



On page 5, read about research using focused ultrasound to treat metastatic brain cancer.

Doc Talk

Published for healthcare professionals.

IN THIS ISSUE

- 1 The Challenge of Diagnosing a Pain in the Neck
The Importance of Ongoing Care for Stroke Patients
- 2 Case Study: Diagnosing Chronic Neck Pain
- 3 Case Study: The Continuum of Stroke Care
- 5 Clinical Trial Evaluates New Approach to Treating Metastatic Brain Tumor
- 6 Outpatient Palliative Care Addresses Growing Patient Needs
- 7 One Patient's Story: Palliative Care While Fighting Cancer and Pain
- 8 Newest Members of Swedish Medical Staff
Continuing Medical Education

The Challenge of Diagnosing a Pain in the Neck

Vague symptoms, a multitude of diagnostic testing and limited time for patient appointments can create a significant challenge for primary-care providers (PCPs) who are trying to accurately diagnose neck pain. In this instance, referring to a specialist earlier, rather than later, may be beneficial for the patient.

The Spine Program at the Swedish Neuroscience Institute offers comprehensive diagnostic services, including advanced diagnostic imaging and electrodiagnostics. SNI is also uniquely equipped to provide the full scope of integrated surgical and non-surgical treatment options for patients presenting with neck pain.

Cervical spondylotic myelopathy

Neck pain symptoms are very common, but usually intrinsically benign. Ruling out more ominous disorders can be time consuming, resource intensive and frustrating for all involved. One of the serious disorders presenting as “simple” neck pain is cervical spondylotic myelopathy (CSM). Patients may present with one or more of the following symptoms:

- Activity related neck pain, sometimes with headaches
- Clumsiness in the hands and legs
- Stumbling gait
- A burning sensation in hands up to the forearm
- Electrical radiation into an arm
- A shocking sensation running down the neck into the back

(continued on page 2)

The Importance of Ongoing Care for Stroke Patients

Research has shown that up to a third of patients who are hospitalized with stroke stop their stroke preventive medications by one year post hospitalization. Reasons for stopping their medications can include provider-to-patient miscommunication, drug side effects or cost. Non-adherence to stroke preventive medications places patients at greater risk for a secondary stroke and neurological decline.

According to the National Stroke Association, recurrent strokes account for one quarter of the nearly 800,000 strokes in the United States each year. The increased risk of another stroke is particularly high during the year immediately following the original stroke. The stroke survivor's risk of secondary stroke increases with age – an uncontrollable risk factor. Risk factors that can be controlled include hypertension, high cholesterol, diabetes, obesity, cigarette smoking,

heavy alcohol use and drug abuse. Therefore, it is critical that primary-care providers encourage their patients who have had a stroke to continue follow-up stroke care for life.

At Swedish, patients who have received acute care for stroke are scheduled for follow-up appointments at the Swedish Stroke Clinic. The clinic also sees patients who have been treated for stroke at other hospitals on a referral basis. The follow-up care provided in the clinic focuses on secondary stroke prevention through medication management and recommendations for lifestyle changes.

“Experiencing a stroke is a life-altering event. Patients want to know how they can prevent another stroke in the future,” says **Sheila Smith, M.D.**, medical director for the Stroke and Neurohospitalist programs at Swedish. “Our team, which includes neurologists, cerebrovascular neurosurgeons, neuro-interventionalists and

(continued on page 3)

Diagnosing a Pain in the Neck (continued from page 1)

Patients with these symptoms may suffer from CSM, while also being considered for other diagnoses, such as neurodegenerative processes, neoplasia, infection or vascular malformations.

