Winter | 2021

The Wesley HOSPITAL
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Medilink

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A FOCUS ON WOMEN'S HEALTH

In this issue:

Medilink

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Caring for you for life

what's inside

GENETIC CARRIER SCREENING

THYROID CANCER

CHOICES

Welcome to the Winter 2021 edition of Medilink

AFTER PUTTING CELEBRATIONS ON HOLD IN 2020 WHILE WE FOCUSSED ON KEEPING OUR PATIENTS AND STAFF SAFE DURING THE PANDEMIC, IN JUNE 2021 WE CELEBRATED TEN YEARS OF ROBOTIC SURGERY AT THE WESLEY.

To mark this incredible milestone, it was a wonderful opportunity to come together with everyone who has been a part of bringing the latest advancements in medical technology to our patients, including our theatre teams, surgeons, GPs, donors and technology partner, Device Technologies.

The Wesley robotics program began as a bold vision, but through the commitment of our robotics teams has grown to become the highest volume program in Australia and New Zealand, with more than 7,500 procedures performed since inception. At its peak, the program averaged just less than 1,000 cases per year, and despite expansion of robotic services throughout Australia, remains the highest volume program in the country.

In 2017, that commitment to excellence led to The Wesley becoming the first hospital in Australia to join only ten others world-wide at the time to receive internationally recognised accreditation as a Centre of Excellence in Robotic Surgery by international accrediting body, the Surgical Review Corporation.

I'd like to take this opportunity to thank you, our network of GPs, for the role you have played in supporting us to build our robotics program, believing in the benefits of innovation and trusting us with the care of your patients. Over the next ten years, we remain focussed on exceeding clinical expectations, expanding the program into more specialties and continuing to achieve the best possible surgical outcomes for our patients.

I hope you will enjoy and benefit from this edition of Medilink, focused on women's health, from breast care to endocrinology, maternity and more.

Also featured is the incredible support available for patients and their families undergoing and recovering from cancer treatment through our Choices Cancer Support Centre. From exercise and wellness classes to art therapy and peer support, Choices' programs are offered free of charge for anyone affected by cancer, and are made possible by the generosity of our supporters and community **wesley.com.au/donate-to-us**.

In our Fast Five this edition, we sat down with Katie O'Connell from CPR Kids to talk who, what and why. We are proud to offer the CPR Kids Baby and Child class here at The Wesley for our new mums and dads as part of our Wesley Maternity antenatal program. Led by paediatric nurses and midwives, the class prepares parents, grandparents, aunts and uncles with the knowledge and confidence to help their baby or child in an emergency.

Finally, we look forward to welcoming you to our upcoming GP Education events with our specialists in Maternity and Women's Health. I encourage you to visit our website ***wesley.com.au*** *to check the upcoming dates and to register.*

Thank you for taking the time to read Medilink. We always welcome your feedback and if I can be of any assistance, please don't hesitate to get in touch.

Sean Hubbard
General Manager

Personalised care for women

In our women's health edition of Medilink, we're excited to bring you expert articles from leaders in a range of specialties from pregnancy and early motherhood, to women's cancers and the very best in post-treatment support. We look forward to expanding on these topics with you in the second half of 2021 through our series of CPD education events for GPs. Keep an eye out for your invitation to these events, or watch our event registration page.

For many women, their first experiences at The Wesley come when they begin to grow their family. Wesley Maternity is privileged to support more than 1,000 women and their families each and every year as they welcome a new baby – it's where our ethos of 'caring for you for life' begins. For some that includes support to conceive and for others it involves the care of our expert Special Care Nursery team when their baby arrives. No matter the journey to parenthood; we're proud to provide the best possible care. In obstetrics and gynaecology, Drs Leonie Callaway, Pauline Joubert and Ross Turner share their insights into the evolving space of pre-conception genetics, the latest in IVF and overcoming other complexities in conception.

Shifting to oncology, personalised care is fast becoming an expectation for patients going through a cancer journey. Both the Wesley Breast Clinic (WBC) and our on-campus partner in radiation care, GenesisCare, provide personalised risk assessments to guide cancer screening and treatment respectively. Wesley Breast Clinic's Dr Carmen Gutierrez and GenesisCare Radiation Oncologists Drs Marie Burke and Nicola Lowrey explain these services and their impact on patient outcomes. The Icon Cancer Centre is also onsite to provide expert medical oncology treatment and management options.

This year we are also celebrating ten years of delivering and developing our robotic surgery program.

While robotic surgery is traditionally associated with prostate surgery, it is progressively being used to offer minimally invasive surgical options for gynaecological cancer patients, allowing faster recovery times and better outcomes for patients.

Finally, we hear from Janine Porter-Steele, Director of The Wesley Choices Cancer Support Centre, commonly known as Choices. While this service is based at The Wesley, it is a free service available to anyone affected by cancer. Janine's article unpacks Choices Women's Wellness after Cancer program, an evidence-based health promotion program that provides clear direction for combating complications after cancer treatment.

I hope you enjoy this edition of Medilink and I look forward to meeting with you soon.

Daniel Rochaix
Business Development Manager

For information on events or specialist visits to your practice contact the team via email wesley.BDM@uchealth.com.au

Genetic carrier screening

BY DR PAULINE JOUBERT

"Information on carrier screening for genetic conditions should be offered to all women planning a pregnancy or in the first trimester of pregnancy. Options for carrier screening include screening with a panel for a limited selection of the most frequent conditions for example cystic fibrosis, spinal muscular atrophy and fragile X syndrome, or screening with an expanded panel that contains many disorders 'up to hundreds'."

This is a consensus guideline of the Royal Australian and New Zealand College of Obstetrics and Gynaecology.

"Information on carrier screening for the more common genetic conditions that affect children e.g. cystic fibrosis, spinal muscular atrophy, fragile X syndrome should be offered to low-risk women and couples i.e. regardless of family history and ethnicity."

The above statement is found on the RACGP website as a "practice point".

What does this mean for us as practitioners caring for women before and during pregnancy?

Essentially it means that every single woman or couple we see who are under 12 weeks gestation or possibly contemplating a pregnancy, should have the option of genetic carrier screening discussed with them. In the past, reproductive carrier screening for inherited recessive conditions was offered on the basis of ethnicity or family history. However, this has been found to lead to significant under-identification of carrier couples. Australia is a multicultural society with couples from a wide range of ethnic and family backgrounds. As a result the recommendation is to offer screening to all women and couples even if they are deemed low risk by conventional methods.

This can be time consuming and confusing for all involved.

There are an abundance of resources available to educate ourselves and to use to educate

patients, however even those can be overwhelming. Hopefully this article summarises key points when pondering these guidelines and statements of our "governing bodies" that those of us in the trenches must scurry to fulfil.

What is meant by genetic carrier screening?

Newer genomic sequencing techniques allow us to test for a multitude of recessive conditions in couples who have no family history of a genetic disorder. These conditions are usually autosomal recessive or X-linked. This means that both parties of the couple need to carry the gene for the child to have a chance of being affected by the condition.

X-linked inheritance is more complicated and sons of mothers who carry the mutation can be affected.

The tests are normally done on blood or saliva samples.

Why screen at all?

Everyone is a carrier for approximately two severe autosomal recessive conditions. Up to 1:50 couples find out they have a chance of having a child with a severe inherited genetic condition. 1:200 babies are born with a rare inherited condition. Inherited conditions are to blame for approximately 20% of infant deaths and 10% of paediatric hospital admissions.

Put another way, 1:20 people are a carrier for either Cystic Fibrosis (CF), Spinal Muscular Atrophy (SMA) or Fragile X Syndrome.

Early diagnosis of an increased risk of inherited genetic conditions allows couples more options in making informed reproductive choices that include pre-implantation genetic diagnosis through in vitro fertilisation (IVF), donor eggs or sperm or invasive diagnostic tests when pregnant (amniocentesis or chorionic villous sampling).

There are different types of screening:

SINGLE-CONDITION SCREENING

Screens for only one specific inherited disorder. Examples of this are Tay-Sachs disease or haemoglobinopathies.

THREE CONDITION SCREENING

Screens for 3 of the most common rare inherited diseases namely CF, SMA and Fragile X.

EXPANDED CARRIER SCREENING

Screens for hundreds of different inherited diseases and always includes testing for CF, SMA and Fragile X.

ONE STEP SCREENING

Both parties are tested simultaneously and each given their couple and individual results and risks. This can be preferable as more carriers are detected and the results return in a more timely fashion resulting in the ability to influence decisions earlier.

TWO STEP SCREENING

The female partner is tested first and only if she tests positive for a condition is the male partner tested. This can be more economical as most companies offer the testing of the partner for free in this situation, however, the risk assessment for the couple as a whole takes longer.

What tests are available?

The most commonly used and easiest to access currently include:

+ SNP – Sonic Genomics – three condition screening or the Beacon expanded panel
+ QML – three condition test only
+ VCGS (Victorian Clinical Genetics Services) Prepair (3 condition screening) and Prepair+ (expanded panel)
+ Invitae expanded panel.

