The Wesley HOSPITAL
Caring for you for life

Medilink

Medical Professionals' direct link
to programs and services at the Wesley

Women's Health

Articles in this issue:

Welcome

Dr Luis Prado

Director of Medical Services

Welcome to the Summer Edition of Medilink. This edition features a number of articles by Wesley Visiting Medical Practitioners who specialise in women's health. The articles cover a variety of topics including thyroid conditions, breast surgery, fertility, prolapse surgery and menstruation issues.

Women's health is a pillar of expertise at The Wesley Hospital. We provide a comprehensive range of women's health services, with a dedicated women's health ward, maternity unit, The Wesley Breast Clinic, Wesley Monash IVF clinic, Kim Walters Choices Program and a number of outpatient allied health clinics. As Queensland's most comprehensive private hospital, the Wesley is able to offer seamless care from diagnosis through to treatment on one campus, complemented by clinical nurse specialists.

Our women's health service is but one part of our complete medical care. To cater for growth, we continue to make progress with important new projects. Our theatre expansion project is well under way, with stage one complete and the stage 2 now launched. Stage one included the addition of four consultation rooms in our Day Surgery unit and the creation of a theatre hot floor which has streamlined the patient experience. The project will ultimately result in a state-of-the-art theatre complex comprising 19 theatres, including one hybrid theatre for specialised cardiac and vascular procedures. We are also progressing with the expansion of our Emergency Centre. The Emergency Centre refurbishment will include the provision of four new holding bays, one new consulting room and additional patient toilet facilities. The Emergency Centre is expected to be complete early in 2014 and construction of the new operating theatres in 2015.

As we look to 2014, we hope that through our General Practice continued professional development (CPD) events and other communications, we will continue to keep you informed about the hospital's services and play an important role in GP education. We recognise the important role the General Practice community plays in ensuring The Wesley remains one of Australia's leading private hospitals and welcome any feedback you may have.

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Business Development Update

Vicki Goss

Business Development Manager

As we start the new year I would like to like thank all our speakers and attendees who have made our 2013 continuing professional development (CPD) program such a success. We have held a number of local and regional CPD events, active learning modules and successfully introduced the GP medical series in partnership with St Andrew's War Memorial Hospital. The medical series added a new dimension to GP professional development with our engaging hosts Geoffrey Robertson QC and Tony Jones.

In 2014 we have once again compiled a strong and inspiring program of CPD events at the Wesley which we are confident will support the development and maintenance of medical skills and lifelong learning for our referring GPs and VMPs. Details of our 2014 program is attached.

If you are interested in having specialists visit your practice, or would like more information about our CPD program please contact me via email wesley.bdm@uchealth.com.au or call 0419 020 156.

Clinical Education 2014

CPD The Wesley Hospital	ALM The Wesley Hospital	GP Medical Series Wesley/SAWMH	Regional
18 FEBRUARY ENT	**15 FEBRUARY** Womens Health		
18 MARCH Gastroentrology			**MARCH – Week of 24th** General Practice Update Men's Health Northern Gold Coast
15 APRIL Paediatric			
20 MAY Cardiology		**17 MAY** Q&A with Tony Jones	**MAY – Week of 21st** General Practice Update Men's Health Mackay
4 JUNE Cardiac Audit Dinner	**14 JUNE** General Medicine		
17 JUNE Gynaecology			
15 JULY Orthopeadic			**JULY – Week of 28th** General Practice Update Men's Health Cairns
27 AUGUST Surgical Audit Dinner	**23 AUGUST** General Surgery		
19 AUGUST Emergency Medicine			
16 SEPTEMBER Vascular		**13-14 SEPT** Private Practice Weekend	**SEPT – Week of 8th** Men's Health Rockhampton
21 OCTOBER Intensive Care	**18 OCTOBER** CPR		
			1 NOVEMBER ALM – Cardiology Hervey Bay
18 NOVEMBER Infectious Disease			**NOV – Week of 3rd** General Practice Update Men's Health Emerald

Please note: Topics and dates are subject to change

The Wesley Ulcer Clinic

The Wesley ulcer clinic is run by a Vascular Physician with training in ulcer management and assessment. The clinic offers services including:

+ a clinical nurse consultant specialising in wound management
+ weekly clinics
+ assistance with the management of diabetic ulcers
+ neuropathic treatments
+ arterial
+ venous
+ limited dressings provided at cost
+ direct admission to hospital if required
+ access to imaging and other specialists as required.

The doctors consultation fee id bulk billed for all patients but there is a separate Clinic fee of $33.50 which is non-refundable. Patients are also required to pay for their own dressings which are provided at cost.

You can contact The Wesley Ulcer Clinic by phoning 07 3232 7645 to book an appointment.

Outpatient musculoskeletal physiotherapy

The Wesley Therapy Service has launched an improved physiotherapy outpatient service with treatment now available Monday-Friday between 7am and 5pm. Call us on (07) 3232 6190 to make a booking.

The Physiotherapy Outpatient Clinic is open to all patients, members of the general public and all Wesley Hospital staff. It provides excellent continuity of care and rehabilitation to our patients post discharge and enables them to see their doctor and get physiotherapy treatment on the same day, if appropriate. We are located in the East Wing, level B1 of The Wesley Hospital.

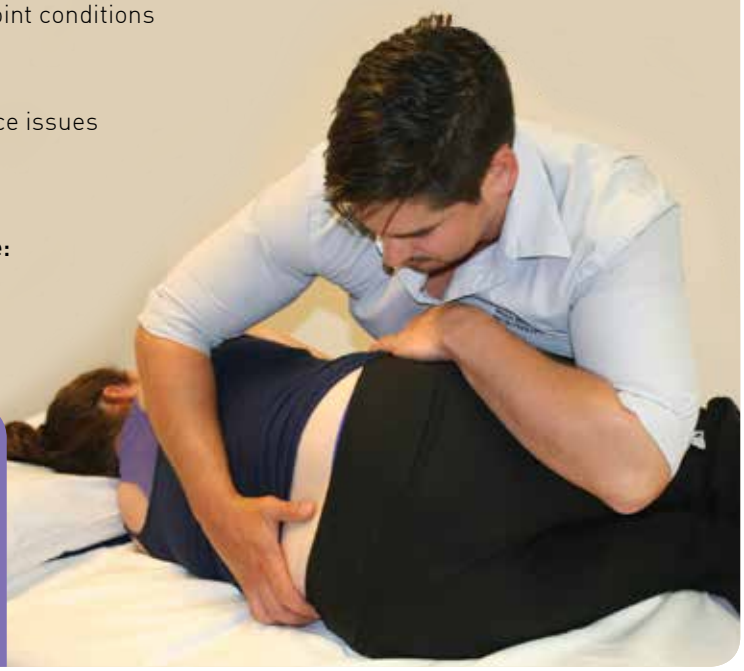
The Wesley Physiotherapists can help with joint or muscle pain and can treat all post-operative conditions. We now also have a Sports Physio available to help your more athletic patients and to provide specialist advice.

Our Physiotherapy Outpatient Clinic offers:

+ Management of acute and chronic spinal and other joint conditions
+ Treatment of soft tissue injuries
+ Post-operative strengthening and reconditioning
+ Diagnosis treatment of sports injuries or performance issues
+ Dry needling (similar to acupuncture)
+ Posture and gait analysis.

All of our consultations are one on one and incorporate:

+ Hands on treatment
+ Individually tailored exercise programs
+ Advice relevant to the condition.



No referrals are necessary to attend the clinic. Private health insurance rebates apply.

For more information on the Physiotherapy Outpatient Clinic or to make a booking, call us on (07) 3232 6190 or visit www.wesley.com.au

The Wesley Breast Clinic

The Wesley Breast Clinic provides a screening program for asymptomatic women aged 40 years and over and a diagnostic clinic for women of any age. Services are also extended to the small percentage of men who develop breast symptoms.

Radiographer performing a mammogram

Radiographer performing a breast ultrasound

The screening program involves a mammographic examination, in addition to a consultation with a breast care nurse if required. If an abnormality is detected, further investigations can be undertaken immediately with all processes and reasons comprehensively explained to the patient. Each visit includes advice regarding further screening examinations, breast self-examination and information about breast cancer and its detection.

As screening has been demonstrated to be effective in reducing breast cancer deaths only for women over 40 years, this program is orientated towards that age group.

Our diagnostic clinic provides a specialised multidisciplinary assessment for all breast diseases, with any woman able to attend with a GP referral.

Investigated modalities used by the diagnostic clinic include:

+ Physical examination by a clinical doctor or if necessary a Breast and Endocrine Surgeon
+ Digital mammography using highly specialised, low dose radiation equipment
+ Ultrasound examination with dedicated breast ultrasound equipment
+ Needle sampling of abnormal areas of the breast if considered necessary
+ Other specialised imaging techniques when appropriate i.e. pre-operative localisation.

The diagnosis is reached by combining the results of these investigations. Full details of results, together with our recommendations for future management, are sent to the referring GP as well as being discussed with each woman before she leaves the clinic.

The Wesley Breast Clinic also has close ties with the Kim Walters Choices Program, which provides ongoing support for those affected by breast and gynaecological cancers.

Another service offered by the Wesley Breast Clinic is a Familial Cancer Service for women with a strong family history of breast cancer. The service offers clinical and imaging assessment, together with counselling regarding risk and detailed advice relating to the management of options and genetic testing.

If you would like to refer a patient to the Wesley Breast Clinic please complete the referral form located under GP resources on our website or call for an urgent appointment on 3232 7202 or email breastcl@uchealth.com.au

The Wesley Hospital KIM WALTERS choices

The Kim Walters Choices Program, or Choices as it is often referred to , is a free community service available to any individual diagnosed with breast or gynaecological cancers. The services aims to provide a friendly and informal environment, where people can self-refer, or be referred by a friend or a health professional. The program is unique within Australia.

The Choices philosophy is "to provide appropriate support and information to all women, men and their families affected by breast and gynaecological cancers with respect for their emotional, social and intellectual needs."

