPh

“Hormone replacement therapy is relevant to women of all ages. If you’re a woman who’s planning to live past the age of 35, at some point you’re going to face a hormone imbalance.” (Oprah Winfrey, Jan 2009)

Hormones exist in harmony with each other – each having an important part in the symphony of hormones. When levels of the hormones are in the right proportions, body systems are stable. However, when balance is lost hormone deficiencies and excesses can become toxic to the body, causing unwanted symptoms, disorders and disease. The ultimate goal of hormone replacement therapy is to imitate, as closely as possible, hormones that are naturally produced by the human body to alleviate menopausal symptoms. These symptoms can have a devastating effect on one’s quality of life. Symptoms such as fatigue, headaches, weight gain, irritability, infertility, mood swings, lack of libido, depression, thinning hair and decreased muscle mass. Reduction of symptoms and not disease prevention, with the possible exception of osteoporosis, is the goal here.

As reproductive function decreases with age, hormone levels fluctuate then decline, triggering hormone imbalances. Progesterone is only produced by the ovaries and when they slowly wind down their functioning through the menopause years, progesterone slows down right with it. Estrogens, however, can be produced by other cells in the body besides the ovary, namely adipose cells that convert testosterone to estrogen. Therefore, during menopause progesterone is dropping but estrogen may not be, leading to estrogen dominance. There is not enough progesterone to balance out the activity of the estrogens in the bloodstream, not to mention the fact that you do not have enough progesterone to provide its beneficial effects on the blood vessels, bone, brain, etc. This is what leads to the menopausal symptoms so many women complain of.

The key to natural or bio-identical versus synthetic hormone replacement therapy is the molecular structure of the hormone. The synthetic hormone is “similar” to the natural hormone in the body but NOT identical. Bio-identical hormone replacement therapy (BHRT) uses molecules that are bioengineered so that their structure matches the hormone(s) which are produced by the human body. Bio-identical hormone therapy does not refer to grinding up leaves and plants or using herbal products such as soy supplements, black cohosh or yam isoflavones. Bio-identical hormone replacement therapy compounds are made using pure chemicals from FDA regulated suppliers. In addition, bio-identical hormones are not made from conjugated equine estrogens (CEE) whose metabolites have been demonstrated to be cytotoxic, but replicate what is naturally produced by the human body.

Hormonal symptoms may appear as PMS, perimenopause or menopause and BHRT may be beneficial in some form for women during any of these phases of her life. There is a lot of dosage flexibility in BHRT products as compared to conventional hormone products. Doses can be easily increased or decreased in small amounts as needed and they are available in a variety of dosage forms, such as tablets, capsules, creams, gels, troches, sublingual drops and suppositories.

Synthetic hormones are manufactured with FDA oversight, whereas compounded bio-identical hormones are regulated by the state and the raw ingredients do come from an FDA regulated suppliers. This is one of the areas that critics of BHRT seize upon. However, a compounding pharmacy that is state regulated and PCAB accredited with proper quality assurance procedures in place and using top of the line equipment can personalize the medication to the bio-unique needs of your patient. So it is important to choose the right compounding pharmacy.

Bio-identical hormone replacement therapy is an approach that satisfies 3 key ideas. One is that we use only hormones that are biologically identical to human hormones. The second key idea is that we tailor each woman’s treatment to their specific hormone needs. This means “testing not guessing” and extensive symptom evaluation to create a customized dosage based on that person’s particular hormone needs. BHRT does have “normal” lab values allowing focused therapies to stay inside the “normal range”. Lastly, is that the goal of treatment is to achieve a balance of activity of all the hormones. We must realize that all the hormones work together like an orchestra and optimizing the activity of one hormone will enhance the effects of others. This is probably the most important concept in BHRT and is often overlooked as we tend to focus on one or two hormones or organs in the body. Our purpose in treating with hormones is to facilitate the body’s innate intelligence NOT to override it. Restoring balance and quality of life are the goals.

How can I help my patients alleviate their malady of menopausal symptoms that require more time than I have? A physician requested hormone consultation for the patient is a good place to start. During the consultation the pharmacist will discuss a symptom checklist, health questionnaire, recommend hormone testing and answer questions about bio-identical hor-
mone replacement. A summary of the consultation and recommendations (based on hormone levels) from the pharmacist will be sent to the physician for ease in writing the prescription. You or your patients may call Pharmacy Specialists at (407)260-7002 to schedule hormone consultations.

Jill Weinstein, RPh, graduated from University of Florida and is the clinical pharmacist who does hormone, nutrition and weight loss consultations at Pharmacy Specialists. Pharmacy Specialists is proud to be the only pharmacy in all of Central Florida and one of only 129 pharmacies in the country that are accredited by the Pharmacy Compounding Accreditation Board (PCAB). We meet or exceed ALL standards for sterile as well as non-sterile compounding and we are the only USP 797 and USP 795 validated compliant pharmacy in all of central Florida. Currently, Sam Pratt, RPh at Pharmacy Specialists is the only Full Fellow of the International Academy of Compounding Pharmacists in the Central Florida area. Call Pharmacy Specialists to check with a clinical pharmacist for suggestions and recommendations. For additional information please call (407)260-7002, FAX (407) 260-7044, Phone (800) 224-7711, FAX (800) 224-0665.
Detection of Sentinel Lymph Nodes in Patients with Endometrial Cancer Undergoing Robotic-Assisted Staging: A Comparison of Colorimetric and Fluorescence Imaging

By Robert W. Holloway, MD

Sentinel lymph node (SLN) mapping is commonly performed for cancers of the breast, vulva, and melanoma, to eliminate complete lymphadenectomy and its associated morbidities, by predicting spread of disease based on a directed lymph node biopsy. Sentinel pelvic lymph node mapping for the detection of metastatic disease in gynecologic cancers has been investigated using blue dyes and radio-colloid (Tc-99). Combining both methods achieves bilateral detection of pelvic lymph nodes in about 80% of cases, leaving room for improvement.