“CSM is a progressive disorder and the leading cause of spinal cord dysfunction,” says **Jens R. Chapman, M.D.**, a world-renowned orthopedic spine surgeon and researcher at SNI who has more than a quarter century of experience providing spine care. “Compressive myelopathies are the result of a complex, and somewhat variable, intrinsic mechanical and vascular compromise caused by traction events between various layers within a compressed spinal cord. In a spinal cord compressed by bone spurs, disc herniation, or a combination of both, differential minute migrations of various tracts of the spinal cord of not more than one millimeter can cause disproportional dissociation and injury, with subsequent deterioration of the gray matter within the spinal cord. This leads to an inflammatory response and a progressive decline in spinal cord function. The variables in these cases are the patient’s spinal cord blood supply and their unique inflammatory response system. Therefore, one cannot always infer from the amount of cord compression how severe a patient’s myelopathy will be.”

Contributing factors to CSM include:

- **Age:** As the body ages, arthritis develops, and facet joints and discs wear out and naturally narrow the spinal canal.
- **Genetics:** Individuals with a Pacific ethnicity are more prone to CSM. Asians, especially Japanese and other Pacific Islanders, are at greater risk for ossification of the posterior longitudinal ligament (OPLL), which causes narrowing of the spinal canal.
- **Anatomy:** Congenital stenosis creates a very small spinal canal.
- **Sports and hobbies:** Impact sports, yoga and other activities that are not appropriate for a person’s body type or physique may affect the neck and lead to compression. A classic example is the “spear tackler’s spine,” a football player’s neck which is collapsed into itself through repetitive head impact on targets.
- **Inflammatory arthritis:** Diseases such as rheumatoid arthritis can lead to a serious impingement of the spinal cord through the formation of a pannus (a reactive soft-tissue accumulation).

- **Untreated neck fractures:** An old neck fracture that has not healed, such as an odontoid fracture, can result in an impingement of the cervical spinal cord.
- **Sleep positions:** Unhealthy rest positions, such as sleeping with a forward bent neck on a big pillow, may result in a chronic neck deformity and cord impingement.

Although CSM is typically a byproduct of aging, it can also be seen in younger patients with congenital stenosis of the cervical spine and other conditions, such as ossification of the posterior longitudinal ligament (OPLL). The problem remains that the leading symptomatology — neck pain — is very common and by itself nonspecific.

Diagnostic imaging and testing

Advanced MRI scans, assessment of neck stability and alignment with flexion-extension radiographs, and occasionally CT myelography, are used to quantify cervical spine structure and spinal cord integrity. The severity of myelopathy can be categorized using the six-point Nurick grading scale, with 0 being normal, 1 through 4 signifying varying levels of alteration to the activities of daily living, and 5 indicating wheelchair bound or bed ridden. An even more precise scoring system developed and validated in Japan uses an 18-point functional scale that measures dexterity, ambulatory capability and urinary control.

Treating CSM

CSM treatment ideally begins with timely recognition before serious and frequently irreversible spinal cord changes develop. An important starting point, therefore, begins with a recognition of the condition, along with a systematic baseline neurological examination, which can be followed by a risk assessment for deterioration. For early stages of myelopathy, a combination of education and greater general health awareness, activity modification, and occupational and physical therapy may be coupled with repeat clinical evaluations and observation. However, according to a recent nationwide prospective study, one out of every three patients with CSM will get progressively worse over four years and convert to some type of surgery. Advanced

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Case Study: Diagnosing Chronic Neck Pain

Jens R. Chapman, M.D., Swedish Neuroscience Institute



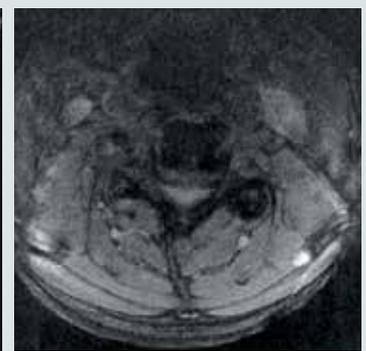
Jens R. Chapman, M.D.

A male patient in his mid-50s suffered from a host of medical problems for more than a decade. He was being treated with powerful anti-inflammatory and immune-suppressive medications. He also suffered from chronic neck pain, which was being managed with exercise and massage therapy. He came to our attention after he had started falling at

(continued on page 6)



MRI — T2 sagittal.



MRI — T2 axial.

