Innovations in Surgery

Surgeons Play Key Role in Managing Thyroid Cancer

Of all major cancers in the U.S., thyroid cancer has the fastest rising rate of occurrence, having increased 350 percent since 1950. But the news isn’t all bad. Along with this dramatic increase, come relatively flat and low mortality rates – less than one per 100,000 patients since 2003.

In a Surgical Grand Rounds presentation on May 7, 2010, Carmen C. Solorzano, M.D., presented new findings on the changing role that surgeons play in the management of thyroid cancer. Solorzano, director of the Vanderbilt Endocrine Surgery Center and associate professor of Surgery, discussed risk factors, trends in diagnosing and surgery, and post-operative treatments.

Thyroid cancer tends to strike women between the ages of 30 and 50, with a recurrence rate of up to 30 percent.

The primary known risk factors are environmental-based, and include exposure to radiation, such as medical radiation and energy radiation. Sadly, rates of thyroid cancer

McKenna Awarded McCleery Master Teacher Award

The Department of Surgery on June 18, 2010, awarded Samuel J. McKenna, D.D.S., M.D., the prestigious Robert S. McCleery Master Teacher Award, which recognizes outstanding full-time teachers of surgical residents at Vanderbilt University Medical Center.

In introducing this year’s award recipient, Oral and Maxillofacial Surgery Resident Adam Pitts, D.D.S., M.D., noted that while a preponderance of hyperbole exists in today’s culture when defining excellence, the use of the term “master” is not overused in McKenna’s case.

“Dr. McKenna has dedicated his entire life to providing a balance between ethics and critical thinking when teaching the basic foundations of medical care,” he said. “He specifically tailors his lessons to each individual and is available to the residents every day of the year. Outside of the classroom, he serves as a stellar example of how to interact with patients, treating each as a member of the family,” Pitts said.

McKenna completed his doctor of dental surgery degree from the University of California School of Dentistry-Los Angeles in 1980 and his medical degree from Vanderbilt in 1983. He stayed on at Vanderbilt to complete his residency, later serving as a member of the faculty as well as former director of the Oral and Maxillofacial Surgery Residency. In 2008, he was named to his current position as chairman of the department of Oral and Maxillofacial Surgery.
Managing Thyroid Cancer...

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spiked in geographic areas near the nuclear accident at Chernobyl.

However, improved diagnostic and surgical therapies may positively impact recurrence and survival rates. One such technique involves the use of ultrasound to more accurately diagnose and monitor cancerous cells in both the thyroid and lymph nodes. Studies have shown that ultrasound has detected lymph node or soft tissue metastases in up to 30 to 50 percent of patients who were originally thought to be negative based on initial physical exams.

“Although we are seeing a dramatic increase in the incidence of thyroid cancer, much of this increase can be attributable to more widespread use of diagnostic tests such as ultrasounds and CT scans when surveying other illnesses. The good news is that thyroid cancer is a very treatable and curable disease,” said Solorzano.

With these improved diagnoses, surgeons are able to more accurately assess the need for and scope of surgery, resulting in fewer unnecessary procedures. Though removal of the entire thyroid is commonly performed and increases survival among high-risk cancer patients, prophylactic dissection of the neighboring lymph nodes still remains controversial because of increased morbidity associated with the more difficult surgery. Improved diagnoses, however, can take away some of the mystery when determining treatment options for patently gross lymph node disease.

Once surgical treatments have been provided, post-operative therapies can assist in monitoring and minimizing the risk of recurrence and spread of the disease. Two such adjuvant therapies include the use of radioactive Iodine (RAI) and thyroid stimulating hormone (TSH). Although recent studies show that the use of RAI and TSH can reduce recurrence, more study is needed to determine impact to long-term survival rates, especially in low-risk patients.

“Our goal as surgeons is to accurately diagnose the disease, remove it with minimal morbidity, and minimize the likelihood of it coming back or spreading,” said Solorzano. “By taking this comprehensive approach, we are truly improving the lives of our patients,” she said.

Solorzano joined Vanderbilt University Medical Center in February after serving as chief of Endocrine Surgery at the University of Miami. Her clinical interests focus on the diagnosis and surgical management of endocrine diseases of the thyroid, parathyroid and pancreas. Her research interests have included studies on the use of ultrasound to diagnose thyroid cancer; intraoperative PTH monitoring during parathyroidectomy; the role of estrogens in thyroid cancer; the function of sonic hedgehog signaling pathway in thyroid cancer, and angiogenesis in pancreatic cancer.