Recently, use of fluorescent dyes have been described for mapping using a near-infrared imaging system that is available for the daVinci operative system. This pilot investigation reports the first clinical outcomes of lymphatic mapping for women with endometrial cancer (EC) using both blue dye and fluorescent indocyanine green dye. 100% patients had successful bilateral mapping and 67% more metastatic disease was detected with SLN mapping using immuno-histochemical stains compared with standard pathology protocols. A larger prospective multi-institutional trial piloted by Florida Hospital is planned to confirm these findings.

SLN mapping will likely be shown to detect more metastatic disease for high risk cancers, and may allow elimination of complete lymphadenectomies for low risk cases if a sufficiently powerful negative predictive value is confirmed in the prospective trial. Given that 40 to 50% of women with EC have low-risk histology, this technique may greatly reduce side-effects and complications from surgery, and conversely increase the accuracy of staging surgery for high risk histologies.

OBJECTIVE

The objective was to retrospectively compare results from lymphatic mapping of pelvic sentinel lymph nodes (SLN) using fluorescence near-infrared (NIR) imaging of indocyanine green (ICG) and colorimetric imaging of isosulfan blue (ISB) dyes in women with endometrial cancer (EC) undergoing robotic-assisted lymphadenectomy (RAL). A secondary aim was to investigate the ability of SLN biopsies to increase the detection of metastatic disease.

METHOD

Thirty-five patients underwent RAL with hysterectomy. One mL ISB was injected submucosally in four quadrants of the cervix of pelvic sentinel lymph nodes (SLN) mapping is commonly performed for cancers of the breast, vulva, and melanoma, to eliminate complete lymphadenectomy and its associated morbidities, by predicting spread of disease based on a directed lymph node biopsy. Sentinel pelvic lymph node mapping for the detection of metastatic disease in gynecologic cancers has been investigated using blue dyes and radio-colloid (Tc-99). Combining both methods achieves bilateral detection of pelvic lymph nodes in about 80% of cases, leaving room for improvement.

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METHOD

Thirty-five patients underwent RAL with hysterectomy. One mL ISB was injected submucosally in four quadrants of the cervix.
vix, followed by 0.5 mL ICG [1.25 mg/mL] immediately prior to placement of a uterine manipulator. Retroperitoneal spaces were dissected for colorimetric detection of lymphatic pathways. The da Vinci® camera was switched to fluorescence imaging and results recorded. SLN were removed for permanent analysis with ultra-sectioning, H&E, and IHC staining. Hysterectomy with RAL was completed.

RESULTS

Twenty-seven (77%) and 34 (97%) of patients had bilateral pelvic or aortic SLN detected by colorimetric and fluorescence, respectively (p=0.03). Considering each hemi-pelvis separately, 15/70 (21.4%) had “weak” uptake of ISB in SLN confirmed positive with fluorescence imaging. Using both methods, bilateral detection was 100%. Ten (28.6%) patients had lymph node (LN) metastasis, and 9 of these had SLN metastasis (90% sensitivity, one false negative SLN biopsy). Seven of nine (78%) SLN metastases were ISB positive and 100% were ICG positive. Twenty-five had normal LN, all with negative SLN biopsies (100% specificity). Four (40%) with LN metastasis were detected only by IHC and ultra-sectioning of SLN.

CONCLUSIONS

Fluorescence imaging with ICG detected bilateral SLN and SLN metastasis more often than ISB, and the combination resulted in 100% bilateral detection of SLN. Ultra-sectioning/IHC of SLN increased the detection of lymph node metastasis.

This study was presented by Dr. Robert Holloway at a Focused Plenary Session at the 43rd Annual Meeting on Women’s Cancer® of the Society of Gynecologic Oncology (SGO), March 2012, Austin, TX [Reference: Gynecol. Oncol. 2012; 125 (Suppl. 1): A45].

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Principles of Management

By Harinath Sheela, MD

There are three major principles underlying the management of patients with malabsorption and maldigestion, and appropriate care of such patients in the majority of cases necessitates that each of these three are addressed:

1. **Identification and treatment of the underlying disease.**
   - This may seem obvious but it is a principle that is all too frequently ignored. As an example, chronic diarrhea that follows a sizeable small intestinal resection is not invariably due to malabsorption; in many cases it is instead due to colitirhea (a secretory diarrhea that arises from excess bile acids entering the colon) and which requires a very different form of therapy than is required for malabsorption.

2. **Treatment of the diarrhea that often accompanies these disorders.**
   - Management of diarrhea becomes an important aspect of the therapeutic plan in circumstances in which the underlying pathophysiology cannot be entirely corrected. Nonspecific antidiarrheal agents, such as loperamide, diphenoxylate with atropine, and deodorized tincture of opium, are useful in this regard. Loperamide should be tried first because it is largely metabolized on first pass through the liver and does not easily cross the blood-brain barrier, minimizing any CNS side-effects. It is also generally less expensive than diphenoxylate with atropine. Deodorized tincture of opium is useful because of its high potency, which can be particularly useful in severe cases of malabsorption. Because it carries with it a small risk of addiction, patients should be asked about past drug addictions before it is prescribed. In patients with very rapid intestinal transit, the rate of pill dissolution may be a limiting factor: both loperamide and diphenoxylate with atropine also come as liquids, and these forms can be useful in this setting.

3. **Identification and correction of nutritional deficits.**
   - In many cases dietary maneuvers are helpful adjuncts in the effective management of diarrhea due to malabsorption. Patients should generally avoid more than one serving a day of caffeine-containing beverages since such drinks may promote diarrhea. Highly-sugared beverages such as soft drinks and fruit juices can also markedly increase the volume of diarrhea. This is particularly true in patients with short gut syndrome, where insufficient intestinal absorptive surface remains to compensate for the hyperosmolar effects of such drinks. Diluting soft drinks and fruit juices with water in a 1:1 ratio can be helpful for patients who enjoy such drinks. Patients whose diarrhea causes problems with dehydration and electrolyte disorders should use an oral rehydration solution daily.

