

HEALTH & SCIENCE

TUESDAY, JULY 19, 2011

“I’m not saying that children should be raised by wolves . . . but there should be less of a leash.” AnyBODY, E6

UNEARTHING THE BIBLE’S BAD GUYS

Philistines revealed Archaeologists piece together clues about the history of a people remembered chiefly as the enemies of the Israelites in the Hebrew Bible. E4

40% Proportion by which nitrogen-oxide emissions have decreased since 2002. But are Washingtonians breathing easier? **Urban Jungle**, E2

THE CHECKUP

More than just puppy love

A new study offers further evidence that a pet can help improve your physical and emotional well-being. E3



Dr. da Vinci will see you now

As robotic devices grow more popular, some question their cost and claimed value

BY CHRISTIAN TORRES

If robotic surgery is the future of medicine, many in the health-care industry would like you to know that the future is already here.

In 2010, an estimated 220,000 U.S. procedures were assisted by a robotic device called the da Vinci surgical system. Approved by the Food and Drug Administration 11 years ago, da Vinci is the only equipment of its kind on the market, with more than 1,300 systems installed across the country.

A surgeon operating the system sits at a console several feet away from the patient, and with the aid of a TV-like 3-D visualizer and joystick-style controls, uses the robot’s arms to maneuver instruments through small incisions. It’s a major change from traditional, or open, surgery, in which large incisions are made to access various parts of the body. The company that makes the system says it yields less scarring, pain and blood loss, among other benefits. And surgeons say that with its dexterity and precision, the robot’s performance



MARSHA HALPER/
MIAMI HERALD

may be better than minimally invasive procedures done by human hand.

Da Vinci was first used primarily for prostate removals, but it is now also used for heart valve repairs, hysterecto-

Mark Dylewski, a thoracic surgeon, uses a da Vinci surgical system at South Miami Hospital to remove a lung tumor from a patient who was a few yards away, attended by other members of the surgical team.

ROBOTS CONTINUED ON E4



PHOTOS BY MARSHA HALPER/MIAMI HERALD

Thoracic surgeon Mark Dylewski spent approximately six hours on a procedure to remove a cancerous lung tumor from a patient using the da Vinci surgical system that has been installed at South Miami Hospital.

Surgeons are divided over robotic systems

ROBOTS FROM EI

mies and throat cancer surgeries, among others.

"Robotic surgery has transformed fields that used to be focused on open procedures into ones focused much more on minimally invasive techniques," said Jonathan Hwang, director of the Robotic Surgery Program at Washington Hospital Center. Da Vinci can be expected to gain ground in colorectal and general surgery over the coming years, Hwang added.

Such expansion has raised concerns about whether hospitals are overly promoting robotic surgery.

"I think people are captured by the belief that being operated on with the newest technology, like a robot, is always better than the old ways — that is not always true," said Gabriel Barbash, a cardiovascular surgeon.

Costs and competition

Barbash, who does not work with the robot, co-authored a commentary, last year in the *New England Journal of Medicine*, that looked at a variety of studies and estimated that robotic surgery added an average of \$1,600 — or about 6 percent — to the cost of an operation. The difference was even greater when researchers factored in the price of the robot itself — \$1 million to \$2.3 million, plus up to \$170,000 per year in maintenance, according to Intuitive Surgical, maker of the da Vinci. (Medicare and many other insurance plans providers cover use of the da Vinci for all commonly performed operations.)

With hospitals making such large investments in the new technology, Barbash said, they have incentives to promote da Vinci.

"The competition right now [for patients] is on the level of billboards, advertisements, Web sites and more," said Martin Makary, co-author of a recent study on this topic published in the *Journal of Healthcare Quality* and a pancreatic surgeon at Johns Hopkins School of Medicine. "The competition should be on the level of outcomes."

The study by Makary, who has trained on the robot but is unconvinced so far of its overall benefits, found that among 164 U.S. hospital Web sites featuring robotic technology, 18 percent made use of what the study termed emotionally appealing phrases, 73 percent used manufacturer-provided images or text, and 33 percent linked directly to a manufacturer's Web site.

In addition, 89 percent of hospital sites claimed that robotic surgery is superior; the most common claims were that it shortens recovery time and lessens pain, scarring and/or blood loss. No site mentioned risks, though there have been reports of injury, and no site referenced a randomized clinical trial — the gold standard for evidence — to support their superiority claims.

"Materials provided by hospitals regarding the surgical robot overestimate benefits, largely ignore risks and are strongly influenced by the manufacturer," the Makary study said.

Among Washington area hospitals, George Washington University Hospital uses both images and text from Intuitive; the hospital's Web site also links to Intuitive's Web site. Washington Hospital Center uses an Intuitive-produced video to explain da Vinci and describe its benefits, and it has manufacturer images. Both sites combine manufacturer content with their own.



Dylewski uses precise hand movements to operate the robotic device, which is being used for a growing number of surgical procedures.

