Volume 2, Issue 1, March 2013

What's New in Gynaecology?

An Update for General Practitioners

Sydney Women's Endosurgery Centre www.swec.com.au

Robotic Surgery In Gynaecology

Dr David Rosen

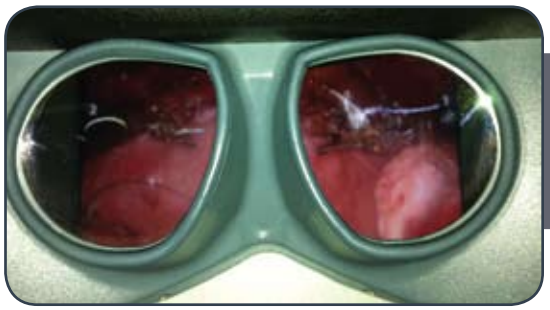
In 2011, a single da Vinci™ robot performing mostly radical prostatectomies existed in one Sydney hospital. By 2012, 4 systems existed with 2 more planned[1]. The Intuitive website, the owners of the da Vinci patent, states that 1840 units located within 1450 hospitals exist worldwide[2] performing 200 000 procedures per annum[3]. Only the most strident of critics can fail to acknowledge the coming tide that will dictate the future direction of surgery and surgical training.

How widespread is robotic surgery?

Robotic assisted surgery is now employed in Urology, General Surgery, Cardiac, Thoracic, Transoral and Gynaecological disciplines (see box).

What is robotic surgery?

"Robotic" surgery is NOT surgery by a robot. The surgeon is just as vital to the procedure as ever. The difference is that the movement of the instruments and tissues are performed by robotic arms placed via laparoscopic ports into the peritoneal cavity, whilst the surgeon is seated at a console controlling the movement of these arms, the energy sources connected to the instruments, and the focus, magnification and position of the scope. The assistant and scrub nurse remain at the bedside along with the anaesthetic team.



Robotic viewing glasses

Gynaecological cases suitable for robotic surgery:

1. Hysterectomy
2. Pelvic floor prolapse repair including sacrocolpopexy
3. Endometriosis including complicated bowel resection
4. Myomectomy
5. Tubal reanastamosis
6. Gynaecological oncological surgery including lymphadenectomy

Why robotic?

There are a number of real and potential advantages to robotic surgery;

1. Compared with traditional (so called "straight stick") laparoscopic surgery where the surgical instrument can only move in 3 planes (up/down, left/right and in/out), the robotic instruments are wristed and therefore have 7 degrees of movement, 3 at the point of port entry through the abdominal wall and 4 at the instrument wrist itself. This allows for more precise handling of tissue, and the reduction in movement at the abdominal wall reduces postoperative pain and enhances recovery.

...continued over

2. A robot has no intention tremor. Even the most relaxed, most experienced and most alert surgeon will have an element of tremor, especially with finer movements. The robotic arm suffers no such human frailty!
3. Vision – anyone who has seen a laparoscopic surgical procedure will understand the advantages of the magnified view compared with open surgery, especially when looking into the recesses of the pelvis. Until now, however, we as laparoscopic surgeons have had to mentally convert the 2D image we see on the screen, into a 3 dimensional world by using our experience and anatomical knowledge. Indeed this characteristic alone has been the limiting factor for many surgeons and trainees unable to negotiate the 2D world without resort to coarse haptic techniques (rough handling of tissues, missing objects with graspers etc). The amazing 3D view seen through the binocular robotic viewer (pictured) provides all the advantages of minimally invasive surgery PLUS an enhanced 3 dimensional laparoscopic view.
4. As mentioned previously, the advances in laparoscopic surgery of the past 15 years have been well documented; shorter hospital stay, faster recovery, reduced blood loss and now even reduced costs overall are all offered to patients who have the benefit of access to advanced laparoscopic surgery. Recently, we have endeavoured to show that laparoscopic surgery can actually provide all the above with better surgical outcomes than comparable open surgery.

This is a major step forward. Critics of minimally invasive surgery have been known to warn patients off exploring such avenues because laparoscopic surgery is somehow "dangerous" or "unproven". Not only has this been shown to be false but we can now recommend laparoscopic procedures such as sacrocolpopexy and treatment of endometriosis based on evidence of superiority over similar open surgery.

Much has happened with laparoscopic surgery, time will show the benefits of robotic surgery to our patients.

> "As leaders in the field of minimal access surgery, SWEC are part of this robotic revolution."

And the downside?

