

SWEDISH MEDICAL CENTER PLATE

Seattle, Washington | www.swedish.org

New Center Offers Sophisticated Endoscopic Testing and Treatments

In the fall of 2011 Swedish opened a new Endoscopy Center at Swedish/ First Hill. This high-tech center expands and enhances endoscopic diagnostic and treatment capabilities at Swedish.

"From screening and surveillance to the most advanced tertiary and quaternary minimally invasive, non-operative and interventional services, the center is a resource for multiple specialties," says **Jack Brandabur, M.D.**, medical director, Swedish Endoscopy.

In this efficient, safe and comfortable environment, highly trained specialists have access to state-of-the art technology, including endoscopic ultrasound (EUS), three-dimensional imaging and high-resolution endoscopy, as well as capsule endoscopy, deep enteroscopy and the SpyGlass® Direct Visualization System for endoscopic retrograde cholangiopancreatography (ERCP).

The center has six standard endoscopy rooms, including two state-ofthe-art interventional units that offer both EUS and the newest generation of 3-D fluoroscopy – a first for an endoscopy unit on the West Coast. This commitment to providing the most advanced imaging technology means that this high-tech hybrid unit can meet the needs of gastroenterologists, surgeons (continued on A2)



The Endoscopy Center's team of experts includes both physicians and specially trained nurses. Left to right: Drew Schembre, M.D., Medical Director, Swedish Gastroenterology; Laci Hickman, R.N.; Angie Budinich, R.N.; Donna Madeira, R.N., BSN, CGRN; and Jack Brandabur, M.D., medical director, Swedish Endoscopy.

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Swedish/Ballard Swedish/Cherry Hill Swedish/First Hill Swedish/Issaquah

Endoscopy Testing and Treatment

(continued from A1)

and interventional radiologists.

"The center also features one room specifically designed for GI, esophageal, gastric and anal/rectal motility studies," says **David Patterson, M.D.**, a regional resource for this type of expertise. "In one room, my gastroenterology and surgery colleagues and I have the technology we need to diagnose and treat these conditions, including the ability to offer some unique services, such as gastric pacemakers."

The center's gastroenterologists, as well as Swedish thoracic surgeons, have extensive training and expertise in endoscopic treatments for early cancers and precancerous lesions. This allows nonsurgical treatment of some types of tumors. For example,

endomucosal resection (EMR) or techniques such as radiofrequency ablation and cryotherapy may help prevent esophageal cancer in patients with precancerous Barrett's esophagus, as well as help them avoid major surgery, such as esophagectomy.

"Minimally invasive is the new buzzword in medical procedures, but a state-of-the-art facility must be able to couple technologies for accurate diagnosis and, when possible, treatment of patients in a single setting," says interventional pulmonoligist **Jed Gorden, M.D.** "For example, an abnormal chest CT scan raises the concern for lung cancer. The new center allows us to tailor a diagnostic/treatment plan

For more information, or to refer a patient

Swedish Gastroenterology 206-215-4250

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using the most advanced bronchoscopy tools, including ultrasound and navigational bronchoscopy, to assist in the diagnosis and staging, and when appropriate, the initiation of therapy."

The new Swedish Endoscopy Center offers every diagnostic and therapeutic capability in gastroenterology and GI surgery in one setting &

Case Study: Fusion of advanced technologies

Jack Brandahur, M.D., Medical Director, Swedish Endoscopy, and Drew Schembre, M.D., Medical Director, Swedish Gastroenterology

A 71 y/o male was admitted to a nearby hospital with acute GI bleeding and bile duct and duodenal obstruction. Additional studies demonstrated the cause of the obstruction was a tumor within the duodenum. A CT scan confirmed the tumor originated in the pancreas and had spread to the liver, deeming him surgically unresectable.

The patient was transferred to Swedish for evaluation and treatment. Given the patient's significant co-morbidities and high risk for surgical intervention, we determined it would be best to relieve both obstructions using advanced endoscopic techniques.

With the patient under anesthesia, we dilated the tumor in the duodenum. Using endoscopic and fluoroscopic guidance, we advanced endoscopic equipment through the obstructing neoplasm.

The presence of a large pancreatic tumor and the distortion of the duodenal anatomy prohibited the use of Endoscopic Retrograde Cholangiopancreatography (ERCP), which is the standard endoscopic approach to the bile duct. Instead, we switched to endoscopic ultrasound.

Under ultrasound guidance, we accessed the bile duct by punching through the duodenum wall with a hollow needle, and passing a guide wire antegrade through the bile duct and out into the duodenum. We then grasped the guide wire through an ERCP scope, which allowed conventional access for the necessary instruments (the rendezvous approach).

