AUTUMN | 2013 | NEUROLOGY, NEUROSURGERY, SPINAL SURGERY & REHABILITATION EDITION

The Wesley HOSPITAL
Caring for you for life

Medilink

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

Advances in glioblastoma research

Neurology, Neurosurgery, Spinal Surgery & Rehabilitation

Articles in this issue:

Dr David Walker
Neurosurgeon

Welcome

Dr Chris Beck

Acting Director of Medical Services

Welcome to the autumn edition of Medilink.

Whilst Dr Luis Prado continues in the role of Acting General Manager, I will be filling his role as Acting Director of Medical Services. My usual role of Deputy Director of Medical Services is currently being filled by Dr Kirsten Price.

The autumn edition of Medilink focuses on neurology, neurosurgery, spinal surgery and rehabilitation. A number of our specialists have submitted articles to provide you with up-to-date information about their specialty areas.

With a 70 bed orthopaedic unit, a 31 bed neurology ward (including an acute stroke unit) and an 18 bed intensive care unit, the Wesley is well positioned to provide care for patients with neurological and spinal problems.

Additionally, the Wesley also offers a number of rehabilitation services to support a spectrum of specialities. At the end of last year, the hospital opened a Day Rehabilitation Service that facilitates an early discharge from hospital though a multidisciplinary approach to patient treatment.

This year we are continuing to offer GPs continued professional development (CPD) events. To date, we have held evenings focusing on ENT and prostate cancer as well as our highly successful GP Medical Series 'Hypothetical' event with Geoffrey Robertson QC. The Wesley holds education evenings on the third Tuesday of each month and we encourage GPs to attend as they provide an opportunity to learn about advances in the medical industry while networking with fellow GPs and specialists.

Our theatre expansion project is well underway and is expected to be completed by the end of 2014. This project will see the addition of four operating theatres, which will include a hybrid theatre that allows surgeons to complete operations using the most advanced imaging technology. The expansion project will provide improved patient care with a better workflow through the theatre complex.

I look forward to working with you to ensure your patients receive the best care when coming to the Wesley and welcome your feedback about our clinical services.

Phone 07 3232 7926
Email dmsoffice.wesley@uchealth.com.au

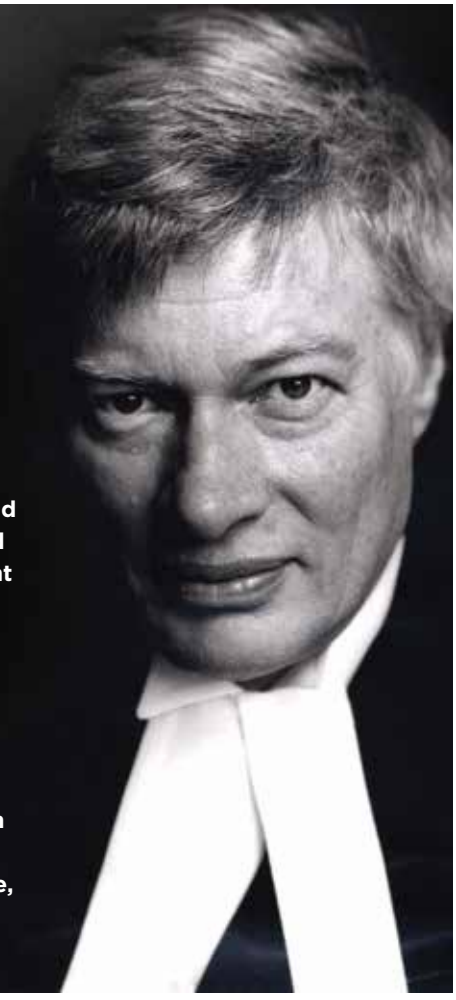
GP Medical Series QUEENSLAND HYPOTHETICAL

GEOFFREY ROBERTSON HOSTED MEDICAL HYPOTHETICAL

The Wesley Hospital and St Andrew's War Memorial Hospital staged a highly successful 'Hypothetical' on Saturday 16 March, for part one of the GP Medical Series Queensland. Hosted by Geoffrey Robertson QC at the Brisbane Hilton, the event attracted 330 medical professionals who enjoyed a night of education and good humour while discussing the ethical and moral dilemmas facing the health industry today.

Mr Robertson led a panel of medical and industry professionals who were grilled on a range of issues including treatment options for prostate cancer, how to respond to a patient declining a blood transfusion, whether technology will diminish the role of GPs and the need for Advance Care Directives.

Part two of the series, the Q&A, based on the award-winning ABC TV program hosted by Tony Jones, is set to draw an even bigger audience in July. Part three, The Great Debate, will be held in November.



Business Development Update

Vicki Goss

Business Development Manager

It is the final year of the RACGP CPD triennium and we have more than 15 events that you can attend in 2013. We have developed a strong CPD program this year and are confident it will support your professional development.

Our 2013 CPD program focuses on men's health. We are holding five regional CPDs this year in Bundaberg, Toowoomba, Townsville, Northern NSW and Gladstone.

This year we have introduced the GP Medical Series Queensland which is a joint venture with St Andrew's War Memorial Hospital, to address priority learning areas for Australian GPs. Our collaboration enables us to offer you access to an even wider range of specialists and learn about new and innovative practice that will assist you with providing quality care to your patients. The format utilises a variety of the latest innovative educational delivery platforms including debate, peer discussion, review and interactive workshopping.

Another service that we offer GPs is on-site education. A specialist can attend your practice for a lunchtime session where you and your colleagues can ask them your own unique questions. This small group session is a great way to enhance your knowledge in a specific area and develop working relationships with specialists.

If you are interested in having specialists visit your practice, or would like more information about our CPD program please contact me via email vicki.goss@uchealth.com.au or call 07 3232 7258.

Clinical Events Calendar 2013

The Wesley's CPD events have been awarded four **Category 2** points by the RACGP for the 2011 – 2013 triennium. Full program details and invitations are mailed out to GPs before each event. Registration is required prior to each event.

CLINICAL EDUCATION EVENTS for 2013

Date	Event	Topic*	Location
16 April	Continued Professional Development	Colorectal	The Wesley Hospital, Auchenflower
17 April	Continued Professional Development (rural)	Men's Health	Bundaberg
24 April	Continued Professional Development (rural)	Men's Health	Toowoomba
18 May	Active Learning Module	Men's Health	The Wesley Hospital, Auchenflower
21 May	Continued Professional Development	Cardiology	The Wesley Hospital, Auchenflower
23 May	Continued Professional Development (rural)	Men's Health	Townsville
18 June	Continued Professional Development	Acute Admission	The Wesley Hospital, Auchenflower
16 July	Continued Professional Development	Paediatrics	The Wesley Hospital, Auchenflower
20 July	Active Learning Module Special Guest, Tony Jones	CPD3 – Q&A	The Hilton, Brisbane
20 August	Continued Professional Development	Orthopaedics	The Wesley Hospital, Auchenflower
28 August	Continued Professional Development (rural)	Men's Health	Northern NSW, TBA
17 September	Continued Professional Development	Respiratory Conditions	The Wesley Hospital, Auchenflower
19-20 October	Active Learning Module (Clinical Weekend)	Multiple Topics	The Wesley Hospital, Auchenflower
23 October	Continued Professional Development (rural)	Men's Health	Gladstone
16 November	Active Learning Module	CPD3 - The Great Debate	The Hilton, Brisbane
19 November	Continued Professional Development	Infertility	The Wesley Hospital, Auchenflower

NOTE* Topics are subject to change

Day Rehabilitation service at the Wesley

The Wesley Hospital has recently introduced a Day Rehabilitation Service for patients who wish to undertake individual treatment sessions as an outpatient.