Of course, there are drawbacks:

1. **Expense** – at present, robotic surgery is more expensive than other forms. In Australia, at the time of publication, only certain Health Insurers will cover the cost of the disposables used for robotic cases. Furthermore, the capital costs of the robot itself is well known.
2. **Limited cases** – linked with the above, in gynaecology at present only Hysterectomy is eligible for rebate as a robotic operation. SWEC aims to change this over time, much has occurred with laparoscopic surgery, to allow us to offer the advantages of robotic surgery to all women regardless of their surgical complaint.

3. **Training** – whilst the Fellows of SWEC and other robotic units have access to simulated training and surgical cases, this is obviously not the case throughout NSW. As with any new technique it is likely that established surgeons will monopolise caseload in both private and public situations in order to obtain the necessary experience with a new technique. Combine this with a generalized reduction in gynaecological surgery due to better medical options and one can see the difficulties faced by the gynaecologists of tomorrow.
4. **Haptic feedback** – because the robotic instrument is remote from the surgeon there is no "feel" of the tissues. At first this is very strange however a knowledge of what the structure should feel like along with some tricks (seeing the pressure made by the robotic arm when applied to tissue, or getting the bedside assistant to feel a structure to demonstrate its compliance) provides "visual haptics" and allows an experienced laparoscopic surgeon to feel the tissue mentally.

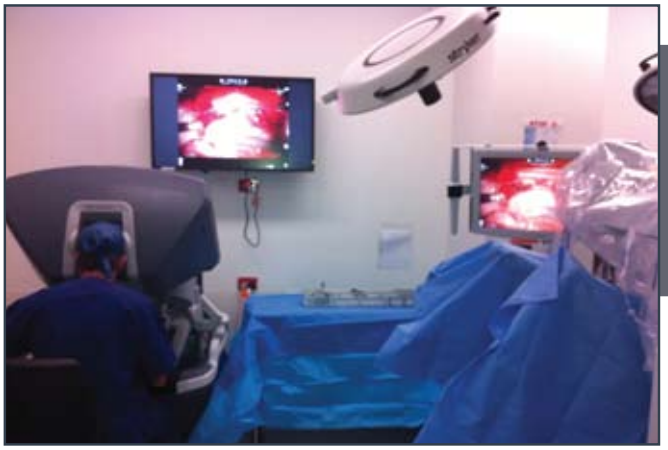
The future?

Laparoscopic surgery was initially derided by traditional surgeons due to a combination of the shock of the new and fear of losing work. Time has proven them wrong and now a laparoscopic cholecystectomy is the basic standard of care expected in any institution. Sadly this has not been the case in gynaecology – in 2008, 2/3 of all hysterectomies in the United States were still performed by laparotomy and only 11.6% by laparoscopic methods[4], and the numbers are similar locally. As more cases are performed and the data on cost, recovery, complications and outcomes is gathered, it is hoped that robotic surgery affords more and more women access to advanced minimally invasive surgical options.

Robotic training – more than just turning up!

Training in Robotic surgery has been a long path for the doctors at SWEC. After attending a surgical conference in Brisbane in 2010 it became clear to the team that robotics were the way of the future and as leaders in the field of minimal access surgery, they needed to be a part of this revolution. Time passed quickly until the beginning of 2012 when training commenced under the auspices of the reps at Device Technologies. This involved a minimum of 10 hours of training on the robotic simulator before any live surgery, to familiarise themselves with the nuances of a different type of operating.

Dr Rosen, Cario and Chou at the robotic training centre, Celebration Hospital, Orlando.



The Robot in operation, Macquarie University Hospital, Sydney.

> "Over a 3 day weekend one month later, each of the three SWEC surgeons performed their first robotic cases at Macquarie University Hospital, North Ryde, including hysterectomy and myomectomy."

In August, the entire team, Surgeons and Fellows, travelled to Orlando FL. to attend a 4 day training course run by Dr Arnold Advincula, one of the pioneers of robotic surgery and a world renowned expert. The training centre, attached to the Celebration Hospital, is a purpose built facility with a 6-bed animal laboratory, a permanent veterinary anaesthetic team and a staff of dedictated robotic trainers. In the adjacent hospital, Dr Advincula runs 2 operating theatres allowing the attendees to view state-of-the-art robotic surgery. There, the team were put through their paces on the robotic simulators and during live animal labs (pictured above), as well as a short amount of time to see the local sights. Only after successfully demonstrating the surgical skills required will the specialist trainers sign a surgeon off to allow them to commence cases using a da Vinci robot.

Within a month of training, it is hoped that a surgeon will commence their first robotic cases to maintain the momentum. SWEC had organized Dr Advincula to attend these cases as preceptor and so over a 3 day weekend one month later, each of the three SWEC surgeons performed their first robotic cases at Macquarie University Hospital, North Ryde, including hysterectomy and myomectomy. After such a long time in the planning, to achieve this milestone was celebrated in the appropriate fashion!