Ongoing Care for Stroke Patients *(continued from page 1)*

neuroradiologists, works collaboratively to evaluate the patient's medical history and diagnostic testing, and to determine which treatment options are best. We may recommend surgery for some of our patients with more complex stroke. For the majority of patients, however, we recommend antithrombotic and statin medications for life. At the time of discharge, we make sure they understand what medications are being prescribed and why. By seeing the patients in the Stroke Clinic for follow up, we are able to reinforce the importance of adhering to a particular medication regimen and making lifestyle modifications, such as smoking cessation."

Members of the stroke team work in partnership with the patient's primary-care provider to ensure the appropriate level of care. For some patients who successfully transition rather easily to a healthy lifestyle, appointments at the Stroke Clinic may be short term and the PCP assumes responsibility for helping the patient remain compliant. For patients with more complex medical issues and multiple co-

morbidities, such as hypertension and diabetes, the relationship may be more long term. The goal, however, is to transition stroke patients to long-term follow up in the primary-care setting. 

Referring to Swedish

Specialists at the Swedish Stroke Clinic and at Swedish Neurological Rehabilitation Medicine are available for referrals, second opinions and consults regarding patients who have been treated for stroke.

Swedish Stroke Clinic
Swedish Cherry Hill
James Tower
550 17th Ave., Suite 400
Seattle, WA 98122
Phone: 206-320-3278

**Swedish Neurological
Rehabilitation Medicine**
Inpatient Acute Rehab Unit
Swedish Cherry Hill/6E
Phone: 206-320-2625
Outpatient Rehabilitation
Ballard, Cherry Hill and Issaquah
Phone: 206-320-2600

Case Study: The Continuum of Stroke Care

Sheila Smith, M.D., Medical Director, Swedish Stroke and Neurohospitalist Programs



Sheila Smith, M.D.

Hank is a 56-year-old truck driver with no known medical problems. He rarely visited a doctor — until the day he presented to the emergency department (ED) of his local community hospital with acute onset right-sided ataxia, dysarthria and left-sided visual loss. Fortunately, the hospital is part of the Swedish TeleHealth Network and the Acute TeleStroke Program.

The ED physician initiated a TeleStroke consultation with the stroke team at the Swedish Neuroscience Institute (SNI) in Seattle. Together the ED physician and the stroke neurologist at Swedish determined that Hank was a great candidate for the clot-busting drug tPA. Following the administration of tPA, Hank had a CT angiogram of his head and neck, which showed a clot in the basilar artery. The risk of mortality with a basilar artery thrombosis has been reported to be as high as 90 percent. Those who survive can be left with significant neurological disability. Therefore, treating these patients in a timely manner is critical to successful outcomes.

Transfer to Swedish Cherry Hill

Recognizing that Hank was having a potentially life-threatening stroke, the ED team transferred him to Swedish Cherry Hill, a certified Primary Stroke Center and regional resource for complex stroke patients. Members of the SNI stroke team, including a neurologist, an anesthesiologist, a neurointerventionalist, and specially trained nurses, awaited his arrival.

When Hank arrived at Swedish, he was immediately taken to

the MRI suite for a rapid MRI and MRA. This study showed that his basilar artery had recanalized, but there was still a clot in the right posterior cerebral artery. Hank had cerebral infarctions in the bilateral cerebellar hemispheres and a small infarct in the territory of the right posterior cerebral artery. He had a much larger perfusion deficit in the right posterior cerebral artery territory. The large perfusion diffusion mismatch suggested that he had a large area of brain, referred to as penumbra tissue, which was at risk of further infarction.

Removing the clot

The team transported him to neurointerventional radiology for clot retrieval using the SOLITAIRE™ Flow Restoration device. Neuro-interventionalists use this self-expanding stent retriever to remove clots intracranially. The procedure was successful and blood flow was restored to the right posterior cerebral artery territory.

Hank was admitted to the neurointensive care unit following a course of tPA and the clot retrieval. Twenty-four hours post procedure, a head CT confirmed there was no hemorrhage into the region of his strokes. Clinically he improved dramatically and was subsequently transferred to the telemetry unit, where he remained for four days.