The service provides a 60 minute, one-on-one rehabilitation session for patients who require a single therapy. For those patients with multiple co-morbidities that require two or more therapies, a half day multidisciplinary session is also available (approximately three hours duration).

The aim is for patients to regain as much function as possible, enabling them to continue to live in the community and maximise their quality of life. Patients are encouraged to participate in activities to promote independence in a supervised and safe environment.

The program

The program includes a comprehensive assessment to identify specific patient needs, from which goals and an individual treatment plan are developed. Interventions are tailored to match each person's requirements. Attendance may range from daily to weekly according to patient need and functional ability. The multidisciplinary team regularly reviews each case with the rehabilitation specialist.

What is available?

Disciplines in our service include; physiotherapy, occupational therapy, speech pathology, dietetics and pharmacy. Privately funded patients may be eligible for up to 20 sessions per calendar year.

Physiotherapist assisting patient with rehabilitation activities.

Patient completing rehabilitation exercises.

Patient participating in occupational rehabilitation therapy.

Case presentation

A 75 year-old woman with multiple system atrophy, who is a recurrent faller, was referred to the service following discharge from hospital.

Patient goals:

- reduce falls
- improve balance and muscle strength
- improve safety with transfer and mobility

Attendance:
Twice weekly over a 12 week period

Interventions:

- active exercise for global strengthening and endurance
- spinal mobility
- dynamic balance and weight shift
- function specific gait activities indoors and outdoors
- functional transfer practise

This patient made significant gains. She was able to transfer and mobilise safely and reported having less falls at home. Balance and overall strength improved. All outcome measures (see table below) show significant measurable change.

STANDARDISED OUTCOME MEASURES		
On admission	On discharge	Significance
Timed up and go (sec)17.9 nil aids	13.07 nil aids	> 11 secs indicates falls risk for community dwelling females (80-89) with a SD of 3. *
Timed up and go (sec) 18.47 4ww	15.44 4ww	
Demorton Mobility Index (/100) 48	85	Need to improve or deteriorate by 10 points or more (on the 100 point scale) for a clinician to be 90 per cent confident that a true change in patient condition has occurred.
Balance outcome measure for elder rehabilitation (/16) 9	12	Greater than 3 points change = significant

*Patient score indicates a continuing falls risk and use of a walking aid is recommended.

Who is suitable?

The Wesley Day Rehabilitation Service benefits people who have suffered a functional decline and are working towards achieving their optimal level of independence.

These may include those who:

- require balance training to reduce falls risk
- have had orthopaedic surgery
- present with neurological disease or have had a stroke
- have chronic disease
- are recovering after oncology treatment
- have a functional impairment requiring reconditioning

Referral process

Referrals from GPs should be sent by letter or fax directly to:

Dr Wilbur Chan or Dr Polly Tsai
The Wesley Day Rehabilitation Service
East Wing Level B1
451 Coronation Drive
Auchenflower QLD 4066

P 3232 6190 or 0422 002 439
F 3232 6189
E wilbur.chan@uchealth.com.au

Back Rehabilitation and Pain Management Program

A patient case study

It is now acknowledged that one in five of the population suffer from chronic pain. The Wesley Hospital Pain Management Program was established over 15 years ago and was designed to apply modern pain management methods to assist patients and their relatives. The object of the program is to gain the patient's confidence and to engage them in activities including; enhancement of their physical fitness, improvement of their sleep pattern, increasing their confidence in activities of daily living, a reduction of their medications, management of associated psycho-social issues and helping them understand the health benefits of work, either paid or voluntary.

Program case study

JW was a 45 year old male who had been working in a food distribution centre of a major supplier. While lifting cases of fruit he suffered lower back pain radiating down his right leg. He could not continue with his work and he was placed on workers compensation payments. He was seen at the hospital accident and emergency unit in a country town and referred back to his local general practitioner. He underwent a CT scan which showed degenerative changes to the lumbar spine at L5/S1 with a grade 1 spondylolisthesis. He saw different doctors in the clinic. He was referred for physiotherapy. He was placed on Panadeine Forte. He was advised to rest at home and avoid provoking any further pain.

He continued to attend the medical centre at monthly intervals and had some contact with his case manager at WorkCover.

Over the next three months he became more despondent and depressed. His tobacco smoking increased. He continued with OxyContin 20mg three times a day (morphine equivalent 90mg). He had some difficulties in communication with his case manager. He quietly withdrew from his family and his friends.

Four months after the injury he was referred by his case manager to Brisbane for an independent medical examination. Once this process was triggered his local general practitioner referred him to a spinal surgeon in Brisbane.

When he saw the spinal surgeon it was noted that he was in great distress, with pain and the range of movement of his lumbar spine markedly reduced. The imaging revealed a grade one spondylolisthesis. The surgeon recommended a lumbar fusion.

The case manager at WorkCover was aware of the disappointing outcomes from fusions in the WorkCover patients. Instead she referred him to a pain and rehabilitation physician for consideration of a multidisciplinary pain management program.

When seen in our program there was a five month history at this point of low back pain and right sciatica. The pain was rated at 8/10.

The worker complained of insomnia. In terms of daily living activities he noted he rose at 8.00am, had a cigarette and a cup of coffee and watched television until 12.00pm then he had a light lunch. During the afternoon he rested on his bed and walked the dog for 20 minutes. Following dinner he again watched television. In all he was smoking 20 cigarettes a day and taking OxyContin three times a day. He was becoming depressed, irritable, unhappy and withdrawn.

JW was seen at the Wesley Pain Management Clinic and admitted for rehabilitation which was sponsored by WorkCover. He was accommodated by the hospital. He joined a group of seven other patients in the three week program. Initially he was understandably angry, irritable and reluctant to engage in the program. However, with the support of other patients and with the help of our psychologist, physiotherapist, exercise physiologist and occupational therapist he

By Dr Leigh Atkinson

Specialist Pain Medicine Physician and Neurosurgeon, Director Pain Management Program, The Wesley Hospital.

The object of the program is to gain the patient's confidence and to engage them in activities including; enhancement of their physical fitness, improvement of their sleep pattern, increasing their confidence in activities of daily living, a reduction of their medications, management of associated psycho-social issues and helping them understand the health benefits of work, either paid or voluntary.

Patients participating in a group education session.

began to be more positive. This program was coordinated by Sally McCracken SRN. During the program he was seen weekly by the specialist pain management physician and director of the clinic. Psychological testing revealed a significant adjustment disorder with depression (K1033) and he was commenced on Pristiq 50mg morning and Amitriptyline at night. He agreed to reduce his OxyContin and this was replaced with Panadol Osteo six daily. With the busy program within the hospital his tobacco smoking also was reduced. With the encouragement of the exercise physiologist he began walking more actively and he became more engaged in the physiotherapy component of the program.