Choices can assist in:

+ answering your questions
+ providing practical assistance
+ helping you make decisions that are best suited to you
+ providing you with emotional support
+ meeting other individual needs about having breast or gynaecological cancers
+ providing the opportunity to meet others with similar needs.

Individuals who have been diagnosed with breast or gynaecological cancers can access Choices at any time during their diagnosis, treatment, and even years down the track. Our services are available to everyone, no matter where you were diagnosed or are being treated. We also welcome partners, family members and the support persons of those diagnosed so that they too can obtain information and support.

To contact Choices please call Monday to Thursday 8:30am to 5:00pm or Friday 8.30am to 2.30pm on (07) 3232 6548 or free phone 1800 227 271 or email choices@uchealth.com.au

We also welcome people to drop in any time within the opening hours to our Choices rooms in the grounds of The Wesley Hospital, 451 Coronation Drive, Auchenflower, Brisbane.

BRCA1 and BRCA2

Who needs to know?

Celebrities and breast cancer groups praised Angelina Jolie for her 'courageous' decision to undergo a preventative double mastectomy and share her story, saying her openness could save lives by leading to a surge in women being tested for the cancer gene.

Following the announcement of Jolie's double mastectomy for an inherited breast cancer risk, public awareness worldwide has been heightened. Breast cancer is common, with about 14,000 women being newly diagnosed each year in Australia with a lifetime risk approaching 1:8. From a population of 23 million (half being female), it is important to remember that most women do not develop breast cancer, the incidence being about 114 per 100,000 women with an average age of 60.

Of women that I see each year with breast cancer, those with a very high risk due to a genetic predisposition, such as BRCA1 or BRCA2, comprise approximately five per cent of women I eventually treat. The other group of women I consult, advise and occasionally treat prophylactically, will be women like Jolie, who have not yet developed breast or ovarian cancer, but are at very high risk due to a proven predisposition breast cancer gene.

The greatest risk factor for developing breast cancer, I always say, is being a woman and getting older! Little comfort for females in our community as Australia has one of the highest incidences worldwide. Family history is the next most important risk factor. For the average woman with any family history, a first-degree relative with breast cancer about doubles her risk, hence a recommendation for annual screening rather than biannually for the woman with no family history. BRCA carriers pose quite a different risk problem and it is important to identify these potentially higher risk individuals.

Inherited gene mutations – why do we get cancer?

Cancer is a genetic disease associated with mutations in genes that normally act to control cell growth, proliferation and DNA repair. Up to 95 per cent of all cancers are caused by these somatic mutations in cancer-associated genes. As these faults occur in somatic cells (such as the cells lining breast ducts), they cannot be inherited.

However, some individuals come from families that have an inherited mutation in one of these same genes e.g. BRCA, and consequently start life with a defective copy of a particular tumour suppressor gene (the 'first hit') present in every cell of the body. In a person with a rare genetic susceptibility, the 'first hit' has already been inherited either in the egg or the sperm (germline mutation). People who inherit a germline mutation in a cancer-associated gene are therefore at increased risk of developing cancer and in addition, can pass a germline mutation on to the next generation. For each of their offspring (male or female), there is a 50 per cent chance they will inherit the mutated copy of the gene.

Examples of hereditary breast cancers

- BRCA1 and BRCA 2 – most common
- Li-Fraumeni Syndrome – p53 mutation
- PTEN (Cowden Syndrome)
- Familiar type gastric cancer and lobular breast cancer
- Peutz-Jeghers Syndrome

What is BRCA?

BRCA1 and BRCA2 are tumour suppressor genes that produce a protein that assists in DNA repair. Germline or inherited mutations in both these genes are therefore associated with a higher risk specifically for breast and epithelial ovarian cancer. The first gene to be discovered was BRCA1 on chromosome 17. Since then, BRCA2 and other cancer susceptibility genes have been identified. People who have an inherited fault in these genes are gene mutation 'carriers', with an increased risk of developing cancer. Inherited faults in BRCA1 and BRCA2 are more common in individuals of Ashkenazi Jewish heritage.

Risk of breast or ovarian cancer

- Lifetime risk of breast cancer
  - 50-80 per cent BRCA1 and BRCA2
- Lifetime risk of ovarian cancer
  - 20-40 per cent BRCA1
  - 10-20per cent BRCA2
- Familial cancer tends to occur at younger age
  - Increased risk is lifelong

Who should be tested?

Remembering that the majority of women affected with breast cancer do not have a high risk gene and those at high risk represent a small portion of the population, women should be very selectively screened. Overestimating risk may lead to unnecessary fear, anxiety and even over-treatment.

Genetic testing should only be done with pre- and post-test counselling. It should only be performed in a setting where the test can be adequately interpreted and the results will aid in diagnosis or influence the medical or surgical management of the patient or family members at hereditary risk of cancer. This should include discussion of the possible risks and benefits of early detection of cancer and prevention modalities.

So take a family history:

- Ask about all relatives over three generations, affected by cancer
- Maternal and paternal family history is equally important even for breast and ovarian cancer

Associate Professor Owen Ung

Breast and Endocrine Surgeon
MBBS, FRACS

Dr Michael Gattas

Clinical Geneticist
MBBS, FRACP

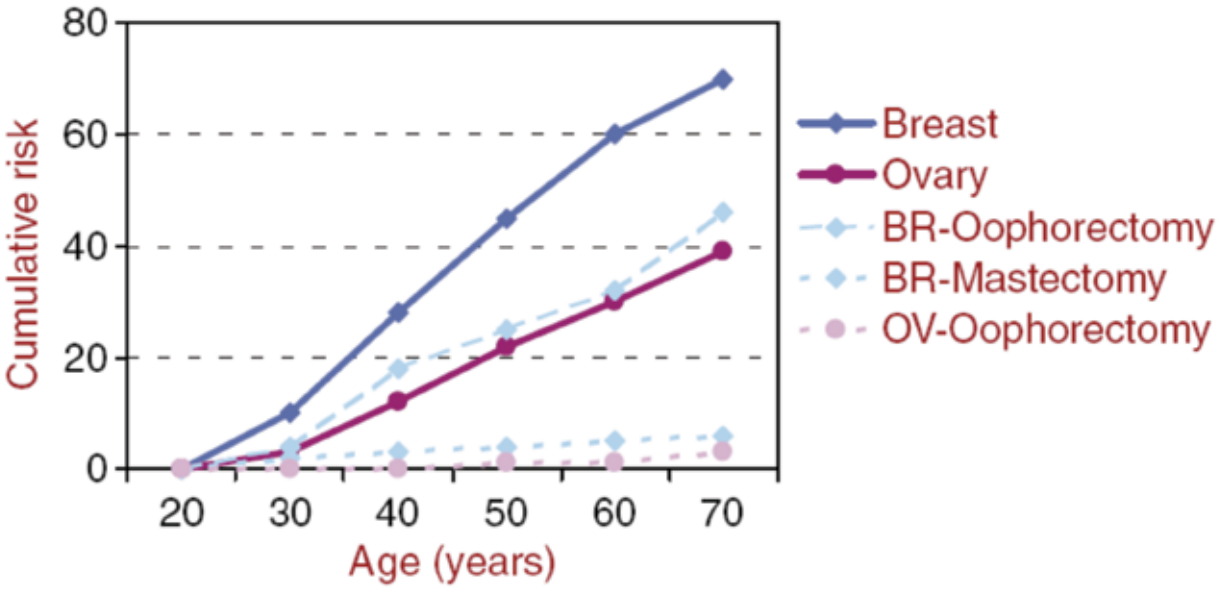


Figure 1: Cancer risk reduction with prophylactic surgery.

- Document all cancers on both sides of the family and age at diagnosis
- Ethnic background (especially Ashkenazi Jewish origin)

Features of the family history that suggest possible genetic susceptibility to breast and ovarian cancer:

- Several family members on one side of the family in different generations affected by breast and/or ovarian cancer
- Women who develop breast cancer before the age of 40 years (particularly very young i.e. <30)
- Women who develop bilateral breast cancer
- Women who develop both breast and ovarian cancer
- Men as well as women who develop breast cancer
- Ashkenazi Jewish origin
- Triple negative breast cancer can be a feature of BRCA1 related breast cancers

The National Breast and Ovarian Cancer Centre (NBOCC) has developed three categories of risk based on family history. The categories give a guide to screening recommendations based on level of risk and to the appropriateness of referral for consideration of genetic testing.

The Familial Risk Assessment – Breast and Ovarian Cancer (FRA-BOC) online tool:

http://canceraustralia.gov.au/clinical-best-practice/gynaecological-cancers/fra-boc/evaluate

How is testing done?

The initial step in genetic testing is usually to take blood from one of the family members affected by breast or ovarian cancer. This first phase, the 'mutation search', must be done with informed consent. The laboratory then searches the large BRCA1 and BRCA2 genes to determine whether a causative gene mutation can be found. If found, unaffected relatives, male or female, can easily be tested to find out whether they harbour the gene i.e. whether they are at very high risk or at the normal population risk. This is known as 'predictive' testing and is a relatively quick process.

A causative gene mutation cannot be found in every family tested as mutations may be missed or may be present in other genes not yet identified (non BRCA genes). Therefore, if the family history is strong and the genetic test (mutation search) fails to identify a gene mutation in an affected family member, the test result should be considered 'unexplained' and all relatives remain at potentially high risk.

A multidisciplinary approach

Management options for affected and unaffected women at genetic risk are complex, requiring the interaction of a genetics specialist with the breast surgeon, plastic surgeon, gynaecological oncologist, oncologist, endocrinologist and the patient's general practitioner. The approach should be multidisciplinary.

Managing high risk individuals

Breast surveillance:

- Annual mammography and ultrasound for women over 35 years
- Ultrasound may be omitted for older women with less density, usually >50 years
- Ultrasound for younger women or older woman with dense breast tissue
- MRI for younger women or women with dense breast tissue (Medicare rebate available only for identified high risk individuals <50 years of age) and very young patients (<35 years), I omit mammograms and alternate MRI and ultrasound every six months.