McCleery Teacher Award...

(Continued from Page 1)

“Dr. McKenna is a consummate surgical educator, mentor and role model who is beloved by his residents. I can think of no one more deserving of this award,” said R. Daniel Beauchamp, M.D., the Foshee Distinguished Professor of Surgery and chairman of the Section of Surgical Sciences.

McKenna expressed his sincere appreciation for the recognition. “I can hardly declare how much this means to me,” said McKenna. “I’m flattered that I would be considered for this award when in the company of so many brilliant teachers,” he said.

Presented at the Third Annual Robert S. McCleery Master Teacher Award and Lectureship for Surgical Resident Education, the McCleery Award was endowed in 2008 by the late Eastace H. Winn, Jr., M.D., Vanderbilt benefactor and surgical resident who trained under the late Robert S. McCleery, M.D.

McCleery was a 1938 graduate of the Ohio State University College of Medicine and surgical resident at Jackson Memorial Hospital, now the University of Miami, and the University of Minnesota Medical School. Then chairman of the Vanderbilt Department of Surgery Dr. Barney Brooks recruited McCleery to serve as surgeon-in-chief at the Thayer Army Hospital in Nashville. The hospital was built during World War II and designated as one of the Veterans Hospitals, to be staffed by the Vanderbilt University School of Medicine.

The award is bestowed each year through a nomination process by surgical residents. Clinical Professor of Neurosurgery Alan Fruin, M.D., was the first recipient of the Mc Cleery Teacher Award, followed by Professor of Surgery and Program Director of Surgery Education John L. Tarpley, M.D.

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Trauma Chief Sees Rise in Injuries Among Active Senior Citizens

Every day, adventure-loving enthusiasts take to their bikes, their ATVs, even their cars, and end up in the ER with traumatic injuries. So while it’s not surprising that trauma is the number one killer of those under the age of 44 in the United States, the second fastest growing segment of trauma patients may surprise you. They’re senior citizens.

Sid Sutton, a former Navy Seal, had been defying age for years. On a beautiful spring day, he, his son and grandson took to the hills of San Diego on their motocross bikes. Just another action-packed day for the 67-year-old. But after jumping a mogul, Sid’s life forever.

At 64, Bob crashed his bike on Memorial Day weekend, after riding 100 miles the day before. Once paramedics arrived, Bob was already experiencing the signs of traumatic brain injury and, possibly, spinal cord injury. MRIs revealed severe frontal lobe injury. After an incredible, up-hill climb, Bob Ostrowe has recovered, and is even cycling again, though, admittedly, at a slower pace.

A significant part of Bob’s recovery included months of physical therapy, but, sadly, this process is often neglected by patients and families who, understandably, just want to get back to their lives as it was.

“No one can prepare you for the day your loved one is wheeled into a trauma unit,” said Morris. “Everything you know stops, and a new, frightening real-
Every day, Vanderbilt doctors learn something new about disease, directly from their patients. Just as researchers work to develop cures and new treatments. But what if the two could work together?

That’s the concept behind Vanderbilt’s newly developed doctoral program in Epidemiology. As a database analyst in the department of Thoracic Surgery, Stephen Deppen is one of only five students from around the world accepted into the program. Using his passion for biostatistics, Deppen will work directly with Vanderbilt researchers using real world patient data to uncover risk factors associated with certain lung cancers.

“With these new skills, Deppen, as an epidemiologist, will help us solve the mysteries of what causes some lung cancers,” said Bill Putnam, Jr., M.D., F.A.C.S. “We’re very excited about how this relationship between research and medicine will benefit our patients,” said the chairman of the department of Thoracic Surgery and Ingram Professor of Cancer Research with the Vanderbilt-Ingram Cancer Center.

Putnam first developed an internal database which began to track thoracic surgery procedures in 2005 and looks to integrate Vanderbilt’s operative information into the Society of Thoracic Surgeons’ National General Thoracic Surgery Database. Thoracic surgeons diagnose, manage and treat patients with lung and other chest cancers.

“We have volumes of valuable information at our fingertips,” said Putnam. “Now through this program, we can take research out of the theoretical and study real life scenarios that can help explain why cancers affect some patients and families, and not others,” he said.

Analysis of this data may enable surgeons to more accurately predict patients who are at risk of developing cancer, thereby reducing unnecessary surgery. It may also lead to promising evidence-based and cost-effective treatment models that incorporate newly developed genetic and proteomic tests into daily patient care.

