Primary Aldosteronism: A Common Cause of Hypertension

Hypertension is defined as a clinic blood pressure ≥140/90 mmHg, or an average ambulatory blood pressure ≥135/85 mmHg. Hypertension alone rarely causes symptoms, but accounts for over nine million adult deaths worldwide annually, predominantly related to resultant cardio or cerebrovascular disease.

Over 30% of New Zealand adults (33% men, 28% women) have hypertension, and the prevalence is higher still in Māori.

Primary aldosteronism (PA) is by far the most frequently encountered endocrine disorder presenting primarily with hypertension, and accounts for at least six percent of adult hypertension in observational studies. A benign unilateral adrenal adenoma is the most common source of excess aldosterone, although bilateral disease (hypercorticism or nodularity) is also encountered. Contrary to popular belief, hypokalaemia is present in less than 37% of confirmed cases of primary aldosteronism. The likelihood of underlying PA in patients with severe hypertension (BP >180/110 mmHg) is at least 13%, and up to 25% in those with resistant hypertension (defined as persistent hypertension despite optimal doses of three or more anti-hypertensive agents).
Selective screening for PA is indicated in any patient who fulfils the criteria outlined in figure 3, and is performed via a morning blood sample to measure aldosterone, renin, and potassium levels. Whilst concurrent anti-hypertensive medication use can affect aldosterone and/or renin measurements, it is preferable to perform this screening test without withdrawal of any medication (with the exception of spironolactone). An aldosterone to renin ratio of >30.5 suggests a diagnosis of PA, and these patients should be referred to the local endocrinology service for further investigation (figure 2 – please see over).

A saline suppression test is performed to confirm the biochemical diagnosis. Anti-hypertensive agents likely to interfere with interpretation of aldosterone/renin levels are good valuations for four weeks prior to this test, and replaced with suitable alternatives. If present, hypokalaemia is corrected. Normal physiology is indicated by suppression of aldosterone following the infusion of 2000ml of normal saline; conversely, PA is confirmed when the aldosterone level remains above 280 pmol/L.

Attempts to localise the source of excess aldosterone can then be undertaken if the patient would be willing to undergo surgery (if indicated). CT imaging of the adrenal glands is performed, but is complemented by adrenal vein sampling in those over 40 years of age given the common finding of incidental adrenal lesions with increasing age. Adrenal vein sampling involves catheterisation and venous sampling of both adrenal veins so that the relative output of each gland can be compared. 

Aimlactone is offered to those with clear evidence of unilateral aldosterone excess. Normalisation of potassium levels can be expected after surgery. Blood pressure control is generally improved rather than resolved, with the majority of patients remaining on one or two blood pressure agents to achieve normotension. Medical therapy is used instead in those who are unwilling to undergo surgery or have bilateral disease. The aldosterone antagonist Spironolactone is clearly a preferable choice of agent but is limited by frequent gastrointestinal side effects, as well as gynaecomastia, erectile dysfunction, menstrual irregularities, and postural hypertension. 

References

Primary Aldosteronism: A Common Cause of Hypertension

Dr Richard Carroll

An Approach to the Assessment and Management of Primary Aldosteronism

**Suggestive clinical features**

- Stop Spironolactone, Eplerenone, Amiloride 4 weeks
- Correct potassium deficit
- Suitable for surgery?

**Aldosterone:Renin ratio**

- ARR > 30.5?

**Reassure**

Consider medication interference

**Conformation testing (saline suppression test)**

- CT adrenal gland

**Age <40**

Clear unilateral pathology

**Surgery**

Lateralisation

**Adrenal vein sampling**

- Stop Spironolactone, Eplerenone, Amiloride 4 weeks
- Correct potassium deficit
- Suitable for surgery?
- Age <40
- Clear unilateral pathology