Ovary surveillance:

- Ovarian screening – CA125 and endo-vaginal ultrasound are considered unreliable
- At an appropriate time – oophorectomy is a better option.

Prevention

Endocrine therapy

Tamoxifen and Aromatase inhibitors: not used much in practice, but certainly some women not wanting prophylactic surgery would benefit and the pros and cons need discussion. Expect about a 30 per cent lowering of risk, but the overall risk still remains high for mutation carriers. There is no PBS rebate available for this indication.

Prophylactic surgical procedures

Figure one demonstrates cumulative risk against age, with and without prophylaxis.

Mastectomy

Risk-reducing bilateral mastectomy will reduce the risk of developing breast cancer to one to two per cent but does not reduce the risk to zero. Significant preoperative counselling is essential. The option of breast reconstruction should be discussed. Unlike women with newly diagnosed breast cancer, women considering risk-reducing mastectomy can be encouraged to take their time in making decisions and spend as much time as they feel is necessary to understand the surgery and its implications. Many younger women choose to complete their families before considering prophylactic surgery. Most women with partners wish to include them in their decision making. Most women want to at least discuss immediate breast reconstruction. Treatment teams need to offer the full range of options. It is important to manage expectations realistically; while surgical reconstructive options are many, no procedure can restore a normal breast and only the best results tend to be posted on the internet.

Salpingo-oophorectomy

It is important to remove the salpinx to further reduce risk but even so, like breast cancer, risk can be reduced to one to two per cent only, as peritoneal carcinoma may still occur. Risk-reducing bilateral salpingo-oophorectomy is a procedure sometimes more easily accepted by high risk patients, particularly if she is post-menopausal. The symptoms of menopause for the pre-menopausal patient however, can be quite severe, especially when occurring abruptly following ovarian surgery.

For most women, salpingo-oophorectomy is relatively straightforward and can be performed laparoscopically. Oophorectomy also confers up to a 50 per cent reduction in breast cancer risk for the pre-menopausal woman who has not already undergone prophylactic mastectomy. If there are uterine abnormalities or the woman wishes to take tamoxifen then hysterectomy should be considered.

The prophylactic dilemma

For the BRCA individual, the risk of breast cancer becomes significant at a younger age (twenties) and ovarian cancer risk somewhat later (forties). There will of course be exceptions e.g. the family with a history of ovarian cancer occurring in younger family members.

Psychologically and emotionally, oophorectomy may seem more palatable than mastectomy, particularly for younger women, who may not have a steady and supportive partner when the implications of their BRCA status are being considered. Outward appearances and body image are unchanged after an oophorectomy but significantly changed after a mastectomy.

Physiologically and physically however, oophorectomy may be devastating for the pre-menopausal patient who may not have completed her family and would be thrust into a sudden and complete menopause at a young age. The long term affects of being devoid of oestrogen may be far worse. A young woman undergoing prophylactic mastectomy should therefore be placed on hormone replacement to avert the complications of oestrogen depletion. Hormone replacement, however, increases the risk of breast cancer at least a little. Fertility preservation and breast feeding for some women may be paramount to their decision making. Conversely, some of my patients have stated a reluctance to have children, given the chance of passing on their BRCA gene. In vitro fertilisation and pre-implantation genetic diagnosis is an option available in these circumstances.

In my view, the ovary is more problematic than the breast. Surveillance is unreliable and the consequences of a likely late diagnosis devastating. Women should be encouraged towards surgical prophylaxis at an appropriate time. Ideally, this should follow mastectomy (should the woman be accepting), which would remove at risk breast tissue and any concerns over hormone replacement. The use of the oral contraceptive pill may help reduce the risk of ovarian cancer in the high risk women with BRCA mutations. The OCP does not seem to add much to the risk for breast cancer, which is already high in this population.

So with appropriate support and counselling, BRCA carriers can be helped towards an individual solution. Prevention is still better than early detection but for the breast, good surveillance methods are available for the patient not wishing to undergo surgical prophylaxis. There is so much more to managing the woman with a predisposition gene than simply performing a mastectomy. ■

Associate Professor Owen Ung is a breast and endocrine surgeon with rooms at The Wesley Hospital. He is a committed clinician, researcher and educator. His long-term interest in familial breast cancer has spanned more than 20 years of specialist practice, pre-dating the availability of BRCA testing. He has championed the evolution of multidisciplinary breast cancer management and its immeasurable benefit, particularly for those at high risk.

Dr Michael Gattas is a clinical geneticist who has moved into newly renovated rooms at the Wesley Medical Centre. He has been involved in the clinical testing of the BRCA genes since he started his practice in Queensland in 1996. He has experience in using video consultation to see patients and an interest in testing new technologies as they continue to develop.

**Note – this article was written by Professor Owen Ung with additional information provided by Dr Michael Gattas.*

Professor Ian Gough

Breast and Endocrine Surgeon

Thyroid surgery as a women's health issue

Thyroid disorders including cancer, benign goitres and thyrotoxicosis are three to four times more common in women than in men. This translates to the proportion of women referred for assessment and eventually having thyroid surgery.

There have been notable changes in the practice of thyroid surgery in recent years including:

1. The evolution of endocrine surgery as a subspecialty, with surgeons developing expertise and experience with improved outcomes.
2. The almost universal adoption of total thyroidectomy rather than subtotal thyroidectomy for appropriate indications (reference 1).
3. The refinement of surgical operations using smaller incisions and improved dissection techniques that result in shorter length of stay and faster recovery.
4. The increased role of lymph node dissection in differentiated thyroid cancer.
5. An expanded role for surgery in the treatment of Graves' thyrotoxicosis. (reference 2).
6. The improvement in patient assessment with high quality imaging and cytology. Endocrine surgeons can perform neck ultrasound themselves; this is very helpful in decision making and discussing with a patient why an operation is indicated, or alternatively why observation would be appropriate.

The main reasons for considering thyroid surgery are:

1. A large goitre, especially if progressively enlarging, producing pressure symptoms or extending below the clavicles.
2. Nodules that are large or enlarging or that have features on ultrasound or cytology that raise suspicion of malignancy. The Bethesda system of categorisation of thyroid cytology is becoming widely used to sort patients into those suitable for observation or surgery.
3. Thyrotoxicosis of all causes including single and multiple nodules and Graves' disease.

Graves' disease is a significant health issue for some women. The thyrotoxicosis in Graves' disease is distinguished by a raised level of TSH receptor antibody that is the underlying cause of both the thyroid and the orbital pathology.

Graves' ophthalmopathy is linked to TSH receptor antibodies causing inflammatory swelling of tissues in the orbit. Radioactive iodine may exacerbate the ophthalmopathy and if used, requires several months of systemic immunosuppression.

Total thyroidectomy is preferred because it is rare for the ophthalmopathy to worsen. Importantly, there is significant potential for the ophthalmopathy to improve with time because the levels of TSH receptor antibody decline and often normalise after total thyroidectomy. It is preferable that the patient is referred before the orbital tissues become fibrotic and while the process is potentially reversible. Generally, radioactive iodine is being used more selectively and surgery has an expanded role in treatment of thyrotoxicosis as detailed in the American Thyroid Association guidelines (reference 2).

References:

1. *Gough I R, Wilkinson D. Total thyroidectomy in the management of thyroid disease. World Journal of Surgery. 2000. 24(8): 962-965.*
2. *Bahn RS, Burch HB, Cooper DS et al . Hyperthyroidism and other causes of thyrotoxicosis: management guidelines of the American Thyroid Association and American Association of Clinical Endocrinologists. Thyroid. 2011. 21(6): 593-646.*

Professor Ian Gough is a General Surgeon specialising in breast and endocrine surgery. His area of particular expertise is complex endocrine surgery.

Prof Gough received his medical degree from the University of Queensland and is a Fellow of the Royal Australasian College of Surgeons and the Royal College of Surgeons (UK). He is a Professor of Surgery at the University of Queensland, Senior Visiting Surgeon and Head of Endocrine Surgery at Royal Brisbane and Women's Hospitals. He has researched and published widely about breast and endocrine surgery and given many lectures both nationally and internationally as well as delivering advanced teaching courses for other surgeons.

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Nipple discharge

Management principles

Nipple discharge is a common breast complaint. Fortunately, this is usually benign. The principle of the 'triple test' as used in the assessment of breast lumps also applies to nipple discharge. This should include history, examination and cytology.

History

There are some features in the history that can indicate whether nipple discharge is significant. The key features of significant and non-significant nipple discharges are summarised in the table below.

Investigations

Breast imaging should be performed. This includes mammography (for women over 35 years of age) and an ultrasound. Ductography is usually unnecessary and can be an uncomfortable investigation as it requires cannulation of the nipple duct.

The single most helpful investigation is often nipple discharge cytology. This is easily performed by smearing nipple discharge onto a cytology slide and then spreading this over a second slide to obtain both fixed and air dried slides. Atypical cytology is reflective of the presence of epithelial or papillary cells. Most benign discharge cytology results will demonstrate macrophages and debris. The presence of blood is often labelled atypical.

Haemostix swabs are not particularly helpful in differentiating the nature of discharge. Infection is an uncommon cause of nipple discharge so microbiology swabs are not particularly useful.

Aetiology

The most common local cause of a benign/non-significant discharge is duct ectasia. Some discharge is common after mammography. Benign discharges will often resolve if there is no further expression.

Systemic causes are usually reflective of hyperprolactinaemia which can result from a number of medications (some antiemetics, some antihypertensives, HRT and some oral contraceptives, phenothiazines), or rarely pituitary tumours (prolactinomas).

Significant discharges are often due to an intraduct papilloma or localised duct ectasia. Less commonly it can be a result of DCIS or invasive malignancy. The presence of papillary cells may indicate an intraduct papilloma which is benign, but papillary ductal carcinoma in situ or an invasive papillary carcinoma cannot be excluded. Significant discharges occur spontaneously and do not resolve despite lack of expression.