The Vanderbilt Institute for Medicine and Public Health started the Ph.D. program in Epidemiology in 2009 to extend the focus of disease research beyond individual departments and into the broader research enterprise, further positioning Vanderbilt as a leader in collaborative research. Students in the program work directly with Vanderbilt research teams 15 to 20 hours per week during the academic year and full-time in the summer, effectively functioning as co-investigators in clinical research studies.

“We developed this program to create a collaborative environment where advances in research and methodology can be applied directly to advances in healthcare and prevention,” said Katherine Hartmann, M.D., Ph.D., director of graduate studies in the Vanderbilt Ph.D. Program in Epidemiology. “The breadth of our research at Vanderbilt uniquely enables us to match students to highly specialized areas of study. The discoveries they make with their teams will lead to a better understanding of the causes and mediators of both disease and health,” she said.

Deppen is being mentored by Eric L. Grogan, M.D., assistant professor in the department of Thoracic Surgery, who is developing novel methods of diagnosing and treating early stage lung cancer. His work is supported by the VPSD program and a LUNG-SPORE grant.

All areas of epidemiology are available to students, including breast cancer; colorectal polyps; nutrition and lifestyle risk factors; endometrial cancer; lung cancer; child, women’s and men’s health; global health; orthopedics and rehabilitation; infectious disease, and reproductive epidemiology.

Students admitted into the program must have a masters degree at enrollment and are required to complete a total of 72 credit hours, including research and course work, which is shared with the Biostatistics graduate programs.

Innovations in Surgery is produced quarterly by the Section of Surgical Sciences.

R. Daniel Beauchamp, MD, Chairman and the Foshee Distinguished Professor of Surgery

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McGirt Named Director of Clinical Spine Research for Neurological Surgery

Although Matthew J. McGirt, M.D., didn’t officially start in his new role as director of Clinical Spine Research for the department of Neurological Surgery until July 15, his drive and enthusiasm were evident long before he ever walked through the door.

McGirt is on a mission to create at Vanderbilt a center that conducts ground-breaking spinal research to determine which surgeries and treatments have the best outcomes for each patient. The Spinal Column Surgical Quality and Outcomes Research Laboratory, led by McGirt, will include at its helm co-principal investigators Joseph Cheng, M.D., Clint Devin, M.D., and Oran Aaronson, M.D., as well as residents, post-doctoral fellows, medical students and research nurses.

The lab will work in conjunction with the Vanderbilt Institute of Medicine and Public Health to compare and determine the overall effectiveness of both existing and future spinal surgeries and procedures. Their findings will be published in the national orthopedic and neurosurgery spine literature. Utilizing a prospective, web-based registry, the laboratory will record in-hospital safety and surgical quality data, medical resource consumption and costs, and long-term outcomes data.

“By critically evaluating the effect various treatment paradigms and surgical procedures have on patient reported outcomes, we hope to improve patients’ quality of life in a cost-effective way,” said McGirt.

Comparative effectiveness research, as it is called, is at the very forefront of the national healthcare dialogue. Vanderbilt’s successes in this area will play a pivotal role in developing national healthcare policy changes that reduce costs while improving patient care.

McGirt also brings to Vanderbilt singular expertise in large spinal reconstruction in the treatment of spinal deformities, degenerative diseases and cancer of the spine. This proficiency will position Vanderbilt as a regional leader in large-scale spinal surgery, including minimally-invasive procedures for large tumors.

“We are very fortunate to have recruited Dr. McGirt to the Vanderbilt department of Neurological Surgery. He is unquestionably a national leader in neurosurgical outcomes research. His work will focus on the value of surgical interventions for spinal disorders – a very timely and important area of public health research,” said Reid C. Thompson, M.D., chairman of the department of Neurological Surgery. “Look for Dr. McGirt to place Vanderbilt at the forefront of this research. In addition to his incredible research, his surgical expertise and training are superb. We are delighted that he is here!”

McGirt comes to Vanderbilt from The Johns Hopkins Hospital where he directed the Spinal Column Biomechanics and Surgical Outcomes Laboratory and the NeuroOncology Surgical Outcomes Research Laboratory. He has published more than 150 peer-reviewed manuscripts, holds numerous research grants and has given more than 100 lectures focusing on maximizing patient quality of life after spine surgery. He received his undergraduate and medical degrees from Duke University School of Medicine. He completed his internship, residency and AO Spine Fellowship at Johns Hopkins.
The Department of Surgery on June 18, 2010, bid fond farewell to the departing chief residents in a banquet filled with stirring and often hilarious reminiscings.