Determining the cause of the stroke

During his hospital stay, additional tests were used to try to identify the reason for Hank's stroke. Cardiac telemetry showed no evidence of atrial fibrillation, which can be a common cause of cardioembolic stroke. A transthoracic and transesophageal echocardiogram (TTE), which is used to evaluate cardiac structure, showed a small patent foramen ovale (PFO). With up to one fourth of

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Stroke Care Case Study (continued from previous page)

healthy individuals having a PFO, the presence of a small PFO was not considered terribly unusual. Lower extremity Doppler studies showed no blood clot in either leg. Because the PFO was small and was not associated with an atrial septal aneurysm, we felt it was not high risk. We prescribed long-term aspirin and statin therapy, with plans for close follow up in the Swedish Stroke Clinic.

Preparing for discharge

Hank was evaluated by physical, occupational and speech therapists while he was in the hospital. They noted bilateral upper extremity ataxia and gait ataxia. **Jeffrey Moo, M.D.**, a specialist in acute neuro-rehabilitation, evaluated Hank and determined he was a good candidate for transfer to the Acute Rehabilitation Unit. Five days post arrival at Cherry Hill, Hank was transferred to inpatient rehabilitation, where he continued to improve. After four days on the unit, Hank was ready to transition to outpatient rehabilitation and was discharged home.

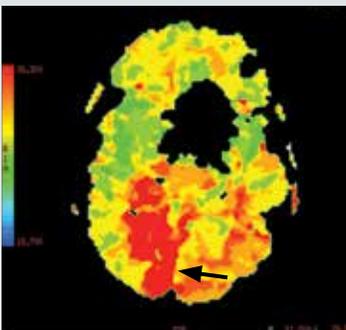


Image 1. This patient has a large perfusion deficit in the territory of the right posterior cerebral artery. This finding, along with the patient's exam findings, suggested that he had a large area of penumbra tissue in the brain, which had not yet infarcted, but could go on to infarct.

Follow-up care

After discharge, Hank began receiving follow-up care in the Swedish Stroke Clinic. Because of his age and no clear cause for his stroke, this type of care was vital to his continued improvement and secondary stroke prevention. Although he was now on aspirin and statin therapy for secondary prevention, it was not clear that it was the optimal long-term treatment. He had what appeared to be an embolic stroke, but we could not identify the source of the embolism. An arterial dissection in a vertebral

artery can cause artery-to-artery embolization in the brain, but in this case there was no evidence of vertebral artery dissection. Although we determined the small PFO was not high risk, Hank's work lifestyle (sedentary for hours at a time while driving) potentially placed him at risk for blood clots.

Because Hank had a life-threatening thromboembolic stroke at a relatively young age, we decided further testing was warranted. A hypercoagulable laboratory panel was evaluated and determined to be negative for a hypercoagulable state. We also placed Hank on a CardioNet Mobile Cardiac Outpatient Telemetry™ (MCOT™) for one month. In patients with cryptogenic embolic stroke, such as Hank, the current trend is to monitor the heart rhythm for a month post stroke to see if the patient has paroxysmal atrial fibrillation that was not captured on telemetry during hospitalization. Statistically about 10-20 percent of patients with atrial fibrillation will be identified during this longer-term cardiac monitoring. Atrial fibrillation is an important finding because when found, the strategy for secondary stroke prevention changes from aspirin to anticoagulation. In Hank's case, his cardiac telemetry device showed atrial fibrillation. We discussed the telemetry results and recommended anticoagulation medication. After reviewing the pros and cons of warfarin and one of the newer anticoagulants, the patient decided to avoid warfarin and is now taking apixaban.

In addition to the care he received in the Swedish Stroke Clinic, Hank also continued outpatient physical and occupational therapy under the direction of Dr. Moo. At four months post stroke, Hank's recovery was dramatic. He was experiencing minimal deficits, including mild dizziness and dysarthria, and was walking without assistive devices. When he started talking about resuming driving, Dr. Moo referred him to Swedish Issaquah Occupational Therapy for a pre-driving assessment. The assessment was positive and Hank was able to begin driving his private vehicle. He has continued to improve and is hopeful that one day soon he will be able to resume driving commercial vehicles.

