



PathWay

THE ROYAL COLLEGE OF PATHOLOGISTS OF AUSTRALASIA



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Issue #035

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- RCPA position statement on Lyme Disease penned by experts
- World Ovarian Cancer Day unites countries in fight against silent killer
- Parasitic eye infections are a first world phenomenon too
- RCPA Fellow helps raise funds for cancer between chemotherapy treatments for lymphoma

Introduction



Our articles this month are an eclectic bunch anchored by Dr Melissa Baker's story about her battle with lymphoma. She shares her personal journey as a 'pathologist who is also a patient' who has raised (as part of a team) more than \$70,000 for the Peter MacCallum Cancer Centre in between chemotherapy treatments.

May 8 is also World Ovarian Cancer Day so we've asked an expert about ovarian cancer, including whether there are any new research findings to report (and there is!).

We also know it's not easy being green, so the RCPA has released a position statement on Lyme Disease to guide medical practitioners through an evidence-based diagnostic pathway. Dr Stephen Graves, microbiologist and spokesman for Lyme Disease for the RCPA, explains why.

We've also spoken to Pathology Update presenter Dr Harsha Sheorey about parasitic eye infections, and discovered they do occur in the developed world.

Thank you to everyone who has 'liked' our Facebook page – we've passed 300 likes. Don't forget to check our Facebook page regularly at www.facebook.com/TheRoyalCollegeOfPathologistsOfAustralasia.

You can also keep up-to-date with what's happening in pathology by following our CEO Dr Debra Graves (@DebraJGraves) or the College (@PathologyRCPA) on Twitter.

Save the date: The new Centre for Personalised Immunology will be launched on 28 April

Interesting Facts

1,470

The number of Australian women expected to be diagnosed with ovarian cancer in 2014.

903

The number of Australian women who died from ovarian cancer in 2011.

64.4

The average age of ovarian cancer diagnosis in Australia in 2009.

Source: Cancer Australia

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5.30pm-7pm at the John Curtin School of Medical Research located at the Australian National University in Canberra. To register email madeleine.nicol@anu.edu.au or call 02 6125 2577. The lecture is free and open to the public. Please find link with registration details here: <http://jcsmr.anu.edu.au/News-events/CPI-Launch>

RCPA position statement on Lyme Disease penned by experts



The Royal College of Pathologists of Australasia (RCPA) has released a position statement on Lyme Disease^{[1],[2]} outlining signs and symptoms, diagnosis and relevant pathology tests to guide medical practitioners through evidence-based investigation of this infection. Titled *Diagnostic laboratory testing for Borreliosis ('Lyme Disease' or similar syndromes) in Australia and New Zealand*, the position statement also acknowledges the considerable public interest and misinformation regarding Lyme Disease in Australia.

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World Ovarian Cancer Day unites countries in fight against silent killer

Ovarian cancer has the lowest survival rate of all gynaecological cancers. It's often discovered in a late stage - usually because of a lack of awareness of symptoms but partly because that is the nature of the disease. Since May 8 is World Ovarian Cancer Day,



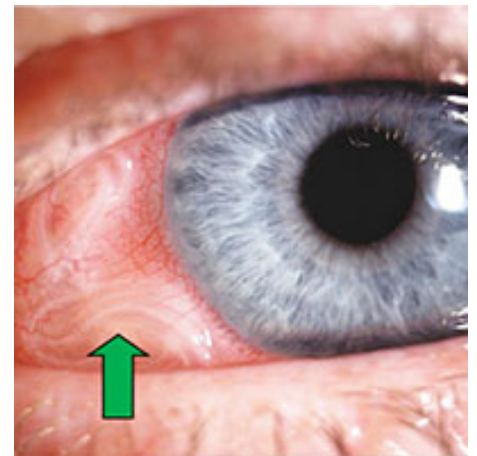
when organisations from around the world unite to educate their communities about ovarian cancer and its symptoms, we thought we'd ask an expert about this disease, and find out if there is any new research to report.