In patients in whom bile acid depletion has an important role in fat malabsorption (eg, chronic cholestasis, major ileal resection), therapy with exogenous conjugated bile acids can decrease steatorrhea. Although such preparations are no longer available by prescription, there are some reliable companies that sell desiccated ox and cattle bile over the internet. However, natural bile acid preparations increase the volume of diarrhea due to colonic secretion occurring after bacteria in the colon deconjugate the bile acids. This can occur even though they are decreasing the magnitude of steatorrhea. This is generally not of concern in patients who have undergone a colectomy. For patients who have a colon in continuity with the fecal stream, however, a synthetic conjugated bile acid that does not undergo bacterial deconjugation (cholylsarcosine) may be beneficial. Apart from reducing diarrhea, cholylsarcosine reduces urinary oxalate excretion in patients with short bowel syndrome. Cholylsarcosine is presently not available in the United States.

Consultation with a dietitian is frequently useful, but in complicated cases assistance from a physician who specializes in nutrition support is preferred since complex nutritional issues are frequently encountered in this setting. It is generally accepted that unintentional weight loss associated with illness that exceeds 10 percent of usual body weight is associated with excess morbidity and mortality due to malnutrition. This degree of weight loss should lead to an aggressive plan for nutritional restitution in the patient.

**NUTRIENT SUPPLEMENTATION AND RESTRICTION**

Most patients with malabsorption have only mild or moderate weight loss. If the disease leading to malabsorption can be specifically treated, most patients can continue with normal dietary intake. Oral supplementation with vitamins and minerals is usually sufficient to correct existing deficiencies, although over the few weeks immediately following the identification of a vitamin or mineral deficiency more rapid recovery can be achieved by supplementation with 5 to 10 times the Daily Value (DV, previously Recommended Dietary Allowance or RDA).

In patients in whom the malabsorption cannot be corrected, the amount of a particular micronutrient necessary to maintain normal status may continue to be 5 to 10 times the DV.

Patients with substantial steatorrhea may require supplementation with more polar forms of fat-soluble vitamins. An example is using the 25-hydroxylated form of vitamin D (calcifediol), which is more polar than vitamin D2 or D3 and is therefore more easily taken. Oral supplementation with vitamins and minerals is usually sufficient to correct existing deficiencies, although over the few weeks immediately following the identification of a vitamin or mineral deficiency more rapid recovery can be achieved by supplementation with 5 to 10 times the Daily Value (DV, previously Recommended Dietary Allowance or RDA).

In patients in whom the malabsorption cannot be corrected, the amount of a particular micronutrient necessary to maintain normal status may continue to be 5 to 10 times the DV.
absorbed in patients with fat malabsorption. The serum calcium should be monitored for the first few weeks of therapy with this naturally occurring analogue since it is more potent than vitamin D2 or D3, and can more easily produce hypercalcemia. More recently, 1-hydroxylated vitamin D (Hectorol), which is also more polar than vitamin D2 or D3, has become available. In assessing blood levels of vitamin D in patients taking this compound, it is necessary to check 1,25 dihydroxyvitamin D levels rather than the more conventional 25-hydroxyvitamin D, since the 1-hydroxyvitamin D will be converted directly into the dihydroxy form.

Similarly, a polar form of vitamin E, d-alpha-tocopheryl polyethylene glycol 1000 succinate (TPGS) has proven to be well absorbed in situations where conventional vitamin E is poorly absorbed due to fat malabsorption.

Some fat-soluble vitamins can also be obtained in capsules containing an emulsifying solution (eg, Aquasol A®, Aquasol E®). However, it remains unproven if these preparations actually enhance absorption of the vitamins.

A variety of other nutrients are often required in specific situations:

- Iron and folic acid supplementation are usually required in celiac disease; in some cases, deficiencies of these nutrients are the presenting manifestation of the disease.
- Calcium and magnesium supplementation are required after extensive small intestinal resection, or in any setting where there is severe fat malabsorption. Both vitamin D malabsorption as well as excessive fecal loss of calcium and magnesium (because of binding to malabsorbed fatty acids in the intestinal lumen) contribute to these deficiencies.
- Vitamin D deficiency worsens calcium deficiency. Optimal maintenance of bone mass is best achieved when serum 25-hydroxyvitamin D levels are maintained in the upper end of the normative range, or slightly above (ie, 30 to 50 ng/mL) among those using vitamins D2, D3 or 25-hydroxy vitamin D as a supplement. Among those taking the 1-hydroxylated form of the vitamin, the optimal blood concentrations of vitamin D metabolites are less clear. It would probably best in the latter situation to aim for a blood level within the normative range for 1,25 dihydroxy vitamin D. In patients who have fat malabsorption and a colon in continuity with the fecal stream, calcium supplementation also assists in the prevention of nephrolithiasis due to oxalate stones.

It is important to recall that serum concentrations of calcium and magnesium may be poor indicators of homeostasis of these cations. The possibility of normomagnesemic magnesium depletion (in which there is isolated intracellular magnesium depletion) should be considered as a possible cause of refractory hypokalemia or unexplained hypocalcemia in patients at high risk for magnesium loss since magnesium is necessary for both parathyroid hormone (PTH) release and for its actions in the target tissues. Measuring the response to an oral magnesium load has been suggested as a clinically meaningful method to detect normomagnesemic magnesium depletion. The utility is uncertain; it may be simpler to administer magnesium if there are reasons to suspect magnesium depletion. As an example, magnesium depletion should be suspected in any patient with the otherwise unexplained combination of hypocalcemia and hypokalemia.