SNP

3 condition screening test. Download the Reproductive carrier screening request form from the website. Any Sonic healthcare collection centre can collect the blood sample.

Takes approximately 10 days for a result and costs $385. There is no Medicare rebate. If the female tests positive for a condition, the male partner is tested for free.

The Beacon expanded carrier screen tests for more than 400 genes. Both partners are tested. You can download the request form through Genie, Medical Director or Best Practice. It is a blood test that can be collected at any Sonic collection centre.

It takes 3-5 weeks for a result, costs $595 and there is no rebate.

QML

3 condition screening only available. Can use any general QML request form. The patient calls the required number (1800 822 999) to prepay for the test and takes the receipt issued to the collection centre. The cost is $345. There is no rebate.

The partner is tested for free if the female tests positive for a condition.

VCGS

Prepair: 3 condition screening is a cheek swab. You can request kits be sent to your practice and there are clear instructions in the pack that the patient can self-collect and post to VCGS in the prepaid envelope. A request from is required. This can be downloaded off their website. On their website you can click on “order the test” and follow the prompts. Turnaround time is 2-3 weeks. It costs $389 and there is no rebate. The partner is tested for free if required.

Prepair+: Expanded panel tests for approximately 250 conditions. Both partners are tested. It is a blood test and there is a list of collection centres available on their website. The request form can be downloaded from their website. The cost is $900 and there is no rebate.

VCGS provide genetic counselling if required for any positive results.

INVITAE

This is an American company that offer an expanded panel. Both partners are tested with a saliva sample and the cost is US$250. To request this you order the test through their website. They send the kits directly to the patients and the patients then self-collect the samples and return them. The results are sent to the clinician and later accessible to the patients. Turnaround time is approximately 3 weeks. They test for 289 genes. There is no rebate.

Mackenzie’s Mission

Mackenzie’s Mission is a national research project funded by the Federal Government. It aims to identify how reproductive carrier screening for an expanded range of conditions can best be made available to Australian couples who desire it. The couple are both tested for over 1,000 genes for free. They receive a couple-based result of “low risk” or high risk”. Only if they are high risk do they receive their individual results with genetic counselling. You can become a part of this research by contacting the research team on their website.

In conclusion, as you face the challenge of incorporating this into daily practice, know that there are people to call if you are unsure and a myriad of easy-to-access websites. The RACGP website has launched a “Beware the Rare” campaign to educate GPs and make them aware and equipped to pass this information on to their patients. On the RACGP website there are CPD attracting videos with information about genetic carrier screening.

Genetics as a field of medicine is advancing daily. The decision to undertake genetic carrier screening is a personal one with potential far reaching consequences and not something to be taken lightly. Every couple deserves to know about the testing available and the benefits and limitations. General practitioners are often the first port of call for couples seeking advice about family planning and so it falls to you to bring this to their attention.

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Pre-implantation testing: Double trouble

BY DR ROSS TURNER

Pre-implantation genetic testing (PGT) is available for:

- **monogenetic disorders [PGT-M],**
- **chromosomal structural re-arrangements [PGT-SR],**
- **sex selection [PGT-SS]**
- **aneuploidy screening [PGT-A].**

This case discussion highlights the use of both PGT-M and PGT-A.

A 27-year-old nulligravidae lady with known von Willebrand type 1(vWD) [autosomal dominant] presented for a pre-pregnancy consultation. Primary menorrhagia and dysmenorrhea were controlled with continuous Qlaira and intermittent short courses of norethisterone 1.25mgs for occasional breakthrough bleeding. Previously periods were heavy and painful. Significant family history was her mother [also affected with vWD] having endometriosis and sub fertility. Her partner was 31 years of age with no significant personal or family history and normal physical examination.

A physical examination and transvaginal ultrasound were normal, apart from noting that the ovaries were small, which could have been a Combined Oral Contraceptive Pill (COCP) effect. General advice on healthy lifestyle and supplements was given along with a request for the normal antenatal screening tests, and ovarian reserve testing. AMH results, once off the COCP, indicated low ovarian reserve. Reproductive options (described below) were discussed in detail with the couple, who opted for IVF supported by PGT-M.

After counselling the couple did expanded genetic testing for recessive gene conditions and were found to both be carriers for Glycogen storage disorder 1b [GSD].

A genetic review was required to discuss the implication of being carriers for this gene mutation, confirmation of the presence of a pathogenic variant and to organize molecular identification of the mutation. As screening for two genetic conditions, they were counselled on the possibility of only having vWD affected embryos [the less severe condition] available for transfer as statistically, only 3/16 embryos would be ideal for transfer as 1/4 will have GDS, half of the remaining 3/4 will have

vWD and at the age of 27 years a half of these will be aneuploidy.

To avoid extraneous sperm DNA being amplified during the testing process ICSI is required for fertilisation. Feasibility studies were then performed, requiring blood samples from the couple and their parents to develop a test to identify the mutated gene. This takes 4-6 weeks and costs about $2000. The test can also detect any aneuploidy.

After 3 cycles of IVF, of the 15 oocytes collected 3 resulted in blastocyst suitable for biopsy and two embryos where suitable for transfer.

While controversial, due to the limited opportunity to conceive, a laparoscopy was performed to treat any endometriosis to improve the ovarian response, egg quality and optimise the success of any embryo transfer. Extensive endometriosis was diagnosed and excised from both pelvic side walls and the pouch of Douglas.

Following this surgery, another IVF cycle was done with the creation of another embryo suitable for transfer. One of the tested frozen embryos was also transferred during this cycle but unfortunately did not result in a pregnancy.

Two further FET/HRT cycles were performed with the first attempt resulting in a chemical pregnancy (positive HCG but not ongoing pregnancy) followed by the transfer of the last embryo [affected vWD/carrier GSD/inconclusive for 24 chromosome] with the addition of intramuscular progesterone due to the low levels in the previous cycle. This pregnancy continued through 12 weeks of pregnancy. As PGT-M testing is only a screening test [with a 95% sensitivity], amniocentesis is still recommended to confirm the absence of the genetic disorder.

This case demonstrates the importance of discussing extended genetic screening with couples about to embark on a pregnancy and also those in the first trimester. With six in 1,000 children born having a major recessive gene disorder, these are more common in women having children under the age of 30 than the risk of Down's syndrome, and a leading cause of neonatal and infant morbidity and mortality and admissions to hospital. These conditions occur usually in the absence of any family history and delivering previous healthy children does not exclude a couple from having a recessive gene match.

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PRACTICE POINTS

Before testing, couples should be advised of their options if they are found to have matching recessive gene mutations which are:

1. No children or adoption
2. Donor sperm [more accessible]
3. Donor egg
4. IVF/PGT-M
5. Conceive with option of testing and potential termination.
6. Conceive and no testing. 25% chance of having an affected child.

Implication of doing EGS test

1. Psychological distress of being diagnosed a carrier of a mutation
2. Moral obligation to inform siblings of the mutation
3. Possible discrimination by insurance companies as some gene mutations can carry an increased risk of adult onset diseases
4. Risk reduction not elimination
5. Not guarantee healthy child

Pathway of PGT-M

1. Geneticist appointment
2. IVF specialist appointment
3. Genetic Scientest appointment
4. Feasibility studies
5. IVF co-ordinater appointment
6. IVF specialist review and start cycle
7. Confirmatory testing in pregnancy

Updates in Obstetric Medicine: Weight, Diabetes, Bariatric Surgery, Medical Problems

BY DR LEONIE CALLAWAY

Just recently, I had the pleasure of leading the development of the new Queensland Clinical Guidelines for the management of pregnant women after bariatric surgery and obesity, to be published very soon.

A key issue that we needed to highlight is the critical importance of preconception care for women who have had bariatric surgery. Ideally, women will have a stable weight prior to falling pregnant. From some of our research, we know that falling pregnant while still losing weight can affect the development of the egg, which may have long term effects on the health of the offspring. We have published a review of this, with the article available through open access (Matuisak et al, 2014).

What are the practical things we need to do?

1. Ensure that women of reproductive age who have had bariatric surgery have effective contraception until their weight is stable.
2. Explain to women that ideally, weight should be stable in the three months prior to pregnancy, to ensure the best chance of good long-term health for the baby.
3. Ensure that nutritional issues and supplementation are carefully managed.
4. Consider specialist preconception care, particularly if women have other medical co-morbidities.
5. Ensure that women have excellent mental health care, including trauma informed care. Some of our research suggests an association between adverse childhood experiences, obesity and gestational diabetes. One of these articles are also available on open access. The other is provided in the reference list below (Hollingsworth et al, 2012; Schoenaker et al, 2019).

Given the complexities of the diet culture that pervades our world, and the high rate of previous trauma in women who struggle with weight, it is important to be mindful of these issues when caring for women at this very vulnerable point in their lives.