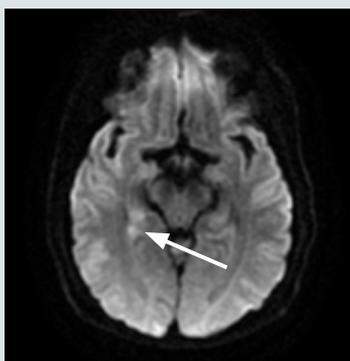


Image 2. There is only a small stroke in the territory of the right posterior cerebral artery at the time of this MRI.

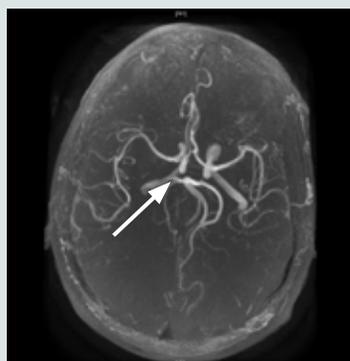


Image 3. There is an occlusion of the right posterior cerebral artery.



Image 4. Right posterior cerebral artery occlusion, pre clot retrieval.



Image 5. Post thrombectomy using the Solitaire device. The right posterior cerebral artery was recanalized.

Clinical Trial Evaluates New Approach to Treating Metastatic Brain Tumor

In late fall 2014 neurosurgeons from the Swedish Neuroscience Institute (SNI) performed a focused ultrasound procedure on a patient with a metastatic brain tumor. The procedure, which was performed by **Stephen Monteith, M.D.**, and assisted by **Charles Cobbs, M.D.**, was part of an early-stage clinical trial examining the efficacy of using this technology for metastatic brain cancer. Patients enrolled in the study primarily have cancer that has metastasized from other parts of the body, such as the bowel, breast or lung.

This is one of three clinical trials at SNI that Drs. Monteith and Cobbs, and **Ryder Gwinn, M.D.**, are leading that use focused ultrasound to treat neurological conditions. The other two trials are using focused ultrasound to treat patients with essential tremor and Parkinson's. All three studies are being conducted at multiple sites, with SNI among the leaders in the number of participants.

Focused ultrasound is similar to targeted stereotactic radiosurgery using GammaKnife®. However, with ultrasound waves there is no risk of radiation exposure or accumulation, and no concern for radiation affecting sensitive structures in the brain that are in close proximity to the tumor.

"We are conducting this research to hopefully prove that the focused ultrasound procedure is an alternative treatment option for our patients, but we won't know that until we are done with the complete trial," says Dr. Monteith, a specialist in cerebrovascular neurosurgery and brain tumors. "Finding new, more effective and less invasive ways to care for our patients is our overall mission."

Focused ultrasound already has approval from the U.S. Food and Drug Administration (FDA) as a treatment for neuropathic pain and obsessive-compulsive disorder (OCD). It is hoped that the outcomes from the current clinical trials will help support an application to the FDA to expand the use of this therapeutic technology.

"Focused ultrasound may offer us the ability to treat patients who have had either surgery or radiation, and don't have any other options left for a tumor that has continued to grow despite those procedures," says Dr. Monteith.

An advanced, noninvasive therapy

Focused ultrasound is a noninvasive procedure that typically takes about four hours. With the patient's head immobilized in a frame and water circulating through a cap to keep the brain cool, the neurosurgeon focuses more than a thousand ultrasound waves on a specific target. The resulting energy kills the brain cancer cells.

The procedure is a marriage of technologies. The surgeon uses an MRI scanner intraoperatively to guide the ultrasound waves. The imaging provides the necessary precision to target specific tissue while avoiding other structures in the brain. Because patients are awake during the procedure, they can answer questions and perform simple drawing or writing tasks. This real-time monitoring

also aids the surgeons in more precisely focusing the ultrasound waves on the target.