Magnesium salts are poorly absorbed and may exacerbate underlying diarrhea so intermittent parenteral administration is sometimes necessary.

In the setting of persistent malabsorption, occasional monitoring of bone mass with dual photon absorptiometry (“DEXA”) is indicated since the incidence of metabolic bone disease is quite high in this population.

Additional dietary principles — Dietary restrictions in some diseases leading to malabsorption can result in full restoration of mucosal function and nutritional status. Examples include:

- A gluten-free diet in patients with celiac disease.
- Elimination of a particular carbohydrate in patients with isolated carbohydrate deficiencies.
- A reduction in dietary long chain fatty acids below 40 g/day in patients with steatorrhea can reduce stool volume and stool fat content to acceptable levels. However, this may unduly restrict the patient's ability to consume sufficient calories, in which case supplementation with medium-chain triglyceride (MCT) oil or MCT-based liquid supplements is indicated. The use of pure MCT as a cooking oil, spread on toast, or salad dressing can be a double-edged sword since it occasionally induces nausea or an osmotic diarrhea. MCT-based liquid nutritional supplements are no longer readily available on the United States. However, a substitute can be made by adding 10 mL of MCT oil to 8 ounces of nonfat milk, to which is added one packet of a powdered instant breakfast meal and briefly emulsified in a blender. Nonfat lactase-treated milk should be used in patients who are lactose intolerant. Among those with short bowel syndrome, carefully performed energy balance studies suggest that MCT is most effective in patients whose colons remain in the fecal stream, since a major site of MCT absorption appears to be the colon.

- A low fat diet is an important component of the treatment regimen for patients with fat malabsorption due to short bowel syndrome if the colon is in continuity. Some authorities suggest that a high fat diet can also be used with an intact colon to increase energy absorption. Such an approach can be considered in individual patients but the tradeoff will probably be increased diarrhea and divalent cation loss.

Fat restriction does not present an advantage with respect to net fluid, energy, nitrogen, or electrolyte absorption if a jejunoscopy or ileostomy is present. In the latter situations, a patient may more easily achieve caloric goals, and thereby a stable weight, if no fat restriction is imposed.

Lactose intolerance — Elimination of milk and milk products from the diet leads to improvement in primary lactase deficiency. In acquired forms of lactose intolerance due to small intestinal disease, treatment of the underlying disease or its complications may improve lactose tolerance without requiring dietary modification.

The presence and underlying cause of lactose intolerance in patients with small intestinal disease should be established prior
to suggesting a lactose-free diet. As an example, the prevalence of lactose malabsorption is significantly higher in patients with Crohn’s disease with extensive small bowel involvement than in those with colonic disease alone. However, lactose malabsorption in Crohn’s disease of the small bowel may result from factors other than lactase enzyme activity, such as bacterial overgrowth and/or diminished small bowel transit time, each of which can improve during treatment.

Recommended a lactose-free diet in such patients imposes an added inconvenience and deprives them of a valuable source of nutrition (especially calcium and vitamin D). When symptoms of lactose intolerance arise during a flare of the disease, restricting dietary lactose temporarily may be sufficient. Commercially available lactose-free milk products can help to minimize symptoms, allowing for more generous ingestion of dairy foods.

Finally, intolerance to dairy products is not necessarily due to lactose intolerance. Allergy to milk proteins, as well as psychological factors, may also have a role.

**Fructose intolerance** — Up to one-half of the population cannot completely absorb a load of 25 g of fructose while daily intake varies from about 11 to 54 g per day. In a study of healthy volunteers, 10 percent had positive breath test results after consuming 25 g of fructose while 80 percent had positive results with a 50 g load.

Concern over fructose malabsorption has grown with the increasingly widespread use of high fructose corn syrups that are used to sweeten a wide variety of commercial food products. However, the degree to which fructose malabsorption contributes to gastrointestinal symptoms is not clearly established. Gastrointestinal symptoms related to fructose malabsorption appear to be more common in individuals who have an underlying functional bowel disorder such as irritable bowel syndrome. Unabsorbed fructose provides a substrate for rapid bacterial fermentation (causing gas), and may have other physiological consequences including an increased osmotic load and alteration of gastrointestinal motility (which may cause diarrhea), and a change in the profile of the bacterial flora.

Dietary fructose is consumed in two forms: as a monosaccharide, and as a disaccharide, since it is contained in sucrose (glucose-fructose). For reasons that are incompletely understood, fructose absorption from sucrose is greater than the absorption of fructose as a monosaccharide.

The ability to absorb fructose (even in those with malabsorption) depends not only upon the amount of fructose consumed, but the presence of other sugars ingested with it. Concomitant ingestion of glucose, galactose, and some amino acids increases fructose absorption, while sorbitol decreases it. These observations have implications for dietary recommendations in patients in whom fructose malabsorption is suspected since foods that contain fructose may be well tolerated if they also contain glucose but may be less well tolerated if they also contain sorbitol (although sorbitol itself can cause diarrhea). Thus, it is the net amount of fructose that is important.

There are two commercially used forms of high fructose corn syrup (HFCS), one that contains approximately 42 percent and the other approximately 55 percent fructose (HFCS-55). The other main ingredient is glucose. For example, a 12-ounce soda containing HFCS-55 has about 22 g of fructose and 17 g of glucose providing an excess of only 5 g of fructose per can, an amount that can be absorbed completely in most healthy individuals. Thus, despite an abundance of fructose, HFCS may not be a major culprit in causing symptoms in individuals with fructose malabsorption (provided that its ingestion is modest) since it also contains similar amounts of glucose.