The occupational therapist worked with his workers compensation case manager and with his employer to plan for a return to work in a suitable duties program at the same store. At the conclusion of the program it was recommended that JW would return to his home town and be followed up by a psychologist.

At the conclusion of the three week program JW was showing positive signs of improvement. He was encouraged by the changes in the level of physical fitness. He was beginning to sleep for eight hours a night. The cloud of despair was easing. His attitudes were changing. His chance of re-employment was becoming more realistic.

He returned to his home city. Arrangements were made for him to be followed up by the exercise physiologist with a gym program. He was also to be followed up by a psychologist. He was returned to his general practitioner for ongoing management of his medications. It was suggested that he should continue to withdraw and cease the opioids. The other important part of the program was to gain the support of his family during this difficult time of recovery. Six months after commencing the program JW returned to a suitable duties position in the store, working three days a week with a plan to gradually increase this.

In conclusion, the aim of the program is:

1. To educate the patient regarding chronic pain
2. To assist the patient to return to a degree of physical fitness
3. To manage the adjustment disorder with appropriate medications and counselling
4. To reduce the dependency on opioids and tobacco
5. To educate the patient about the health benefits of work
6. To return the patient to a suitable duties program, or with older patients, to enhance the activities of daily living and direct them towards volunteer work. ■

Prescription drugs, chronic pain and iatrogenic dependency

Dr Christian Rowan

Addiction Medicine Specialist, Addiction Sciences Queensland

Medicines have an important role to play in the delivery of healthcare. Medicines can be obtained through prescription, via over-the-counter dispensing, via illicit diversion, or alternatively, through online web-based sources.

Prescribing for individual patients should always be informed by up-to-date quality medical guidelines. Where appropriate, patients should also always be offered non-pharmacological treatments as part of comprehensive, individual management plans. Adjuncts to pharmacological treatment can include access to physiotherapy, occupational therapy and psychological interventions as well as dietary advice, exercise prescriptions and lifestyle counselling.

Dependence on prescribed and over-the-counter medicines can occur, with the prevalence of these disorders significantly increasing over the past decade.

Opioid medications and tranquillisers, such as benzodiazepines, are known to carry a risk of dependence. Patients should always be encouraged to make informed decisions through the provision of appropriate information that highlights the risk of addiction through the long-term use of these medications. Increased prescribing of pharmaceutical opioids has raised professional concerns about iatrogenic opioid dependence as well as the potential for intentional and unintentional overdose.

Together, patients and their treating medical practitioners need to collaborate and reach agreement on any indication for these medications, as well as the duration and proposed course of treatment. Regular clinical reviews should be agreed upon and scheduled. Consideration should also be given to using an "opioid agreement", which would clearly articulate patient and prescriber responsibilities, assess efficacy and side effects and ensure regular follow-up.

Specialists, general practitioners and other members of the treating health team need to work collaboratively to prevent addiction from occurring and to support and assist those whose treatment becomes problematic. Such collaboration is critical to the successful treatment of these patients and is the core philosophy of the Addiction Sciences Queensland team, based at The Wesley Hospital.

In relation to chronic or persistent pain conditions, it is recommended that regular analgesic regimes are used and that patients are not prescribed "as required" medications; that parenteral routes of narcotic administration are avoided, that Pethidine is not used, that long-term, non-steroidal anti-inflammatory medications are avoided and that consideration is given to other adjuvant medications such as neuropathic agents, anti-convulsants, and anti-depressant medications including SSRIs, SNRIs or TCAs, where appropriate. It is important for health professionals to seek the expert knowledge and skills of those in the clinical area of pain management, given the increasing prevalence of pain conditions in hospital and community-based populations.

The Australian Government has indicated that a real-time reporting system for controlled drugs will be introduced nationally. The aim of any web-based, real-time monitoring system for prescriptions of drugs of dependence is part of a comprehensive strategy to reduce inappropriate prescribing, reduce illegal diversion and eliminate doctor shopping and the unsanctioned use of these medications.

Certainly, such a system is welcomed as a useful tool for health professionals. However, it should also be realised that this strategy may come with some unintended negative consequences. These include overly cautious prescribing of such medications when clinically indicated, leading to the possibility that genuine chronic pain patients may be marginalised. Unsanctioned use may also shift to pharmacy warehouse theft, online purchasing, other prescription drugs or to illicit drugs.

Addiction and substance dependency does not discriminate. Registrations on the Queensland Opioid Treatment Program are no longer predominantly for heroin dependency. Those numbers remain strong, but rapidly increasing numbers of patients are undertaking replacement therapy as a result of their dependence on prescription medications, such as Oxycontin and Endone, as well as over the counter codeine-containing medications, such as Nurofen Plus. The Australian Government has flagged plans to introduce new pharmaceutical guidelines, aimed at reducing the use of these medications and their cost to the Australian economy.

This is where specialists, such as those at Addiction Sciences Queensland, have an important role to play. Prescription drug dependency and its treatment requires an initial comprehensive biopsychosocial assessment. Addiction medicine specialists take into account the medicine(s) on which the patient is dependent, any ongoing physical or psychological health issues, previous or con-current alcohol, tobacco, illicit drug use, the period of addiction and the wider social and educational needs of the patient.

Many patients find it incredibly challenging to accept the fact that they have developed a substance dependency disorder and many of them will not be appropriate to be treated in the public sector due to privacy, employment, cultural, and socioeconomic reasons. Addiction Sciences Queensland provides its patients with treatments that are tailored to the needs of the individual and reflects the need for a collaborative approach between the many professionals engaged in that person's rehabilitation. Addiction Medicine Specialist, Dr James Finn, recently joined the practice to assist with providing this personalised service to our increasing number of patients. There are also plans to have additional specialists available later this year. ■

Therapeutic use of Botulinum

Prof Peter Silburn

Neurologist,
Neurosciences
Queensland

Botulinum toxin is the most powerful toxin and its clinical applications have expanded remarkably since its first use for oncological disorders around in the early 1980s. Its clinical efficacy and safety has permitted the effective treatment of disorders previously refractive to medical and surgical therapies.

Mechanism of action is well understood, involving the cholinergic system and consequently it has widespread uses involving the nervous system disorders where it does not cross the blood brain barrier. The toxin has no irreversible effect but great care needs to be taken in its application.

Botulinum toxin has also been shown to be effective in the treatment of a wide range of disorders associated with involuntary muscle contraction and spasm, including focal dystonia, hemi facial spasm and spasmodic torticollis, neurologic syndromes associated with excessive muscle contraction or involuntary movement. These conditions have a full reimbursement through the Pharmaceutical Benefits Scheme (PBS).

More recent indications include that of excessive sweating or axillary hyperhidrosis refractory to medical treatment. The Botulinum toxin injection controls the hypersecretion of glands by weakening the overactive muscles through a local injection. Botulinum toxin injection is also used for difficult to control migraines. Both axillary hypersecretion and migraine are partially reimbursed by the PBS. There is evidence of clinical efficacy in a number of other non PBS indications.