**Upcoming CME’s (Educational Events)**

Acurity Health Group host a variety of Continuing Medical Education (CME) sessions for GPs throughout the year. Each session is formatted to give you an opportunity to meet consultant physicians and surgeons, receive expert feedback and discuss topics in an interactive environment. We aim to deliver practical sessions with a primary healthcare focus and learning outcomes based on general practice diagnosis, management and investigation. Consultants are often able to provide updates on the latest research and cutting edge treatments and procedures. Our sessions are endorsed for CME and MOPS purposes by the RNZCGP. If you would like to suggest a topic of interest or require further information please contact Sarah Malone, Business Development Manager: P: 04 920 0158, E: sarah.malone@acurity.co.nz

**Upcoming CME’s 2015/16**

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Title</th>
<th>Details</th>
<th>Venue</th>
<th>CME endorsed</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 July 2015</td>
<td>Dr Richard Carroll, Endocrinologist</td>
<td>Current approach to glucose control</td>
<td>When and how to consider an endocrine cause of hypertension</td>
<td>Education Centre, Wakefield Hospital</td>
<td>2 credits</td>
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<td>27 August 2015</td>
<td>Mr Wicks, General Surgeon</td>
<td>Surgery – Complications after Surgery</td>
<td>What GPs Need to Know</td>
<td>Education Centre, Wakefield Hospital</td>
<td>2 credits</td>
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<tr>
<td>Date TBC</td>
<td>Marie Verschoor, Clinical Charge Nurse</td>
<td>Gastroenterology in a Nutshell</td>
<td>Procedures for Registered Nurses</td>
<td>Vaiata House, Masterton</td>
<td>1 educational point</td>
</tr>
<tr>
<td>9 September 2015</td>
<td>Mr John Groom, Gastrointestinal and Colorectal Surgeon/Endoscopist</td>
<td>Gastroenterology</td>
<td>Education Centre, Wakefield Hospital</td>
<td>2 credits</td>
<td></td>
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<tr>
<td>15 September 2015</td>
<td>Dr John Wyeth, Gastroenterologist/Endoscopist</td>
<td>Gastroenterology in a Nutshell</td>
<td>Upper GI Symptoms and Disease</td>
<td>Seminar Room, Bowen Hospital</td>
<td>2 credits</td>
</tr>
<tr>
<td>September 2015</td>
<td>Dr Bertrand Jauffret, General Surgeon and Mr Bernard McEntee, General Surgeon, Colorectal &amp; Laparoscopic Surgeon</td>
<td>TBA</td>
<td>Colon Cancer Screening</td>
<td>Royston Hospital, Hastings</td>
<td>2 credits</td>
</tr>
<tr>
<td>September 2015</td>
<td>TBA</td>
<td>Colon Cancer Screening</td>
<td>East Pier Hotel, Napier</td>
<td>2 credits</td>
<td></td>
</tr>
<tr>
<td>21 October 2015</td>
<td>Dr Lupe Tamiosepe, Vascular and Endovascular Surgeon</td>
<td>Vascular</td>
<td>For more details about Dr Tamiosepe, please see p15</td>
<td>Education Centre, Wakefield Hospital</td>
<td>2 credits</td>
</tr>
<tr>
<td>18 November 2015</td>
<td>Dr Ken Romeril, Haematologist</td>
<td>Haematology Update</td>
<td>Education Centre, Wakefield Hospital</td>
<td>2 credits</td>
<td></td>
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<tr>
<td>6 &amp; 7 May 2016</td>
<td>Multiple speakers</td>
<td>Connect 2016 – Acurity GP Conference</td>
<td>For enquiries, email <a href="mailto:connect@acurity.co.nz">connect@acurity.co.nz</a></td>
<td>Te Papa, Wellington</td>
<td>TBA</td>
</tr>
</tbody>
</table>

For an updated list of CME’s visit www.acurity.co.nz and search events.
Dupuytren’s Disease: Update on a Historic Condition

Dupuytren’s Disease is a very common condition taking its name from a pioneering French Surgeon; Baron Guillaume Dupuytren after he delivered an account of the condition and his treatment for it as one of his “leçons orales” in 1831(1). In fact it had been described before in London and possibly even as early as 1614 by Felix Platar in Switzerland.