We placed an expanding metal stent in his bile duct, which decompressed the obstruction caused by the tumor. A second self-expanding metal stent placed in his duodenum relieved the gastric outlet obstruction.

Following the procedure, the patient was hospitalized for over-night observation. That evening he was able to resume oral intake, and his overall medical condition and liver function improved.

His diet was upgraded the next day and he was discharged home with his family for subsequent follow-up care from his personal physician and local oncologist.

The Swedish endoscopy team was able to treat this patient's multiple obstructions non-surgically through the collaborative efforts of anesthesia, radiology and our skilled GI nursing team. Having the ability to move from one advanced modality to another in one state-of-the-art unit allowed for minimally invasive, efficient and seamless care of a complex medical condition.

This case study is presented for educational purposes.



Case Study: Endoscopy unit supports lung cancer staging and treatment preparation

Jed A. Gorden, M.D., Director, Interventional Pulmonology, Swedish Cancer Institute

TM is a 78 y/o male with a long smoking history. While being worked up for a cough, he received a chest X-ray and CT scan of the chest, which showed a 2-cm left lower lobe nodule and small lymph nodes around his central airways. A follow-up PET scan showed increased metabolic activity in the left lower lobe nodule, but no additional increased metabolic activity in any other part of the body.

After discussing the case, the multidisciplinary Chest Tumor Board at Swedish recommended that if this was a cancer and there was no cancer in the lymph nodes in the chest, it would be best to have radiation oncology treat TM using CyberKnife radiosurgery. Placement of fiducial seeds in and around the tumor would assist with tracking and accuracy of radiation delivery.

TM came to the special procedure unit at Swedish's new Endoscopy Center for advanced bronchoscopy using endobronchial ultrasound to see through the airway wall. The plan called for first locating and biopsying the lymph nodes. If no cancer was identified, we then would initiate SuperDimension

electromagnetic navigation bronchoscopy to navigate to the left lower lobe lesion in order to biopsy it. If cancer was confirmed, we would immediately place fiducial seeds to facilitate CyberKnife radiosurgery.

TM was sedated with the assistance of the center's anesthesia team. We advanced the ultrasound bronchoscope into the airway. We identified and biopsied three lymph nodes. Slides were prepared in the procedure room, and an on-site pathologist reviewed them and determined there was no cancer in any of the sampled lymph nodes.

With staging complete and no cancer found in the lymph nodes, we initiated Super-Dimension electromagnetic bronchoscopy. Using electromagnetic guidance and a steerable probe, we threaded a catheter through the branching airways into the left lower lobe mass. We secured the extended working channel and removed the steerable guide. Through the channel, we advanced a thin radial ultrasound probe to confirm successful navigation to the lesion. After confirming our location, we took biopsies of the mass. Slides where made and the pathologist confirmed

the diagnosis of adenocarcinoma. Additional biopsies where taken for laboratory testing for mutational analysis of the tumor. With tissue sampling complete and cancer confirmed, we proceeded to navigate to four distinct, predetermined sites to place four gold fiducial seeds and confirmed seed deployment using real-time fluoroscopy.

The entire procedure (lymph node staging, tumor biopsy and fiducial seed placement) took approximately two hours. TM was discharged home the same day after recovering from anesthesia with no restrictions to his activity or diet. We directed him to follow up with radiation oncology for CyberKnife radiation therapy.

Within a single treatment setting, we were able to diagnose, stage and set in motion a multidisciplinary treatment plan. The ability to combine advanced technology and expertise in a single procedure gives us the ability to provide the greatest breadth of service for each minimally invasive procedure.

This case study is presented for educational purposes.

Swedish/First Hill among Nation's Top Hospitals

For the second year The Leapfrog Group has included Swedish Medical Center/First Hill on its 'Top Hospitals' list – a list that includes just 65 hospitals from a field of nearly 1,200.

The Leapfrog Group is a coalition of public and private purchasers of employee health coverage that was founded a decade ago to work for improvements in health-care safety, quality and affordability. The 'Top Hospital' designation recognizes hospitals that deliver the highest quality care by preventing medical errors, reducing mortality for high-risk procedures like heart-bypass surgery, and reducing hospital readmissions.

The Leapfrog Hospital Survey is the only voluntary effort of its kind.

It focuses on four critical areas of patient safety:

- The use of computer physician order entry (CPOE) to prevent medication errors
- Standards for high-risk procedures such as heart surgery
- Protocols and policies to reduce medical errors and other safe practices recommended by the National Quality Forum
- Adequate nurse and physician staffing

Hospitals also are measured on such things as their progress in preventing infections and other hospital-acquired conditions, and adopting policies on the handling of serious medical errors. "Of all the awards Swedish has won over the years, the most meaningful is Leapfrog's



The survey results are available online at www.leapfroggroup.org.