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Parasitic eye infections are a first world phenomenon too

Most parasites that invade the human body can also infect the eye. Dr Harsha Sheorey, microbiologist at St Vincent's Hospital, Melbourne, says parasites should be suspected as the cause of eye infections, even in developed countries.

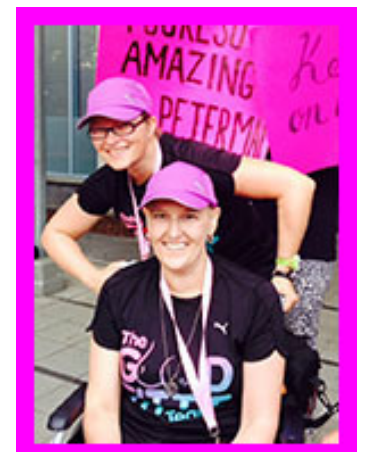


“Medical professionals should be aware of parasitic infections of the eye in the right clinical context, and particularly in migrants, refugees, people with compromised immune systems and in people who have contact with animals,” he explains. “Parasitic eye infections may be uncommon in developed countries, but they do occur.”

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RCPA Fellow helps raise funds for cancer between chemotherapy treatments for lymphoma

Dr Melissa Baker, forensic pathologist at the Victorian Institute of Forensic Medicine, is fighting the fight of her life. She is battling Hodgkin's lymphoma, yet she still had the will to help raise more than \$70,000 for the Peter MacCallum Cancer Centre in between chemotherapy rounds.



Dr Baker participated in the Weekend to End Women's Cancers two-day 60km walk through Melbourne on March 1st and 2nd this year. She captained a team of 29 that raised \$70,623.51 - the fourth largest fund raising effort by a team.

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- The future and the present have finally merged to create the era of molecular testing
- Are pathologists the patients' physicians?
- Genetics delivers precision medicine in cancer care
- Sudden death in young

Introduction

Pathology Update is over for another year. Pathologists from 17 countries, including the Netherlands, Kenya, France, Mauritius and China, gathered at the Melbourne Convention Centre from February 21-23 to listen to their choice of presentations delivered by 143 speakers.

Three of the articles in this month's edition are from lectures delivered at Pathology Update. They include the suggestion that pathologists have become the patients' physicians, the advent of personalised cancer genomics, and the issue of sudden death in young athletes.

The fourth article examines the impact of the genetic revolution on the

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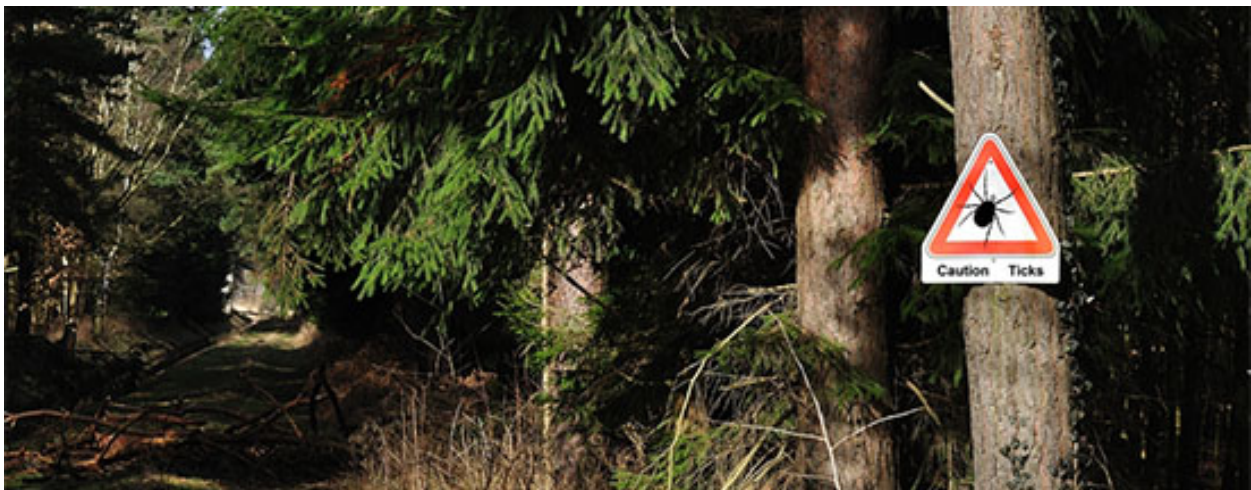
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The RCPA position statement on Lyme Disease penned by experts