It is a remarkable scientific achievement that the worlds most powerful toxin has been harnessed to enable the safe application across a variety of indications, extending from cosmetic application but more importantly the treatment of previously medically refractive neurological disorders and disabling conditions. There are potential severe complications in its application and strict guidelines have been in place for some years now for neurologists to obtain approval for its safe application across the expanding variety of disorders that involve the cholinergic neural system.

Currently, we have two preparations of Botulinum toxin which are marketed under the either Botox or Dysport. Both products have similar efficacy and safety profiles. ■

Dr Peter Silburn injecting patient with Botulinum toxin for excessive sweating.

THERAPEUTIC USES OF BOTULINUM TOXIN IN NEUROLOGICAL DISORDERS

Disorder	PBS applicable
Hemi facial spasm (tics)	Y
Dystonia	
Cervical dystonia (spasmodic torticollis)	Y
Blepharospasm	Y
Focal Spasticity	Y
Autonomic Indications	
Axillary hyperhydrosis	Y
Migraine headache	Y

Novel uses of Botulinum Toxin in neurological disorders

Disorder	Indication
Tremor	Hand, head, palate
Dystonia	Writer's cramp, spasmodic dysphonia, oromandibular dystonia, bruxism
Ophthalmology	Strabismus
Autonomic	Gustatory sweating, sialorrhea Bladder dysfunction Anal fissure, achalasia
Anismus vaginismus	
Focal backache	

Dr David Walker

Neurosurgeon,
BrizBrain & Spine

Advances in Glioblastoma research

A team of researchers based at The Wesley Hospital are involved in a world-leading trial to improve the outcome for patients with a deadly form of brain tumour, glioblastoma multiforme (GBM).

The team, led by neurosurgeon Professor David Walker of BrizBrain & Spine, is collaborating with leading scientists at the Queensland Institute of Medical Research to conduct the trial. The novel treatment aims to manipulate the immune system to fight the disease.

GBM is a common and aggressive form of malignant brain tumour diagnosed in adults. GBM can affect adults of any age. Despite their prevalence, the exact aetiology of GBM remains unknown. Adults who present with suspected GBM often experience a variable symptomatology dependent on the site of the tumour. Common symptoms include dizziness, severe headaches, seizures, disturbances in speech and vision and cognitive impairment.

While the incidence of GBM is relatively low within the population compared to other malignant diseases, the mortality rates have remained significantly higher and relatively unchanged over the past decade. The current treatment for GBM is a combination of surgery, radiation therapy and chemotherapy. Surgical treatment options are dependent on the site of the brain tumour and include biopsy, debulking and resection. Surgical interventions are typically used to confirm histopathology diagnosis, reduce the tumour burden and introduce local antineoplastic agents to the site of the tumour. Following diagnosis, a combination of chemotherapy and radiation is generally commenced. The role of chemotherapy in GBM treatment is primarily to stabilise the disease and prevent further progression. Patients commencing on chemotherapy initially receive Temozolomide, with Lomustine and Avastin used to slow recurrent tumour. Radiation therapy is often used as an adjuvant to chemotherapy following initial diagnosis. However, despite these aggressive interventions, GBM often recurs, with few patients experiencing survival beyond 24 months.

While many conventional treatments are able to prolong a brain tumour patient's life, they are not able to provide a cure. This poor prognosis has lead to recent investigations and experimental interventions into the aetiology of these tumours. Contemporary research investigations have increasingly focused on the role of viral infections such as human cytomegalovirus (HCMV) in the development of GBM. Evidence emerging from these studies indicates a possible link between HCMV and GBM development. Based on this evidence, a number of experimental interventions have been developed globally.

Locally, researchers have developed an experimental T cell based immunotherapy treatment for HCMV positive recurrent GBM patients. This treatment acts as an adjuvant to conventional treatments and acknowledges the importance of the immune system in recognising and responding to HCMV infected GBM cells. Through this treatment, it is hoped that the person is immune response will be sufficient to significantly slow further progressive disease.

The treatment aims to expand and prepare each individual's HCMV specific cytotoxic T cells to target the virally encoded HCMV antigens within the GBM tissue. Once expanded, these cells are transferred to the patient over three to four infusions. The patient is then followed up to monitor progress and the safety and tolerability of the treatments. To date, nine patients have successfully received this treatment, with results indicating positive outcomes and, in some instances, patients have survived beyond 24 months.

These preliminary results have enabled future research into treatment for GBM, with a new clinical trial expected to commence this year. While this clinical trial continues to investigate the association between HCMV and GBM, it will recruit newly diagnosed HCMV positive GBM patients. Through this research we will continue to monitor the safety and effectiveness of HCMV specific cytotoxic T cells and evaluate their impact on progression free survival. ■

Dr David Walker

Dr Richard Kahler

Neurosurgeon,
BrizBrain & Spine

Developments for Spinal Surgery Outcomes

The Newro Foundation, in conjunction with the surgeons at BrizBrain & Spine, have developed the Surgical Outcome Survey (S.O.S), an online assessment tool to establish current local evidence on the outcomes of spinal surgery.

For every patient undergoing surgery for degenerative cervical spine and degenerative lumbar spine conditions, there is a requirement to provide evidence of the risks and benefits of surgical intervention. Clinical research, mainly collated from retrospective analysis, provides some of the basis of the information given pre-operatively. In large, only anecdotal evidence can be given to the patient regarding the short and long term outcomes following spinal surgery.

The S.O.S system developed is a web-based internet program designed to assess the short-term and long-term outcomes following the surgical management of lumbar spinal conditions and cervical spinal conditions from the perspective of both the patient and the surgeon.

This system will enhance the ability of an individual surgeon and practice to assess results from surgeries through the use of standardised data collection.

The S.O.S system uses multiple measures that are valid, reliable and sensitive in degenerative conditions of the cervical and lumbar spine. The data is collected pre-operatively (baseline) and again at six weeks, six months, one year and two years after surgery.

This is an automated service, where emails are sent at the required assessment time intervals, containing the link to appropriate survey. These surveys take no longer than 20 minutes to complete and where patients do not have access to the internet, the S.O.S application is able to generate paper based surveys. All of the information collated using S.O.S is encrypted to ensure internet communication privacy, ensuring patient confidentiality and the secure transfer and storage of all patient and surgeon data.

Importantly, the S.O.S platform allows for the individual surgeon to track the outcomes at the level of the practice. It also allows for the information collected to be released and pooled for the establishment of a national data set and international comparisons of patient centred outcomes of spinal surgery.

The Surgical Outcome Survey online assessment system will provide up-to-date information on the benefits of cervical and lumbar spine surgical intervention and quality of care not only to patients, but will give vital, transparent benchmarking evidence to institutions and other governing bodies. ■

For further information please contact Dr Richard Kahler or Beth Morrison at the Newro Foundation at sos@newrofoundation.com.au.

Newro FOUNDATION
New Ideas New Research New Hope

PHYSIOTHERAPY AND MUSCULOSKELETAL OUTPATIENT CLINIC

The Wesley Therapy Service has expanded the physiotherapy outpatient clinic. The service is now open to the public and is conveniently located on the hospital campus. Located in the East Wing, level B1, the service is available Monday to Friday, between 7:00am and 5:00pm.

Our physiotherapists can help with joint or muscle pain and can treat all injuries. There is also a sports physiotherapist available to help enhance athletic performance and give you specialist advice.