It is also important to be aware that eating disorders are very prevalent in higher weight women, and indeed, can be triggered by the weight loss that occurs following bariatric surgery. All of this needs sensitive and thoughtful care.

GESTATIONAL DIABETES

The diagnosis of gestational diabetes can be extremely stressful for women. While it is often regarded as a simple pregnancy complication, it can be anything BUT that for women. We know it can trigger extreme anxiety, and can also result in restrictive eating behaviours, which are particularly problematic for women who have previously struggled with eating disorders. Women often feel a high degree of shame with the diagnosis of gestational diabetes, which can be particularly problematic in women with a background history of trauma and mental health difficulties.

PRE-EXISTING DIABETES

We have also recently been involved in the new national guidelines for the management of pre-existing diabetes and pregnancy. The critical importance of specialist pre-pregnancy planning in women with pre-existing diabetes was emphasised in this document. It covers all the details of pregnancy care, and also has an excellent section about breastfeeding for women with type 1 and type 2 diabetes.

BREASTFEEDING IN WOMEN WITH GESTATIONAL DIABETES

It is essential to remember that for women with gestational diabetes, breastfeeding reduces the risk of developing type 2 diabetes. Breastfeeding needs excellent midwifery, lactation consultant and general practitioner support, due to all the benefits that accrue for mother and baby.

PRECONCEPTION CARE FOR COMPLEX MEDICAL ISSUES

Preconception care is essential for women with complex medical issues. Increasingly women with complex medical issues are wanting to consider a family. Previously, they would have been discouraged from pregnancy. However, as medical care has rapidly improved, the outcomes are often far better than reported in the literature. A preconception review allows the woman and her partner to consider very carefully the impact of their health on their pregnancy, the potential impact of pregnancy on their health, a careful medication review, and careful decision-making support. Medication management and other preconception health matters are all key to high quality pregnancy preparation.

Over the last few years, it has been a pleasure to care for women prior to and during pregnancy with cystic fibrosis, solid organ transplants, heart disease, kidney disease, auto-immune disease, previous malignancy, along with all the more usual things!

Sometimes women and their partners find peace in the decision to not proceed to pregnancy.

For women who do proceed, in face of all the risks, and when well prepared, very often they report that having a baby (even with all the complications, and often a preterm delivery) was the most important thing they ever did.

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FAST FIVE

WITH KATIE O'CONNELL

KATIE O'CONNELL IS A PAEDIATRIC NURSE AND PAEDIATRIC CLINICAL NURSE EDUCATOR, WHO HAS LOVED CARING FOR HER LITTLE PATIENTS AND THEIR FAMILIES ON THE WESLEY HOSPITAL CHILDREN'S WARD (MEDICAL AND SURGICAL) FOR THE PAST 13 YEARS. SHE IS ALSO A MIDWIFE AT WESLEY MATERNITY WITH MORE THAN 9 YEARS EXPERIENCE, AND IS EXCITED TO WORK FOR CPR KIDS AS AN EDUCATOR RUNNING BABY AND CHILD CPR AND FIRST AID CLASSES. SHE HAS A SPECIAL INTEREST IN POSTNATAL CARE, NEWBORN AND NEONATAL CARE NURSERY AND CAESAREAN BIRTHS.

Who should do a baby and child first aid class?

Every adult who knows or cares for a child needs to have paediatric CPR and first aid skills! Parents, grandparents, aunties, uncles, babysitters, friends, childcare educators, teachers…it is vital that they have the knowledge and skills to recognise and respond to a sick or injured child.

Why is it important to know paediatric first aid?

When it comes to a medical emergency involving a child, every second counts! Children deteriorate rapidly, and what you do as a first responder in the minutes before an ambulance arrives will make all the difference to the health outcome for your child. We want every parent and caregiver to be empowered with the knowledge and skills to act swiftly, calmly and confidently in a medical emergency, so they know they have done everything they possibly could have in that moment.

Why do you love teaching first aid to families?

As a mum myself to two crazy little boys, I know how unpredictable children can be, and how quickly and easily children can get themselves into mischief with illness and injury!

My experience as a paediatric nurse has shown me the importance of parents being adequately prepared for any emergency situation involving their child, and it is incredibly fulfilling arming parents with the life-saving skills of paediatric CPR and first aid. I love knowing that parents and caregivers who attend our classes leave feeling confident that when the worst happens, they can jump into action and perform good, effective CPR and first aid for their child every time.

What is covered in the CPR Kids classes?

The first half of the class covers baby and child CPR using the DRSABCD acronym. We use scenarios and stories to immerse participants into real-life situations, with lots of hands on practice on our lifelike baby and child CPR manikins. We also cover a number of vital first aid topics focusing on the prevention, recognition and response to choking, drowning, fevers, seizures, burns, poisoning, head injuries and envenomation. Participants will also receive follow-up online learning modules covering allergies and anaphylaxis, broken bones, and management of snake and spider bites, as well as being provided with handouts and posters to refresh their learning at home.

Can you tell us your top first aid tips for new parents?

- Have a well-stocked first aid kit.
- Trust your instinct - if you are worried about your child, seek medical help. You know your child best.
- Most importantly - do a paediatric CPR and first aid course, and keep refreshing your knowledge!

Baby and Child CPR + First Aid Class

Essential for EVERY family - learn CPR and first aid for babies and children. The 3 hour classes are taught by the CPR Kids expert paediatric nurses who specialise in children's health.

Topics include:

- Drowning
- Choking
- Fever
- Head injuies
- CPR for babies and children
- Poisoning
- Burns
- and more!

Classes held at
The Wesley Hospital
call 1300 543 727 or visit
cprkids.com.au to book

Babies and breastfeeding always welcome.

What is cow's milk protein allergy?

BY DR KAREN LIM, PAEDIATRICIAN

DR KAREN LIM IS A GENERAL PAEDIATRICIAN WITH SPECIAL INTEREST IN NEWBORN MEDICINE, BEHAVIOURAL AND DEVELOPMENTAL PAEDIATRICS SUCH AS ADHD AND ASD

CASE STUDY

This is Baby X's third medical review since her birth and she has only gained 300grams above her birthweight (3.1kg to 3.4kg). During this time, mother has ceased breast feeding and tried various formula including thickening, anti-regurgitation and lactose-free formula. She was reviewed by her Paediatrician and diagnosed with cow's milk protein allergy.

DEFINITION

Cow's milk protein allergy (CMPA) is an abnormal immunological response to cow's milk protein. It can be specific IgE mediated or non-IgE mediated. In IgE mediated CMPA, reactions are acute and can occur within 2 hours of cow's milk ingestion. The symptoms range from allergy-like (urticaria, angioedema or loose stools) to manifestations of acute anaphylaxis. Non-IgE mediated CMPA reactions are generally delayed and symptoms can occur from 2 days to one week after drinking cow's milk. The predominant symptoms in infant with CMPA are gastrointestinal (~50% with loose stool, blood and/or mucus in stool, and abdominal pain), dermatological (~30% with rashes, eczema and hives) and respiratory (~20% with wheezing, cough or sneeze). Prolonged CMPA in infants can lead to poor growth and failure to thrive. The prevalence of CMPA varies from 2% to 7.5% with a lower incidence rate amongst exclusively breast-fed babies.

DIAGNOSIS

CMPA is diagnosed clinically with detailed history taking and examination. In an irritable infant with faltering growth, loose stool with blood and/or mucus is a red flag. Family history of atopy or confirmed food allergy is a risk factor for infants with CMPA.

The diagnosis of CMPA is confirmed after improvement of symptoms following elimination of cow's milk from infant's diet. The recurrence of symptoms on reintroduction of cow's milk is highly suggestive of non-IgE mediated CMPA.

Other tests such as skin prick testing and RAST are not helpful, unless used to exclude other pathology/ allergens.

MANAGEMENT

The treatment for CMPA is elimination of cow's milk protein from diet. For non-IgE mediated CMPA, both dairy and soy products should be excluded due to risk of cross-reactivity. In breast-fed infants, mother should eliminate all dairy and soy in her diet. During this period, she should be commenced on Calcium +/- Vitamin D supplementation. It is also recommended that she consult with a dietician to assist with food elimination as it can be daunting and overwhelming to know which foods contain dairy or soy.

In formula-fed infants, hydrolysed formula should be used. Cow's milk protein is extensively broken down

into peptides in hydrolysed formula. For mild reactions, Apatamil Allerpro is available over the counter. For mild to moderate CMPA, more hydrolysed versions such as Alfare and Pepti-Junior can be prescribed. In instances of moderate to severe CMPA, some infants will require amino acid-based prescription formula (Neocate and Elecare). Goats' milk, sheep's milk and soy milk alternative are not recommended due to cross-reactivity of proteins.

Most infants will need to remain on a cow's milk protein elimination diet for six to 12 months.

At that stage, more than half will tolerate re-introduction of cow's milk protein in their diet. This should be done in a slow staged process. Most children will outgrow CMPA symptoms by the age of one and the majority with full resolution by three years of age.