CyberKnife® Shows Great Promise as Delivery Platform for Accelerated Partial Breast Irradiation

Radiation oncologists and physicists at the Swedish Radio-surgery Center evaluated the side effects and cosmetic outcomes following the use of CyberKnife stereotactic radiosurgery to treat breast cancer. The results of this retrospective study conducted from June 2009 through May 2011 showed excellent cosmetic outcomes and minimal observable side effects.

Swedish is one of only a few medical centers in the Northwest that has a full armament of radiation therapy options for treating breast cancer - especially cancer that has been diagnosed early and has not spread beyond the breast. Because 90 percent of all local recurrences in women with Stage 0, 1 or II breast cancer occur within 10 millimeters of the site of the lumpectomy, accelerated partial breast irradiation (APBI) has become the treatment of choice for many women. APBI gives a higher dose of radiation over a one- to two-week period of time compared with the six-and-a-half-week conventional radiation course. Mini-catheter and balloon-catheter brachytherapy are two forms of APBI performed at Swedish in which radiation is inserted through a catheter into the patient's breast at the site of the tumor. While these two therapies can effectively target the tumor, they are invasive procedures that

come with a risk of infection.

Intensity-modulated radiotherapy (IMRT) and 3D-conformal radiotherapy (3D-CRT) are newer, non-invasive APBI procedures that are also available at Swedish. Although there is no risk of infection with these two procedures, there are other side effects because a broader area is treated to ensure coverage and, therefore, more normal tissue is exposed to the radiation. Side effects with any form of radiation may include skin irritation or burning, fatigue, rib injury, lung damage, and fluid retention in the breast and adjacent arm. Some breast-cancer patients indicate that these side effects continue for many months to years, and that their breasts never feel the same following radiation therapy.

"This is why we engaged at looking at this novel technique using the CyberKnife for APBI," says Sandra Vermeulen, M.D., medical director of the Swedish Radiosurgery Center. "We knew from the treatment of other tumors that the CyberKnife would allow us to treat the lumpectomy cavity with greater accuracy than 3D-CRT and IMRT. We postulated that this greater accuracy would spare a greater amount of normal healthy tissue and decrease side effects."

CyberKnife is a non-invasive, external beam radiation delivery

system that uses multiple beams of radiation from various angles to target the tumor. The dose from each beam is not high enough to damage the tissue through which it travels on the way to the target. Where the beams meet, however, the dose of radiation can mimic the high dose delivered via brachytherapy. Because CyberKnife uses image-guidance technology to track tumor movement due to breathing, radiation is more finely focused on the tumor or other points of interest, such as a lumpectomy cavity, which results in less radiation to surrounding healthy tissue compared to IMRT and 3D-CRT.

During the two-year evaluation period, nine patients were treated with CyberKnife APBI. The results of the study, which received no industry, government or private funding, show that CyberKnife can be used for APBI without producing any of the acute side effects that are by-products of other APBI therapies. Since completion of the study, five more patients have been treated without incident.

Not enough time has transpired to fully evaluate the associated clinical outcomes, such as recurrence; however, reducing acute side effects that affect a patient's quality of life and improving cosmetic outcomes are key findings in which women are keenly interested.

Case Study: CyberKnife and whole-breast irradiation

Sandra S. Vermeulen, Medical Director, Swedish Radiosurgery Center

The mammogram obtained by a 55 y/o female at an outside institution in February 2011 showed bilateral breast abnormalities. Powdery calcifications were noted in the upper outer aspect of the right breast measuring 0.5 cm. In addition, there was an asymmetric tissue density in the outer quadrant of the left breast. An ultra-sound-guided biopsy on the left revealed an ER/PR positive, Her2Neu negative 8-mm infiltrating ductal cancer with a Bloom-Richardson score of 3/9. A biopsy on the right showed atypia.

The patient came to Swedish for a second opinion and further care. Bilateral breast wire localizations were later preformed with left-sided sentinel node mapping. The left side showed only a small amount of residual invasive cancer (0.15 cm) with clear margins and a negative sentinel node on H & E staining. Surprisingly, the right breast revealed an 8-mm DCIS, cribiform and solid sub-type, with an intermediate nuclear grade. The inferior margin on the DCIS was close, so a re-excision was planned.

Prior to her surgery, a radiation oncologist discussed adjuvant radiation treatment options with the patient, including whole-breast irradiation and APBI techniques (including delivering APBI with the CyberKnife platform). The patient elected the latter for the treatment for her non-invasive cancer in the right breast.