Management

Benign and non-significant discharges can often be managed conservatively with reassurance and discouraging patients from expression. Troublesome discharges, particularly if voluminous and socially embarrassing, may require a total duct excision. This is a day surgery general anaesthetic procedure. A periareolar incision allows the nipple to be detached from underlying ducts. The retroareolar ductal tissue is excised. This can lead to loss of some or all nipple sensation and some deformity of the nipple/areola complex.

Significant single duct discharges, particularly those with atypical cytology require a duct excision (microdochectomy) for both therapeutic and diagnostic purposes. This is performed as a day case general anaesthetic procedure. The discharging duct is cannulated with a lacrimal probe and then excised by a radial or periareolar incision. Final cosmetic results are usually excellent, but some nipple distortion or inversion can occur.

Dr Petar Vujovic is a general, breast and endocrine surgeon consulting at the Wesley Medical Centre. He operates each week at The Wesley Hospital and is a Visiting Medical Officer at the Princess Alexandra Hospital. He is a visiting surgeon at The Wesley Breast Clinic and Breast Screen Queensland. His academic appointments include senior lecturer at the University of Queensland, clinical tutor at The Wesley Hospital and Assistant Professor at Bond University.

Non-significant discharges	Significant discharges
Bilateral nipple involvement	Unilateral nipple involvement
Multiple duct discharge	Single duct discharge
Coloured discharge (purulent, milky/creamy, green/brown)	Clear/serous or bloody discharge
Occurs only with expression (and may resolve if expression discouraged)	Occurs spontaneously (and does not resolve with lack of expression)

Dr Petar Vujovic

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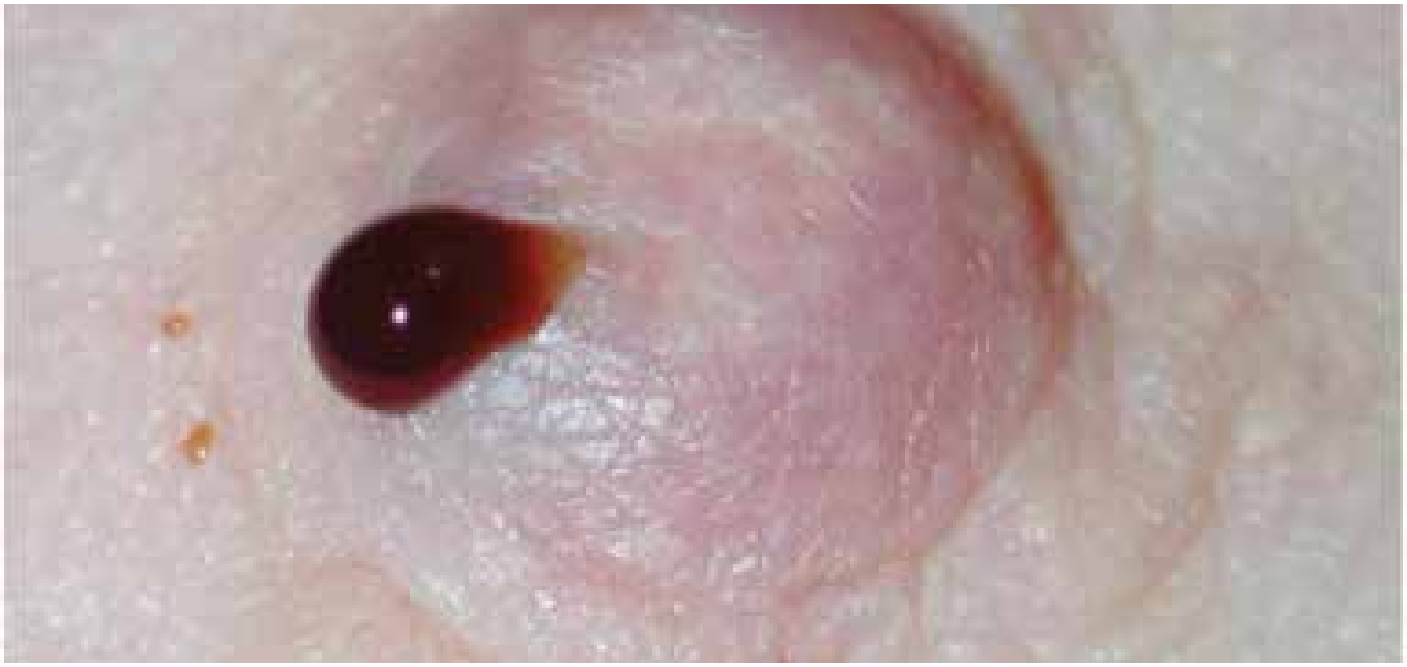

A single duct haemoserous nipple discharge

Case study

Mrs HN is a 59 year old who presents with a six week history of intermittent, brown-coloured discharge from a single duct in the right nipple. Breast imaging including mammograms and breast ultrasounds were unremarkable. There was no family history of breast or ovarian cancer. Past medical history included three caesareans, hormone replacement therapy, cystoscopy, tubal ligation, colonic polyps and hypertension. The patient is married and has three adult children, all of whom were breast fed as infants. She was a lifelong non-smoker.

Examination revealed a single duct rusty coloured discharge from a central duct in the right nipple. There were no palpable breast masses or thickenings with no axillary or supraclavicular lymphadenopathy.

A smear was taken for nipple discharge cytology. This was reported as 'atypical' due to the presence of red blood cells and sparse groups of epithelial cells.

The patient ultimately underwent a right microdochectomy via a radial incision. The subsequent histopathology report described a 1.4cm intraduct papilloma.

Post-operatively the patient made a rapid recovery and had no further nipple discharge. Follow-up breast imaging six and 12 months after her surgery demonstrated no further breast lesions and the nipple discharge did not recur. ■

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Migraines in women?
Consider hormone contribution

Migraine is a severe and debilitating headache affecting as many as 15 per cent of the population. These headaches can last up to 72 hours and are three times more likely to affect women as they are to affect men.

For some women, as many as 50 per cent in some studies, the beginning of their period also heralds the start of migraine in what can be a relentless monthly cycle of headache and nausea, severely limiting their ability to function normally.

One theory suggests migraine is the result of increased vascular reactivity in the blood vessels around the brain. For the nearly 30 per cent of people who suffer an aura, this is thought to be the result of the initial vasoconstrictor phase which can lead to quite localised neurological signs and symptoms. Following this stage, there is compensatory vasodilation which stretches the meninges and leads to the blinding headache that is all too familiar to sufferers.

Researchers have determined that fluctuations in hormone levels, in particular a sudden increase or decrease in oestrogen may be the precipitating factor in some sufferers. It is believed that these fluctuations increase vascular reactivity which in turn starts the pathway ultimately ending up as a migraine headache. Prostaglandin release also plays a role in regulation of the menstrual cycle and has been implicated in the causing of migraine.

The absolute serum level of hormone is thought not to be as important as the fluctuation. In fact, the second trimester of pregnancy sees hormone levels at their absolute physiological peak, yet most women report amelioration of symptoms and lessening frequency of their attacks. With the delivery of the placenta during the third stage, hormone levels rapidly decrease and this can precipitate a recurrence of migraines at a time when other triggers like sleep deprivation and dehydration may also be present.

Menstrual migraines typically occur two to three days prior to commencement of the period. They usually last for the first two to three days of the period and are categorised by resolution when menstruation ceases, only to occur in the next cycle.

In addition to the usual treatment for migraine such as analgesics, anti-inflammatories and triptans, women with true menstrual migraine may benefit from obliteration of the menstrual cycle and its attendant hormonal fluctuations.

Supplementation with transdermal oestrogen during the low oestrogen part of the cycle or fixed dose hormonal preparations delivering a steady level of hormone, sufficient to suppress the menstrual cycle altogether, are worth considering.

Traditional teaching recommends avoidance of the combined oral contraceptive pill in women with migraines although this is starting to be questioned. Alternatives include long-acting reversible progesterone only contraceptive implants or IUDs supplemented with low-dose daily transdermal oestrogen preparations to achieve reliable amenorrhoea.

Another alternative is a vaginal delivery system where the hormone diffuses directly into the bloodstream, so bypassing the liver and enabling a lower total dose of hormone. This route of administration also provides the theoretical benefit of not stimulating hepatic production of clotting factors, although this is not yet proven in clinical studies.

Similarly, at the time of menopause, anovulatory cycles are initially closer together before spacing out and eventually stopping. Peri menopausal women may report an increased frequency of migraines in addition to menorrhagia associated with these anovulatory cycles. The addition of replacement therapy doses of hormones may offer symptom relief in these women.

Of course the usual recommendations, precautions and evaluation of risk factors are necessary before prescription of any hormonal preparation.

For some women, however, regulation of their menstrual cycle may just help their migraines as well.

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Dr Gino Pecoraro

Obstetrician and Gynaecologist

Case Study

Mrs JS is a 35 year old referred from her neurologist for an opinion regarding an 18 month history of worsening cyclical migraines thought to be related to her menstrual cycle.

Neurological examination and investigation had been unremarkable and she received relief from sumatriptan during an acute attack but the neurologist wondered whether cycle suppression could eliminate her headaches.

She was a fit and well woman without co-morbidities, not on any regular drugs and a non-smoker and non-drinker. She had previously delivered three children vaginally, was current for smears and had regular, although increasingly heavy periods. Her husband had previously had a vasectomy and she was not taking any exogenous hormones.

Abdominal examination revealed a soft non-tender abdomen without organomegaly nor lymphadenopathy. Bimanual vaginal examination revealed a mobile, bulky and slightly tender uterus consistent with adenomyosis without any pinpoint tenderness, fixity nor tethering.

In view of her menorrhagia, a levonorgestrel-containing IUD was inserted under paracervical block with azithromycin cover in the rooms. She returned for review three months later with an ultrasound scan confirming correct placement of the device and sonographic features suggestive of mild adenomyosis. Mrs JS reported significant decrease in volume of menstrual loss but almost daily spotting. She still suffered from migraines when her period was due but felt they were shorter in duration and less severe.