OUTCOME FOR BABY X

Baby X was prescribed hydrolysed formula (Pepti-Junior) and two weeks later, she was a much happier baby with normal stools. She had also put on 400grams during that time. At 13-months old, she is a thriving toddler who was happily snacking on a cheese stick at her paediatrics review.

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SUPPORTING WOMEN TO MAKE INFORMED DECISIONS

DCISionRT® is a risk assessment test which looks at the likelihood of ductal carcinoma in situ (DCIS) recurring after surgery, the risk of the disease spreading, and the impact of radiation therapy in reducing that risk. DCISionRT assists you and your patients to select treatment based on the biology of the tumour, not just clinical pathology.

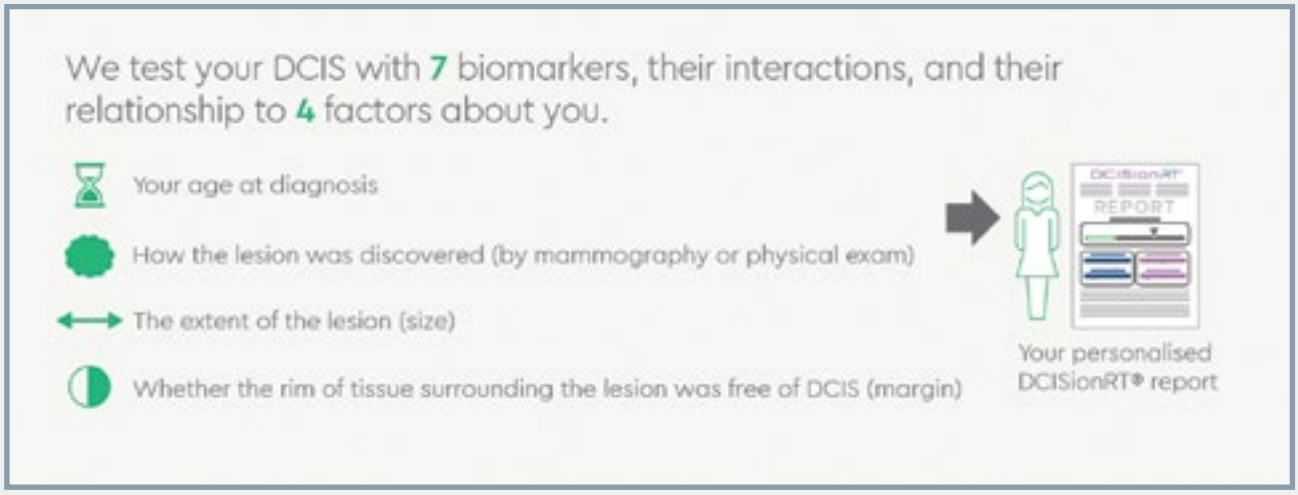
GenesisCare Radiation Oncologist Dr Marie Burke, said: "I've been looking after women with breast cancer for more than 30 years as a Radiation Oncologist and it's been such a pleasure to see how progressively we have personalised treatment options for women."

A PERSONALISED TREATMENT APPROACH

DCIS itself is not considered life threatening, however, a recent study suggested that women with DCIS have a 3-fold increased risk of death from breast cancer compared with women without DCIS because of the variations in treatment practice, due to geographical access and differing clinical protocols.

DCISionRT looks at women diagnosed with DCIS and assesses their 10-year risk of recurrence or of developing invasive disease with or without radiation therapy. It is the only test developed specifically for this purpose.

The outcomes of the test show whether your patient's risk is 'low' or 'elevated' and assesses the potential benefits of radiation therapy. The test results are then used as a decision tool for you and your patients when considering treatment options.



GenesisCare Radiation Oncologist Dr Nicola Lowrey, said: "Traditionally almost all women with intermediate and high grade DCIS have been offered radiation treatment but there is a portion of women who don't need it. DCISionRT enables us to identify which women are at low risk of recurrent breast cancer and do not need radiation therapy."

"The additional biological information provided by DCISionRT can give you and your patients insights into the risks of the disease recurring and the likelihood of benefiting from radiation therapy. A truly personalised approach," said Dr Burke.

THE DCISionRT TEST

The test can be applied to the breast tissue sample taken as part of your patient's biopsy or breast surgery; no additional procedure is required.

The results will be shared with the patient and doctor within approximately one week from the lab receiving the tissue sample, and a follow-up appointment will then be arranged with your doctor to discuss the patient's journey.

The DCISionRT test and treatment package are available only through GenesisCare clinics. GenesisCare is offering the DCISionRT test along with radiation therapy as a bundled financial package. If no radiation therapy is needed at the time of results, there will be no cost to your patient for the test. The cost of the test is not covered by private health insurance or Medicare; hence the financial package being offered by GenesisCare.

"At GenesisCare our goal is to deliver the best possible treatment, for every patient, every time," said Dr Lowrey.

CLINICAL EVIDENCE

DCISionRT has been developed and validated on over 3,500 patients across six distinct patient cohorts. Studies on 5 of these cohorts have produced consistent results study to study in published research from 2010 to 2018.1,4-6

The sixth cohort currently consists of >1,400 patients who are part of the ongoing PREDICT Registry in the US. Results to date from this study are also consistent with prior studies but not yet published.

GenesisCare have also partnered with PreludeDx on a research program to further the clinical development of precision medicine tests, including breast and other cancers, with global real-world evidence.

"As part of this Australian-first initiative, we have established a global registry to further evaluate DCISionRT's impact on treatment decisions as well as outcomes of patients post-surgery," said Dr Burke.

Dr Marie Burke
MBBS, FRANZCR
Medical Director Queensland Radiation Oncologist,
Doctor Engagement Leader

Dr Nicola Lowrey
MBBS, B AppSc (MRT), FRANZCR
Radiation Oncologist

DCISionRT® – biological profiling for personalised treatment

Supporting women to make informed decisions

GenesisCare are proud to be the first in Australia to provide access to DCISionRT® – a **new** test improving the treatment choices of thousands of breast cancer patients as they work with you, their doctors, to make informed decisions about their treatment options.

Based on studies carried out in over 3,500 DCIS patients,[1–4] DCISionRT is a risk assessment tool looking at the likelihood of:

- DCIS recurrence after surgery
- Invasive disease development after surgery
- DCIS recurrence after surgery and radiation therapy
- Invasive disease development, after surgery and radiation therapy

At GenesisCare, we focus our care on the individual, not just the condition, and support you to bring a personalised approach to your patient's treatment. Our care is based on the unique needs of every individual, backed by innovative technology, a global network of over 5,000 specialists, and advanced diagnostic and multidisciplinary treatment options.

Evidence-based, precision testing – improving patient outcomes.

Available at GenesisCare Wesley

Suite 1, Wesley Medical Centre
40 Chasely Street
Auchenflower QLD 4066

For more information please contact:
Tel: 1300 086 870
receptiononcologywesley@genesiscare.com

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GenesisCare

When to see a women's health physio?

WE CHATTED TO SENIOR PHYSIOTHERAPIST CHERYL ZEELIE ABOUT HOW HER TEAM IS BUILDING THE CONFIDENCE OF WOMEN AT ALL STAGES OF LIFE. #womenshealthweek

WHAT IS THE ROLE OF A WOMEN'S HEALTH PHYSIOTHERAPIST?

The women's health physiotherapist supports women in their health journey and focuses on maintaining and restoring normal function and improving quality of life for our clients.

We have specialised knowledge regarding conditions specific to females. Here at The Wesley we treat women both on the acute wards post-surgery and in the maternity unit as well as in our Women's Health outpatient clinic.

Consultations in our clinic include a comprehensive assessment, hands on treatment, individually tailored exercise program, advice and education and guided progression to aid return to work, exercise and activities of daily living.

We have six physiotherapists in our outpatient clinic who have all completed extensive postgraduate training specifically in the area of Women's health.

We are passionate about providing excellent care for our women through all their life stages from young women, through the childbearing years, to midlife and beyond menopause.

WHY SHOULD WOMEN SEE A WOMEN'S HEALTH PHYSIOTHERAPIST?

Many women will experience some sort of pelvic floor issues in their lives that we are able to help with. We also play a big role in recovery post gynaecological surgery as well as breast cancer surgery. We work together with our clients to formulate a treatment plan, set goals and to get them back to doing the things that they enjoy. We can provide education and exercise to enhance wellness in our clients.

WHAT CONDITIONS CAN THE WOMEN'S HEALTH SERVICE ASSIST WITH?

Conditions that are typically seen by the Women's Health Service include:

- Pelvic floor disorders such as urinary incontinence and prolapse
- Childbearing women pre-post-delivery including exercise prescription and pregnancy related pelvic girdle/ back pain
- Chronic pelvic pain and sexual dysfunction
- Rehabilitation after gynaecological surgery
- Bladder overactivity
- Bowel disorders including constipation and incontinence
- Rehabilitation after breast cancer surgery
- Lymphoedema management

WHY SHOULD WOMEN PRIORITISE THEIR HEALTH?