Following the procedure, clinical and MRI evaluations determine how well the patient tolerated the procedure and whether there was any indication of hemorrhage or stroke.

The future of focused ultrasound

Other studies are using focused ultrasound to cross the blood-brain barrier and aid drug delivery to brain tumors, such as glioblastoma. In this instance, microbubbles containing the drug therapy are first administered intravenously. Although they circulate throughout the body, the encapsulated drug cannot be released without a trigger. Focused ultrasound waves directed at the brain tumor are the trigger. They break up only the microbubbles in the targeted area. The ultrasound causes the microbubbles to explode, and also disrupts the blood-brain barrier. This allows the drug payload to cross the barrier where it can be absorbed and kill the tumor cells. The beauty of this type of drug-delivery mechanism is the use of encapsulated drugs, which keeps them from being activated and causing systemic effects, along with focused ultrasound to trigger activation and precisely deliver the drugs only to the brain tumor.

Other pre-clinical research seeks to determine whether focused ultrasound might be a safe and effective therapy to target the course of epileptic seizures. This research is not yet advanced to the clinical trial phase.

For more information about focused ultrasound, please call **206-386-2748**. 



With patient's head immobilized in a frame, more than a thousand ultrasound waves target and kill the brain cancer cells.

Neck Pain Case Study (continued from page 2)

home and found it progressively more difficult to use a knife and fork. An examination revealed a Nurick stage-4 myelopathy and four-extremity spasticity with presence of long tract signs. An MRI scan found that he had developed significant disc degeneration, with resultant anterolisthesis (forward slippage) of his C4 on C5 vertebral segments. The spinal cord at this damaged motion segment demonstrated cord signal changes seen as the bright signal within the substance of the spinal cord in the area of the greatest compression behind the C4-5 discs. On his axial image the spinal cord space measured 4 mm, well below the lower norm of 13 mm found in normal spinal canal sizes in the mid-sagittal diameters. (See page 2.)

The patient received traction and was transported to the

operating room at Swedish Cherry Hill shortly after admission. An anterior exposure and microscopical decompression with fusion was performed. An organ-donor bone was used to reconstruct the spinal column and a locking plate was used to stabilize the spinal column in a normal alignment. The patient enjoyed a dramatic recovery of his neurologic function — almost back to normal — and for the first time in years was free of neck pain.



Post procedure.

Outpatient Palliative Care Addresses Growing Patient Needs

For years, palliative care services throughout the health-care enterprise focused on inpatient care and the terminally ill. Today, palliative care has taken on a different look as it realigns services to meet the needs of patients who are suffering from advancing chronic conditions. This is particularly applicable to cancer patients, who often receive much of their care on an outpatient basis and may live longer with cancer.

According to the American Cancer Society's *Cancer Facts & Figures 2014*, "approximately 13.7 million Americans with a history of cancer were alive on Jan. 1, 2012. Some of these individuals were cancer free, while others still had evidence of cancer and may have been undergoing treatment." The ACS also reports "the five-year survival rate for all cancers diagnosed between 2003 and 2009 is 68 percent, up from 49 percent in 1975-77." These statistics suggest the need for careful evaluation of palliative care services and how those services can support patients throughout their disease trajectory, regardless of prognosis.

In 2014, the Swedish Cancer Institute (SCI) took a pro-active step in realigning palliative care services by partnering with the Swedish Medical Group (SMG) to recruit **Ellyn M. Lee, M.D.**, who is board certified in both internal and geriatric medicine, as well as hospice and palliative medicine. Dr. Lee is medical director of Palliative Care and Symptom Management. She brings to Swedish extensive experience in the field of palliative medicine, most recently as director of Palliative Care at the University of Arizona, which included inpatient and outpatient components, and the Hospice and Palliative Medicine Fellowship program.

"This is a wonderful opportunity to broaden the scope of palliative care services in order to serve a wider population through an outpatient program," says Dr. Lee.