She was commenced on a daily transdermal oestradiol preparation and asked to return in two months for review. At that time, her spotting had settled and she had not had a premenstrual migraine for those two months. The decision was made to stop the oestrogen and see whether the benefits would last. She came back for review in a further two months saying that although no vaginal bleeding had returned she did return to having monthly migraines.

After discussion of potential risks and benefits, Mrs JS has elected to continue using daily transdermal oestrogen in addition to her progesterone-loaded IUD to help both her menorrhagia and menstrual migraine. She remains under neurology review and the plan at this stage is to continue current therapy.

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Management of the positive sentinel node in breast cancer

Is axillary dissection always required?

Axillary nodal status is still one of the most important prognostic factors in breast cancer. Axillary surgery, however, is associated with short and long term morbidity in the form of lymphoedema, pain, seroma and functional shoulder problems. The introduction of sentinel lymph node biopsy has meant that the majority of women with breast cancer will avoid these problems if the sentinel node is negative. Until recently, women with a positive sentinel node have required a complete axillary lymph node dissection and therefore are exposed to these complications.

Sentinel lymph node biopsy (SLNB) involves removal of the first lymph node or group of nodes to which the breast cancer would spread. These are identified by the preoperative injection of radioiosotope (lymphoscintigraphy performed in nuclear medicine) and intraoperative injection of Patent Blue V dye. This is only appropriate for women who are clinically node negative at diagnosis. For women who are clinically node positive at diagnosis, axillary lymph node dissection (ALND) still remains the most appropriate management. If the sentinel lymph node is negative, no further axillary surgery is required. For women with a positive sentinel node, an ALND has been recommended. However recent research may suggest that this is not always required.

To understand where the research is headed it is important to look back at the initial studies into SLNB. The very first studies confirmed its reliability. With the use of radioisotope and Patent Blue V dye the sentinel node is accurately identified in 96-7 per cent of patients. There were initial concerns when the false negative rate was shown to be 8-10 per cent. Despite this false negative rate, SLNB was associated with a low risk of axillary recurrence and equivalent survival rates to ALND. Veronesi (Ann Surg 2010) reported 10 year follow up of 516 patients who underwent SLNB. This is the longest followup of the many randomised controlled trials in SLNB. The axillary recurrence rate in the SLNB only group was 0.9 per cent and disease free survival was equivalent between the two groups.

Why is this axillary recurrence rate so low if the false negative rate is 8-10 per cent ?

It is hypothesised that many untreated nodes will not progress. Axillary recurrence is also low as a result of adjuvant treatments. Standard whole-breast radiotherapy covers the lower axilla. Systemic therapy (chemotherapy and endocrine treatment) will also treat nodal disease to some extent.

Therefore the question arose as to whether axillary dissection is required in all patients with positive sentinel nodes. Recent studies are attempting to address this question and may impact our management of women with positive sentinel nodes.

The first was the ACOSOG Z0011 trial (Guiliano JAMA 2011). Women eligible for the trial were clinically node negative with tumours <5cm and on final histology had 1-2 positive sentinel nodes. 445 were randomised to ALND and 446 to SLNB alone. All underwent lumpectomy and had adjuvant whole breast radiotherapy. 96-7 per cent of women had adjuvant systemic therapy. At median follow-up of 6.3 years, 5 year overall survival was equivalent between the groups (91.8 per cent for ALND vs 92.5 per cent for SLNB). 5 year disease free survival was also equivalent at 82-3 per cent.

The conclusion was that amongst women with limited sentinel node metastatic breast cancer treated with breast conservation and systemic therapy, the use of SLNB alone does not result in inferior survival.

The IBCSG B23-01 (Lancet Oncol April 13) looked at women with micrometastases (<2mm) in the sentinel node. The patients were randomised to SLNB alone or ALND. There was no difference in the 5 year survival rate (88.4 per cent vs 87.3 per cent) and the axillary recurrence rate was 1 pe cent at 5 years for SLNB alone.

Therefore it may be appropriate to perform SLNB alone in certain patients with 1-2 positive sentinel nodes and cancers <5cm, who will receive radiotherapy and systemic treatment. However there are still questions to be answered. The risk of breast cancer recurrence peaks within three years, however there is ongoing risk of recurrence until at least the 10 year mark. Therefore longer follow-up is required from these studies to confirm persistence of low recurrence rates and equivalent survival. Until then the decision regarding whether SLNB alone is appropriate should be made by a multi-disciplinary team.

Certainly the tide may be turning but it is not out yet.

Dr Stringer is a Breast and Endocrine Surgeon at The Wesley Hospital. She specialises in the surgical management of breast cancer, benign breast conditions, thyroid and parathyroid disease. She is a Senior Lecturer at UQ and a clinical tutor for the Bond and Griffith Medical Schools. She participates in the Brisbane Breast Cancer Multidisciplinary Meeting, which occurs fortnightly in conjunction with a group of specialist breast cancer surgeons, medical and radiation oncologists, radiologists, breast nurses, geneticist and pathologists. She works privately at the Wesley and Northwest Brisbane Private Hospitals. She is also a VMO at the Royle Brisbane Women's Hospital.

Dr Kate Stringer

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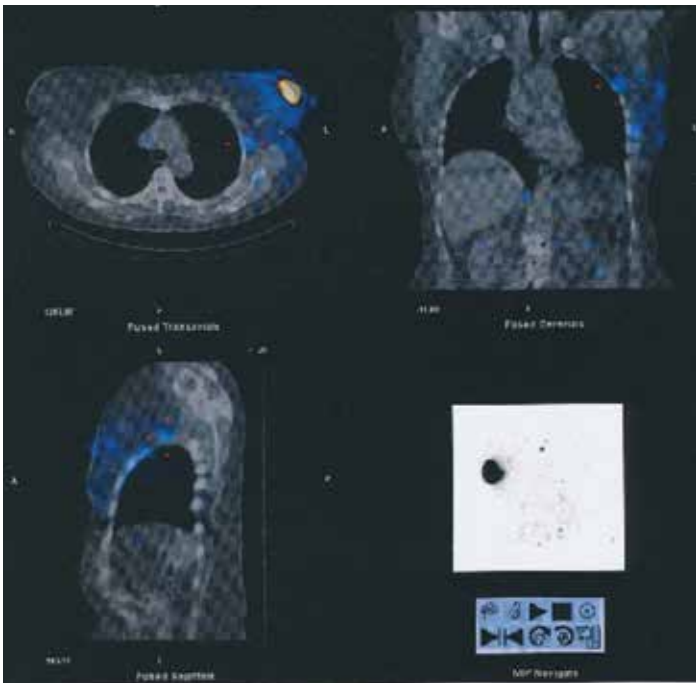
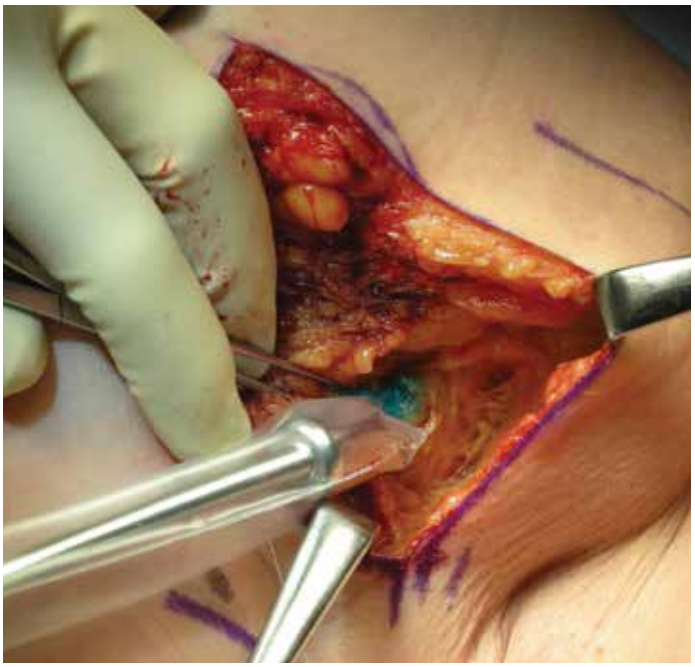
MBBS FRACS

The Navigator Probe used to identify the 'hot' sentinel node.



Lymphoscintigraphy demonstrating injection site around tumour and uptake of radiocolloid in the sentinel node



Identifying the sentinel node, containing both Patent Blue V dye and radioisotope.

Case study

A 56 year old post-menopausal patient is diagnosed through routine screening with a 2cm invasive ductal carcinoma in the upper outer quadrant of the left breast. She was clinically node-negative with no evidence of nodal involvement by palpation or on ultrasound. She underwent a wide local excision and sentinel lymph node biopsy using radioisotope and Patent Blue V dye.

The histology revealed a 20mm grade 2 invasive ductal carcinoma, ER positive, PR negative, HER2 receptor positive. One of three sentinel lymph nodes contained a 1.2mm metastasis. Extensive discussion was held with the patient and in the Breast Cancer Multidisciplinary Meeting. The patient was to receive adjuvant chemotherapy, Herceptin (trastuzumab), whole-breast radiotherapy and an aromatase inhibitor. She was willing to undergo all adjuvant treatment offered. It was decided not to proceed with axillary dissection, given recent publication of the ACOSOG Z0011 trial. She has been followed for a total of 18 months to date with no sign of local or distant recurrence. She is undergoing annual mammogram and ultrasound and regular clinical follow-up. ■

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Pelvic organ prolapse surgery

The facts regarding mesh

In Australia, one in nine female patients will undergo continence or vaginal prolapse surgery in their lifetime. Pelvic organ prolapse (POP) surgery accounts for two thirds (25,000 in 2011) of these interventions as compared to one in three being continence interventions (10,000 in 2011 from the Australian Institute of Health and Welfare). Also, POP surgery has longer operating time, inpatient stays and recovery time, creating significantly greater cost to the community. As increasing age is one of the greatest risk factors for developing POP, it is imperative that safe, effective and cost efficient interventions are undertaken.