It often presents to general practitioners with patient concerns regarding developing lumps in the hand (see Table 1). Early Dupuytren’s disease characterised by these isolated nodules with occasional skin tethering or “pits” rarely requires any treatment. The disease is usually painless but occasionally steroid injections into tendon or symptomatic nodules can be helpful.

This benign fibroproliferative condition affects the palmar fascia, causing thickening of the involved tissue, most commonly along the ring and little finger rays. As the disease progresses this tissue shortens. Dupuytren himself used the term “cord” in his own writings which is how this disease came to be known.

The disease can also be considered to be a symmetrical bilateral condition occurring in the third and fourth decades of life. It is three times more common in men (M:F 4:1). It is often associated with comorbidities such as alcohol, hepatic pathology and diabetes but the precise role of environmental triggers is not clear cut in the literature. Many of these classic associations are not clear cut in the literature however diabetes, smoking and alcohol are not clear cut in the literature however diabetes, smoking and alcohol can be variable and may influence timing of treatment decisions.

There is a genetic component to the condition with both a racial and familial link as well as some patients displaying aggressive bilateral, early onset disease with ectopic site involvement (termed the Dupuytren’s Diathesis). The exact genetics however remain elusive and it is likely to be polygenic with environmental triggers. Many of these classic associations have been described before in London and possibly even as early as 1614 by Felix Platar in Switzerland.

Table 1. Differential Diagnosis of Early Dupuytren’s

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibroma</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Ganglion</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Giant Cell Tumour</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Lipoma</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Gouty Tophus</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Traumatic Scar Tissue</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>Palmar fibrous nodule</td>
</tr>
<tr>
<td>Callus</td>
<td>Palmar fibrous nodule</td>
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</tbody>
</table>

When Should Treatment be Considered?

There are no absolute indications for treatment and the disease itself is not curable despite advances in the cell and molecular biology of the condition. Over the last 180 years the mainstay of treatment has been surgical correction of the contracted digit with Dupuytren himself using a percutaneously placed bistoury to divide tethering cords. Some newer treatments are showing promise but surgical excision of the involved tissue remains the most reliable method of correction particularly with extensive or recurrent disease. Metacarpalphalangeal joint contractures are generally easier to correct than proximal interphalangeal joints and thus surgery should be considered earlier for PIPJ involvement (fasciectomy) of 20º to 30º, whilst 40º plus can be tolerated at the MCPJ. The table top test can be useful where treatment is indicated if a patient is unable to place their hand flat on a table palm down.

When Should Treatment be Considered?

Treatment Options

The modern standard surgical procedure is a fasciectomy(4) where the involved ray is opened and macroscopically involved tissue is excised, carefully dissecting this free from and preserving the important anatomy – nerves vessels and tendons. This removes shortened tethering nodules and cords allowing extension of the digit.

There has been a trend towards less invasive interventions over the last few years and simple division of tight cords (fasciotomy) or localised segmental aponeurectomy have become popular but are unlikely to be useful in patients with isolated palmar disease and significant contracture. Enzymatic dissolution of diseased tissue using collagenase injections is now also popular having been through trials in America and Europe(5)(6). Xiaflex (clostridium collagenase) is not yet freely licenced in New Zealand but is likely to become available in the near future. An alternative is percutaneous needle fasciotomy but this should be performed by an experienced surgeon with good appreciation of the anatomy.

Radiotherapy has also been shown to be effective but concerns remain regarding the potential longer term effects particularly in younger patients. Steroid injections may slow disease progression but are unlikely to correct established contractures. In advanced, aggressive disease and particularly in recurrences, skin may be involved requiring a dermofaciectomy and full thickness skin graft reconstruction.

All treatment modalities present some potential risks (see Table 2) and options should be fully discussed to select the most suitable treatment and timing for each patient.