Women juggle so many different roles in a day and it is vital to look after yourself, go for check-ups and seek help for any women's health concerns that you may have. Women need to put their health first and to keep making positive changes that will have long lasting results.

IS A REFERRAL REQUIRED?

A doctor's referral is not required to see us. If a GP has referred a patient, then we work closely with them to update them on progress.

CONTACT

Phone (07) 3232 6190 to book an appointment. We are located in the day rehab unit, Level B1, East Wing, The Wesley Hospital

Breast Cancer: Risk assessment and high breast density

BY DR CARMEN GUTIERREZ

THE WESLEY BREAST CLINIC (WBC) OPENED IN 1982 AND IS CELEBRATING 40 YEARS OF SERVICE TO BRISBANE WOMEN NEXT YEAR. THE WBC IS A FACILITY LOCATED AT THE WESLEY HOSPITAL AND BRINGS TOGETHER A MULTIDISCIPLINARY TEAM OF MEDICAL OFFICERS, RADIOLOGISTS, BREAST CARE NURSES, SURGEONS, IMAGING TECHNICIANS AND OFFSITE CONSULTING SPECIALIST BREAST PATHOLOGISTS THAT WORK COLLABORATIVELY TO PROVIDE A COMPREHENSIVE, ADVANCED BREAST CARE SERVICE. THE WBC CURRENTLY CARES FOR MORE THAN 20,000 PATIENTS A YEAR FOR BREAST SCREENING AND DIAGNOSTIC ASSESSMENTS.

One of the main aims of the WBC has been to provide personalised patient care. Breast screening intensity is related to an individualised breast cancer risk. Everyone is familiar with the three different "categories of risk" described by Cancer Australia, based exclusively on family history of breast cancer. However, there are other breast cancer risk factors that should be considered when assessing individual breast cancer risk such as: past history of some breast conditions such as lobular carcinoma in situ (LCIS); atypical ductal hyperplasia (ADH); and high breast density.

As part of our standard mammogram screening process we assess breast density. Some women aged 40-60 who are identified as having very high breast density are assessed using our IBIS breast cancer risk programme (Tyrer-Cuzick calculator) as part of our breast evaluation.

The calculator uses personal breast cancer risk factors as well as family history, genetic testing and mammographic density (percentage of volumetric density) to estimate a personal 10 year or lifetime risk of developing breast cancer.

Women are grouped into High (3 times or more the population risk), Moderate (1.5 – 3 times the population risk) or Population risk for the development of breast cancer.

Not all women in the high-risk group have a significant family history of breast cancer and not all women with a family history have a high risk of developing breast cancer. A careful discussion takes place after the risk assessments and women in the high-risk group will be offered a more frequent screening schedule and additional imaging, such as MRI. Other issues potentially discussed with women in the high-risk group will depend on their individual history and could include genetic testing (this will require a consultation with a genetic counsellor +/- a referral to a geneticist), general lifestyle modification, HRT use, and chemoprophylaxis. Since the WBC started the IBIS programme in 2017, it has assessed more than 3,000 women providing personalised risk profiles and individualised screening programs appropriate for their risk category.

In 2020 we audited the first three years of the IBIS programme, looking at general statistics as well as characteristics of the high-risk women detected by the programme and breast cancers detected in the IBIS population. Not surprisingly, the majority of breast cancers in the IBIS population occurred in the high and moderate risk groups. This reinforces the need for risk assessments, to identify individuals requiring more intensive screening and follow up of high-risk women.

WHAT SERVICES DOES THE WBC PROVIDE?

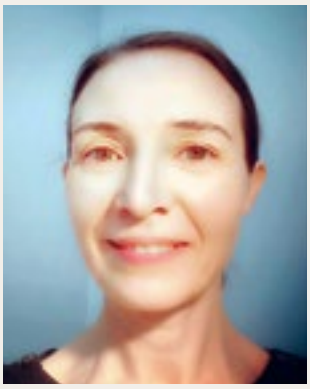
The WBC Screening Clinic: For Asymptomatic women. A visit to the WBC screening clinic involves our breast care nurses conducting a directed family and personal patient history and a mammogram. If a mammographic or a clinical abnormality is detected, further assessment with ultrasound +/- biopsy will be performed at the same visit.

The digital mammography unit at the WBC also measures volumetric density during the mammogram allowing us to objectively assess mammographic density. If a patient has very high breast density then a bilateral breast ultrasound examination will also be recommended. This additional step is recommended due to the intrinsic biology of dense glandular tissue and a reduction in mammogram sensitivity in very dense breast tissue. The WBC's practice of identifying patients with high breast density during a mammogram to follow up with a breast ultrasound was vindicated in a recent study published in JMIRO. The results showed that 20% of breast cancers diagnosed at the WBC were sonographic findings after a negative mammogram. Additionally, these cancers were smaller when they were identified, and as a result of this were identified earlier, were less invasive, easier to treat, and patients had a better outcome.

The WBC Diagnostic Clinic: provides a service for symptomatic patients, women with a significant risk of developing breast cancer and/or high breast density. These women will have a consultation with one of our breast physicians which will include a mammogram, a whole breast ultrasound, and, if indicated, an MRI examination.

Any biopsies are performed in the same consultation day and pathology results are discussed with the patient when they are available, usually within 24 hours. After every diagnostic assessment, a letter is sent to the referring GP, including consultation notes, imaging details and any biopsy results.

We also organise the imaging required for post-surgical patients. This service usually provides follow up imaging at the WBC, followed by a review and consultation by their surgeon.



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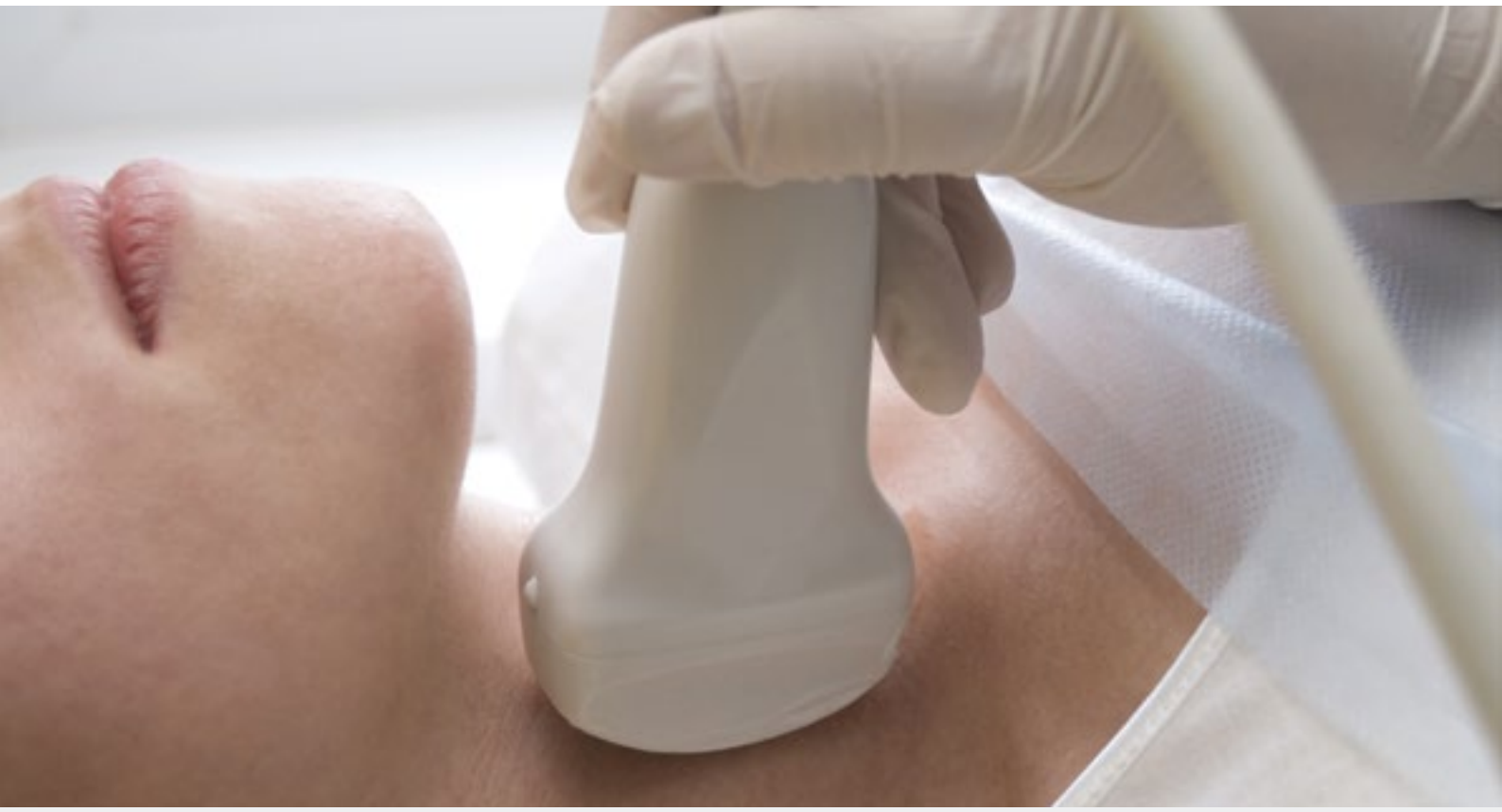

De-escalation of management for Differentiated Thyroid Cancer

BY DR JENNY GOUGH

It is well recognised that patients with Differentiated Thyroid Cancers (Papillary and Follicular cancer, DTC) have an excellent prognosis in general. There are only a small number of patients who ever develop distant metastatic disease or die from DTC (5%). It is therefore important that patients are not harmed by treatment, which could potentially be worse than the disease. Due to the small numbers of patients who die from DTC, survival is not a good indicator of treatment success or failure.