Patients in whom a trial of dietary avoidance of fructose is desired should be advised to avoid foods that contain a high net amount of fructose (ie, more fructose than glucose, or more fructose and sorbitol than glucose). In particular, they should reduce or temporarily eliminate their intake of:

- Foods sweetened with “fructose” or “crystalline fructose.”
- Juices and fruits containing high net amounts of fructose (eg, apples, pears, sweet cherries, prunes, dates), and beverages sweetened with high fructose corn syrup. If consumed, these foods should be eaten with meals, and beverages sweetened with high fructose corn syrup limited to 12 ounces. Because long-term elimination of these healthful fruits is not generally advisable, it should only be entertained if objective evidence of fructose malabsorption is obtained (see below) or if unequivocal benefits are obtained with their elimination.

A fructose breath test has been suggested as an objective means of identifying fructose intolerance [22]. Further validation of the predictive value of this test is needed.

**Pancreatic insufficiency** — The mainstay of treatment in severe malabsorption and steatorrhea due to exocrine pancreatic insufficiency is a low fat diet and administration of exogenous pancreatic enzymes. To optimize the efficacy of treatment, the management of exocrine pancreatic insufficiency must be individually tailored to account for both the underlying cause and any associated disturbance in gastrointestinal physiology. In addition, the properties of the pancreatic enzyme preparations and adjuvant drugs need to be taken into consideration.

Several commercial preparations are microencapsulated, and are thereby designed to be acid-resistant to avoid enzyme inactivation by gastric juice. As a general rule, 30,000 IU of pancreatic lipase, swallowed during each full meal, should suffice in reducing steatorrhea and preventing weight loss. One-half of that dose should be administered with snacks. Determining the adequate amount of lipase can be confusing since the amount of lipase in pancreatic supplements is typically expressed in USP units. One IU is equivalent to approximately 2 to 3 USP units. If symptoms persist, supplemental therapy with H2 receptor antagonists or proton pump inhibitors is often effective.
Nonencapsulated formulations may be more successful in patients who are achlorhydric or who have dyssynchronous gastric emptying (eg, Billroth II anatomy), since there is no need to protect the enzymes from acid. Microencapsulated formulations will only delay the release of the enzymes in the proximal small intestine, and are therefore intended more for patients who have retained the ability to secrete gastric acid.

**SUMMARY AND RECOMMENDATIONS**

- The management of patients with malabsorption and maldigestion consists of treatment of the underlying disease, management of accompanying diarrhea, and correction of nutritional deficits.
- Because many diseases may lead to malabsorption, there is no nonspecific or generally recommended treatment. As a result, the exact diagnosis is essential for successful therapy.
- Most patients presenting with malabsorption have only mild or moderate weight loss. If the underlying disease leading to malabsorption can be specifically treated, most patients can continue with normal dietary intake. Dietary principles for patients with more severe, intractable, or specific forms of malabsorption are summarized above.
- Dietary restrictions in some diseases leading to malabsorption can result in full restoration of mucosal function and nutritional status.

*Harinath Sheela, MD moved to Orlando, Florida after finishing his fellowship in gastroenterology at Yale University School of Medicine, one of the finest programs in the country. During his training he spent significant amount of time in basic and clinical research and has published articles in gastroenterology literature.*

*His interests include Inflammatory Bowel Diseases (IBD), Irritable Bowel Syndrome (IBS), Hepatitis B, Hepatitis C, Metabolic and other liver disorders. He is a member of the American Gastroenterological Association (AGA), the American Society for Gastrointestinal Endoscopy (ASGE) and the American Association for the Study of Liver Diseases (AASLD) and Crohn’s Colitis foundation (CCF). Dr. Sheela is a Clinical Assistant Professor at the University of Central Florida School of Medicine. He is also a teaching attending physician at Florida Hospital Internal Medicine Residency and Family Practice Residence (MD and DO) programs.*

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Fertility Preservation in Cancer Patients

By Mark P. Trolice, MD

Due to the increasing success of oncologists over the past four decades, patients diagnosed with cancer are not only surviving longer but care now focuses on improving quality of life and long term health. Chemotherapy and radiation, the standards of care in cancer treatment, result in significant gonadotoxicity thereby impairing a woman’s (and man’s) fertility. As a result, cancer patients in their reproductive years are faced with another life crisis – preserving their fertility. The new field of Oncofertility focuses on the importance of maintaining reproductive potential in cancer patients using a multidisciplinary approach to include the fields of Oncology, Reproductive Endocrinology and Molecular Biology. This article explores options of Fertility Preservation (FP) in Cancer Patients.

Over 100,000 women less than age 45 are annually diagnosed with cancer. Between 1990 and 2008, overall cancer death rates decreased by 23% in men and 15% in women, representing approximately 1 million lives saved. Approximately 77% of cancer patients diagnosed less than age 45 survive greater than 5 years. These rates are continuing to improve for the four most serious cancers - lung, colon, breast and prostate. Consequently, in 2006 the American Society of Clinical Oncology (Lee et. al., Journal of Clinical Oncology) recommended, “as part of the consent prior to therapy, oncologists should address the possibility of infertility with patients as early in treatment planning as possible” and “FP is an important, if not necessary, consideration when planning cancer treatment in reproductive-age patients. Nevertheless, Gwede et. al., in Practical Radiation Oncology (in press) reveals while 82-84% of Medical and Radiation Oncologists vs. 51% of Surgical oncologists “always/often” discuss FP with their patients, only 24-31% of all oncologists rarely/never refer for FP.

FP options depend on many factors. The age of the patient will provide insight to her ovarian reserve to contemplate the utility of FP. The tumor type, stage, and treatment plan determines the time, if any, available to proceed with an emergency IVF cycle. The patient’s relationship status may influence the choice of freezing eggs or embryos because IVF requires insemination with sperm unless egg freezing is chosen. Based on the virulence of the cancer, the patient’s health may preclude or allow an IVF cycle. Additionally, insurance coverage for IVF will determine the cost of FP treatment to the patient. Lastly, and most importantly, the psychological toll on the patient should always be addressed.