The Royal College of Pathologists of Australasia (RCPA) has released a position statement on Lyme Disease^[1,2] outlining signs and symptoms, diagnosis and relevant pathology tests to guide medical practitioners through evidence-based investigation of this infection. Titled *Diagnostic laboratory testing for Borreliosis ('Lyme Disease' or similar syndromes) in Australia and New Zealand*, the position statement also acknowledges the considerable public interest and misinformation regarding Lyme Disease in Australia.

“General practitioners may see patients who think they have Lyme disease and they will consequently investigate this possibility,” explains Dr Stephen Graves, microbiologist and spokesman for Lyme Disease for the RCPA. “The position statement includes a flow-diagram for laboratory testing of patients with suspected Lyme Disease to guide these doctors through an evidence-based diagnostic pathway.”

Lyme Disease (also known as Lyme Borreliosis) is an infectious disease transmitted to humans through the bite of an infected/ carrier tick from the genus *Ixodes*. Only a small number of ticks of this genus are confirmed vectors of Lyme Disease, and none has been found in Australia. They are, however, endemic in North America, Asia and Europe.

Dr Graves was Chair of the committee of medical microbiologists from the RCPA that produced the position statement. He says Lyme Disease is occasionally seen in Australia in travelers bitten by an infected tick before returning home from countries where the tick is endemic. There are also cases in which people who have not left Australia have been diagnosed with Lyme Disease by both Australian and offshore laboratories not accredited by the National Association of Testing Authorities (NATA) and RCPA^[3], but Dr Graves says these results should be viewed with caution.

“Lyme Disease is a very ‘popular’ diagnosis yet a controversial topic. But the fact is NATA/RCPA accredited laboratories in

Australia can certainly diagnose this infection, and have diagnosed it when people have returned from countries where it is endemic. It's just that we have never had a domestically acquired case diagnosed by an accredited laboratory in Australia, and that's certainly not because they can't test for it correctly," he explains.

The RCPA's position statement was penned by expert medical microbiologists to provide clarity to this controversial subject. It acknowledges the issues surrounding Lyme Disease and laboratory testing, and presents an evidence-based pathway for investigation and diagnosis. These facts will ensure it is the 'go-to' source of information when investigating suspected cases of Lyme Disease in Australia and New Zealand.

[1] Lyme Disease is covered in the [August 2013 edition of ePathWay](#)

[2] The Lyme Disease position statement can be found at <http://www.rcpa.edu.au/Library/College-Policies/Position-Statements/Diagnostic-Laboratory-testing-for-Borreliosis-Lyme>

[3] NATA/RCPA accredited laboratories is covered in the [June 2012 edition of ePathWay](#)

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World Ovarian Cancer Day unites countries in fight against silent killer



Ovarian cancer has the lowest survival rate of all gynaecological cancers. It's often discovered in a late stage - usually because of a lack of awareness of symptoms but partly because that is the nature of the disease. Since May 8 is World Ovarian Cancer Day, when organisations from around the world unite to educate their communities about ovarian cancer and its symptoms, we thought we'd ask an expert about this disease, and find out if there is any new research to report.

Professor Peter Russell is a senior histopathologist at GynaePath (Douglass Hanly Moir Pathology), Honorary Professor in Pathology at the University of Sydney and Honorary Fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. He says screening for ovarian cancer is not effective and tumour markers^[1] are not particularly useful before the disease is diagnosed.