The problem with this, in Makary's point of view, is that "patients have come to trust official hospital Web sites as an official source for medical information, and [they] expect the voice of a doctor."

Lisa McDonald, director of marketing for GWU Hospital, wrote in an e-mail that "While the hospital's website informs patients of the full range of services we offer, the ultimate decision about a patient's course of treatment is a medical decision made by doctors with the patient's best interest in mind." Hwang said, "I don't personally see those as issues, as we present both options and outcomes on our site," adding, "I agree there's a lot of marketing out there."

Mixed results

Research on robotic surgery has shown a mix of results. As of June, 23 randomized clinical trials and 371 prospective and retrospective studies of da Vinci procedures had been published, according to Intuitive, which provided financial or other support to some of those studies. Among the results are those benefits mentioned on hospital Web sites, such as less scarring and pain. But many studies only compared robotic surgery with open surgery, which has already been overtaken by minimally invasive techniques in certain procedures. Studies that compared robotic surgery and traditional laparoscopy, for example, often found little to no difference in outcomes.

Chris Simmonds, senior director of marketing services for Intuitive, said, "In more complex procedures, we believe there are also benefits [of robotic] over laparoscopic," but "the big [comparison] value is between robotic and open surgery." Simmonds noted that many hospitals are internally tracking procedures and seeing da Vinci's benefits, but the data are unpublished.

"[With da Vinci,] there's much more ease and maneuverability — you can turn the corner in the throat, for example," said Nader Sadeghi, a head and neck surgeon at GWU Hospital. Sadeghi has done about 15 robotic surgeries and uses da Vinci for difficult-to-reach throat cancers.

Hwang has performed about 1,250 robotic prostate removals and said that da Vinci helps visualize the tight space around the prostate and avoid blood vessels and nerves. More than 80

percent of prostate removals now are done robotically, according to research presented at the annual meeting of the American Urological Association in May.

"Laparoscopic surgery, because it's so difficult, especially with prostatectomies, has been abandoned," Hwang said of the shift.

Hysterectomy is the second most commonly performed procedure with the da Vinci. Five years after FDA approval, more than 100,000 of an estimated 550,000 to 600,000 hysterectomies nationally in 2010 were performed robotically, according to Intuitive. Not everyone agrees that the increase is justified.

Looking for the truth

Paul MacKoul, director of the Women's Surgery Center, which has offices in Maryland and Virginia, said he believes there's a growing overreliance on robotic surgery for a few reasons, including marketing by Intuitive. MacKoul said his practice does not have a da Vinci: He prefers laparoscopic surgery because he believes it allows for smaller incisions and shorter operating and recovery time. The Women's Surgery Center airs radio ads and features a "Truth About Robotics" section on its Web site with that message.

Cheryl Iglesias, a gynecologic surgeon at Washington Hospital Center who has performed more than 200 robotic procedures, said that da Vinci should not be the first choice for straightforward hysterectomy. She has, however, seen shortened recovery times with its use and considers the device an "enabling technology" that provides better viewing and hand-eye coordination and is valuable in complex cases.

With the range of procedures that can be performed robotically, surgeons agree that further evidence needs to be collected and more comparisons need to be done. "We've seen advantages, but those need to be verified," Sadeghi said, while Hwang said that more studies of robotic vs. laparoscopic surgery need to be performed.

For now, though, said Barbash, "Patients should be choosing surgeons and not robots. Choose the best surgeon and go with the surgical methodology with which he/she feels most comfortable."

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DR. DA VINCI WILL SEE YOU NOW by Christian Torres

This story was by far my biggest challenge of the summer, but it also became one of the stories I was most proud of. When I arrived at *The Washington Post*, I had already done several stories on medical research, so I wanted to carry over that experience into a more consumer-friendly story that would also be issue-driven.

Robotic surgery perfectly fit the bill: It's an emerging technology with a growing collection of research, as well as plenty of consumer interest and controversy. The study at the center of my story came out of browsing random press releases, but I was able to research from there and eventually turn it into something much larger. I read dozens of research articles and commentaries, interviewed about a dozen people and browsed the web for hours on end to get a grasp of the topic. I also read several other published stories about robotic surgery and found where my story could fit in. While others focused on one procedure or only touted the benefits of the technology, I wanted to take a more critical, balanced approach and bring in issues like cost, effectiveness, and marketing.

Finding balance, however, was an immense challenge. I quickly realized that there were few clear answers, if any, regarding robotic surgery's effectiveness. And in talking with sources, I also found that there were numerous conflicts of interest to address. I worked closely with my editors on these and other fronts. I had to cover all bases and keep the story fair, but I also had to make sure the story was interesting and understandable. After several drafts, and several times returning to my sources and research, I had a piece that was interesting and challenged the reader to carefully consider robotic surgery. I had many people contact me once the piece was published, some sharing their own robotic surgery experience, and others thanking me for exploring the pros and cons before they had to make a decision about surgery for themselves. I'm happy to know that this piece helped stir up important conversations.

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