The clinic offers:

- management of acute and chronic spinal and joint problems
- treatment of soft tissue injuries
- post-operative strengthening and reconditioning
- diagnosis and treatment of sports injuries or performance issues
- dry needling (similar to acupuncture)
- posture and gait analysis

All consultations are one on one and incorporate:

- hands on treatment
- individually tailored exercise programs
- advice relevant to your condition

No referrals are necessary to attend the clinic and private health insurance rebates may apply. To make an appointment please phone (07) 3232 6190.

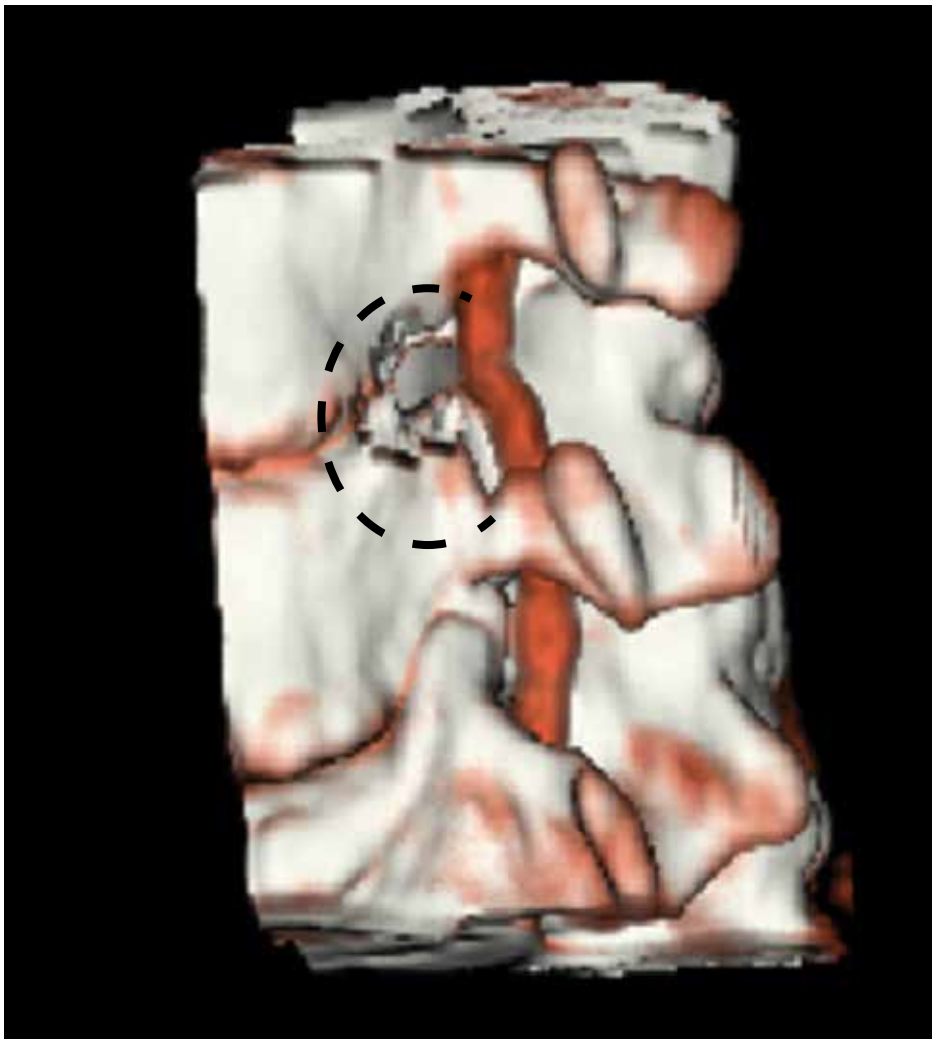
Anterior Foramenotomy

Cervical nerve root entrapment or irritation is a common cause of neuralgic sensations in the arm. This is often perceived as a deep toothache-like pain in the arm and does not follow any classical dermatomal distribution but is often associated with prickling paraesthesiae which, on specific questioning, are more likely to follow a dermatomal pattern. It often comes on quite acutely and spontaneously and usually without any definable history of neck trauma. Luckily it usually spontaneously dissipates over a period of weeks, leaving an undercurrent of local neck discomfort which also slowly dissipates. At its peak it is a very unpleasant pain, leading to demands that something must be done. However, a judicious regime of analgesia combined with tricyclics will usually tide the patient over with a promise that in a few weeks it will probably get better. It is surprising how even quite profound local motor deficits will slowly melt away.

Having said that, there is a subgroup in whom the pain is unmanageable, who demonstrate a progressive neurological deficit or in whom the whole process takes too long and with these patients surgery to decompress the involved nerve root becomes an option. The anatomical diagnosis is MR based and this is generally far more accurate than conventional CT, but CT with intrathecal contrast is probably the most accurate way of delineating nerve root cut off.

Historically, the surgical techniques involved consisted of either a posterior operation, in which a limited laminectomy is used to expose the nerve from behind, or an anterior approach where the nerve channel is released by going through the disc, having approached the disc via an anterior retropharyngeal approach. The anterior approach is far more common, but historically involved removing the entire disc and fusing the relevant two vertebrae on either side of the disc together; the Anterior Cervical Discectomy and Fusion (ACDF).

There has been an alternative approach available for many years which combines the advantages of the anterior approach; the ability to release the nerve without retracting it, and avoids many of the potential adverse effects of the anterior approach; the disc does not have to be removed, only the fragment causing the compression and less pharyngeal retraction so a lower incidence



Removal uncinate process

Dr Janusz Bonkowski

Neurosurgeon
BrizBrain & Spine

of annoying postoperative swallowing difficulties. The posterior approach fell into disuse in the sixties when anterior surgery was preferred, but has recently enjoyed a revival as a disc preserving option. Its main technical limitation is that the compressive pathology almost invariably lies in front of the nerve, whilst the approach exposes the nerve from behind in a very confined field and trying to get around a swollen and irritated nerve trunk can be technically challenging.

The alternative procedure is called the anterior foramenotomy. It was first described nearly 50 years ago, has been periodically revived by spinal surgeons at 10 year intervals but has never entered their repertoire and is rarely considered as an alternative. I have been performing anterior foramenotomies for 10 years, have done some 250 of these procedures and feel that it has a definite advantage in patients presenting with unilateral cervical nerve root irritation who require surgery.

The technical details of the procedure are that it is an anterior operation, but because only one side of the vertebral column that needs exposing the amount of pharyngeal and laryngeal retraction is far less than in a classical ACDF. There is no hardware nor implants, and no fusion, so although the underlying disc may slowly fail over time it does so in a physiological fashion (I tell all my patients to regard their discs like their teeth; who gets to 50 with a perfect set?). The lateral tip of the vertebrae is drilled for a few millimetres sufficient to expose the osteophyte or disc fragment, these are removed, the nerve channel probed and the incision closed and that is the operation. No concerns about pseudarthosis, virtually no swallowing difficulties, no accelerated adjacent failure and almost immediate alleviation of the neuralgia, with an overnight stay in hospital in most cases.