"Tumour marker proteins can be raised in response to other factors such as pregnancy, endometriosis or, indeed, any irritation of the peritoneum which lines the abdominal cavity, and are not always raised in patients with ovarian cancer," he says.

"The symptoms for ovarian cancer are usually vague and non-specific. Most women experience some degree of abdominal distension and find they can't fit into their clothes anymore. Other more targeted symptoms include stomach or pelvic pain, abnormal vaginal bleeding and going to the toilet more often to urinate, or becoming constipated, because the tumour is pressing on their bladder or bowel."

Another reason for the often late diagnosis is the ovaries sit in the abdominal cavity where there is room for a tumour to initially develop and spread without causing obvious symptoms. However, women who have the highest risk of developing ovarian cancer can be proactive in preventing their chances of developing the disease.

“The risk of malignancy from ovarian cancer in women with the BRACA1 or BRACA2 gene mutations, or in those with a strong family history of ovarian and/or breast cancer, can be up to 50 percent,” explains Prof Russell. “For women without these factors, the lifetime risk of developing ovarian cancer is between one and two percent.”

Prof Russell says the best preventative treatment for women in the high-risk groups is to have their ovaries and fallopian tubes removed once they have finished having children. He says if they do this before a breast cancer develops, their risk of developing breast cancer also drops by about 30%.

Diagnosis of ovarian cancer involves clinical assessment of symptoms, an ultrasound (usually vaginal) and pathology tests. If a suspicious ovarian mass is found, then it is removed by a surgeon and examined and classified by a specialist pathologist.

“Pathology is the foundation for the management of a patient with ovarian cancer,” explains Prof Russell. “Ovarian cancer isn’t a single disease. The World Health Organization classifies 98 separately defined tumours that are all slightly different and of which about one third are malignant. The patient’s treatment path is determined according to which of these types they have, and its stage, because they all have individual features such the way the cancer behaves or spreads.”

The discovery of an ovarian mass might represent the last stage of the process, but Prof Russell says there is a lot of recent research interest in the origins of ovarian cancer.

“While there are many types of ovarian cancers, there are basically three large groups. Germ cell tumours and gonadal stromal tumours always originate in the ovaries, but there is emerging evidence that the third, and largest group, called epithelial tumours, originates in the fallopian tubes, and the cancer cells then trickle across to the ovaries.”

Prof Russell says once the cancer cells arrive at the ovaries, they grow ‘like weeds’ because hormone-producing ovaries are like ‘potting mix’ to them. He believes the discovery that epithelial tumours could originate in the fallopian tubes might turn the management of ovarian cancer on its head as far as prophylactic treatment is concerned.

“It’s more acceptable to have the fallopian tubes removed than the ovaries because of associated hormonal side effects and conditions that might subsequently develop, such as osteoporosis and cardiovascular disease. It offers a less dramatic and less emotive management option for prevention of ovarian cancer.”

A breakthrough in research for this disease would certainly be welcome since it has a low survival rate and no guaranteed cure. The first World Ovarian Cancer Day took place on May 8 last year, and it is now an annual event. Information about ovarian cancer and its symptoms needs to be heard, so mark May 8 on the calendar, visit the website^[2] and make some noise to help raise awareness about this silent killer.

[1] Tumour markers are covered in the [June 2012 edition of ePathway](#)

