JOHNS HOPKINS
Surgery

NEWS FROM THE JOHNS HOPKINS DEPARTMENT OF SURGERY

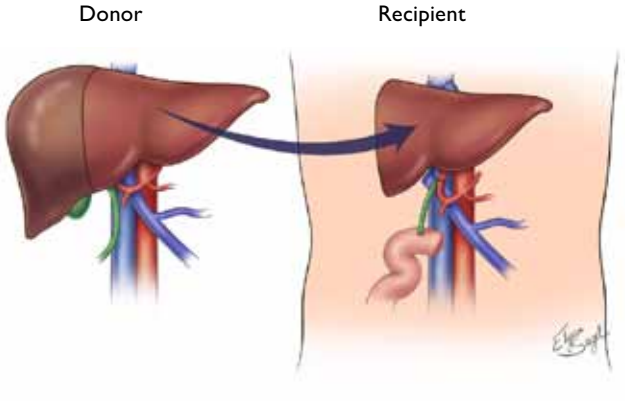
WINTER 2014

JOHNS HOPKINS MEDICINE

Ben Philosophe meets with members of the surgical team in the live donor liver transplant program at Johns Hopkins, where an average of four live donor operations are performed per year.

THE CASE FOR **LIVE DONOR** LIVER TRANSPLANTS

For adult patients in need of a liver transplant, the waiting list is long and available organs are few.



ELYSSA SIEGEL / ELYSSASIEGEL.COM

Illustration of a left lobe, live donor liver transplant. The right lobe can also be transplanted.

So many cards must fall into place before a recipient can ever make it to the operating room. A donor organ extracted from a recently deceased patient must be viable and quickly transported to the recipient's hospital. Recipients, meanwhile, must be ready at a moment's notice and meet a stringent set of qualifications, right down to the degree of illness. Too sick, and the organ might go to waste: No transplant could save them. Not sick enough, and their case may not be considered urgent enough compared with patients who might be mere days or weeks away from dying.

But when it comes to liver transplants, finding a donor doesn't have to mean waiting for someone else to die. In many cases—particularly for those healthier patients not quite sick enough to make it to the top of the list—a live donor may be their best or only option, says Johns Hopkins transplant surgeon **Ben Philosophe.** Because of the liver's regenerative properties, a person can feasibly live with as little as one third of their natural organ. By sacrificing an estimated 50 to 60 percent of their own liver, live donors—usually a family member or close friend—can offer hope to patients who otherwise might spend years battling painful liver disease. For those patients who've found a willing donor, the Johns Hopkins Hospital Comprehensive Transplant Center is among the highest-volume centers, accounting for an estimated 2 percent of live donor liver transplants across the nation.

Worldwide—but particularly in Asia and Eastern Europe—live donations are often the rule,

(continued on back page)

A pioneer in computer-aided screening of breast cancer risk, David Euhus developed software called CancerGene in 1997. The program compiles risk factors for developing cancer and now has more than 4,000 users in 80 countries.

BREAST CANCER

The Benefits of **Genetic Screening** for Breast Cancer

Many patients with a family history of breast cancer may find genetic screening for the disease pointless, because they mistakenly believe that their fates are predetermined. What they don't realize, says new head of breast surgery **David Euhus,** is that preventing cancer is entirely possible in those who are known to be genetically predisposed.

Patients with gene mutations in BRCA1 or BRCA2 have up to an 80 percent likelihood of getting breast cancer and up to a 60 percent chance of developing ovarian cancer. "Genetic testing helps us determine which members of a family are at increased risk for cancer and which aren't," says Euhus. Those who are found not to be at increased risk can return to life as usual. When the mutations are discovered, however—via lab analysis of a DNA sample from either blood or saliva—four types of intervention are available.

"The first thing that we talk about is lifestyle," Euhus says. "There's good evidence that staying physically active and avoiding weight gain in middle age reduces the risk of developing cancer."

Enhanced surveillance is also recommended. Physicians will see patients every six months, alternating mammograms with MRI scans. Though MRIs are more expensive, they're also more sensitive, and they're covered by insurance for patients with mutations. "That's another good reason to get genetic screening," Euhus says.

A next line of defense is a chemopreventive drug, Tamoxifen, which lowers the risk of breast cancer by about 50 percent. "It's a good idea for BRCA2 carriers, Euhus says, "and probably a good idea for BRCA1 as well."