For many years, post-pubertal males have preserved their fertility by cryopreserving and storing semen samples. There are limited options of FP for children and currently involve ovarian tissue freezing, considered experimental. The options for adult female cancer patients to preserve their fertility are as follows:

A. EXPECTANT

The ovary is especially sensitive to chemotherapy given the finite number of oocytes available and the reproductive impact is contingent on the dose of therapy and the patient’s age at treatment as younger patients are more likely to resist the damaging effects to the ovary. It is estimated 40% of women less than age 40 undergoing chemotherapy will experience ovarian failure following treatment. Alkylating agents, particularly the combination of oral CMF (cyclophosphamide, methotrexate, and fluorouracil) have the highest risk of ovarian failure. Post therapy, resumption of menses, if applicable, occurs in six months but may require up to two years. It is important to note, the return of menstrual function does not equate with maintenance of pre-treatment biologic ovarian age. Therapy results in the death of primordial ovarian follicles and interrupts follicle recruitment and maturation, resulting in decreasing ovarian reserve. So, the reproductive potential of a woman post-chemotherapy can still be impaired despite the return of menstrual cycles as demonstrated by a higher rate of infertility and lower ovarian reserve. If ovarian failure occurs post treatment, options include egg donation and adoption.

B. MEDICAL OVARIAN SUPPRESSION

The use of GnRH-analogs in post-pubertal females to preserve ovarian function has been debated for many years. The theory stems from the induction of a hypogonadal state whereby lower pituitary FSH levels reduce follicular recruitment sparing the use of eggs and a reduction of blood flow to the ovary thereby reducing the amount of gonadotoxic chemotherapy. Perhaps the most compelling argument is the GnRH analog induced increase in Sphingosine-1-PO4, an anti-apoptotic molecule, protecting immature eggs. Despite medical articles for and against the use of GnRH-analogs for FP, a recent study showed a significant reduction in patients experiencing early menopause on GnRH analog for six months while receiving chemotherapy compared to patients on chemotherapy alone. (Del Mastro, L. et al. JAMA 2011)

C. IN-VITRO FERTILIZATION (IVF) WITH EMBRYO/EGG CRYOPRESERVATION

With its advent in 1978, the advanced reproductive technology of IVF has developed into a minor office procedure for transvaginal ultrasound guided oocyte aspiration under conscious sedation. Due to novel approaches to ovarian stimulation, a cancer patient desiring “emergency” IVF for embryo or egg freezing can usually complete the process within two weeks. The major advances in
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FLORIDA CENTER FOR CELLULAR THERAPY RECEIVES FACT ACCREDITATION

Florida Hospital Cancer Institute’s Florida Center for Cellular Therapy (FCCT) is proud to once again be recognized for high standards in bone marrow transplantation and excellence in care by receiving the Foundation for the Accreditation of Cellular Therapy’s (FACT) accreditation.

Since 2009, Florida Center for Cellular Therapy has held this certification based on surpassing the requirements set by international teams of cellular therapy experts that address quality standards in cell collection, manufacturing and administration. Florida Hospital Cancer Institute is one of two centers in Central Florida to hold this accreditation and continues to lead the way in cancer treatment.

The Florida Hospital Cancer Institute Bone Marrow Transplant Program Team: Vijay Reddy, MD, Melhem Solh, MD, Kim Lower, CMOM, Yasser Khaled, MD, Paul Gordon, MD.

ARNOLD PALMER HOSPITAL REACHES HIGHEST LEVEL IN EPILEPSY TREATMENT

Hospital Becomes the First and Only Level-4 Epilepsy Center in Central Florida

Arnold Palmer Hospital for Children has been named a Level-4 Epilepsy Center – the highest designation available for the treatment of epilepsy. The designation is made by the National Association of Epilepsy Centers (NAEC) to evaluate the appropriateness and quality of specialized epilepsy care.

According to NAEC, a fourth-level center should provide the more complex forms of intensive neurodiagnostics monitoring, as well as more extensive medical, neuropsychological, and psychosocial treatment. Fourth-level centers also offer a complete evaluation for epilepsy surgery, including intracranial electrodes, and provide a broad range of surgical procedures for epilepsy.

In treating epilepsy, the Neuroscience Institute at Arnold Palmer Hospital offers patients and families access to an interdisciplinary approach, featuring experienced physicians, surgeons, epileptologists, neuropsychologists, and neuroradiologists. The team provides patients a full spectrum of treatment options for epilepsy, from non-surgical options including ketogenic diet to advanced surgical treatments.

“Effectively treating patients with severe epilepsy and chronic seizures requires an extraordinary amount of resources,” stated Ron Davis, MD, co-medical director of the epilepsy program at Arnold Palmer Hospital. “Few places around the country can offer epilepsy patients the level of care found at Arnold Palmer Hospital. This is a significant achievement for us and our community, and ensures our patients can get top-quality treatment right in their backyard.”

D. OVARIAN TISSUE CRYOPRESERVATION

The most experimental and least applied of all the FP options, tissue freezing offers hope to adult and pre-pubertal cancer patients by removing and freezing ovarian and testicular tissue with the subsequent potential of re-implantation to the patient or in-vitro maturation of the eggs and sperm.

FP options should be provided to all patients diagnosed with cancer so they may understand the risk of cancer treatment on their reproductive potential and the alternatives to procreate.

IVF facilitating FP are the use of GnRH-antagonists and vitrification. The former is the alternative to GnRH-analogs traditionally used for ovulation suppression during IVF stimulation to avoid the premature release of eggs prior to retrieval. The antagonist can be initiated during ovarian stimulation with immediate suppression as opposed to the two weeks needed for an effect using the analogs.