[2] <http://ovariancancerday.org>

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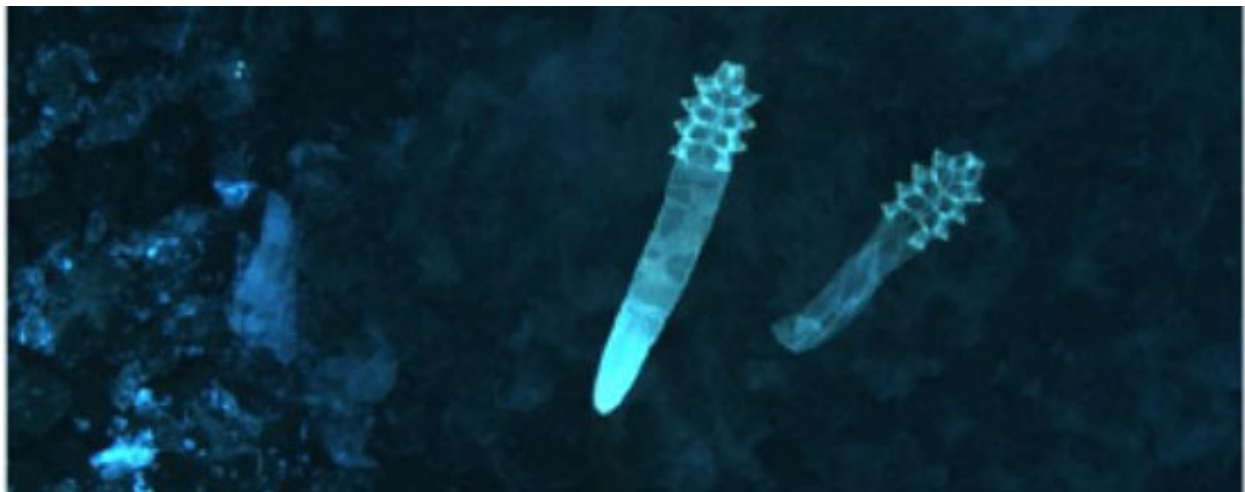
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Parasitic eye infections are a first world phenomenon too



Most parasites that invade the human body can also infect the eye. Dr Harsha Sheorey, microbiologist at St Vincent's Hospital, Melbourne, says parasites should be suspected as the cause of eye infections, even in developed countries.

"Medical professionals should be aware of parasitic infections of the eye in the right clinical context, and particularly in migrants, refugees, people with compromised immune systems and in people who have contact with animals," he explains. "Parasitic eye infections may be uncommon in developed countries, but they do occur."

Examples of parasitic infections include *Toxocara canis*. These are roundworms found in dogs that are not properly dewormed. The roundworms live in the dog's bowel, and their eggs are excreted via the dog's faeces. If a person ingests these eggs - from perhaps not washing their hands properly after contact with an infected dog's faeces or contaminated environment - the eggs can hatch inside their body. The resultant larval (young) form of roundworms then migrate around the body via the blood and capillaries until they find a home - commonly in the eye, brain, liver and lung

"If a mosquito, flea or tick bites an infected animal and then bites a human, these parasites can find their way into a person's body via the bite and potentially end up in their eye," explains Dr Sheorey. "Humans are not natural hosts to these parasites so they basically travel through the bloodstream to any part they like and they may get caught up in the eye."

Infections can also happen through unusual incidents. Dr Sheorey says he has seen a recent case in Australia where a sheep botfly shot its larvae into a farmer's eye resulting in a parasitic eye infection."

He also advises people who wear contact lenses to be aware of *Acanthamoeba*. This is a relatively common soil parasite that lives in water, such as rivers or streams, and occasionally in town water.

"People who wear contact lenses often have small scratches on their cornea (the transparent front part of the eye). If they wash their contact lens in water or contaminate the lens cleaner, then *Acanthamoeba* can attach itself to the lens and subsequently invade their eye through these small corneal scratches. This can result in a very severe form of eye infection

which may need a corneal transplant.”

Parasitic infections don't always find their way inside our eyes. Parasites can live on the outside as well. An example is the crab or pubic louse. This parasite is typically found on pubic hair, but it can also live in other areas where there is coarse hair for them to hold on to - including eyelashes.

“Pubic louse is sexually transmitted and can involve the eyelashes,” says Dr Sheorey. “Once they are there, the female lays eggs which gets attached to the eyelash hair, and when they hatch the infestation worsens if not treated early.”