In preparation for the radiation procedure on the right, gold fiducials were sutured into the lumpectomy cavity wall at the time of her re-excision. Pathology revealed that the re-excision specimen showed no residual DCIS with widely clear margins (greater than 10 mm). Three weeks after surgery, the surgical site showed evidence of good healing without signs of infection. A CT/MRI simulation was performed for APBI treatment planning. Beginning a few days later, the patient received 10 consecutive CyberKnife treatments of 34 Gy to the lumpectomy cavity including a 15-mm margin. Treatments were delivered over less than one hour each. The patient returned to work following each treatment. Other than minimal fatigue, she had no obvious radiation side effects, including no skin erythema.

The patient then began a 6½-week course of whole-breast irradiation on the left. A standard dose of 50.4 Gy was given to the whole breast followed by a 10 Gy boost to the lumpectomy cavity, including margin. The patient was not a candidate for APBI on the left because the lumpectomy cavity was not well delineated on a CT simulation and was absent fiducial markers for CyberKnife. Post radiation therapy she is now taking adjuvant hormonal therapy.

The patient is now seven months out from CyberKnife to her right breast

and five months out from whole-breast irradiation to the left side. Cosmetically, the patient is pleased with her bilateral result. Clinically, however, there is an observed difference in the weight and texture of the left breast when compared to the right. The patient states that the right breast quality is not much different than the pre-treated breast. Lymphedema is absent on the right, but present on the left. The causes may reflect the tumor location, size and surgery extent, as well as the whole-breast irradiation. Nevertheless, the intent of APBI using CyberKnife is to reduce the risk of normal tissue exposure to the acute and chronic effects of radiation while reducing the risk of cancer recurrence to that of wholebreast irradiation. With her consent and approval, this patient provides us with an unusual opportunity to study the side effect differences of two different breast irradiation techniques in the same patient. Presently, she is undergoing physical therapy with good results and is encouraged that her left breast lymphedema will continue to improve. She is also on a schedule to obtain bilateral breast MRI's and mammograms alternating every six months. 80

This case report is presented for educational purposes with the patient's consent.

TeleNeurology Now Available to Washington Communities

Swedish Medical Center launched TeleNeurology – the most recent addition to the Swedish TeleHealth program – in November of last year. This remote consultation service provides much-needed support to communities that do not have access to neurology consults due to limited local resources.

TeleNeurology builds on the

technology the Swedish Neuroscience Institute (SNI) uses to provide TeleStroke services to link an SNI neurologist with a patient and his or her care provider who are located in a distant hospital or physician's office. This new service offers the fastest and easiest access to a thorough neurology consultation for any type of neurological condition – without

requiring travel outside the patient's community.

The technology

TeleNeurology uses video conferencing and a secure Internet connection to allow real-time, face-to-face interaction between an SNI neurologist and a patient. A telepresenter – a local health-care

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Teleneurology

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provider who Swedish has specially trained – facilitates the evaluation and transmits critical information to the SNI neurologist. A live video stream allows the SNI neurologist to obtain a thorough history and examination. TeleNeurology also uses specialized telemedicine equipment, such as a digital ophthalmoscope; an ENT/ otoscope fitted with a camera, and a digital stethoscope.

at Swedish/Cherry Hill, which is a regional referral center for all levels of neurological care. An initial Tele-Neurology consult, however, greatly improves access to an initial evaluation or second opinion. It also creates a collaborative relationship between an SNI neurologist and the patient's physician that is useful in identifying treatment options that might be administered locally or, when necessary, speeding up the transfer

With physician shortages a growing concern, Swedish has been forward-thinking in deploying telehealth programs to hospitals and practices to help fill the specialty gap that creates significant challenges for many Washington communities. From a patient-focused perspective, these programs also help individuals who live in some of the most beautiful, yet remote, areas of the state avoid lengthy trips for conditions that

may not require an advanced level of care.

For more information about TeleNeurology or other Swedish TeleHealth programs, or to inquire about becoming part of the Swedish TeleHealth Network, contact TeleHealth Program





Local hospital/doctor's office

Enhancing access

Sometimes a TeleNeurology consult will conclude with a recommendation for an on-site visit with one of SNI's neurologists for further evaluation or a transfer to the hospital



process for patients who require the specialized diagnostic testing and treatments that are available at SNI. This immediate and local access to tertiary care benefits patients, families and primary-care providers.