Vitrification is the revolutionary process of freezing embryos replacing the “slow-freeze” method. Most importantly, the more rapid freezing method of vitrification avoids damaging ice crystal formation in the high water content egg. Consequently, pregnancy rates through vitrification have significantly improved and egg freezing/thawing success is approaching the outcome in fresh cycles. Though considered experimental by the American Society for Reproductive Medicine, over 50% of IVF centers in the U.S. offer this technology.

CURRENT TOPICS

Florida Center for Cellular Therapy Receives FACT Accreditation

Orlando Physician Assistant Invents Portable Pelvic Device For Exam Rooms Lacking Proper Equipment

After years on the job witnessing the lack of available equipment to perform proper pelvic exams, local Orlando Physician Assistant, Pamela Gilley, files for Patent for her portable device, called Porta-GYN™, creating a new solution for exam rooms.

Oftentimes, gynecological examinations must be performed when a proper gynecological exam table is not available. Porta-GYN™ is a new and useful portable pelvic exam device, which is lightweight, easily transportable and can be used on existing hospital beds or tables to support an OB/GYN patient safely in the correct position for examination or procedure. Gilley describes, “Even as a student PA, I often wondered at the lack of available equipment to perform thorough pelvic exams in family practice offices, walk in clinics, hospital rooms, and emergency rooms. While working in the emergency room setting where time is of the essence, this became even more obvious.”

Porta-GYN is designed for hospitals and clinics, where OB/GYN examinations are performed where there are few or no full-size, dedicated pelvic exam tables available, or in environments where budget or space restrictions require a more frugal or temporary option. Although wheeled mobile pelvic exam carts exist, they are still very large, heavy, approximately one-half the size of a medical bed, and expensive. Mobile pelvic exam carts resemble small beds, and are wheeled from room to room. They are reportedly uncomfortable for the patient and practitioner to use. Also, because they are expensive, it makes it unlikely that a medical center or hospital to have more than one.

Gilley explains, “Rapid examinations are often a vital necessity. Making do with a big bulky pelvic cart, or dedicated OB/GYN bed in which there is often only 1 for the entire ER, causes delays in care, often forcing clinicians to use overturned bedpans in place of a true pelvic exam table in order to expedite care and treatment for women.” Realizing a true need for a portable alternative, Gilley worked at home in the middle of the living room floor, using boxes, wood, and pillows to work on a viable alternative to create the Porta-GYN. After developing a functional design and refining it with her patent attorney, Gilley filed for Patent in early 2012 and is now considering investment funding to pursue prototype development. Her Patent designs and a 3-D animation can be seen at Porta-GYN.com.

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Orlando Health Unveils New In-Patient Care System

Changes bring more physician face-time, better patient outcomes

Orlando Health is introducing a new in-patient care system at Orlando Regional Medical Center beginning May 1, 2012. The new model will increase the amount of time hospital-based doctors -- known in the medical profession as ‘hospitalists’ -- spend with patients inside the hospital and their families. The new approach is aimed at improving patient care by enhancing the communication and collaboration between hospitalists and patients’ primary care physicians and specialists.

“Doing what is best for our patients is at the heart of the change to our hospitalist program,” said Sherrie Sitarik, president and CEO, Orlando Health. “This new delivery model promotes optimal patient care, and it is an essential element in our mission to transform our systems, operations and programs so that everything we do revolves around patients’ needs.”

The program is part of Orlando Health’s patient focused strategy introduced by Mrs. Sitarik in January, 2010. The strategy is a multi-year undertaking aimed at transforming the model of care across the organization. The goal is better integration of clinical care for patients and increased collaboration between medical staff and physicians so that patient care is seamless, more effective and efficient. Orlando Health expects the new approach will improve patient outcomes and satisfaction.

With the new model, hospitalists will be responsible for fewer patients. There will be a comprehensive hand off between care providers, including patients transferring from one level of care to another, such as from the intensive care unit to the step-down unit. Hospitalists will be continually on site 24 hours a day, seven days a week allowing patients and families the benefit of improved access and availability as well as enhanced communication and continuity of care. Hospitalists will also be actively involved in quality care processes. A pilot of the new in-patient model launched at Orlando Health’s Dr. P. Phillips Hospital in December, 2010. The program was implemented last fall at South Seminole Hospital. Both programs have received very positive reviews from local physicians who interact with the new hospitalists teams at Orlando Health facilities.

“One of the challenges facing physicians and patients alike in recent years has been the fragmentation and loss of continuity of care between the doctor’s office and hospital settings. The new hospitalist program at South Seminole Hospital has significantly improved consistency of care and flow of information for our patients,” said Martin Derrow, MD, Chief of Internal Medicine for Physician Associates.

The exclusive arrangement features hospitalists who are all employed by Orlando Health, which has tremendous benefits to patients. As employed physicians, they receive the support and resources that a large organization can provide, thereby freeing them from administrative and operational pressures. This allows physicians to more closely concentrate on patient care.

“This new approach continues to honor the relationship patients have with their primary care physicians and specialists,” said Wayne Jenkins, MD, president Orlando Health Physician Partners and senior vice president, Orlando Health. “Primary care physicians may
still personally admit and manage the care of their private patients at Orlando Health hospitals, if they so choose. Orlando Health’s hospitalist program is just another option for primary care physicians that has been shown to be effective in many other markets across the nation.”

Exclusive practice agreements for hospital-based physicians are standard in the healthcare industry. Experience has shown that exclusive hospital-based providers - ranging from anesthesiologists to emergency medicine practices to pathologists – create stronger alignments and better continuity of care within a hospital setting. Orlando Health’s new hospitalist model builds on that experience and goes one step further by ensuring physicians are provided with resources and support to help them deliver exceptional care to patients.

New Fat Graft Procedure Promises Long-term Results in Breast Reconstruction

A team of researchers has discovered a way to boost the survival time of fat grafts in breast reconstruction, overcoming a major problem in a minimally invasive procedure that in many ways seems an ideal alternative to painful reconstructive surgery.