Table 2. Treatment Consideration

<table>
<thead>
<tr>
<th>Potential Complications of Treatment</th>
<th>Treatment Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleeding</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Infection</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Wound Breakdown</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Graft Loss</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Nerve Damage</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Arterial Damage / Vascular Compromise</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Failure to Correct Contracture</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Swelling and Stiffness</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Recurrence</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Extension of Disease</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
<tr>
<td>Complex Regional Pain Syndrome</td>
<td>MCPJ Contracture &gt; 30</td>
</tr>
</tbody>
</table>

References


Image source: www.bissonplasticsurgery.co.nz

Figure 2. Dupuytren’s Disease Affecting 3 Rays

Figure 3. Dupuytren’s Disease: Update on a Historic Condition

Figure 4. Baron Guillaume Dupuytren

Article written by: Mr Marcus Bisson, Plastic and Reconstructive Surgeon, ph (04) 479 1501
How Long will my Joint Replacement Last?

Royston Hospital

Area: Orthopaedics
Article by: Mr Stephen Andrews, Orthopaedic Surgeon, ph (06) 873 1181

How do joint replacements fail?

What causes aseptic loosening?

Aseptic loosening is the most common cause of late joint replacement failure. It is caused by small polyethylene wear particles from the joint. These particles stimulate inflammation and cause osteolysis or the resorption of bone. As bone is eaten away around the prosthesis the joint replacement becomes loose.1

How long do hip and knee replacements last?

The New Zealand data shows that 14 years after surgery 88% of total hips and 94% of total knees will last more than 20 years. This in turn has increased the number of patients that may in the future require revision joint surgery.2

How frequent is revision hip and knee joint surgery?

On average there are approximately 14,000 primary hip and knee replacements performed annually in New Zealand. By comparison there are around 1710 revision performed each year with a ratio of 3:1 hips to knees.3

Can we prevent aseptic loosening?

Recent advances in the manufacturing process of polyethylene are showing promise in reducing the amount of polyethylene wear particles generated. Because of the issues with polyethylene debris several alternate bearing surfaces have been trialed including ceramic on ceramic and metal on metal – each have their own limitations and the new generation of polyethylene remains the most common joint bearing surface.4 5

What is the clinical presentation of aseptic loosening?

Clinically patients with loosening develop pain as a result of the micro motion between prosthesis and bone with activity. This pain is classically mechanical in nature, exacerbated by weight bearing and often worse with the first few steps after getting up – so called start up pain. The pain gradually worsens as the prosthesis loosens further.6

Other symptoms of a failing joint replacement may include:• New onset of instability or dislocation• Swelling• Crepitus• Progressive deformity.

What are the x-ray features of a loosening joint replacement?

X-rays show a gradual progression of bone loss around the prosthesis. Other relevant x-ray findings include eccentric polyethylene wear, cyst formation and prosthesis migration.

What is involved with a revision joint replacement?

Revision for aseptic loosening utilises specialised components that have been designed to compensate for the loss of bone around the femur, pelvis and tibia.

A revision can entail a relatively minor procedure such as changing the head or liner, alternately extensive surgery may be required to remove all components and re-implant a revision joint.

In summary the expected longevity of a hip or knee replacement is currently very good. We are continually looking to improve our results and reduce causes of failure. Younger more active patients are at increased risk of wearing out their joint replacement earlier. We are optimistic that newer forms of polyethylene will further improve long term survival by reducing the incidence of aseptic loosening.

What causes metal wear?

The causes of metal wear are varied and include:

• Progressive deformity
• Crepitus
• Swelling
• New onset of instability or dislocation
• Transient postoperative dislocation

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References

1. The New Zealand Joint Registry, Fifteen Year Report, January 1999 to December 2013

Stephen Andrews consults from the Royston Centre, 325 Prospect Road, Hastings and operates at Royston Hospital.

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1. The New Zealand Joint Registry.

Fifteen Year Report. January 1999 to December 2013


World First Study for Wellington

Bowen Hospital

Capital Vision Research Trust in cooperation with the Lions Clubs of New Zealand is conducting a world first study of an eye disease called Keratoconus.

Known as the Wellington Keratoconus Study (WELKS), it aims to determine the prevalence of keratoconus in Wellington teenagers.

At present there have been no large scale studies in the world on keratoconus in teenagers, yet alone one conducted from a customised van using the latest technology.