The treatment of DTC has undergone significant change in the last 20 years. Advances in surgical technique and safety lead to more extensive surgery and most patients being treated with Total Thyroidectomy and prophylactic central neck dissection (removal of the lymph nodes which lie below the thyroid around the recurrent laryngeal nerves adjacent to the trachea). This was with the aim of achieving undetectable Thyroglobulin results post-operatively and minimising the need for re-operation in the future. Thyroglobulin is a protein which all thyroid cells produce (both normal and malignant) and after total thyroidectomy can be used as a tumour marker. Adjuvant Radioactive Iodine was used widely due to the low risks and side effects of this treatment, again with the aim of achieving an undetectable Thyroglobulin level.

In recent years research has looked at the risks and complications of treatment in addition to overall patient outcomes and quality of life. There does not seem to be a significant benefit for low risk DTC patients having extensive surgery and Radioactive Iodine, and some of these patients can suffer complications from treatment, although this is rare. The 2015 American Thyroid Association Management Guidelines for Adult patients with Thyroid nodules and Differentiated Thyroid Cancer showed a marked shift in the recommendations for treating patients with low risk DTC, with a significant de-escalation of recommended treatment where an undetectable Thyroglobulin is not always required.

In the era of more personalised medicine, the goal is now to offer more individualised treatment in which patients can be involved in decision making.

The main changes in management can be grouped into; decreasing over diagnosis, less extensive surgery and less adjuvant therapy.

DECREASING OVER DIAGNOSIS

Thyroid nodules are very common and benign disease vastly outweighs malignancy. There has been a significant increase in the diagnosis of early thyroid cancers particularly Papillary microcarcinoma (mPTC) with the advent of modern high-resolution ultrasound being readily available in the community. mPTC are papillary carcinomas which are less than 10mm in size, usually indolent and found in up to 15% of surgical specimens where the indication for surgery was a benign goitre. There is now long-term data of "active surveillance" (ultrasound observation without surgery) of selected mPTC from both Japan and USA which report that mPTC do not enlarge or cause concern in up to 70% of patients. The mPTC which progress during "active surveillance" can undergo surgery with no detriment to survival. It is therefore important to try not to over diagnose mPTC.

Radiologists have developed the TI-RADS classification for thyroid nodule appearance on ultrasound in an effort to stratify patients into those who require biopsy and those who require surveillance. No classification system is perfect and this system is essentially designed to try and prevent diagnosis of very small thyroid cancers but not to miss cancers in general. One of the difficulties, however, is that not all ultrasound reports give a clear definition of the TI-RADS system and how it should be interpreted. It is not always made clear that the TI-RADS score needs to be taken into consideration with the nodule size when determining management. It is also confusing as many clinicians are familiar with the thyroid FNA cytology reporting Bethesda categorisation which is numbered fairly similarly. Therefore, there is often misinterpretation that TI-RADS 4 or 5 nodules which are reported as moderately or highly suspicious on ultrasound will require surgery in the same way that a nodule with Category 4 or 5 cytology does. (See below tables) In contrast some patients with large nodules or goitres will occasionally be recommended to have no FNA or follow-up using the TI-RADS classification, but will need to consider surgery for their symptoms.

The current trend in thyroid imaging is to only biopsy nodules which have a high level of concern for being malignant, to avoid indeterminate results which may lead to surgery for what ultimately turns out to be benign disease. For patients who appear to have benign disease on imaging, increasing ultrasound surveillance intervals rather than ultrasound every year are now recommended.

LESS EXTENSIVE SURGERY

In Australia there has been a trend towards prophylactic central lymph node dissection (CLND) for patients with DTC due to an Australian study which showed lower Thyroglobulin levels and low risks and complications in a high volume centre. The aim was to decrease the likelihood of needing to re-operate on the central compartment and risk recurrent laryngeal nerve injury in the future should there be disease in these lymph nodes. CLND involves removing the lymph nodes which are intimately associated with the recurrent laryngeal nerve and therefore carries a slightly higher risk of nerve injury and a hoarse voice depending on the experience of the surgeon. The risk of injury is higher in re-operative surgery due to the presence of scar tissue. The inferior parathyroid glands are also often in this region and when patients have bilateral CLND there is a higher risk of permanent hypoparathyroidism. While the risk of permanent hypoparathyroidism is low (only 5% vs 2% without CLND) this can cause significant morbidity in a young patient who requires lifelong calcium supplementation. It is now accepted that the small risk of hypoparathyroidism is not acceptable for small low risk DTC and there has been a shift away from bilateral CLND to either unilateral CLND or no dissection for low risk DTC. CLND is now recommended for patients with positive lymph nodes on imaging or high risk DTC (>4cm).

There has also been an increasing trend towards Hemithyroidectomy for low risk DTC (<4cm). This has followed the decrease in

TI-RADS CLASSIFICATION OF THYROID NODULES ON ULTRASOUND

T—RADS SCORE	DESCRIPTION	MANAGEMENT
TR1	Benign	No FNA (no recommendation for follow-up)
TR2	Not-suspicious	No FNA (no recommendation for follow-up)
TR3	Mildly suspicious	FNA if >2.5cm Follow if >1.5cm at 1,3 & 5yrs
TR4	Moderately suspicious	FNA if >1.5cm Follow if >1cm at 1,2,3 & 5yrs
TR5	Highly suspicious	FNA if >1cm Follow if >0.5cm annually until 5 yrs

BETHESDA CLASSIFICATION OF THYROID FNA CYTOLOGY

DIAGNOSTIC CATEGORY	DESCRIPTION	RISK OF MALIGNANCY	MANAGEMENT
1	Non-diagnostic/ Insufficient	1-4%	Repeat FNA
2	Benign	0-3%	Clinical follow-up
3	Indeterminate	5-15%	Repeat FNA 3 months, or management as clinically indicated
4	Suspicious for a follicular neoplasm	15-30%	Hemithyroidectomy
5	Suspicious for papillary thyroid cancer	60-75%	Hemithyroidectomy or Total thyroidectomy
6	Malignant	97-99%	Hemithyroidectomy or Total thyroidectomy

recommendation for Radioactive Iodine. If patients do not require Radioactive Iodine and have a normal contralateral lobe of thyroid then there is no requirement for them to have a Total Thyroidectomy. The benefit of this is that a significant number of patients will not require thyroid hormone replacement, have no risk of hypoparathyroidism and only one recurrent laryngeal nerve is at risk. The disadvantages of Hemithyroidectomy are that patients will require more ultrasound surveillance of the remaining lobe than those who have had a Total Thyroidectomy and the potential for needing further surgery in the future (which is around 10%). There is now significant focus on quality of life for patients with thyroid cancer and a growing interest that there may be quality of life benefits to patients having less extensive surgery and retaining normal thyroid function.

LESS ADJUVANT THERAPY

Radioactive Iodine was one of the first targeted therapies for cancer. The thyroid gland, salivary glands and lactating breast tissue are the only tissues which concentrate iodine to a significant degree. Patients are required to be hypothyroid in order for any residual thyroid tissue or cancer cells to take up iodine. This means that a Total Thyroidectomy is required in addition to either Thyroxine withdrawal or administration of Thyrogen (Thyroid Stimulating Hormone (TSH) intramuscular injection) to create a state of TSH elevation, which makes the thyroid cells take up the Radioactive Iodine. Any Radioactive Iodine which is not taken into the cells passes out of the body in the urine. The Beta emission from Radioactive Iodine slowly kills cells which have taken it up without damage to the surrounding tissues. Radioactive Iodine has been very popular because of its low side-effect profile, with the main concern being salivary gland uptake and a dry mouth and the very small risk of secondary cancers of the salivary gland, kidney and leukaemia. After the treatment, patients have a whole-body radioisotope scan which shows where the iodine has been taken up and is effectively a whole-body thyroid cancer scan. This has always been very reassuring to patients and clinicians alike, and has been a reason for reluctance to de-escalate this therapy.