Finally, prophylactic surgical options include removal of the ovaries, which most women with known mutations will do by age 40. This offers the dual advantage of bringing down the risk of breast cancer by as much as 60 percent. And, with improvements in surgical techniques, mastectomies are an increasingly viable and appealing route for patients. "We do skin- and nipple-sparing mastectomies, and beautiful reconstructions," Euhus says. "It's not mutilating like it used to be." ■

To refer a patient: 443-997-8282

Who Should Get Genetic Screening for Breast Cancer

- ✔ Women diagnosed with breast cancer before age 45
- ✔ Women diagnosed with breast cancer at any age, who also have two relatives on the same side of the family also diagnosed with breast cancer, pancreatic cancer or high-risk prostate cancer
- ✔ Women diagnosed with a form called triple negative breast before age 60
- ✔ Women of Ashkenazi descent diagnosed with breast cancer at any age
- ✔ Women who've had ovarian cancer
- ✔ Those with a family history of male breast cancer
- ✔ Those with a family history of both breast and ovarian cancer in one relative

MELANOMA

When Melanoma Patients Should Have a **Sentinel Node Biopsy**

For years, oncologists have relied on sentinel lymph node biopsy to determine whether melanoma has spread to the regional lymph nodes in a newly diagnosed patient. But not every melanoma patient needs a sentinel node biopsy, says surgical oncologist **Julie Lange**.

"We consider the tumor thickness and other tumor characteristics," says Lange. "Patients diagnosed with a very thin melanoma generally have little chance of nearby lymph node involvement and usually do not need a sentinel node biopsy. We typically offer sentinel node biopsies to patients with a melanoma 1 millimeter or thicker, and sometimes for those with a melanoma less than 1 millimeter thick if they have certain high-risk features such as ulceration or elevated mitotic rate."

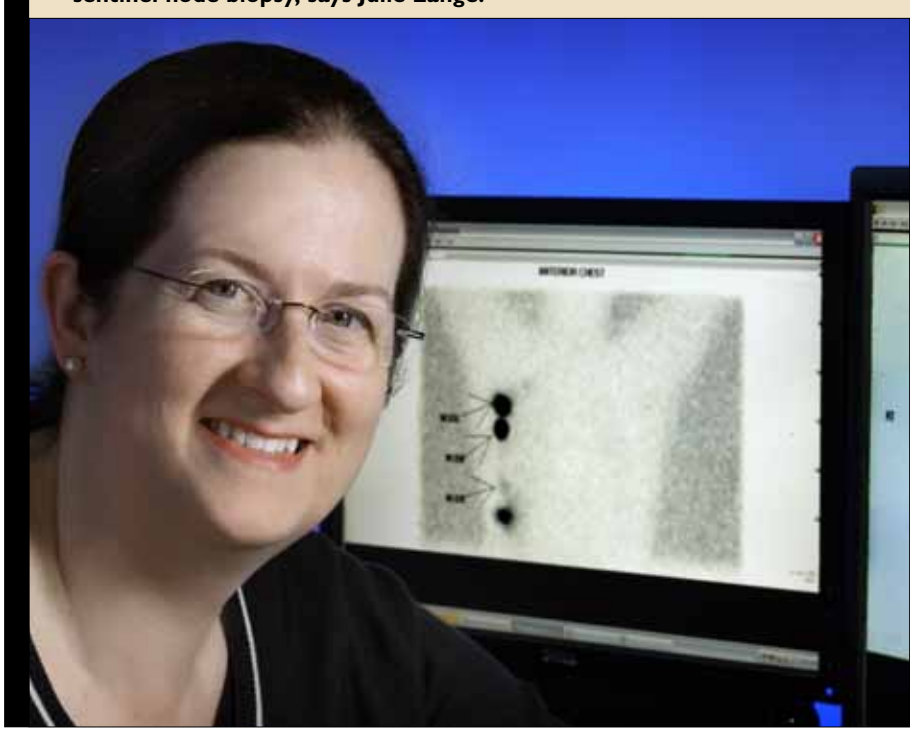
The sentinel node biopsy is a low-risk staging procedure that helps elucidate a patient's prognosis and often helps determine treatment decisions. "Most people with newly diagnosed melanoma benefit from having that information," she says.

"If a biopsied node is disease-free," says Lange, "the other nodes in that basin are very likely to be free of disease as well." In cases where disease has spread to the sentinel node, however, the standard treatment has always been a completion dissection to remove the remaining nodes in that basin. "It's fairly clear that patients who have this procedure have a very low chance of recurrence in that node basin," she says. "But it remains unclear whether completion dissection results in better melanoma-related survival."