WELKS is a completely new enterprise using a customised van as a mobile eye scanning unit to visit schools involved with the study. Year 9 and Year 11 students of participating schools in the Wellington region will have their eyes comprehensively scanned for keratoconus. These scans are quick and painless thanks to the modern hi-tech machines that are used (Pentacam corneal topography). Eye scans can be costly but due to the support of sponsors and donors these scans are able to be offered to all Year 9 and Year 11 students at no cost. Scanning and data collection will all be carried out by Rachel Cox our Ophthalmic Research Technician, with Consultant Ophthalmologist Dr Reece Hall reviewing cases.

"In carrying out the study on keratoconus we will inadvertently also be finding students who have other eye conditions that need attention, or may simply need glasses."

Dr Reece Hall, Consultant Ophthalmologist

Keratoconus is a progressive disease of the cornea (the clear front part of the eye) that starts in adolescence. If left untreated it can cause blindness and may require corneal transplant surgery to restore vision.

It can also impair learning and performance at school due to poor vision as it often goes undiagnosed until advanced vision loss occurs. However, if caught early, loss of vision is preventable with much more simple and new treatment solutions such as corneal cross-linking.

This research is particularly valuable to New Zealand as keratoconus is thought to be more common in New Zealand and especially in those of Māori and Pacific Island descent. There also appears to be a link between keratoconus and those who suffer from asthma, eczema and allergies. WELKS may highlight the need for a national screening programme for New Zealand school children.

Capital Vision Research Trust is a registered charitable trust with the primary aim of providing scientific and community based research into eye disease and eye treatments. This study is being supported by Professor Tony Wells, Dr Reece Hall, Dr Andrew Logan and Dr Keith Small and the trust patron Kerry Prendergast.

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Dr Reece Hall is based at the Bowen Eye Clinic, Bowen Centre, 94 Churchill Drive, Crofton Downs, Wellington. P: 04 464 0003 or 0800 69 20 20 F: 04 464 0004 E: info@boweneye.co.nz W: boweneye.co.nz

Over a glorious two days in May, the 17th Annual Acurity GP Conference: at Te Papa, provided a platform for the GP community to learn and discuss trends and developments in healthcare both here and globally.

More than thirty speakers shared their specialist knowledge in Cardiovascular Health, Oncology, Orthopaedics, Women’s Health and Technology. A variety of workshops, quick-fire presentations, plenary sessions and practical demonstrations, ensured there was plenty on offer to reinforce the basics, introduce recent advances and assist with diagnosis and treatment options. For many the conference provided an opportunity to connect with peers and medical experts. For others the highlights were the “interesting topics, practical advice and relevant information”. Extremely popular were the lightning talks sessions described as “brilliant, simple and very applicable”.

This has been one of our most successful conferences yet. Thank you to everyone who took part and contributed in some way. For those who attended, the work you carry out is of enormous importance to our community; not only is it widely needed but it is greatly appreciated.

With your feedback and suggestions we have some exciting developments in progress for next year and look forward to seeing you on 6th and 7th May 2016.

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Please check our website for updates www.acurity.co.nz
Special thanks to the following speakers:

Dr Malcolm Abernethy, Interventional Cardiologist
Kim Anns, Manager Health Care, Heart Foundation
Matt Beal, Hand Therapist
Mr Nick Bedford, Gynaecologist
Liz Childs, Physio, Health Physiotherapist
Mr Jon Cleary, Orthopaedic Surgeon
Mr Gareth Coulter, Orthopaedic Surgeon
Dr Trevor Fitzjohn, Diagnostic and Interventional Radiologist
Rodney Ford, Physiotherapist
Lesley Gray, Senior Lecturer, Academic Convenor, Department of Primary Health Care and General Practice, University of Otago
Dr Sam Hazledine, Doctor, Entrepreneur, Athlete, Father
Mr Chris Hoffman, Orthopaedic Surgeon
Mr Martin Hinn, Neurosurgeon
Mr Grant Kiddie, Orthopaedic Surgeon
Mrs Hanifa Koya, Gynaecologist
Mr Fell Langstana, Gynaecologist
Dr Mark Leadbitter, Diagnostic and Interventional Radiologist
Steven Livingstone, ACC Case Manager
Mr Simon McDowell, Gynaecologist
Dr Richard Medlicott, General Practitioner
Dr Beth Messenger, Locality Medical Adviser
Dr Helen Moriarty, Senior Lecturer, Department of Primary Health Care and General Practice, University of Otago
Dr Sandy Morris, General Practitioner
Dr Anne O’Donnell, Oncologist
Sue Paton, Principal Advisor Addictions, Health Promotion Agency
Dr Anil Ranchord, Interventional Cardiologist
Sanjeewa Samaraweera, Medtech Representative
Dr Maria Stubbe, Senior Lecturer, Department of Primary Health Care and General Practice, University of Otago
Mr Rod Studd, Urologist
Professor Alan Thurston, Orthopaedic Surgeon
Dr Matthew Webber, Cardiologist/Electrophysiologist
Dr J. Kes Wickremesekera, Vascular and Endovascular Surgeon
Dr Ian Wilson, Gastroenterologist

Special thanks to our conference partner:
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EXCELLENT – Thank you again!

“Many thanks for the well organised and full on, exciting conference with many practical topics”

“Lightning talks excellent”

“Very much enjoyed the conference. Great topics very relevant and filled with gold nuggets! Thank you so much!”

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Specialist Updates

“Enjoyed the conference, found it good value and enjoyed the quick fire presentations.”

“Very well run, lovely venue, feel good conference.”

“Well organised, thank you.”

“Good value and a worthwhile two days!”

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Dr Mark Leadbitter, Interventional Radiologist, Pacific Radiology (left), Dr Guy Jenner, GP (centre) and Mary Jenner, Wakefield Specialist Medical Centre Practice Manager (right)

Dr Mark Leadbitter, Interventional Radiologist, (left), Dr Guy Jenner, GP (centre) and Mary Jenner, Wakefield Specialist Medical Centre Practice Manager (right)

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“Well organised, thank you.”

“Good value and a worthwhile two days!”

Dr Mark Leadbitter, Interventional Radiologist, Pacific Radiology (left), Dr Guy Jenner, GP (centre) and Mary Jenner, Wakefield Specialist Medical Centre Practice Manager (right)

Specialist Vein Health

Dear General Practitioners

Dr Lupe Tuamoepeau – FRACS, FRACS (Vascular)
Mr Richard Evans – FRACS, FRACS (Vascular)
Mr JK Wicks – FRACS (Vascular)

We are pleased to announce the collaboration of our vascular surgical services, through Specialist Vein Health at Wakefield Specialist Medical Centre.

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Our telephone, fax and email addresses are unchanged.

Yours sincerely,

Lupe Tuamoepeau, Richard Evans, JK Wicks
Specialist Vascular and Endovascular Surgeons

Specialist Vein Health

Call 04 389 4999

For referrals please use the new details listed below:

Wakefield Specialist Medical Centre
35 Rintoul Street, Newtown, Wellington.
Phone: (04) 389 4999
Fax: (04) 389 4970
Email: reception@svh.co.nz
Website: www.svh.co.nz
Address: PO Box 7623, Newtown, Wellington 6242

Healthlink Wellington

We also have monthly clinics in Lower Hutt, Kapiti and Nelson.

Thank you for your support.

Yours sincerely,

Lupe Tuamoepeau, Richard Evans, JK Wicks
Specialist Vascular and Endovascular Surgeons

Specialist Vein Health
New Techniques – Water-assisted ‘Underwater’ Colonoscopy

Since its beginnings more than 40 years ago, colonoscopy has involved inflating the large bowel with air, and more recently CO₂, to open it up and provide views of the interior. The introduction of gas into the colonic lumen, however, causes stretching of the wall which leads to discomfort or pain, and lengthening of the bowel, which increases insertion distance and creates sharper corners for the colonoscope to traverse (Figure 1). In patients with irritable bowel syndrome who have experienced discomfort during colonoscopy, this method has now become apparent. Water-assisted colonoscopy significantly reduces sedation requirements in colonoscopy (and in my experience two thirds of patients require no sedation at all), increases the percentage completion rates of colonoscopy (reducing the need for a second procedure or CT colonography), and significantly increases the adenoma polyp detection rate which is the primary measure of colonoscopy quality and its ability to reduce colorectal cancer risk.