Jeffery Dattilo, M.D., assistant professor of Vascular Surgery, was also honored for the second time with the John L. Sawyers Award for outstanding contributions to surgical education.

Congratulations and best wishes to the chief residents on their new journey:

Surgical Resident Honored with Young Investigator Award

Surgical resident J. Joshua Smith, M.D., Ph.D., recently brought back top honors from the poster competition at the annual joint meeting of the American Society of Clinical Investigation/Association of American Physicians (ASCI/AAP), held in Chicago, Illinois.

The AAP awarded Smith the Stanley J. Korsmeyer Young Investigator Award for his presentation on “Smad4 suppresses Wnt signaling through down-regulation of beta-catenin.” The joint meeting encourages the participation of junior scientists and trainees, and fosters close interaction with established senior scientists.

Smith’s presentation described the latest findings from his research on mechanistic insights into colorectal cancer signaling pathways and translation of these basic findings to the patient. Smad4, a tumor-suppressor gene that is mutated in colorectal cancer, was found to repress beta-catenin transcription and inhibit Wnt signaling activity. The Wnt signaling pathway, as mediated by beta-catenin, is abnormally activated in more than 90 percent of colorectal cancer cases.

The study’s findings offer promising, personalized approaches to treatment of colon cancer by enabling physicians to predict which colon cancer patients will have better outcomes based on their tumor’s Smad4 status, and then provide customized molecular therapies to these patients.

Led by R. Daniel Beauchamp, M.D., chair of the Section of Surgical Sciences, these findings, which uncovered a previously unknown function of Smad4, have been submitted for publication and were completed in concert with another Vanderbilt study which appeared in Gastroenterology earlier this year. Both studies hope to be used to identify high-risk patients with colorectal cancer.

Smith received his Ph.D. in Cell & Developmental Biology from Vanderbilt University in May, and is in the third year of Vanderbilt’s five-year Surgical Residency Program.

“Our research is both fun and rewarding because what we learn in the lab can have a direct impact on how we treat our patients,” said Smith.

Urologic Surgery Provides Critically Needed Training in Congo

Though the wars in eastern Congo formerly ended in 2003, the ongoing violence has killed and further displaced millions, who continue to endure horrific attacks each day. The severity of the attacks, particularly against women, has led to a critical need for urologic equipment as well as training to treat and repair the damage done by sexual violence.

To address this need, the Harvard Humanitarian Initiative in 2009 asked Vanderbilt Urologic Surgery Chair Joseph A. Smith, Jr., M.D., to travel to the Democratic Republic of Congo to train doctors at Panzi Hospital. The need for this training is compounded by the fact that the region does not have a single urologist.

“These women have suffered all manner of atrocities, so anything we can do to help them get the treatment they need is why we’re there in the first place,” said Smith. “We continue to go back because humanitarian outreach is so essential in this area,” he said.

Smith recently returned from his third trip to the region, this time taking Urologic Surgery residents Greg Broughton, M.D., and Ian Thompson, III, M.D. In five days, the trio treated 30 patients in the outpatient clinic and performed complex reconstructive surgeries on another 25. Smith is returning to the Congo in August.

“It’s incredibly rewarding to help these wonderfully patient women who, for fear of being ostracized back home due to urologic complications from rape or child birth, literally live on hospital grounds waiting their turn to be treated,” said Thompson.

Through vendor contributions and Smith’s own philanthropic efforts, approximately $35,000 in medical devices

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**Section Spotlight:** Stephanie Rowe, Coordinator, Surgical Residency

*by Linda Norfleet*

July traditionally marks the annual beginning for another class of future surgeons in Vanderbilt’s Surgical Residency Program. As the year’s new crop of interns and residents begins training this month, Education Coordinator Stephanie Rowe has already made her list AND checked it twice!

It doesn’t end there. With invaluable support from Education Assistant Alli Watts, Stephanie will continue reviewing that very list throughout the coming year while compiling yet another inventory for a new class to begin next summer.