“Consequently, this will lead to improved long-term cosmetic results for these patients,” said Dr. Pietro Gentile, a reconstructive surgeon at the University of Tor Vergata in Rome and lead author of the study, which is published in the April issue of STEM CELLS Translational Medicine.

Last year more than 96,000 women in the United States underwent breast reconstruction, according to the American Society of Plastic Surgeons. But breast surgery can be painful and does not always lead to good results. So a procedure involving minimally invasive autologous fat grafting could be an ideal alternative, many agree.

In autologous fat grafting, stem cells are separated from the patient’s own fat tissue and then mixed back with the graft to help enhance its healing ability. Since the cells are taken directly from the patient there is no chance of rejection, and the technique is done through injections so produces few complications.

“The immediate gratification and the absence of breast implants have become powerful motivators which have enticed patients to request this regenerative surgery,” noted Dr. Pietro Gentile. “But that does not mean that fat grafts are trouble-free.” One of the current problems with fat grafts involves their longevity. Over time, the fat can form hard lumps, known as fat necrosis, and turn into scar tissue.

“Another problem is that the body can absorb a portion of the fat and eventually cause the treated breast to lose some of the volume and natural contour realized from the grafting procedure,” Dr. Gentile added. However, if scientists could discover a way to improve the grafts’ survival time these problems could be overcome, too.

So Dr. Gentile and his colleague Dr. Augusto Orlandi, also of the University of Tor Vergata, led a team in testing whether treating fat grafts with either enhanced stromal vascular fraction (SVF) or platelet rich plasma (PRP) would improve the results. SVF cells are a mixed population of cells found in fat tissue consisting of adult stem cells, endothelial progenitor cells, leukocytes, endothelial cells and vascular smooth muscle cells. PRP is blood plasma enriched with platelets containing several different growth factors and special proteins that stimulate healing.

The test group comprised 23 patients, aged 19 to 60 years, suffering from a soft tissue defect in the breast. In the procedure, fat cells were harvested from the patient’s abdomen by liposuction and then the cells were processed in the lab and enhanced with either SVF or PRP. The cells were then injected into the patient’s breast, with the specific graft area determined by where the breast needed correction.

“The results were impressive,” said Dr. Valerio Cervelli, a reconstructive surgeon and member of the study team. “Patients whose breasts were reconstructed using the SVF-enhanced fat grafts maintained 63 percent of the restored contour and volume a year after surgery, while those who were treated with fat grafting and PRP experienced a 69 percent maintenance rate.”

Dr. Gentile added, “This compares to the control group of patients, who were treated with unenhanced fat graft, where a year later the restored contour and volume maintenance rate was only 39 percent. Along with these statistics that support the improved maintenance results, nearly all the patients reported that they were satisfied with their cosmetic appearance, too.”

“These techniques look promising for addressing some of the current challenges with fat grafting,” said Dr. Anthony Atala, Editor of STEM CELLS Translational Medicine and director of the Wake Forest Institute for Regenerative Medicine. “This research has the potential to provide an alternative to traditional reconstructive methods.”
The Orlando Philharmonic begins its 2012-13 season with a celebration of music for your summer entertainment. *The Sounds of Summer Series*, a five-concert chamber music series, is presented at the Margeson Theater, in the Lowndes Shakespeare Center, located at 812 E. Rollins Street, in Orlando’s Loch Haven Park. The series runs from June through August. All concerts are presented on Mondays at 7:00 p.m.

On June 11, the first concert in the series, *Take Me Out to the Brass Games*, brings back audience favorites, the Sovereign Brass. You’ll enjoy some musical tailgating with the amusing antics of these very talented musicians: Mike Avila and Tom Macklin, trumpets; Kathy Thomas, French horn; Jeffrey Thomas, trombone; Robert Carpenter, tuba; and Mark Goldberg, percussion.

With light hearts and skilled hands, the Sovereign Brass breathes fresh life into the otherwise serious world of brass and chamber music. These six virtuoso performers have established a reputation for leaving their audiences both charmed and amazed. Created in 1994, Sovereign Brass is an ensemble of six of the finest freelance musicians in the Central Florida area. The goal of the Sovereign Brass is to bring the highest quality music to the widest possible audience and to present this music in a way that is both entertaining and fun. With a repertoire of more than 300 titles spanning over 400 years of music, the Sovereign Brass has an appeal that bridges generations and cultures. Instrumentation of five brass and one percussionist makes Sovereign Brass one of the most versatile ensembles available today.

**Other concerts in the Sounds of Summer Series include:**

**June 25, 7:00 pm**

*Summer Serenades* — Classic serenades and masterworks featuring the Dvorak Serenade for Winds in D minor, Op. 44 and Mozart’s Serenade No. 10 in B-flat major, K. 361.

**July 9, 7:00 pm**

*Tanglisimo* — Classical Argentinean tangos from the golden age of 1920s, 30s, 40s and other assorted European tangos, including Piazzolla’s Tango Nuevo.

**July 23, 7:00 pm**

*A Musical Offering* — Including Bach’s incomparable Musical Offering and Shostakovich’s towering String Quartet No. 8.

**August 6, 7:00 pm**

*Orlando Philharmonic Jazz Orchestra* — Musicians of the Orlando Philharmonic are joined by Central Florida’s leading jazz musicians, including the music of Count Basie, Duke Ellington and charts by contemporary big band arrangers.

Get your tickets today for this summer series, a popular tradition with Central Florida music lovers. A 5-concert subscription is priced from $70 - $160. You may order the series online at www.OrlandoPhil.org or by calling the box office at (407) 770-0071. Single tickets for the series go on sale May 14 and are priced at three levels: $14, $26 and $37. Information on the entire 2012-13 season is also available online.
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