Over the last decade extraordinary changes have occurred in the management of female continence surgery with sub-urethral tapes established as the gold standard treatment, with high success rates coupled with low morbidity and quicker recovery. Hoping to replicate these advantages in POP surgery in 2003 and 2004, and after approval from the regulatory bodies, transvaginal mesh kits were introduced to Australia. Little data was available on the safety and efficacy of these products at the time.

In 2008 and 2011 the American Food and Drug Administration (FDA) issued transvaginal mesh alerts following an increased number of adverse outcomes reported. The reports primarily related to the mesh eroding into the vagina (mesh erosion) or pain related to the mesh. Although the FDA clarified that they were unable to determine the true incidence and extent of these problems, it reclassified transvaginal meshes as Class III products that require companies to present comparative data demonstrating safety and efficacy prior to approval. Products already on the market are required to present this data within two years.

As a result of the FDA reports a number of changes have occurred. Some companies have elected to remove transvaginal mesh products from the market, class actions have been announced in Australia against transvaginal mesh manufacturers, and there has been a dramatic reduction in the utilisation of these products over the last two years. Unfortunately, much of this debate has occurred in the media and patients have difficulty understanding the facts.

In 2013, we published two systematic reviews of the POP surgery data that provide a valuable evidence-based approach to the surgical management of POP. The Cochrane review on the surgical management of POP evaluated only data from randomised control trials and the conclusion relating to anterior compartment prolapse (the most common site of vaginal prolapse), is summarised in Figure 1, demonstrating a clear advantage of polypropylene mesh over native tissue repairs with a reduced rate of prolapse recurrence. Unfortunately, the mesh exposure rate was 10 per cent and the mesh group had a higher rate of re-operation than the native tissue repair group. We were not able to demonstrate a benefit of transvaginal mesh or biological grafts over native tissue repairs in upper (vault or uterine prolapse) or posterior compartment prolapse.

The sacral colpopexy seen diagrammatically in Figure 2, was superior to transvaginal surgery (sacrospinous or uterosacral colpopexy or transvaginal mesh) for the management of upper vaginal prolapse and is the current gold standard treatment.

The laparoscopic approach demonstrated advantages over both the open and robotic approach. Finally, the Cochrane review demonstrated that the transvaginal native repair was superior to transanal surgery for the management of posterior compartment prolapse. The International Collaboration on Incontinence also reported on the surgical management of prolapse in 2013 under the auspices the World Health Organisation. This review was complimentary to the Cochrane review in that all published data on the surgical management of prolapse was reviewed. While our findings were similar, we were able to demonstrate that peri-operative smoking and concomitant hysterectomy at the time of transvaginal mesh or sacral colpopexy increases the risk of mesh exposures fourfold.

Full copies of these reviews are available at www.urogynaecology.com.au

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Assoc Professor Christopher Maher

Urogynaecologist

ANTERIOR COMPARTMENT: POLYPROPYLENE MESH VERSUS NATIVE TISSUE	
Advantages Mesh	Disadvantages Mesh
↑ subjective RR: 1.57	↑ operating time MWD: -18.57
↑objective RR: 3.35	↑ blood loss MWD: -64.04
↓ reoperation for POP	↑ POP apical/posterior RR: 1.89
	↑ de novo SUI RR: 1.75
	mesh exposure: 11.6%
	reoperation exposure: 6.6%
	↑ total reoperation: 2X

Maher,C. Surgical management of prolapse 2013

Figure 1 Summarises the advantages and disadvantages of anterior transvaginal mesh as compared to native tissue repairs, (Maher, C, 2013. Cochrane review on surgical management of POP).

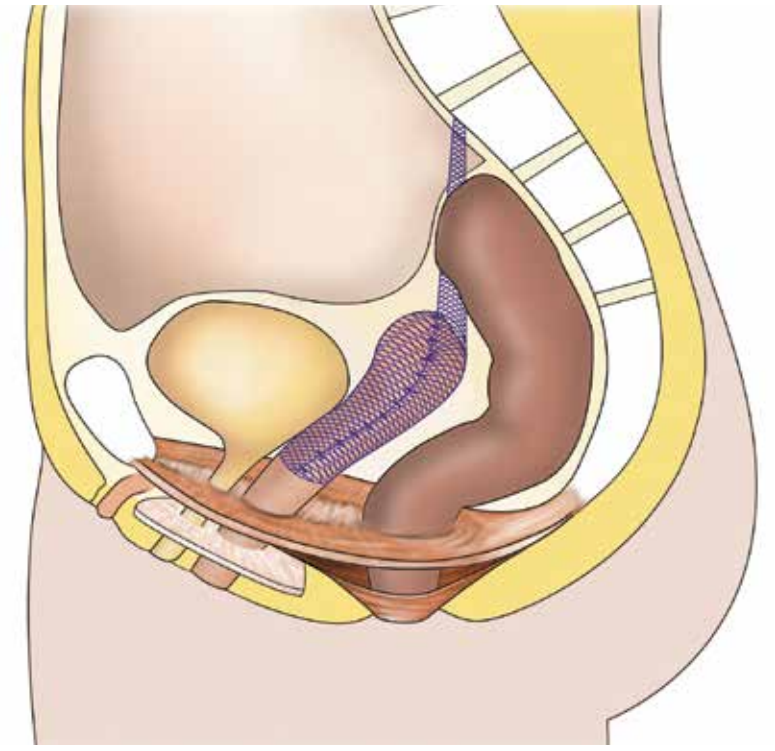

Figure 2 Depicts the sacral colpopexy with abdominal mesh suspending the vagina from the sacral promontory.

Associate Professor Christopher Maher is a Urogynaecologist who completed his undergraduate and speciality training in Brisbane and subspecialty training in Melbourne. His long-term interest and research in female pelvic floor dysfunction has been rewarded with over 100 peer reviewed publications and multiple awards. He has been practising as a Urogynaecologist since 1999 at the Wesley and Mater Hospitals and holds a public appointment at the Royal Brisbane and Women's Hospital. He has held a number of prominent leadership positions both nationally and internationally including Chairman Urogynaecology (RANZCOG); Board Member, Urogynaecological Society of Australia; and Chairman and Lead Reviewer, Cochrane and International Collaboration of Incontinence, on Surgical Management of Prolapse.

Primary hyperparathyroidism: a treatable cause of osteoporosis

Primary hyperparathyroidism (pHPT) is a condition which most commonly affects post-menopausal women. The incidence of pHPT is between 3-4/1000 per annum. The prevalence of pHPT rises to 2.1 per cent of post-menopausal women aged 55 to 75 or to 3.4 per cent for those aged 65 to 84. Overall the incidence of pHPT is twice as high in females as in males and increases with advancing age in both sexes. The largest impact from parathyroidectomy is in patients with osteoporosis, but all patients should be considered for a surgical cure to prevent complications.

Primary hyperparathyroidism is best defined biochemically as hypercalcaemia in the presence of an unsuppressed and therefore inappropriately elevated PTH level.

Most commonly, pHPT presents as incidental hypercalcaemia, in an apparently asymptomatic patient. Hypercalcaemia on routine blood tests should not be ignored and the test should be repeated including PTH and vitamin D. Less commonly, patients have traditional symptoms including osteoporosis, renal calculi, pancreatitis, constipation and depression or 'bones, stones, groans and moans'. Rare presentations include recurrent miscarriages, stillbirth and neonatal tetany in an undiagnosed hypercalcaemic mother. The majority of cases of pHPT are sporadic. Known risk factors for pHPT include radiation exposure, long term lithium use and a family history of hyperparathyroidism.

The diagnosis of pHPT is biochemical, with the following investigations:

- E/LFT (hypercalcaemia, normal renal function, normal alkaline phosphatase)
- PTH (raised)
- Vitamin D (vitamin D replete)
- 24-hour urinary calcium and creatinine (elevated urinary calcium/creatinine ratio)

There are two conditions which can mimic pHPT, familial hypercalcaemic-hypocalcuria (FHH) and vitamin D deficiency. FHH is a rare autosomal dominant disorder. It is characterised by hypercalceamia, unusually low renal clearance of calcium and parathyroid hyperplasia. Most cases are caused by a loss-of-function mutation in the calcium-sensing receptor gene which can now be confirmed on genetic analysis. Patients with FHH often have mildly elevated serum calcium present from a young age. Patients with vitamin D deficiency can have elevated PTH levels with normal or mildly elevated serum calcium. In these patients the diagnosis can be revealed by replacing vitamin D, where deficient patients' results will return to normal while patients with pHPT will have persistently raised PTH. Patients with longstanding pHPT often become vitamin D deficient, but these patients usually have significant hypercalcaemia.

Once diagnosed, surgical treatment with parathyroidectomy can prevent complications, particularly further bone loss. The most recent National Institute of Health consensus guidelines (Bilezikian, J Clinical Endocrinology Metabolism 2009) recommended surgery for all patients who have symptoms or signs. If the myriad of subtle clinical symptoms such as malaise, fatigue, depression, memory loss, poor concentration, polydipsia, polyuria, constipation and non specific bone and joint aches are taken into consideration the incidence of truly asymptomatic disease may be lower than five per cent, with no correlation between degree of hypercalcaemia and these symptoms. In truly asymptomatic patients surgery is recommended for patients aged under 50, if the calcium is above 2.75 mmol/l, or there is renal impairment or reducing bone density, particularly if the T-score is less than -2.5.

Bone mineral density (BMD) has been shown to improve and in some cases normalise, after parathyroidectomy. Parathyroidectomy decreases the risk of fracture in all patients, even those with normal BMD.

The majority of cases of pHPT are due to a single adenoma (87 per cent), with hyperplasia (9 per cent) and multiple adenomas (3 per cent) being rare and parathyroid cancer exceptionally rare (<1 per cent).