Even if the patient develops further episodes of nerve irritation (this is rare), the fallback position, should further surgery be necessary, is less than with the alternatives; if a fusion fails then a redo fusion may be necessary or if a fusion leads to adjacent segment failure then a further fusion or disc implant may be needed and if a disc implant fails then a revision to fusion may be needed. With anterior foramenotomy, the index level usually retains some motion so conversion to a later fusion or arthroplasty at the index level is possible and technically little more challenging than operating in a clean field.

The procedure is not possible in every case, but my experience has been that in patients with cervical problems who do eventually come to surgery it is applicable in 70 per cent of cases. I am a very conservative surgeon so avoid an operation of any sort on the cervical spine until driven to it. There is nothing like a personal experience to build empathy with patients, and having had a ferocious attack of left C6 neuralgia myself (with an MR to prove it), I know what the pain is like, and managed to talk myself out of surgery, and I have transferred that philosophy to my counselling. ■

Left C6-7 Transuncal disc
(post op L lat oblique)

Lumbar
Interbody Fusion

Spinal fusion is the operative process joining two or more vertebra in the spinal column, also known as spondylodesis or spondylosyndesis. It prevents the movement of the joint complex comprising of the disc and two coupled facet joints of a motion segment.

Spinal fusion is an integral part of the surgical management of many spinal disorders.

These indications include

- Fractures with instability
- Infection such as discitis or spondylodiscitis
- Tumour, both primary and metastatic processes
- Deformity including scoliosis and kyphosis
- Instability with pain, typically spondylolisthesis
- Degenerative processes with neural compression or back pain

The majority of spinal fusions presently are performed in degenerative processes, most commonly to reconstruct the level in terms of alignment and height to allow adequate decompression of the neural elements. It is therefore performed as an adjunct. Uncommonly, it may also be employed to treat isolated back pain attributable to either the disc or facet complex at the segment being fused. The rates of spinal fusion have risen significantly in the past decade for degenerative processes in the lumbar spine. This would appear to reflect some shift from often purely decompressive procedures to a reconstructive approach to the segment or level. However, this approach can vary and presently creates significant controversy in spinal surgery.

Technically, fusion of a spinal segment may be achieved via:

- Posterior fusion - between the facet joints
- Posterolateral fusion - between the transverse processes and lateral facet
- Interbody fusion - between the vertebra with disc/body removal

The process of fusion has evolved significantly over recent years. This has allowed two significant advances.

The first being that of rate of union or arthrodesis. Advanced techniques in materials and devices have facilitated an increase in fusion rates from 50 per cent with traditional inlay techniques to greater than 90 per cent with the use of devices to augment stability.

Secondly is the reduction in morbidity with evolution of surgical technique to allow placement of implants with less impact on surrounding structures. This being predominantly muscle preservation.

Fusion was originally achieved via the inlay of bone graft posteriorly or posterolaterally without the use of implants or fixation. This often required external augmentation with the use of a cast or brace. This process, still employed on occasion, requires significant bone graft volume. The union rate due to the movement of the motion segment whilst attempting to fuse also lead to extremely variable union rates reported from 50 to 75 per cent.

The introduction and use of pedicle screw fixation during the 1990s increased to union rate to the order of 80-90 per cent

The use of interbody devices has seen an increase in fusion rate to greater than 90 per cent. Sound technique is still required to achieve these rates and a reduction in attention to technique with reliance on the devices alone may see the rate reduce significantly.

Interbody fusion itself may be achieved via:

Posterior

PLIF - Posterior lumbar interbody fusion

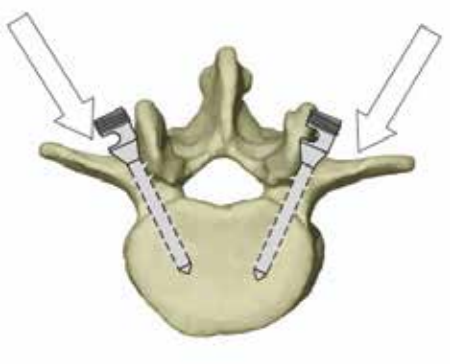
TLIF - Transforaminal interbody fusion

Lateral

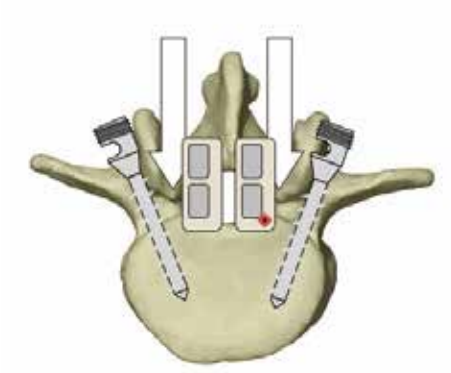
LLIF - Lateral lumbar interbody fusion (also referred to as transpsoas interbody fusion; also referred to in trade names as XLIF and DLIF)

Anterior

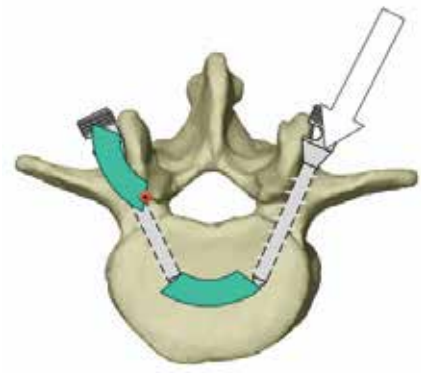
ALIF - Anterior lumbar interbody fusion



Pedicle screw fixation and inlay graft to posterolateral gutters between spinous processes & facets.



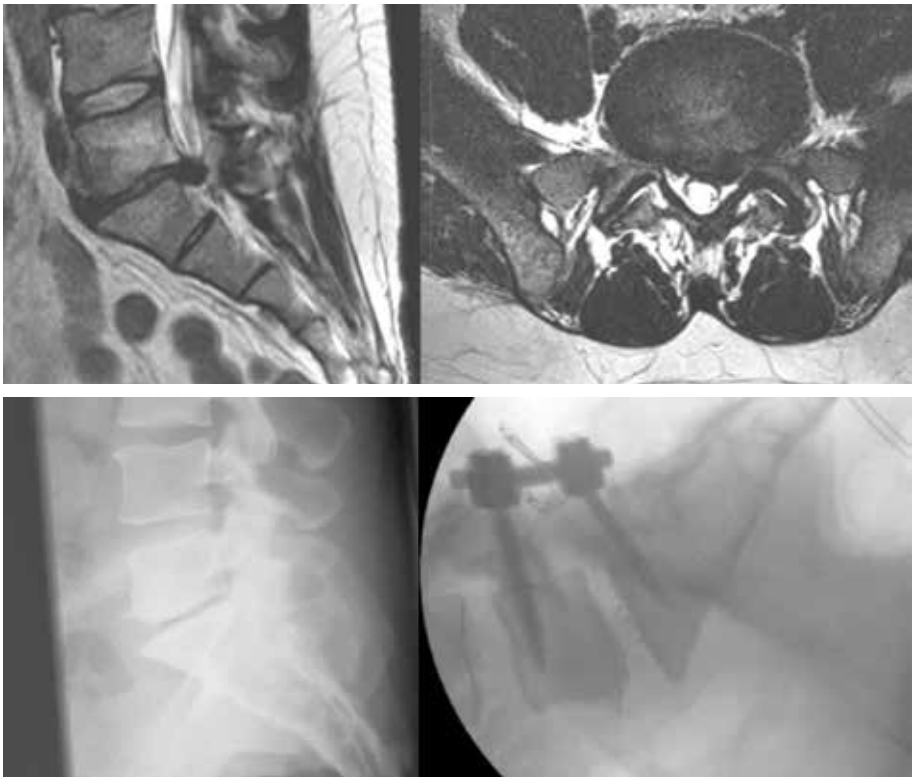
PLIF - Posterior lumbar interbody fusion