Hers is year-round, non-stop--times two--activity: posting notices and deadlines, accepting applications for review, scheduling prospective surgical resident interviews, reviewing GME contracts, implementing accreditation program changes, coordinating dates with grand rounds programs, resident teaching conferences and speakers, preparing the chief residents for teaching conferences and speaking with grand rounds programs, resident program changes, coordinating dates and times, accepting applications for resident interviews, reviewing GME deadlines, accepting applications for summer. Stephanie Rowe, Coordinator, Surgical Residency

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As a college student, she continued to develop her vocal musical ability and joined the University of Mississippi Concert Singers. During this time in her life she traveled to Europe, by invitation, on four different occasions. There was work to be done on these global jaunts, however, and she competed internationally with her choral group in the “Super Bowl of Choirs” against other schools and professional choirs, winning top honors on three of the four college trips abroad.

After college, from 1996 to 2005, Stephanie served as the music minister to her church at Bruce United Methodist Church in Bruce, Mississippi. “Who sings well prays twice” is an old adage that, doubtless, has permanent residence in Stephanie’s playbook for life, as well as her work with the residents.

With rankings in the top 50 medical schools in the United States, 48th in primary care and 15th in research (U.S. News & World Report, April 15, 2010), Stephanie’s function in the section’s education office is critical to the obvious success of the program. Since her start that not-so-long-ago day in 2005, she has matched and graduated five residents’ classes, or some 165 young surgeons, sending them on their way to complete the realization of their goals and become “good surgeons.”

After all of the shared trials, victories, and closeness over the years, her finished work presents a bittersweet conclusion to her labor. In spite of it all--according to Miss Stephanie--saying “farewell” to each year’s group of departing Vanderbilt-trained doctors, knowing they are on their way having fine-tuned their professional and personal abilities with the best training possible, is the most fulfilling aspect of the work that she does in Vanderbilt’s Surgical Residency Program.
were donated that will assist doctors in diagnosing and evaluating which surgery is needed for each patient.

One such device is a cystoscope, which includes lenses, enabling doctors to see inside the bladder and urethra, and guide them in surgical procedures to repair the area.

Without this, doctors in the Congo must perform much more extensive surgery, opening the abdomen and bladder, which can result in post-operative complications.

But medical devices aren’t the only items needed. Incredibly enough, proper lighting to perform surgeries is often deficient. Electricity frequently goes out for minutes at a time throughout the day, leaving surgeons to rely on ambient light from windows, although surgeries are often performed well after dark.

To address this need, Smith and his team brought two portable surgical headlights, prototypes that were developed by former medical student Ryan Hutchinson just as he was completing his fourth year at the Vanderbilt University School of Medicine. The lamps were given to the doctors at Panzi Hospital, and Hutchinson is in the process of sending newly modified rechargeable battery packs.

“The whole experience made me appreciate what we have back home,” said Broughton. “The Congoese physicians have dedicated their entire lives to taking care of people with limited resources and without a second thought,” he said.

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**Section Events Calendar**

**September 2010**

10  
*Multi-Disciplinary Perioperative Morbidity & Mortality Improvement Conference*  
6:30 a.m., Langford Auditorium, Vanderbilt University Medical Center (VUMC)

15-18  
*Halsted Society*  
Thursday, Sept. 16 Scientific Session, 8:30 to 10:25 a.m. Langford Auditorium, 10:25 to 11:55 a.m. 208 Light Hall, VUMC  
Friday, Sept. 17 Scientific Session, Lowe’s Vanderbilt Hotel, Nashville, TN

**October 2010**

21-22  
*39th Annual Vanderbilt Urology Society Visiting Professorship and Rhamy-Shelley Lecture*  
Lowe’s Vanderbilt Hotel, Nashville, TN

22  
*L. W. Edwards Lecture -- 7 a.m.*, 208 Light Hall, VUMC  
“Toward Better Strategies for Improving Surgical Quality”  
John Birkmeyer, M.D., chair, Department of Surgery, University of Michigan
Eric Grogan, M.D., M.P.H., Pierre Massion, M.D., and colleagues evaluated the accuracy of a blood protein signature – which they previously found to be associated with lung cancer – in distinguishing benign from malignant lung nodules in 58 patients. They found that the blood test was highly specific and had a high positive predictive value: 92 percent of patients with a positive test had confirmed malignant lung nodules. However, a negative test result did not provide additional value to clinicians.

The results, reported in the June Annals of Thoracic Surgery, suggest that while the current blood test would not eliminate all unnecessary surgeries, a positive test result may help reduce the need for surgical biopsies in patients who are not good candidates for surgery – and may help initiate non-surgical treatments sooner for those patients.

- Melissa Marino