Surgery is highly effective and can often be performed as a minimally invasive operation. Minimally invasive surgery is possible if the parathyroid adenoma is identified on imaging, with a success rate of 97 per cent. Sestamibi nuclear scanning is positive in 66 per cent of cases and is useful prior to surgical referral. Ultrasound in the hands of radiographers and radiologists is positive in 40 per cent. However, in the hands of interested and experienced surgeons, is significantly higher at 85 per cent, as published recently. Patients whose glands are not able to be identified pre-operatively are still likely to have a single adenoma and may have a successful four-gland exploration operation with high expectation of cure. If a patient does not have an adenoma identified on sestamibi this should not deter referral for consideration of surgery. There are now very few patients with pHPT who would not benefit from parathyroidectomy, particularly in regards to bone health.

Reference:

1. *Al-Askari M, Gough J, Stringer KS, Gough IR. Surgeon performed ultrasound in primary hyperparathyroidism: a prospective study of 204 consecutive patients. World Journal of Endocrine Surgery. 2012; 4(1): 4-8.*

Dr Jenny Gough

Breast and Endocrine Surgeon

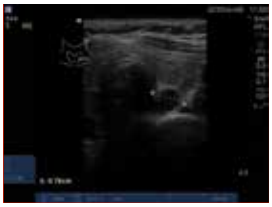

Image 1: Surgeon performed ultrasound demonstrating a left parathyroid adenoma behind the lower pole of the thyroid

Image 2: Sestamibi scan (immediate and delayed image) demonstrating a left parathyroid adenoma at the lower pole of the thyroid

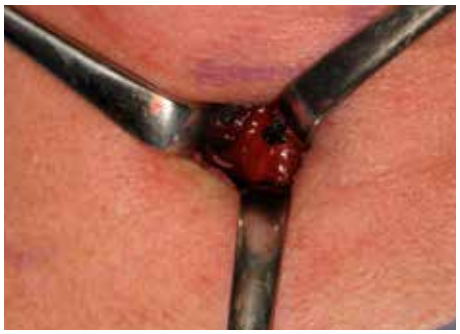

Image 3: Intra-operative photograph of parathyroid adenoma through MIP incision

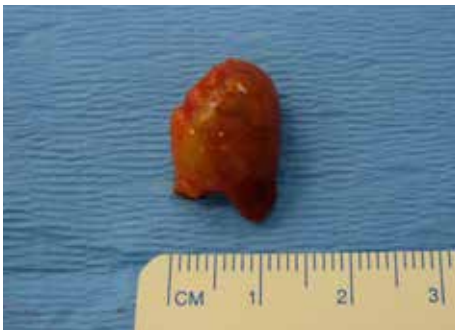

Image 4: Specimen photograph parathyroid adenoma

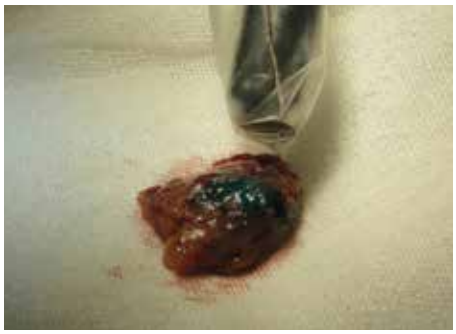

Image 5: Specimen photograph parathyroid adenoma

Case study

A 65 year old woman had a mildly raised calcium level on routine blood tests. Further tests confirmed raised calcium 2.65 (2.1-2.6) and PTH 26.9 (1.6-6.9) and vitamin D deficiency 30 (>75). The patient was referred for further investigation of presumed primary hyperparathyroidism. She was known to have osteoporosis, but thought to be otherwise asymptomatic. On specific questioning she had noticed increasing fatigue, having afternoon naps, and felt her cognition had declined. She attributed these symptoms to advancing age. She commenced vitamin D supplements and the tests were repeated in two months. The results confirmed her to be vitamin D replete (80) with persistently raised calcium (2.68) and PTH (28). Thus vitamin D deficiency was excluded as the diagnosis. The 24-hour urinary calcium/creatinine ratio was elevated excluding FHH.

On examination there were no masses in the neck and the thyroid gland was normal. An ultrasound scan performed during the consultation identified a hypoechoic mass inferior to the left lobe of thyroid consistent with a parathyroid adenoma (image 1). The patient had a sestamibi scan performed which showed left inferior uptake consistent with a parathyroid adenoma (image 2).

As her imaging was concordant she had a minimally invasive parathyroidectomy with removal of the parathyroid adenoma through a 2.5cm incision placed over the gland with ultrasound guidance. Histology confirmed a parathyroid adenoma. Her post-operative course was uneventful and her voice normal. She had minimal pain and required only paracetamol for analgesia. Her calcium (2.25) and PTH (3) returned to normal the following day.

At her post-operative appointment she noted that she felt better and had more energy and clearer cognition. This is a pleasing and not an uncommon finding post-parathyroidectomy. Consistent improvements in quality of life scores following parathyroidectomy in many studies underline the tenuous nature of the asymptomatic label attached to many such patients.

She had a repeat BMD at one year which showed a satistically significant improvement in bone density, although she remained osteoporotic. Lumbar T- score -3.26 (75 per cent improvement) and femoral T-score -3 (7.3 per cent improvement). ■

Dr Jenny Gough is a specialist Breast and Endocrine and Surgeon. She is a University of Queensland graduate and gained her FRACS in General Surgery in January 2007. Dr Gough undertook post-fellowship training in Endocrine Surgery and Oncoplastic Breast Surgery in London. She returned to Brisbane in January 2009 to commence private practice at the Wesley and North West Private Hospitals. Dr Gough is also appointed as a General, Breast and Endocrine surgeon at the Royal Brisbane and Women's Hospital. She is a senior lecturer at the University of Queensland and a clinical tutor for the Bond and Griffith University Medical Schools. Dr Gough is involved in the Brisbane Breast Cancer Multidisciplinary Meeting.

Dr Gough's special interests are endocrine surgery (including thyroid, parathyroid and adrenal surgery using minimally invasive techniques) and breast surgery (including oncoplastic techniques and sentinel lymph node biopsy).

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Fertility sparing options in gynaecological malignancies

Gynecological malignancies are mostly diagnosed in post-menopausal women, but can also arise in young and pre-menopausal women, in whom fertility preservation is of paramount concern. Due to changing lifestyle trends, there has been a significant increase in the number of women diagnosed with gynecological malignancy before completion of childbearing. Most of the standard treatments for these malignancies result in permanent sterility; however, there are now options for young women who would like to preserve fertility. The care of these patients is challenging and requires a multi-disciplinary approach, involving a gynecological oncologist, reproductive endocrinologist, obstetrician and perinatologist.

Options to preserve fertility include shielding to reduce radiation damage, fertility preservation when undergoing cytotoxic treatments, cryopreservation, assisted reproduction techniques and fertility-sparing surgical procedures.

This article summarises the fertility-sparing surgical options for cervical, endometrial and ovarian cancers.

Due to changing lifestyle trends, there has been a significant increase in the number of women diagnosed with gynecologic malignancy before completion of childbearing.

FERTILITY SPARING SURGICAL OPTIONS FOR GYNAECOLOGICAL CANCER

Tumour site	Pathology	Stage	Treatment
Cervix	Squamous or adenocarcinoma	IA1	Cone biopsy
		IA2	Cone biopsy and laparoscopic pelvic node dissection
		IB1	Radical trachelectomy and laparoscopic pelvic node dissection
		IB2+	Ovarian transposition +/- oocyte retrieval
Endometrium	Endometrioid	IA	Progesterone treatment
Ovary	Germ cell	I	Oophorectomy +/- chemotherapy
	Germ cell	I+	Tissue biopsy + chemotherapy +/- oophorectomy
	Borderline epithelial	I	Oophorectomy
	Invasive epithelial	IA	Oophorectomy + staging

Cervical cancer

Cervical cancer is staged according to the International Federation of of Gynaecology and Obstetrics (FIGO) staging system and treated by surgery, radiotherapy, chemotherapy or a combination of these modalities. These usually result in loss of fertility. However, options have been developed to preserve fertility in select cases. These include cone biopsy, radical trachelectomy and ovarian transposition.

Radical trachelectomy (1A2- 1B1) involves radical removal of upper vagina, cervix and parametrium (either abdominally or vaginally) with lymph node dissection (which can be done laparoscopically). The uterus is preserved to maintain fertility. A permanent suture may be placed around the isthmic portion of the uterus to prevent miscarriage from cervical incompetence and subsequent pregnancies are delivered by caesarean section. Careful patient selection is required to determine eligibility for the procedure.

Endometrial cancer (EC)

The use of progestogens (oral megestrol acetate, medroxyprogesterone acetate, levonorgesterol IUD) in the treatment of stage 1A endometrioid endometrial cancer without myometrial invasion is an option. A thorough screening evaluation, including transvaginal ultrasonography and a contrast enhanced MRI is performed to evaluate the extent of myometrial invasion and exclude metastasis. While the optimal surveillance methods for follow-up of these patients is unknown, a repeat pelvic ultrasound with three-monthly endometrial biopsy is the preferred approach. Following childbearing, completion hysterectomy and bilateral salpingo-oophorectomy is advised, even in cases with demonstrated tumor regression, since many of these women have ongoing risk factors for endometrial cancer such as obesity, chronic anovulation or polycystic ovarian syndrome.

Dr Piksi Singh

Gynaecological Oncologist

Ovarian cancer

Borderline tumours have an excellent prognosis and can be treated conservatively in women who wish to preserve fertility or are pregnant at the time of diagnosis. Conservative surgery is offered for stage 1A disease with preservation of uterus and contralateral ovary. For bilateral tumours, a bilateral ovarian cystectomy may be performed in select cases with resection of all macroscopic disease. Successful pregnancy outcomes have been confirmed. Risk of recurrence after conservative surgery is seven to 30 per cent and ovarian cystectomy is associated with a higher risk of recurrence than salpingo-oophorectomy (23 per cent versus seven per cent). Hence women are advised to undergo a completion surgery following childbearing.