While Dr. Lee is building a program to support all disease sites, her work with SCI is focusing on cancer patients through symptom management. These patients have a complex set of spiritual, physical and emotional needs that require very specific services. They require coordination of care to address high utilization of medical services, and help with quality-of-life issues, limitations caused by

their illness or navigating family dynamics.

Dr. Lee says the approach with cancer patients is not on 'how much time do I have left,' but rather 'how can I maximize my time left,' which can be very reassuring for patients and can also drive the type and scope of palliative-care visits. It is also quite natural for palliative care to view the patient and his or her family as a unit of treatment, which acknowledges that cancer directly affects both the patient and the patient's family members.

Dr. Lee's five-to-seven year goal is to build on existing resources to create palliative-care clinics at each of the Swedish campuses, beginning with Swedish First Hill. Each clinic will be staffed by a team of palliative-care specialists, including a physician, nurse practitioner, social worker and chaplain. Each team member plays a specific, yet integrated, role in helping patients navigate their disease and in providing coordination of their ongoing care.

"SCI is a natural home for outpatient palliative-care services," says Dr. Lee. "Personalized medicine is giving our cancer patients the best care through both science and individualized humanistic approaches." 

Outpatient Palliative Care and Symptom Management Services

The Swedish Palliative Care and Symptom Management Clinic helps patients manage the symptoms and stress associated with their illnesses or treatments.

The Palliative Care team focuses on:

- The patient's physical needs
- Providing psychological and spiritual support
- Helping with social and family adjustments
- Coordinating important resources

The goal is to help patients:

- Obtain the services they need
- Regain their mental and physical strength, so they can better tolerate their medical treatments
- Understand their illnesses and treatments

One Patient's Story: Palliative Care While Fighting Cancer and Pain

Ellyn M. Lee, M.D., Medical Director, Palliative Care and Symptom Management



Ellyn M. Lee, M.D.

Adam is a 38-year-old with advanced seminoma. **Jack West, M.D.**, an oncologist at the Swedish Cancer Institute (SCI), treated Adam's cancer with cisplatin/etoposide chemotherapy and radiation. Adam also underwent orchiectomy surgery. As a result of his cancer and the treatments, Adam experienced pain in his lower back. The pain was so severe that it prevented him from working or performing daily activities.

Adam had constant nausea and vomiting. Because he was at increased risk for dehydration, he had weekly treatments at the SCI Treatment Center for hydration. He also took pain medicine orally and through injections (hydromorphone) to help counter the pain. He felt the injections gave him better pain relief than the oral analgesic.

In September 2014, Dr. West referred Adam to the Swedish Palliative Care and Symptom Management Clinic. The goal was to give Adam another level of support and to help him manage his cancer-related symptoms. Adam was hoping for a better quality of life.

Our first approach in the clinic was to increase the amount of pain medication he was taking orally. Although his pain continued to be a problem, he no longer required regular visits to the Treatment Center or the Emergency Department for help with the pain.

Dr. West also referred Adam to an orthopedic surgeon to see if there was a surgical option to help his back pain. **Jeffrey Garr, M.D.**, performed the elective back surgery to stabilize Adam's back.

Adam received palliative-care support in the hospital after his back surgery. This support included education about how he could control the pain medication he was receiving through a patient-controlled-analgesia (PCA) pump. When Adam left the hospital, Providence Infusion & Pharmacy Services assumed responsibility for his IV, and we monitored the level of medication he needed.

Adam continued to visit our clinic and finally found relief from the pain. He began to eat normally, have less nausea and sleep better. His mood improved and he began enjoying his daily activities again. He no longer needed to seek emergency care or visit the Treatment Center for pain relief. Adam felt so good that he decided to return to work.

After a few months, Adam became so busy with his normal life that he no longer needed multiple visits to the hospital or even our clinic. He was enjoying life and requiring very little health care. Eventually, Adam decided he was ready to have the PCA pump and IV removed.