Thyroid hormone replacement for patients with DTC was traditionally given to suppress TSH with the theory that this would suppress any thyroid cancer from recurring. It is however well known that long-term TSH suppression can lead to metabolic consequences of osteoporosis and increased cardiovascular disease particularly arrhythmia. It is now understood that TSH suppression is unlikely to prevent disease recurrence and keeping the TSH within the lower end of the normal range is now recommended. The current guidelines aim for a TSH between 1 and the lower end of the reference range for the laboratory.

The current management guidelines for thyroid cancer provide a guide to de-escalating management of Low risk DTC. These patients have an excellent survival rate and it is therefore important to ensure they do not suffer long term complications of treatment and have optimal quality of life.

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Differential diagnosis of a pelvic mass

BY DR ANDREA GARRETT

INTRODUCTION

Management of a pelvic mass is the bread and butter of a Gynaecologist's practice. They can occur in all age groups but rarely occur before menarche. Of greatest concern is whether a mass is benign or malignant and this can be difficult to distinguish. The symptoms are variable and vague, so diagnosis is often delayed. The incidence of a pelvic mass varies widely but has been reported between 8% and 15% for post-menopausal and pre-menopausal women respectively (1).

DIFFERENTIAL DIAGNOSIS

The pelvic organs are comprised of gynaecological organs (uterus, tubes, ovaries), genito-urinary organs (bladder) and gastro-intestinal organs (appendix, caecum, sigmoid and small bowel loops). Masses can arise from any of these sites but are most commonly due to abnormalities of the uterus, tubes and ovaries. Benign causes include fibroids, pregnancy, tubo-ovarian abscess, dermoid, ectopic pregnancy, endometrioma, benign epithelial cysts, urinary retention, pelvic kidney, diverticular or appendiceal abscesses or peritoneal inclusion cysts. Malignant causes include uterine sarcomas, epithelial, germ cell, sex cord stromal or metastatic tumours of the ovary, borderline ovarian tumours, malignancies of the bladder or bowel and pelvic nodal masses.

SYMPTOMS

Symptoms are often vague but include pelvic pain, bloating, abdominal distension, nausea and/or vomiting, decreased appetite, altered bladder and bowel habit. Abnormal vaginal bleeding is most likely to be associated with uterine causes. Tubal cancers can cause a watery vaginal discharge. Early satiety is more typical for an ovarian malignancy. Fatigue, weight loss, fevers and night sweats are concerning for malignant causes.

DIAGNOSTIC WORK UP

History – Include a history of the presenting complaint, assessing bladder and bowel function as well as a menstrual history (menarche, cycle, fertility status

and menopause). Family history should also be obtained.

Examination –Presence of cervical lymphadenopathy indicates a likely malignant cause. Assess for any abdominal masses, tenderness and inguinal lymphadenopathy. Inspect the external genitalia assessing the vulva, urethral meatus and anus. Speculum examination should be performed with opportunistic Cervical Screening if indicated. A bimanual examination should always be performed to assess the size and mobility of the uterus or ovarian masses. Performing a PR can assist in assessing if the mass is tethered to the bowel.

INVESTIGATIONS

Bloods – Tumour markers should be performed if a pelvic mass is suspected or palpated. Tumour markers are not useful as a screening test as there is poor positive predictive value. We routinely perform CA125, CA19.9 and CEA as the first line of markers if a pelvic mass is present. CA19.9 can be elevated in mucinous ovarian tumours, stomach, biliary and upper GIT malignancies. CEA is elevated in bowel cancers. CA125 can be elevated in many benign conditions but when elevated in association with a pelvic mass it is concerning for ovarian or tubal malignancy. Markers for germ cell tumours include LDH, Bhcg and Alpha fetoprotein. These markers should be performed in women of reproductive age. Sex cord stromal tumours of the ovary are hormone producing tumours, more common around menopausal age and are usually solid. Inhibin B is used to diagnose a granulosa cell tumour and testosterone is used to diagnose Sertoli Leydig cell tumours. Bhcg should always be performed if a woman presents with acute pain and PV bleeding in order to exclude an ectopic pregnancy. HE4 is often overexpressed in patients with serous or endometrioid ovarian carcinomas. It is important to note that HE4 is commonly elevated in older women, smokers and those with renal impairment.

Imaging –The best modality is a pelvic ultrasound (2) - preferably transvaginal. This will assess the uterine size, myometrial architecture, endometrial thickness and adnexae. Some masses have a characteristic ultrasound appearance such as an endometrioma or teratoma. The International Ovarian Tumour Analysis (IOTA) study developed a set of “Simple Rules” for determining the likelihood of malignancy of an adnexal mass (3). Benign features include a unilocular cyst of any size, solid areas <7mm, presence of acoustic shadowing, no blood flow and smooth multilocular cysts <10cm. Malignant features irregular solid tumours, presence of ascites, four papillary projections, irregular solid multi-locular tumour over 10cm and strong colour flow.

A CT scan of the abdomen and pelvis will provide detail about the structures surrounding the pelvic mass, for example, the bowel, bladder, lymph nodes and liver. An MRI will provide the most detail of the mass itself. If endometriosis is suspected MRI can be useful to assess for deep infiltrating lesions. PET scan is performed as part of the work up for an ovarian malignancy.

Endoscopy – If CEA or CA19.9 are elevated or there are significant bowel symptoms, gastroscopy and colonoscopy should be arranged. This will exclude a gastro-intestinal primary with metastases to the ovary.

REFERRAL TO WHOM?

Which specialist to refer to depends on the likely diagnosis. For an ovarian mass, the Risk of Malignancy Index (RMI) score can be calculated (see table below). This is a simple triage tool (4). If the RMI is >200, the patient should be sent to a gynaecologic oncologist as the diagnosis is likely to be associated with a

CRITERIA	SCORING SYSTEM
Menopausal Status (A)	Pre-Menopausal = 1 Post-Menopausal = 3
Ultrasound Features (B) - Septations - Multilocular - Solid areas - Ascites	No features = 1 One feature = 2 Multiple features = 3
Serum CA125 (C)	Absolute Level
Risk of Malignancy Index (RMI) = A x B x C	

malignancy. However, it is worth bearing in mind that 20% of malignant ovarian masses can be associated with a normal CA125 level, which would mean that the RMI score is <200.

MANAGEMENT

Adnexal masses can either be managed conservatively or managed surgically. The reasons to choose one option or the other is based on clinical suspicion, symptoms, features on examination and imaging, tumour markers, patient co-morbidities and patient preference.

Conservative Management – This would be suitable if a patient is asymptomatic, the cyst is simple in nature or appears benign and tumour markers are normal. For a pre-menopausal woman, this cyst may be a physiologic cyst and repeating the ultrasound approximately six weeks later will allow time for the cyst to resolve. If the cyst has persisted, repeating the scan in three and six months is acceptable if the patient remains asymptomatic. In pre-menopausal women, the majority of masses resolve over the course of several menstrual cycles (5).

In an asymptomatic post-menopausal woman with a simple cyst repeating the ultrasound in three months and/or six months is reasonable. If the cyst remains unchanged in that time, surveillance can be discontinued unless she becomes symptomatic.

Surgical Management – Any mass that is symptomatic will require surgical intervention regardless of whether it appears benign or malignant. Any mass that is indeterminate or has an elevated CA125 should be considered for surgery. Some benign conditions will be associated with elevated markers (for example, endometriosis) and deciding whether to proceed with surgery in this instance will depend on the clinical picture.

In most instances surgery can be performed laparoscopically, however this depends on the size of the mass, the likelihood of it being malignant and the co-morbidities of the patient. If malignancy is suspected, the mass should be removed intact and this is more likely to be achievable if the whole ovary is removed. Upon entry to the abdomen, pelvic washings are obtained. All suspicious masses will be sent for frozen section to determine the diagnosis. If a malignancy is confirmed, the patient will undergo an immediate staging procedure. The aim of a surgical procedure in the event of a malignancy is for complete cyto-reductive surgery. Following surgery, the patient would usually receive adjuvant chemotherapy.

In some circumstances extensive malignancy is found at the time of diagnosis and the patient would undergo primary chemotherapy and be re-assessed for surgical intervention after several cycles. A biopsy is required to confirm the diagnosis. In the setting of gross ascites, omental and peritoneal deposits and pelvic masses, disease has already breached the ovary and biopsy in this circumstance will not worsen the prognosis.

CONCLUSION

Pelvic masses have multiple aetiologies and therefore multiple management options. Systematic history, examination and investigations will usually narrow the diagnosis for appropriate referral. Malignant features should always be referred to a gynaecologic oncologist. The RMI can be utilised as a triage tool for masses that don't appear obviously malignant. Observation is a reasonable option as long as the mass appears simple and the patient is asymptomatic. Malignant pelvic masses require a multi-disciplinary team approach in a gynaecologic cancer centre.