DOH Designates Four Swedish Campuses for Stroke Care

The Washington State Department of Health (DOH) has designated four Swedish campuses — Ballard, Cherry Hill, Edmonds and First Hill — to provide stroke care. This designation is part of the DOH's newly established statewide Emergency Cardiac and Stroke system, which recognizes stroke care capabilities at medical facilities across

the state. The DOH designation is in addition to the Primary Stroke Center certification by The Joint Commission, which the Swedish Stroke System of Care has had since 2004.

Washington DOH designated Swedish/Cherry Hill as a Level I facility, one of only four hospital campuses in King County to receive this designation. Swedish/Cherry Hill is a regional referral center that provides comprehensive stroke care – including acute thrombolytic interventions to break down clots and restore circulation, advanced diagnostic imaging to identify a blocked artery, and catheter-based interventions to re-open arteries. Swedish admits about 1,000 stroke patients annually, and provides 24/7 acute

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DOH Designations for Stroke Care

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stroke care. Swedish/Cherry Hill is engaged in clinical research utilizing advanced diagnostic imaging and offering novel therapies for acute stroke patients. It is also home to the Swedish Neuroscience Institute (SNI) and the Swedish Acute TeleStroke Program, which augments local care-delivery systems to allow patients emergent access to stroke specialists when time is critical.

Swedish/First Hill and
Swedish/Edmonds were designated as Level II facilities having demonstrated stroke-trained staff, clinical and administrative infrastructure, and support programs to stabilize and treat acute stroke patients. Swedish/Ballard, which has the infrastructure and ability to provide acute thrombolytic rescue therapy, was designated as a Level III facility.

CME Course Listing

March – July 2012

Physicians from across the region and around the world come to Swedish Medical Center's Continuing Medical Education (CME) courses to learn about new research and innovative treatment techniques.

For times and locations, go to www.swedish.org/cme or call 206-386-2755.

High-Risk Obstetrics: Tools for the Family Physician Friday, March 23

Redefining HIV/AIDS: Prevention.
Policy. Practice. Jointly Sponsored
by: Swedish Medical Center and
Lifelong AIDS Alliance
Friday, March 30

Palliative Care Symposium Friday, April 13

Otolaryngology Symposium Friday, April 20

SIS: An Integrative Approach to Cardiovascular Care

Friday, April 27

Annual Oncology Symposium: Ohesity and Cancer Friday, May 4

Sixth Annual Cerebrovascular Symposium: Practical Aspects of Stroke and Cerebrovascular Care Thursday-Friday, May 17-18 Let's Talk about Sex Friday, May 18

Acute Care Neurology and Neurosurgery: From the ER to the OR to the NCCU

Friday, June 1

Emil Jobb: Gastroenterology Symposium

Friday, June 8

Spine Management for the Primary-Care Physician

Friday, June 15

Third Annual Highlights in CV Therapies: A Contemporary Course for Cardiac & Vascular Specialists Friday, July 13

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Swedish Medical Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Swedish Medical Center

Founded in 1910, Swedish Medical Center is the largest, most comprehensive, nonprofit health-care provider in the Seattle area. Swedish comprises multiple medical facility campuses throughout the Greater Puget Sound Area, Swedish Visiting Nurse Services and Swedish Medical Group. In addition to general medical and surgical care, Swedish also is a regional referral center for cardiac care, maternal-fetal medicine, neurological care, oncology, orthopedics, pediatrics and transplantation. For more information, visit www.swedish.org or call 800-SWEDISH (800-793-3474).

Ballard

5300 Tallman Ave. N.W. Seattle, WA 98107-3985 206-782-2700

Cherry Hill

500 17th Ave. Seattle, WA 98122-5711 206-320-2000

Edmonds

21601 76th Ave. W. Edmonds, WA 98026 425-640-4000

First Hill

747 Broadway Seattle, WA 98122-4307 206-386-6000

Issaquah

751 N.E. Blakely Dr. Issaquah, WA 98029 425-313-4000

Lake Sammamish

2005 N.W. Sammamish Rd. Issaquah, WA 98027-5364 425-394-0600

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6520 226th Pl. S.E. Issaquah, WA 98027 425-427-8450

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13020 Meridian Ave. S. Everett, WA 98208 425-357-3900

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18100 N.E. Union Hill Road Redmond, WA 98052 425-498-2200

Swedish Visiting Nurse Services 6100 219th St. S.W., Ste. 400 Mountlake Terrace, WA 98043 425-778-2400

Swedish Medical Group 600 University St., Ste. 1

600 University St., Ste. 1200 Seattle, WA 98101-1169 206-320-2700

Physician Opportunities

Are you a physician who would like to join a team-oriented, patient-focused practice?

Contact Aaron Bryant Manager, Provider Services Swedish Medical Group 206-320-5925 (office) aaron.bryant@swedish.org