To help answer this question, Johns Hopkins is participating in an international clinical trial called the Multicenter Selective Lymphadenectomy Trial II. In this trial, more than 1,900 patients with positive sentinel lymph nodes are being randomly assigned to receive either immediate completion lymph node dissection, which is currently the standard of care, or no further surgery with ongoing ultrasound monitoring of the node basin that had the positive node. The patients will be followed for 10 years. The purpose of the study is to see whether one course of action is better than the other. "This is an important study, the result of which will help us to make the best decisions for future patients," says Lange. ■

To refer a patient: 410-616-7660

Not every melanoma patient needs a sentinel node biopsy, says Julie Lange.



Once thyroid carcinoma metastasizes to the lymph nodes, says Jason Prescott, surgery is the best option.

ENDOCRINE SURGERY

A Complicated Case of **Thyroid Carcinoma** that Has Spread

Endocrine surgeon **Jason Prescott** knew that the young woman—who came to The Johns Hopkins Hospital from Saudi Arabia—faced a highly complex operation.

Diagnosed with thyroid cancer in her native country, she had already undergone one procedure to remove her thyroid gland. But a subsequent examination revealed that the cancer had spread to lymph nodes within her neck, which would also have to be removed. This operation carries tremendous risk—including the possibility of severe and permanent nerve damage. Her physician recommended that she visit Johns Hopkins, where a multidisciplinary team of endocrinologists, radiologists, pathologists and surgeons would be available to determine treatment.

"Because there are critically important nerves adjacent to the lymph nodes within the neck, controlling functions like the movement of the tongue, the ability to turn the head to the side, the ability to shrug the shoulders, and quality of the voice," says Prescott, "meticulous care in preserving these nerves is extremely important during this type of surgery. Injury to these nerves can have devastating, permanent effects on quality of life."

Though thyroid carcinoma tends to be among the least deadly forms of cancer, once it metastasizes to the lymph nodes, management becomes more challenging, with surgery being the best option for successful treatment. When that's the case, Prescott says, a patient's best chance for a good, long-term outcome is through care at a high-volume surgery center that uses a multidisciplinary approach and where the surgeon has extensive experience in operating on that region of the neck. "At Hopkins, we have a uniquely qualified team," he says. "We have the good fortune to have world-renowned endocrinologists who are devoted to caring for this specific disease as well as expert radiologists and pathologists. Every critical component of the team is in place at Johns Hopkins."

METICULOUS CARE IN PRESERVING THESE NERVES IS EXTREMELY IMPORTANT DURING THIS TYPE OF SURGERY.

Ultimately, Prescott says, the young woman's operation took about seven hours, with all of the affected lymph nodes being successfully removed. As a safeguard, she also had radioactive iodine therapy afterward. "Her prognosis after the surgery is very good," Prescott says. "The chances that this will shorten her life at all are quite small." ■

To refer a patient: 443-997-1508

THORACIC SURGERY

Treatment for **Barrett's Esophagus:** From Monitoring to Surgery

When it comes to patients with Barrett's esophagus, says **Richard Battafarano,** we've learned that the most critical part of treatment is close monitoring, particularly in light of recent projections by the American Cancer Society of a potential rise in esophageal cancer.

"We think many of the carcinomas that occur in people were probably Barrett's at some point," he says. "This is an increasing problem, and we can't forget it."

The condition, a complication of gastric esophageal reflux disease, is most often found when patients don't respond to standard reflux treatments and an endoscopy is performed by a gastroenterologist.