Whilst slightly different from their traditional laparoscopic surgery, it did not take long to adapt to the differences involved with robotics because of the familiarity with operating with instruments rather than open surgery. Certainly, the time spent in mandatory training is fully appreciated and is definitely a must for any surgeon who wishes to commence robotic surgery. It is not simply a matter of just sitting at the console and "giving it a go"!

What's Coming Up at SWEC?

SWEC is delighted to announce the opening of a new service for women of the North and North Western suburbs. From May Drs Cario, Chou and Rosen have been consulting and operating at Macquarie University Private Hospital. Macquarie Private Hospital is a state of the art facility with the latest in surgical and medical technology available. Most notably, our surgeons will be able to offer Robotic surgery and we will keep you updated on any changes in the variety of robotic cases approved for rebate. At Macquarie we will be concentrating on consultations for menstrual abnormalities and difficult or challenging hysterectomy such as for large fibroids, prolapse, incontinence and endometriosis surgery as well as our usual focus on all aspects of gynaecological care.

For all appointments with our surgeons at Macquarie Private Hospital Medical Centre please call 9887 8899 or the Doctors' Rooms.

Bibliography:
1. www.urologist.net.au/henry-woo.html
2. www.davincisurgery.com/
3. The Economist. Jan 18, 2012
4. Laparoscopic robotic gynecologic surgery Obstetrics and Gynecology Clinics of North America, Volume 31, Issue 3, Pages 599-609 Advincula A P, Falcone T

SWEC

Sydney Women's Endosurgery Centre

SWEC
1300 498 448

www.swec.com.au

Who are the Sydney Women's Endosurgery Centre (SWEC)?

SWEC is a group of Sydney Gynaecologists dedicated to excellence and innovation in minimal access surgery for women.

The associated surgeons have all trained and practiced extensively in laparoscopic surgical techniques both here and overseas and SWEC is seen around the world as a leading centre of gynaecological endoscopic surgery. Two Fellows in laparoscopic surgery are employed full time by SWEC working at St George Private and St George Public Hospitals, and visiting Fellows who spend from 1 to 2 years learning the surgical techniques we practice. Indeed our former Fellows have returned to the UK, Ireland, Saudi Arabia, Israel and India to set up endoscopic practices of their own.

SWEC Surgeons practice in private and public hospitals throughout the east, south and west of Sydney. As gynaecologists only they spend all their time involved in major gynaecological surgery including:

- Surgery for pelvic pain and endometriosis
- Removal of fibroids and difficult hysterectomy for pain or heavy menstrual bleeding
- Surgery for prolapse
- Incontinence procedures, amongst others

We strongly believe that advanced gynaecological procedures should be performed by surgeons who specialise in these cases.

SWEC

Sydney Women's Endosurgery Centre

For further information please contact us at SWEC

1300 498 448

For more copies of this newsletter please email the SWEC Administrator at www.sweconline@gmail.com

Your SWEC Surgeons

(in alphabetical order):

Dr Gregory Cario
Suite 5, Level 3
St George Private Hospital
Suite 1, 2 Pearl St
Hurstville Private Hospital
Ph: (02) 9579-3110
Hospitals: St George Private,
Macquarie University Private Hospital,
Hurstville Private, St George Public
www.drgregorymcario.com.au
doc@drgregorymcario.com.au

Dr Danny Chou
Suite 6A, Level 5
St George Private Hospital
Ph: (02) 9587-3388
Hospitals: St George Private,
Kareena Private, St George Public,
Macquarie University Private Hospital,
Royal Hospital for Women

A/Prof. Michael Cooper
Level 7, Park House,
187 Macquarie St, Sydney
Ph: (02) 9233 3546
Hospitals: St Vincents Private, St Lukes Private,
Royal Prince Alfred
www.mjwcooper.com.au
admin@mjwcooper.com.au

Dr Geoffrey Reid
Level 7, Park House,
187 Macquarie St, Sydney
Ph: (02) 9233 4701
Hospitals: St Lukes Private, St George Private,
Liverpool Public,
Southern Highlands Private
www.gdreid.com.au
sydney@gdreid.com.au

Dr David Rosen
Suite 10B, Level 3
St George Private Hospital
Suite 2, Level 3
106 Ebley St, Bondi Junction
Ph: (02) 9553 6500
Hospitals: St George Private,
St Lukes Private, St George Public,
Macquarie University Private Hospital,
Royal Hospital for Women
www.drdr.com.au
reception@drdr.com.au

SWEC Associates

Lionel Reyftmann
Gynaecologist

Dr Jenny Cook
Gynaecologist

Dr Peter Aslan
Urologist

Dr Mathew Morgan
Colorectal surgeon

Prof. Michael Chapman
IVF Australia