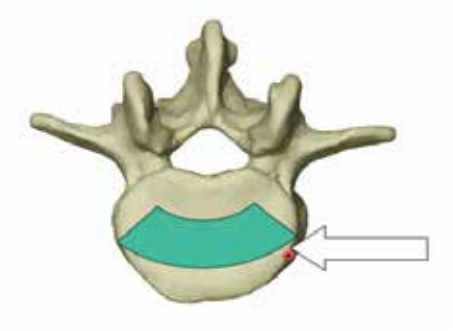
TLIF - Transforaminal lumbar interbody fusion

Dr Simon Gatehouse

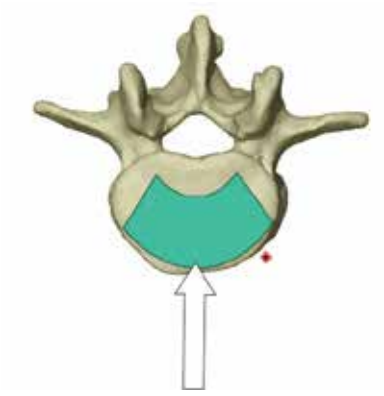
Orthopaedic Surgeon



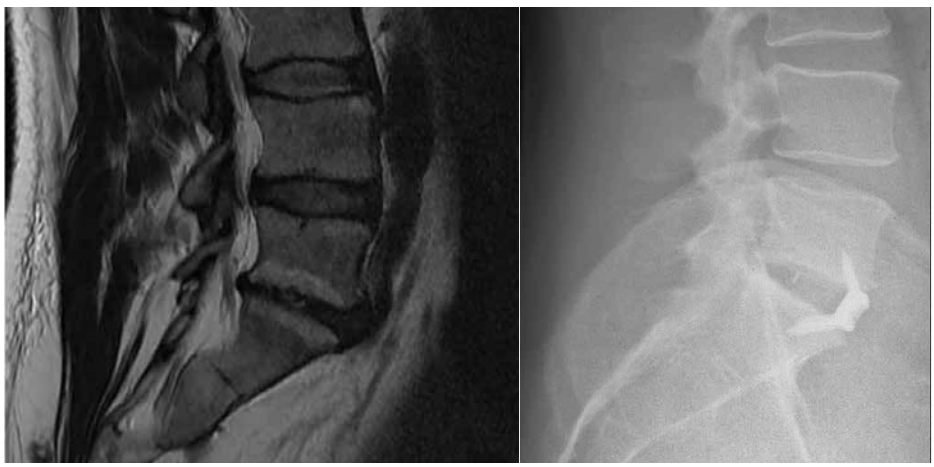
This patient has a posterolateral disc prolapse with foraminal extension at L5/S1. Use of a Transforaminal interbody fusion has allowed an adequate decompression of the neural foramen with restoration of disc height.



LLIF - Lateral (Transpsoas) lumbar interbody fusion. (Also referred to as XLIF & DLIF - proprietary names)



ALIF - Anterior lumbar interbody fusion



This patient has an isolated degenerative disc at the L5/S1 segment. They have lumbar back pain and have exhausted nonoperative measures. The use of an ALIF in this circumstance is effective. This patient had resolution of their back pain.

The choice of interbody technique will often reflect the pathology being addressed.

PLIF/TLIF allows direct vision of the neural structures to be decompressed and are usually employed in conjunction with posterior decompressive procedures, typically a laminectomy.

LLIF and ALIF may be used to achieve indirect decompression with restoration of disc interspace height. They also allow a greater restoration of disc height and recreation of lumbar lordosis in reconstructive or deformity type procedures.

ALIF may also be used to treat back pain attributable to the disc, without the muscle disruption associated with a posterior approach.

As is appreciated, the use of spinal fusion varies significantly. The nature and techniques employed have evolved significantly. The indications outside the degenerative spine remain sound.

Though the majority degenerative processes with neural compression may be treated simple decompressive procedures, the advances in fusion and interbody fusion techniques have also allowed for a broader choice and approaches in complex spinal conditions. This allows for greater flexibility of approach to best suit the pathology and patient.

The techniques have become less morbid in the perioperative period and facilitated more reliable rates of fusion.

It remains critically important however to have a continued focus on the indications. A sound indication will lead to the most reliable outcome. ■

Degenerative Cervical Disc Disease

Degenerative cervical disc disease is one of the most common spine problems that is seen in general practice and forms a significant part of a spinal surgeon's workload. The cervical disc can start degenerating in the twenties; even younger if there has been significant trauma to the neck.

The disc can be wearing out without herniating. A herniated disc can cause spinal cord/nerve root compression on its own or in conjunction with osteophytes.

Degenerative disc disease usually presents with neck pain with pain radiation to the shoulder area. If there is nerve root compression, the patient may have radicular (nerve) pain to the arm/forearm and fingers. The pattern (extent) of this pain is dependent on the nerve root compression. Occasionally patients can present with myelopathy symptoms.

Fortunately 70-80 per cent of patients with neck and arm pain from cervical disc herniation will improve with non-operative treatment within a few weeks. For those who continue to have radicular pain surgery, it will almost certainly cure the radicular pain. More than 95 per cent of those with hand/arm weakness will also improve after surgery.

The traditional operation for cervical disc degeneration and herniation has been anterior cervical discectomy and fusion (ACDF). This operation has been very successful for radicular pain and weakness. Relief of neck after this procedure is less reliable. With fusion of a motion segment with ACDF, the adjacent levels (above and below) has to compensate by moving more and taking extra load and stresses.

Therefore the adjacent levels can degenerate prematurely after an ACDF. The reported incidence of adjacent level disease is 3 per cent per year and 26 per cent in 10 years. This will usually require further surgery.

Degenerative disc disease usually presents with neck pain with pain radiation to the shoulder area. If there is nerve root compression, the patient may have radicular (nerve) pain to the arm/forearm and fingers.