The use of water to open the bowel instead has been noted since 2007, facilitated by the development of foot-operated water pumps. Water allows opening of the colonic lumen without stretching the wall or lengthening the colon, and straightens the sigmoid colon which is usually the most difficult to traverse. Initially employed as a means of reducing pain in patients with irritable bowel syndrome, a broader range of benefits from this method has now become apparent. Water-assisted colonoscopy significantly reduces sedation requirements in colonoscopy (and in my experience two thirds of patients require no sedation at all), increases the percentage completion rates of colonoscopy (reducing the need for a second procedure or CT colonography), and significantly increases the adenoma polyp detection rate which is the primary measure of colonoscopy quality and its ability to reduce colorectal cancer risk.

So how does water increase the detection of polyps?

First, endoscopy in water gives a 4/3 magnification over air and eliminates the obscuring shiny air-water mucosal interface, improving visualization of subtle lesions. Second, when the bowel wall is stretched by gas, so is the polyp, and if it is a reasonably flat polyp then it may become very difficult to see when it is thinned out. This is important because the most important type of polyp implicated in the development of interval cancers (cancers that occur reasonably shortly after a colonoscopy, probably due to missed pathology at that colonoscopy) is the serrated polyp, which is usually very flat. Under water, even flat polyps remain bunched up and project into the lumen making them easy to spot (Figures 2 and 3). The lack of wall stretch and thinning under water gives another advantage as well: the submucosa layer remains thick and allows removal of large polyps without injection of a protective cushion underneath. This technique of ‘underwater EMR’ makes removal of large polyps anywhere in the colon safe and easy – there should be no need for surgical resection of any non-cancerous colonic polyp. Last but not least, patients prefer water-assisted colonoscopy.

Like all endoscopic techniques, colonoscopy procedures with reduced sedation requirements, and reduced procedural discomfort.

Summary

The advantages of water-assisted colonoscopy:

>- Easier colonoscopies
>- Improved patient comfort and reduced sedation requirement
>- Improved polyp detection
>- Ability to perform ‘underwater EMR’ – do not send benign polyps to surgery

References

Dik VK, Morsa LM, Siersema PD. Endoscopic innovations to increase the adenoma detection rate during colonoscopy. World J Gastroenterol. 2014 Mar 7;20(9):2200-11

Dr Rees Cameron

Wakefield Hospital
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Rees Cameron consults at the Wakefield Gastroenterology Centre, Rintoul Street entrance, Newtown, Wellington.

Dr Rees Cameron

Figure 1 Distension of a normally 80-90cm long colon to >150cm by gas insufflation at CT colonography, similar to what happens during traditional gas colonoscopy – the reason for discomfort is obvious.

Figure 2. The terminal ileum underwater – the ‘coral reef’ appearance

Figure 3. Two inconspicuous and easily missed polyps in an air-filled colon

Figure 4. The same two polyps as in Figure 3 easily seen underwater

Since my introduction of this technique to Wellington and Wakefield Hospitals in 2012, there has been universal preference of water-assisted colonoscopy in patients who have had prior gas-insufflation procedures, with reduced sedation requirements, and reduced procedural and post-procedural discomfort.

The lack of wall stretch and thinning under water gives another advantage as well: the submucosa layer remains thick and allows removal of large polyps without injection of a protective cushion underneath. This technique of ‘underwater EMR’ makes removal of large polyps anywhere in the colon safe and easy – there should be no need for surgical resection of any non-cancerous colonic polyp. Last but not least, patients prefer water-assisted colonoscopy.
New Consultants

Acurity Health welcomes the following consultants to our Royston and Wakefield hospitals. Please contact them directly if you would like more information about their specialties.