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Helping women stay well after cancer treatment

THE WOMEN'S WELLNESS AFTER CANCER PROGRAM

THE WESLEY HOSPITAL CHOICES CANCER SUPPORT CENTRE (CHOICES) IS A UNIQUE COMMUNITY SERVICE OFFERING INFORMATION AND SUPPORT TO ALL PEOPLE AFFECTED BY CANCER AND THEIR FAMILIES. OUR PROGRAMS AIM TO IMPROVE PATIENTS' QUALITY OF LIFE AND ARE AVAILABLE TO BOTH MEN AND WOMEN REGARDLESS OF WHERE THEY RECEIVE TREATMENT.

As health professionals working with people diagnosed and treated for cancer we are all aware that cancer treatment can have an enormous physical, psychological and psychosocial impact on our patients. Once treatment is completed, many people struggle feeling a sense of loss and anxiety as they readjust to normal life. These issues are relevant for all people diagnosed with cancer regardless of their age, culture or demographic.

Choices offers a variety of complementary programs for patients regardless of the place of diagnosis or treatment, your patients don't have to be treated at The Wesley Hospital to attend Choices. Programs include intra-treatment and post treatment gym programs supported by an oncology exercise physiologist, clinical nurse and peer support coordinator, yoga, art therapy, and the 'STRENGTH' exercise program. We have a series of groups to support different patient needs, a designated counsellor, a specialist cancer care nurse and an expert peer supporter. Key clinics include counselling, sexuality and menopause.

Choices aims to provide evidence-based services; we regularly engage in research working with a number of universities and other tertiary organisations to make sure we provide our patients with the best and most up to date services.

One such service is The Women's Wellness after Cancer Program (WWACP). This program was designed by a team of leading researchers, led by Professor Debra Anderson from the University of Technology, Sydney. Many women say that when treatment is complete they feel there is no prescription for their future. They feel lost and unsure how to reduce their risks of recurrent disease or other chronic diseases such as type 2 diabetes, heart disease or importantly recurrence of their cancer.

The WWACP aims to address this. Providing a 12-week program of structured health promotion incorporating managing physical activity, diet, smoking, alcohol intake, sleep, and psycho-educational strategies designed to decrease risk factors associated with health behaviours in women. The program includes clear physical activity and healthy eating messages, goal setting (including development of individualised plans with an experienced cancer care nurse and peer support member).

It offers education, coaching, motivational interviewing, feedback, relapse prevention and self-monitoring. Consultations are delivered at three to four weekly intervals for the duration of the 12 weeks. The women each receive a hard copy book or e-book with fact sheets. The book is divided into four steps over 12 weeks. There are four chronological steps: changing lifestyle; establishing healthy habits; maintaining health for illness prevention; and becoming independent. The WWACP book comprises up-to-date evidence-based information reflecting many pertinent post cancer topics. Filled with quotes and other motivational material, women have told us they really value this resource, found it very helpful and have shared with friends.

Women also have access to an interactive website and podcasts. The programs have developed, integrated and optimised eHealth enabled interfaces that have facilitated virtual delivery via desktop and mobile devices.

This means all women are able to access the program easily which is especially important for those who live in remote and regional areas where need for support and contact is often acute.

Outcomes from the initial research, funded by an NHMRC grant, demonstrated improvements in health-related quality of life, physical activity, waist circumference, and sexuality symptomology. The translation of research findings into sustainable improvements in clinical practice and patient outcomes is important to improving quality of healthcare. Evaluation at completion of the WWACP trial demonstrated that this model of care is feasible, acceptable, clinically and cost-effective.

At Choices we have offered this program not only as an individual consultation-based program but also successfully as a group activity. We have managed to navigate the barriers delivered by the COVID-19 pandemic to continue to offer sessions via the Zoom platform. The value of offering the WWACP as a group activity is participants get to share, interact and support each other.

Choices recently received a grant from Wesley Medical Research (WMR) to conduct a feasibility study with younger women diagnosed with breast cancer in Australia.

The *Emerald* study is in partnership with WMR, the University of Auckland, University of Queensland, and University of Technology, Sydney and is the sister study of the *Kowhai* study currently underway in New Zealand. The *Kowhai* study recognises the unique needs of younger women diagnosed with breast cancer and the hope is it will lead to a larger international trial in the future covering all female cancers.

If you would like more information about the Women's Wellness Programs or other programs offered at Choices please contact me at the detail below.

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New Visiting Medical Practitioners

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Dr Ahmad is a staff specialist at Princess Alexandra Hospital and a Visiting Medical Practitioner (VMP) at The Wesley Hospital.

He is a Cardiologist with sub-specialisation in treating abnormal heart rhythms (Cardiac Electrophysiology).

Dr Ahmad specialises in treatment of abnormal heart rhythms such as ventricular tachycardia (VT); atrial fibrillation (AF), Supraventricular tachycardia (SVT); Wolff-Parkinson-White Syndrome (WPW); using cardiac catheter ablation. Implants include pacemakers; biventricular pacemakers and implantable cardioverter defibrillator (ICD).

Dr. Ahmad's early medical and cardiology training was at John Hunter Hospital, Newcastle, followed by a year of post-graduate cardiac electrophysiology fellowship at Flinders Medical Centre, Adelaide.

To gain further expertise in the field of cardiac electrophysiology, he worked for two years alongside experts at the world-renowned institution, The Cleveland Clinic, Ohio, USA – No 1. Cardiology hospital in USA for 25 years. There he focused on cardiac catheter ablation of abnormal heart rhythms and cardiac device implantation and extraction.

Dr Ajay Chauhan
Plastic & Reconstructive Surgery

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Dr Ajay Chauhan is an Australian trained Specialist Plastic Surgeon. After Qualifying in 2012, Ajay spent eight years in Melbourne, where he was a VMO at The Peter MacCallum Cancer Centre and in private practice in East Melbourne.

He has now returned to Brisbane and has commenced private practice at Wickham Terrace. He is a Consultant at the Princess Alexandra and Royal Brisbane and Women's Hospitals.

Dr Chauhan's main interests are:

+ Skin Cancer and Melanoma
+ Head and Neck, Breast and Perineal Reconstruction
+ Aesthetic Surgery of the Face, Breast and Body
+ Microsurgery

Post-fellowship training in France, Germany and the USA has provided additional expertise in the fields of Rhinoplasty, Body Contouring and Perineal Aesthetic and Reconstructive Surgery.

Dr Chauhan is actively involved in teaching registrars in the Plastic Surgery training program, supervising research projects and advocating for the specialty. He is a member of the Australasian Society of Plastic Surgeons, the Australian Society of Aesthetic Plastic Surgeons and The American Society of Plastic Surgeons.

Dr Karen Lim
Paediatric Medicine

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Dr Karen Lim is a General Paediatrician with special interest in newborn medicine and behavioural and developmental paediatrics such as Attention Deficient Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD).

Dr Lim's interest in Paediatrics started when she was a medical student at The Wesley Hospital. She is very pleased to return to The Wesley Hospital as a consultant Paediatrician.

Dr Lim has a first-class honours degree in Microbiology from The University of Queensland. She was awarded Bachelor of Medicine, Bachelor of Surgery (MBBS) in 2012 from Bond University and received her Fellowship in General Paediatrics from the Royal Australasian College of Physicians in 2020.

She undertook her neonatology training at the Mater Mothers' Hospital caring for seriously ill, premature babies, and babies with surgical and cardiac abnormalities. Completing her paediatrics training at Queensland Children's Hospital (QCH) and Ipswich Hospital; she also spent six months working at Mount Isa Hospital where she cared for indigenous children and provided outreach paediatrics care to rural and remote population. Throughout her training, Dr Lim has experience in neonatal and paediatric intensive care (NICU and PICU) for babies and older children. She has also worked in child protection departments at both QCH and Ipswich Hospital where she worked with vulnerable children with developmental and behaviour concerns. Dr Lim is a member of the Neurodevelopmental and Behavioural Paediatrics Society of Australasia.

Dr Lim is bilingual in English and Mandarin. She enjoys working with families from various cultural and linguistic background.

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Dr Singh is currently working as a part time consultant as a Paediatric Neurologist at the Queensland Children's Hospital and Paediatric Synapse Clinic at Gold Coast, recently joining The Wesley Hospital.

Prior to his paediatric neurology training he carried out extensive training in treating paediatric epilepsies and completed his epilepsy fellowship at Queensland Children's Hospital in Brisbane; receiving training from Cleveland Clinic, Ohio USA. He completed a fellowship of the Royal Australasian College of Physicians in Paediatric Neurology (FRACP).

He is an active member of International Child Neurology Association (ICNA), Australia and New Zealand Child Neurology Society (ANZCNS), Epilepsy Society of Australia (ESA) and Association of Child Neurology (AOCN) (India).

He has extensive experience in treating children with epilepsy, headache, neuromuscular disorders, autoimmune diseases, movements disorders, behaviour neurology and a range of neurological conditions.

He has written several articles and chapters in neurology books and received many awards during his training period.

He has a keen interest in imparting and sharing his knowledge and expertise with the colleagues, seniors and junior staff. He is actively involved in academics and various research projects.

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