We helped him transition from IV pain medication to oral analgesics, a slow process to prevent withdrawal. Adam made the transition and has done so well that we have further decreased his oral pain medication. The goal is to support Adam and eventually see him off all pain medication, so he can meet his goal of increasing his work hours. He is now concentrating on his quality of life and will be able to evaluate — in a pain-free way — whether he wants to pursue additional treatment for his cancer.

Adam still comes to the clinic to help further reduce his pain medication. His goal is to stop taking it altogether. The clinic will continue to support Adam's palliative care and symptom management needs as he possibly pursues additional treatment for his cancer.

Referring to Swedish

Swedish Palliative Care and Symptom Management Clinic

Swedish First Hill
1221 Madison, 2nd Floor
Seattle, WA 98104
Phone: 206-386-2126
Fax: 206-991-2361

For more information about the Swedish Palliative Care and Symptom Management program, go to www.swedish.org/palliativecare.

To consult on or refer one of your patients, please call **206-386-2126**.

Swedish Health Services Quick Reference

Ballard

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

Cherry Hill

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

Edmonds

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

First Hill

747 Broadway
Seattle, WA 98122
206-386-6000

Issaquah

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

Mill Creek

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

Redmond

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

Swedish Medical Group

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



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Case studies are provided with the consent of the patient or with personal health information removed or altered in order to protect patient privacy.

Diagnosing a Pain in the Neck (continued from page 2)

compression, in which there is a circumferential compression of the spinal cord, deserves closer scrutiny for surgical care.

There is no cookie-cutter approach for CSM surgery. The primary goal is to identify the most effective and least invasive method that will preserve the greatest function for the patient. Patients with significant one-to-two level disc degeneration and symptomatic spinal cord compression may benefit from an anterior decompression, and fusion or disc replacement surgery. Patients with a more widespread spinal cord compression extending over several levels, however, may be considered for laminoplasty, a motion-sparing surgery that significantly

widens the spinal canal, while preserving the structural integrity of the spinal column after healing. Patients with significant deformities and contractures will usually require more complex combined anterior and/or posterior surgical decompression and fusion surgeries.

What the Spine Program at SNI has to offer CSM patients is access to a seamless continuum of multidisciplinary care and diagnostics that may include both non-surgical and surgical interventions — all under one roof.

For more information about CSM or to refer a patient, please call **206-320-2225**.

The Newest Members of the Swedish Medical Staff

The following individuals joined Swedish during the third and fourth quarters of 2014. We invite you to view their online profiles at www.swedish.org/physicians.

Elfriede Agyemang, M.D.
Internal Medicine/Hospitalist

William Anderson, M.D.
Physical Medicine & Rehabilitation

Lesley Bobek, M.D.
Internal Medicine/Hospitalist

Kari Brown, M.D.
Obstetrics & Gynecology

Kyl Dinsio, M.D.
Psychiatry

Dina Gordon, M.D.
Obstetrics & Gynecology

William Hahn, M.D.
Internal Medicine/Hospitalist

Tiffany Herr, M.D.
Pediatric Primary Care

Richard Kahlstrom, M.D.
Pulmonology

Kitti Kaiboriboon, M.D.
Neurology

Thomas Kawano, M.D.
Cardiology

Mary Lang-Furr, M.D.
Psychiatry

Meena Mital, M.D.
Internal Medicine

Aliza Monroe-Wise, M.D.
Internal Medicine/Hospitalist

Christopher Moore, M.D.
Family Medicine

Donna Richman, M.D.
Internal Medicine

Jennifer Scanlon, M.D.
Obstetrics & Gynecology

Sarah Stanos, D.O.
Pediatric Primary Care

Kelly Sweerus, M.D.
Pulmonology

Michael Wu, M.D.
Pediatric Emergency Medicine

Devon Zoller, M.D.
Internal Medicine/Hospitalist

CME Course Listing – March-April 2015

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 13

Join our email list: swedish.org/CMEProfile

Palliative Care: Transforming Health Care for People with Serious Illness

Friday, March 20

5th Annual Pacific Northwest Head and Neck Cancer Symposium: Thyroid and Parathyroid Disease – A Practical Approach

Friday, April 10

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