Dr Tom Boswell
BHB, MBChB, FRACP
Gastroenterologist
P: 06 878 8109
E: thomas.boswell@hawkesbaydhb.govt.nz
Tom practices at Royston Hospital.
Specialty
Gastroenterology
Training
Tom trained as a Gastroenterologist and General Physician in New Zealand under the Royal Australasian College of Physicians. An Overseas Fellowship was undertaken in Hepatology at the Scottish Liver Transplant Unit, Royal Infirmary of Edinburgh and in inflammatory Bowel disease at Edinburgh’s Western General Hospital.
Special interests
• Coeliac disease
• Endoscopy (Gastro)
• Hepatology
• Upper GI (Gastro)
• Lower GI (Gastro)
• IBD
• IBS.
Tom has a special interest in Hepatology, Inflammatory Bowel Disease and Endoscopy.

Dr Bertrand Jauffret
AHP, ACCA, DES General Surgery, Paris – France
General Surgeon
P: 06 873 1111
F: 06 873 1161
E: bertrandjauffret@hotmail.com
Bertrand consults at the Royston Centre, 325 Prospect Road, Hastings and operates at Royston Hospital.
Specialty
General Surgery
Training
- Surgical Training:
  •  Paris – Assistance Public Hospitals
  •  DES – Visceral Surgery 1992
  •  DES – General Surgeon 1996
Special interests
• Upper and Lower GI Surgery
• Endoscopy
• Laparoscopic Surgery.

Mr Bernard McEntee
BHB, MBChB, FRACS
General Surgeon:
Colorctal & Laparoscopic
P: 06 873 1160
F: 06 873 1161
E: healingsteemed@gmail.com
Bernard consults at the Royston Centre, 325 Prospect Road, Hastings and operates at Royston Hospital.
Specialty
General Surgery
Training
- 2014: Post Fellowship training in Colorectal Surgery, Princess Alexandra Hospital, Brisbane.
- 2013: Post Fellowship training in Colorectal Surgery, Waikato Hospital.
- 2012: Obtained Fellowship of the Royal Australasian College of Surgeons as a General Surgeon.
Special interests
• Colorectal surgery
• Laparoscopic surgery.
Bernard has a special interest in all benign and malignant conditions affecting the colon, rectum and anus.

Dr Lupe Taumoepeau
MBChB (Auckland), FRACS (Vascular)
Vascular and Endovascular Surgeon
P: 04 389 4999
F: 04 389 4970
E: reception@svh.co.nz
Lupe is a Vascular and Endovascular Surgeon consulting at Specialist Vein Health (which is based in Wakefield Hospital, 30 Florence Street, Newtown, Wellington).
Speciality
Vascular and Endovascular
Training
- Completed medical school in Auckland and vascular surgical training in Auckland, Wellington, Hamilton and Brisbane.
- Special interests
  • Carotid Artery disease
  • Minimally invasive aortic surgery
  • Peripheral vascular disease
  • Diabetic foot disease
  • Endovascular treatment
  • Renal transplant.

Mr Bernard Hooks
PHD, MBCHB, Dip (Cardio-EP), FRACP
Cardiologist/
Electro-physiologist
P: 04 381 8115
F: 04 381 8116
E: heart@whc.co.nz
Darren consults at the Wakefield Heart Centre, Rintoul Street, Newtown, Wellington.
Speciality
Cardiology
Training
- Completed a PhD in cardiac electrophysiology in 2002
- Trained in cardiology in Auckland, gaining FRACP in 2012
- Undertook sub-specialist training in cardiology in Christchurch (2013) and Bordeaux (2014).
Special interests
• Cardiac Electrophysiology including ablation of SVT, atrial fibrillation, ventricular tachycardia.

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  • Carotid Artery disease
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  • Peripheral vascular disease
  • Diabetic foot disease
  • Endovascular treatment
  • Renal transplant.

Background
Lupe is of Tongan descent and was born and raised in Auckland, New Zealand. She is the first New Zealand trained female Vascular Surgeon.
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