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Robot realities

The increase in robotic prostatectomies is raising questions about whether the technology leads to better results. *Kate Woods* investigates.

VACUUM cleaner or broom? Laptop or typewriter? Cordless drill or screwdriver? If you asked most people they would probably pick the newer technology.

Likewise, when it comes to the question of robot or surgeon, many patients are choosing robot, especially those with prostate cancer.

In the US, there has been a phenomenal rise in the number of radical prostatectomies performed using robotic technology – known as the da Vinci surgical system – since its introduction almost a decade ago.

In fact, numbers have jumped from 10% in 2004 to 63% in 2007, with estimates showing it could reach as high as 80% by the end of 2008.¹ According to one Australian surgeon, this change is “almost unprecedented in surgery”.

While the increase has been slower in Australia – 16% of radical prostatectomies in 2007 were done robotically compared to 5% in 2005¹ – there will be six

machines in use by the end of the year, and another two expected to begin operating within the next 12 months.

The robot works in a similar way to laparoscopic surgery; it is minimally invasive and allows finer and more controlled movements than a surgeon’s hand.

However, unlike laparoscopic surgery, the system is more intuitive and gives the surgeon a magnified, 3D telescopic view of the operative site.

Much of the literature on the Internet states robotic prostate surgery is far superior to open surgery, and many urologists agree that claims such as shortened time to discharge, quicker return to normal activity and minimal blood loss are reasonable assertions.

But without any randomised controlled trials looking at its effectiveness, claims that robotic surgery leads to an improved and rapid return of sexual function and urinary continence are considered more controversial.

Left to sort through the hype and biases, GPs have to answer questions about the recommended approach by the patient’s urologist and counsel patients about tailored treatments for newly diagnosed prostate cancer.

Aware of their predicament, Associate Professor Phillip Stricker – a surgeon who has performed more than 2000 radical prostatectomies – has conducted the first prospective Australian



Robotic surgery is safe, “but it’s not the be all and end all of treatments” Assoc Prof Phillip Stricker

trial comparing robotic surgery to open surgery in an effort to establish where the true benefits lie.

The independent trial involved 550 cases (400 open and 150 robotic), found quality of life – including sexual function, urinary function and urinary control – was equal between the two groups following surgery.

The margin positive rate was also equal between the groups, but only when the cancer was early and contained. Patients with more extensive cancers recorded slightly better results with open surgery.

As expected, hospital stays were shorter with robotic surgery (averaging 2.5 days compared to four days with open surgery), while return to normal activities occurred a few weeks

earlier with robotic surgery.

“My biggest concern when I started the trial was, is robotic surgery all hype or is it safe? And I think the bottom line is that it’s safe, but it’s not the be all and end all of treatments,” says Professor Stricker, the chairman of the urology department at Sydney’s St Vincent’s Clinic.

> page 26

inside



REAL CASES

A young mother’s eye condition is difficult to resolve

31



TALKING WOMEN

Understanding the role of sex hormones

35

UPDATE

Post pancreatotomy management

27

HEART OF THE MATTER

A bus driver presents with intermittent dizziness and palpitations

36

> from page 25

“There are lots of other treatments around like brachytherapy and even active surveillance, it’s just on the basis of these results I am now comfortable offering [robotic surgery] to people who, for example, have an earlier cancer and want a quick recovery.”

Each year, Professor Stricker performs around 300 prostatectomies, and on the strength of the findings, he predicts the number of robot-assisted radical prostatectomies he conducts annually will increase from

between 100 and 150 to 200.

“We are at the beginning of our learning curve with this technology. So if the results are equal already, even marginally better in some patients, then there is no doubt robot-assisted surgery will be the way of the future.”

Associate Professor Justin Vivian from the school of surgery at the University of Western Australia agrees. He says the fact that four out of five radical prostatectomies in the US could soon be done robotically “speaks volumes”.

“Laparoscopic surgery was around 10 years before the [introduction of robotic surgery] and accounted for less than 1% of the total number of radical prostatectomies.

Look at the quality of the surgeon, not the type of operation, to ensure best patient outcomes

Professor Mark Frydenberg

“So to go from zero to 80% in such a short time shows patients and surgeons are happy with the results.”

He admits the lack of randomised trials is a problem, but says unfortunately this is the case for all prostate cancer treatments. “All the evidence is in case series.”

The lack of “compelling” evidence is the reason Associate Professor Mark Frydenberg, chairman of the

urology department at the Monash Medical Centre, chooses not to embrace robotic surgery.

“I get a little frustrated as an open surgeon to see the less than ideal marketing of robotic technology.

“I actually think it is fantastic technology, and I have done the training myself, but at the end of the day... all the techniques are equivalent. There is nothing to suggest that doing it robotically gives a better outcome.”

For example, he says the studies looking at analgesic use show the amount of pain relief required by patients undergoing robotic-assisted or open surgery is the same on day one and day seven post-operatively.

“Also, US studies have shown a 0.1 day difference in length of stay between open and robotic cases, so this premise that the operation hurts less and patients get out of hospital faster isn’t really backed up by the evidence in the literature.”

And then there is blood loss. “You could argue that blood loss, at least statistically during the operation, is less with a robotic prostatectomy. But is this clinically meaningful when the transfusion rate is 1% or less for both groups?”

COST-BENEFIT DOUBT

Professor Frydenberg says the cost of the robot (\$3 million) and its disposables, coupled with the fact that surgeons spend longer in the operating room per case and the fact that patient outcomes are no better, makes it difficult for governments and hospitals to justify the purchase of more machines.

“Until the cost comes down substantially, it probably won’t be the way of the future in Australia.”

As such, he advises GPs to look at the quality of the surgeon, not the type of operation, to ensure best patient outcomes.

“If patients go to a good open surgeon or a good robotic surgeon or a good laparoscopic surgeon, the patient will get a good result. Going to a suboptimal surgeon just because he uses a robot isn’t going to give the patient a good result.”

Dr Peter Sutherland, head of urology at Royal Adelaide Hospital and an experienced robotic surgeon, agrees.

“At the end of the day, it is important to emphasise good surgery can be done via both methods, and it is important for any patient seeking treatment with surgery that the surgeon’s experience and outcomes are taken into account.”

Reference available from *Medical Observer* on request.



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