Germ cell tumours (GCTs)

GCTs tend to occur in young adults and children and are highly chemosensitive. Therefore, following the diagnosis of a malignant GCTs by frozen section at the time of surgery, a unilateral salpingo-oophorectomy with preservation of a normal-appearing uterus and contralateral ovary is recommended for young women who wish to preserve fertility. Oncological outcomes are not compromised by conservative surgery, even in the face of bulky metastatic disease elsewhere. The overall survival is more than 90 per cent and the majority of women resume normal menstrual function following chemotherapy. Moreover, no increase in pregnancy complications has been reported.

Epithelial ovarian cancer (EOC)

Fertility preservation options are limited for women with epithelial ovarian cancer (EOC), fallopian tube cancer and peritoneal cancer, since most cases are diagnosed at an advanced stage and are associated with a poor prognosis. Hysterectomy and bilateral salpingo-oophorectomy are part of staging and surgical debulking treatment. Fertility-preserving surgery with unilateral salpingo-oophorectomy is typically reserved for patients with stage 1A EOC.

Surgical staging including washings, omentectomy, appendectomy and node biopsies are done before considering conservative surgery (unilateral salpingo-oophorectomy). A thorough abdominal exploration and biopsy of any abnormal areas with an endometrial biopsy is required to exclude endometrial cancer. Biopsy of normal appearing contralateral ovary is not done as incidence of clinically occult bilateral ovarian disease is <2.5 per cent and the biopsy may impair future fertility, which is the purpose of the conservative surgery.

Patients who desire fertility preservation are advised that data regarding outcomes of these treatments is limited, with limited data available on recurrence rate, further prognosis and safety of ovulation induction. These women are advised to undergo hysterectomy and removal of the remaining ovary upon completion of childbearing.

Freezing of oocytes, embryos and ovarian tissues

Where fertility-sparing surgery is not feasible, ovarian stimulation and oocyte retrieval, embryo cryopreservation, ovarian tissue retrieval and cryopreservation may be an option. Assisted conception techniques are usually undertaken in the window between primary surgery and start of chemotherapy or radiotherapy.

Oocyte cryopreservation requires ovarian stimulation with potential delay in cancer treatment and may be contraindicated in hormone-sensitive tumors. Surrogacy is required to achieve pregnancy if the uterus is removed. These options are taken into consideration with close liaison with fertility specialists.

Conclusion

Fertility-preserving options for gynaecological malignancies are continuously evolving and can be offered in certain cases. Proper counselling, a multidisciplinary approach with close liaison with fertility experts, an obstetrician and a perinatologist are required. The patients also need to understand that the data is limited and there may be undefined risks involved. ■

Dr Piksi Singh is a Gynaecological Oncologist who specialises in the management of all known and suspected cancers of the female genital tract, colposcopy and pre-invasive conditions of cervix, vagina and vulva. She has a keen interest in managing women with hereditary familial gynaecological cancers, gestational trophoblastic disease (GTD), vuval reconstructive surgeries and complex minimally invasive surgery, including total laparoscopic hysterectomies and robotic procedures.

Originally from India, Dr Singh obtained her postgraduate obstetric and gynaecological qualifications in 1994 and then worked as a Senior Consultant in leading teaching institutions in New Delhi before moving to Australia in 2003. In Australia, she undertook further subspecialty training in gynaecological oncology in Adelaide, Newcastle and Brisbane, completing her Certification in Gynaecological Oncology in 2008. Dr Singh also acquired further surgical training in resecting upper abdominal disease in advanced gynaecological malignancies and robotic surgery in the United States.

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Welcome to our new
Visiting Medical Practitioners

Dr Matthew Hourigan
Haematologist

Dr Matthew Hourigan is a Haematologist who has recently started practising at The Wesley Hospital. He consults on all clinical haematology and haemato-oncology conditions including lymphoma, leukaemia, myeloma, monoclonal gammopathies, anaemia and iron deficiency, clotting and bleeding disorders, haemochromatosis, abnormal blood counts and cytopenias.

Dr Hourigan is a graduate of the University of Queensland School of Medicine (1999). He completed specialist training in clinical haematology at Princess Alexandra Hospital and Royal Brisbane and Women's Hospital. He returned to Brisbane in 2009 following a fellowship at University College Hospital in London. His fellowship focused primarily on state of the art therapy for malignant bone marrow disorders. University College Hospital is a prestigious institution and Dr Hourigan worked alongside acknowledged leaders in the field of malignant haematology.

Dr Hourigan holds the position of Visiting Consultant Haematologist at Princess Alexandra Hospital, including involvement in the Stem Cell Transplant Program. He is available for all specialist haematology consultations.

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Carina Chow
Colorectal Surgeon

Dr Chow completed her MBBS undergraduate degree at the University of Sydney, her General Surgery training at Westmead Hospital and in surrounding areas including Canberra (2003-2006).

Her colorectal training (CSSANZ)was completed at the Prince of Wales Hospital (NSW) in 2007 and the Royal Brisbane Womenís Hospital in 2008. She undertook specialist robotic training at Anam Hospital, Korea University Medical College, in Seoul.

Since 2009, Dr Chow has practiced as a colorectal surgeon at the Royal Brisbane Womenís Hospital and the Mater Hospital.

Dr Chow has research interests in; The development of a competency-based training program for robotic colorectal surgery; reviewing the role of complete mesocolic excision in colonic cancer; comparing oncological outcomes of a low tie with D3 (extended) lymphadenectomy and a standard high tie.

She is a member of Royal Australasian College of Surgeons, the Australian Medical Association and is also a senior lecturer, University of Queensland.

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Simone Campbell
Gynaecologist

Dr Simone Campbell has been a specialist consultant for over ten years, and has practised fertility medicine for the past seven years, including completing a Master of Reproductive Medicine in 2010. She has worked as an obstetric and gynaecological staff specialist in a range of public hospitals in rural and remote areas of Australia, as well as a number of private hospitals.

Dr Campbell's focus is on providing a long-term practice that provides high quality, tailored, fertility solutions for her patients. In addition, she is one of only a handful of post-graduate qualified fertility specialists in Brisbane, meaning that patients reap the benefits of her extensive knowledge of fertility medicine.

Dr Campbell prides herself on effective and clear communications with patients, as patient understanding is a vital component in achieving a high quality, tailored fertility plan for individuals and their partners. To ensure this happens, Simone takes the time to explain the process in everyday language, making sure that you not only understand, but are fully aware of the fertility process.

She has a number of professional affiliations including:

+ Fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)
+ Member of the Fertility Society of Australia (FSA)
+ Member of the European Society for Reproductive Health and Endocrinology (ESHRE)
+ Australian Medical Association
+ National Australian Society of Specialist Obstetricians and Gynaecologists

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Rachel Esler

Urologist

Dr Rachel Esler is a urological surgeon who has recently started practicing at The Wesley Hospital. Dr Esler has a special interest in the laparoscopic treatment of benign and malignant kidney disease and general urology.

Dr Esler undertook a Bachelor of Science and Bachelor of Medicine, Bachelor of Surgery at the University of Queensland graduating with honours. She then completed her residency and general surgery training in Brisbane and Central Queensland, before being selected to commence her advanced training in urology in New South Wales.

Dr Esler completed her Fellowship examination in urology with the Royal Australasian College of Surgeons in May 2011. She then undertook Fellowship training in Manchester, England, subspecialising in the laparoscopic treatment of urological cancers, particularly kidney and prostate cancer.

Dr Esler has conducted research in conjunction with the University of Sydney focussing on voiding dysfunction and lower urinary tract symptoms in the older male. This research has been presented at meetings in the United States, England and Australia.

She is a member of the Australian Medical Association and the Urological Society of Australia and New Zealand.

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Kim Robertson

Paediatrician

Dr Kim Robertson is a paediatrician who has recently started practicing at The Wesley Hospital. Dr Robertson has a special interest in paediatric allergy and clinical immunology.

Her professional areas of interest include the diagnosis and management of paediatric food and insect allergies, eczema and allergic rhinitis. She also performs diagnostic skin prick testing and intradermal testing, as well as oral food challenges and allergen immunotherapy.

Dr Robertson completed her MBBS degree from the University of Queensland in 1998. She then completed her Fellowship in General Paediatrics at the Royal Children's Hospital, Brisbane, with a sub-speciality in paediatric allergy and clinical immunology. Dr Robertson also undertook a number of secondments to Queensland rural hospitals and completed an additional years training in Dublin, Ireland. She also has a research interest in Adrenaline autoinjector (Epipen) practices in allergy clinic patients. She is

Dr Robertson has professional memberships in the Australasian Society of Clinical Immunologists and Allergists (ASCIA, the Australian Medical Association and the Paediatric Society of Queensland.

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Outpatient physiotherapy for women

The Wesley Therapy Service has launched an improved physiotherapy outpatient service with treatment now available Monday-Friday between 8am and 4pm. Call us on (07) 3232 6190 to make a booking.

The Physiotherapy Outpatient Clinic is open to all patients, members of the general public and all Wesley hospital staff. We provide excellent continuity of care and rehabilitation to our patients post discharge and enables them to see their doctor and get physiotherapy treatment on the same day, if appropriate. We are located in the East Wing, level B1.

Our experienced Women's and Men's Health Physiotherapy team are available for one-on-one consultations. You may benefit from seeing a Physiotherapist if you have any concerns regarding the following:

Women's Health Consultations:

+ Pelvic floor muscle dysfunction
+ Incontinence
+ Rehabilitation following breast cancer surgery
+ Safe return to activity and exercise following gynaecology and reconstructive gynaecology surgery
+ Lymphoedema management
+ Childbearing women pre- and post- delivery.

No referrals are necessary to attend the clinic. Private health insurance rebates apply.

For more information on the Physiotherapy Outpatient Clinic or to make a booking, call us on (07) 3232 6190 or visit www.wesley.com.au