The parasites mentioned above represent a snapshot of the parasitic zoo that can invade our bodies – and potentially our eyes. They are geared to survive in or on a host, in some cases through very complex life cycles. The key is to consider parasites as a potential cause of eye infections in the right clinical context, even if it seems a far-fetched idea.

Dr Harsha Sheorey delivered the lecture *Parasitic infections of the eye* at Pathology Update in Melbourne on February 23.

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RCPA Fellow helps raise funds for cancer between chemotherapy treatments for lymphoma



Dr Melissa Baker, forensic pathologist at the Victorian Institute of Forensic Medicine, is fighting the fight of her life. She is battling Hodgkin's lymphoma, yet she still had the will to help raise more than \$70,000 for the Peter MacCallum Cancer Centre in between chemotherapy rounds.

Dr Baker participated in the Weekend to End Women's Cancers two-day 60km walk through Melbourne on March 1st and 2nd this year. She captained a team of 29 that raised \$70,623.51 - the fourth largest fund raising effort by a team.

"I was diagnosed with Hodgkin's lymphoma last year," explains Dr Baker. "I developed a very itchy scalp in April, and about two months later felt lymph nodes in my neck. I went to my GP but I had basically self-diagnosed lymphoma. The subsequent biopsies, scans and blood tests confirmed my suspicions."

Dr Baker started chemotherapy in July last year, but has unfortunately not responded to that treatment and her disease progressed to primary refractory Hodgkin's lymphoma. As the mother of two small children, it was an extra blow, but her medical training meant she was ready for the news.

"I was pretty sure the first twelve rounds of chemotherapy hadn't worked because I felt a lymph node enlarging in my neck at the end of treatment. Because of my medical training I was prepared for the news ahead of time. I am now having a much stronger type of chemotherapy which means I have to be admitted to hospital for a week at a time for the treatments and I am dependent on blood products for a week or so after discharge."

Six months before her diagnosis, Dr Baker's childhood school friend was diagnosed with breast cancer. Her friend had started a blog about her cancer journey and Dr Baker followed suit. She called hers *I got the good cancer: Inside the mind of a doctor and patient with Hodgkin's lymphoma*^[1].

"I was frustrated by my cancer diagnosis, and by people's reactions such as telling me how lucky I was to have the 'good cancer'. I didn't feel lucky at all, so I decided to use that as a sort of sarcastic title of my blog."

In the midst of all this upheaval, Dr Baker and her sister decided to participate in the Weekend to End Women's Cancers walk. By the time the weekend came around, their team had grown to 29, including two of her uncles who flew over from Perth to walk with her.

"We started out being *The Good Team* to tie in to my blog name when it was just my sister and I planning on walking together. When my friend from primary school with breast cancer joined the team, I changed the name to *The Good Tittie Team* because her blog was called *shittytittiebangbang*. Although the team name is a bit rude and amusing, it tied in with both of our blogs, and our uniforms looked great."

Dr Baker says the walk was in the middle of her chemotherapy rounds, and her physical health improved enough to participate just before that weekend.

"I was too ill to attend Pathology Update in Melbourne the weekend before, so I was glad I could do this walk. My team had a wheelchair for me to retreat to when I needed it so I was able to spend the whole day with them on Saturday. I couldn't do the whole walk on Sunday but I did walk the last four kms so we could all finish together as a team. I was back in hospital on the Tuesday after the walk so the timing was very fortunate."

Dr Baker's current goal is to add at least 100 people to the Australian Bone Marrow Donor Registry^[2]. This is because the next step in her treatment is an autologous stem cell transplant and, depending on the outcome, Dr Baker may eventually need a bone marrow transplant from a donor.

While it's certainly true nobody gets a 'good' cancer, there are good people who actively support cancer research no matter what their situation is. Dr Baker is clearly one of those people.

[1] <http://igotthegoodcancer.wordpress.com>

[2] You can find more information about the Australian Bone Marrow Donor Registry at <http://www.abmdr.org.au>

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