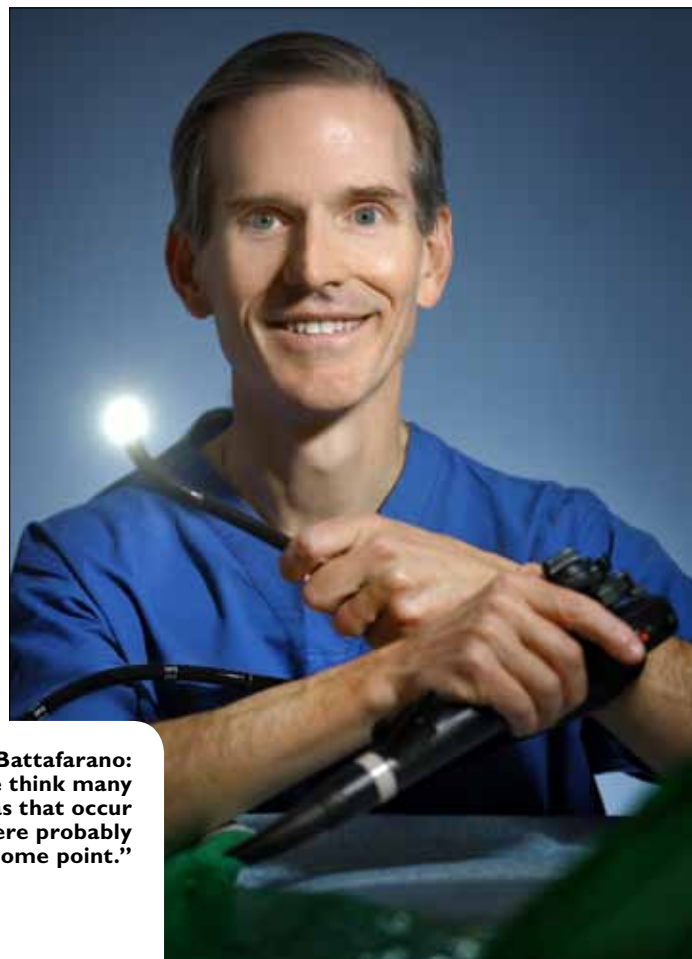
"Once acid suppression is achieved and the reflux esophagitis has resolved, usually through lifestyle changes and high-dose antacid medications," says Battafarano, director of the Division of Thoracic Surgery at Johns Hopkins, "gastroenterologists will manage the condition and recommend short-interval surveillance endoscopy. For those with high-grade dysplasia, endoscopic ablation is generally considered."

"We are monitoring Barrett's much more carefully now as compared with five or 10 years ago," Battafarano says. "It seems obvious, but we now understand that without surveillance endoscopy, there's no way to tell if the condition is progressing toward cancer."

When Barrett's patients present with high-grade dysplasia or intramucosal adenocarcinoma, it's then that gastroenterologists and thoracic surgeons collaborate closely in determining the right time to surgically intervene. "A lot of care and discussion takes place between the teams in assessing these patients," says Battafarano.

There are three different types of esophagectomies available for Barrett's patients with high-grade dysplasia or invasive adenocarcinoma, and all of them are available at Johns Hopkins. One approach is performed via a small laparotomy and a small right thoracotomy, while another is done by laparotomy and a neck incision. A third approach is a minimally invasive procedure that is performed through a laparoscopic (abdominal) and thoracoscopic (thoracic) approach. Each of these types of esophagectomy has advantages and disadvantages, so every attempt is made to match the surgical approach to the patient's needs. "We're very fortunate to have surgeons who specialize in each method, in addition to a world-class team of gastroenterologists with whom we work." ■

To refer a patient: 443-997-1508



Richard Battafarano: "We think many carcinomas that occur in people were probably Barrett's at some point."

Live Donor Liver Transplants

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because of laws prohibiting the use of organs from the deceased. And while such laws may limit the number of transplants performed overall, the result is a much higher volume of live donor transplants than in the U.S., where they are far less common and looked upon with more skepticism. "Turkey alone is doing almost twice as many live donor transplants as the whole United States because they don't have a good alternative," Philosophe explains. "The same is true in many Asian countries. Because they're solely relying on living donation, they're really able to push the envelope."

American hesitance about live transplant programs stems mostly from a small number of high-profile cases, in which the liver donor died. "When you're doing 200 of these surgeries per year across an entire country and it happens once or twice," Philosophe says, "it sends some shockwaves and people get scared."

BECAUSE OF THE LIVER'S REGENERATIVE PROPERTIES, A PERSON CAN FEASIBLY LIVE WITH AS LITTLE AS ONE THIRD OF THEIR NATURAL ORGAN.

But those cases are the exception, he explains. The reality is that live liver transplantations have proven overwhelmingly successful, with a donor fatality rate of .05 percent and a recipient success rate around 90. Hopkins own live donor transplant program performs between 10 and 20 per year. Surgeons in the program have dedicated significant time and resources to training, including traveling to Turkey and other countries that have thriving live donor programs.

"The fact that we do this operation is fairly unique in the U.S.," Philosophe says. "It's something that very few centers have embarked on. We want to be able to offer and expand our options for our liver patients. Since the deceased donor waiting list is long some may not make it. In 2012, nearly 11,000 people died on the liver transplant list nationally. Living donor liver transplant gives them that shot at life before it's too late." ■

To refer a patient: 410-614-2989

JOHNS HOPKINS Surgery

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