Degeneration and collapse of C5/C6 and C6/C7 disc

Dr Steven Yang

Orthopaedic Surgeon

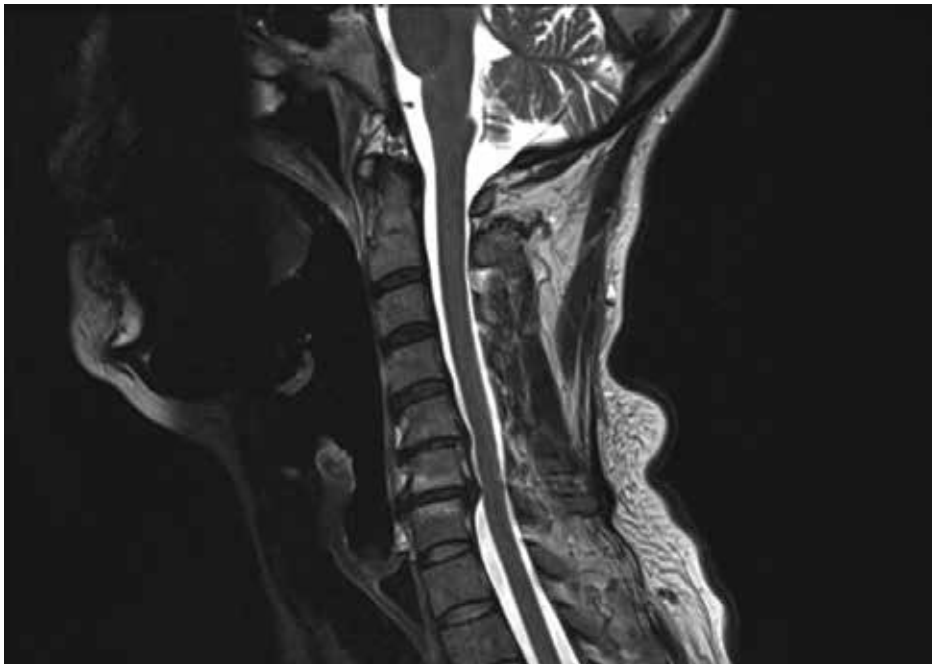
Cervical artificial disc replacement (ADR) was introduced to avoid fusion and maintain motion of the diseased segment. There has been a proliferation of different designs in the last 10 years. However, most ADR designs are based on ball and socket articulation (like a hip joint) or a mobile bearing (like a knee replacement). Cervical motion is complex with a variable centre of rotation and coupled motion, therefore these ADR designs don't reproduce normal quality of motion (kinematics) in the neck. This leads to excessive stresses on the facet joints.

There have been exciting developments lately with new designs of ADR. The latest generation of ADR mimics the design of a natural intervertebral disc.

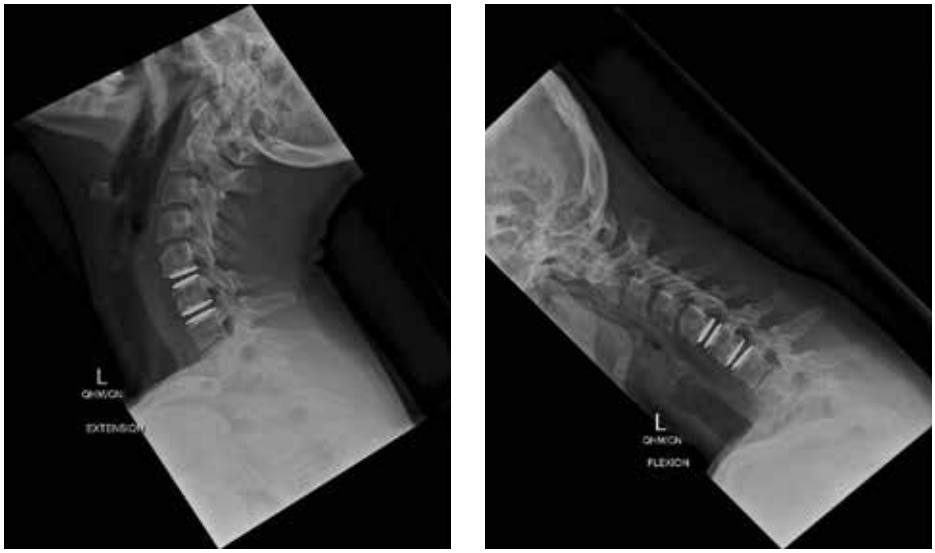
The biomechanical testing has been impressive. It has shock absorbing ability and the quality of motion is nearly exactly the same as a healthy cervical disc. This M6 disc replacement has been available in Australia in the last two years. Dr Yang has been using this ADR since it was introduced and has been very impressed with the results.

Recently published results comparing ACDF (fusion) with ADR have been reassuring. They either show ADR results for pain relief are as good or superior to fusion. The four year outcome shows disc replacement to be just as good for all pain but superior to fusion for neck pain and earlier return to work activity.

Whilst there is no 10 year outcome data yet, there is hope that ADR can reduce the incidence of adjacent level disc degeneration. ■



Spinal cord compression at C6/C7 and C6 & C7 nerve root compression



Normal movement at C5/C6 and C6/C7 disc replacement levels

Welcome to our new
Visiting Medical Practitioners

Dr Judith McEniery
Palliative Care Staff Specialist

Dr Judith McEniery commenced practice as a palliative care staff specialist at the Wesley in October 2012. With 20 years of experience in palliative medicine Dr McEniery has a cared for patients with both malignant and non-malignant conditions. She is passionate about ensuring a seamless transition between inpatient and community settings and has a special interest in conservative management of malignant bowel obstruction, palliative aspects of motor neurone disease and morphine availability and palliative care in developing countries.

Dr McEniery graduated with First Class Honours from University of Queensland and then embarked on paediatric training, obtaining her Diploma of Child Health and MRCP UK. On return to Australia, she joined family medicine training program for general practice and in 1997, obtained a Graduate Certificate in palliative care and was awarded FAChPM in 2002.

From 1998, Dr McEniery has been appointed as a palliative care medical officer and subsequently staff specialist for West Moreton Palliative Care Service based at Ipswich Hospital and a consultant at St Andrew's Private Hospital Ipswich and Ipswich Hospice.

Wesley Palliative Care Unit
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Dr Peter Hansen
Vascular Surgeon

Dr Peter Hansen is a vascular surgeon who has recently started practicing at The Wesley Hospital. His comprehensive experience encompasses all facets of modern vascular practice from minimally-invasive endovascular techniques for the management of arterial, venous and aneurysmal disease to open surgery for all vascular conditions. Additionally, he has a special interest in minimally invasive treatments for varicose veins, endovascular treatment of peripheral vascular disease and endoluminal stent graft repair of aortic aneurysms.

After completing his education at the University of Queensland he undertook his internship at the Princess Alexandra Hospital, Brisbane. His basic surgical training was undertaken in Brisbane and in the UK working in both Worcester and Coventry. Dr Hansen's specialist training was completed in four major centres; The Royal Brisbane Hospital, The Edinburgh Royal Infirmary, The Western Hospital Melbourne and The Princess Alexandra Hospital.

Dr Hansen is a member of the Australian Medical Association, the Australian and New Zealand Society of Vascular Surgery, the Australian and New Zealand Society of Vascular Surgery and is a Fellow of Royal Australasian College of Surgeons.

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Dr Conroy Howson
ENT Surgeon

Dr Conroy Howson is an ENT specialist who started practicing at The Wesley Hospital this year. As a general ENT surgeon he consults for both adult and paediatric patients and offers a comprehensive and caring service with a special interest in rhinology and otology.

New to Brisbane, Dr Howson has come from north Queensland where he was the Director of ENT, Head and Neck Surgery for the Cairns and Hinterland District for five years. During that time he established a new and comprehensive ENT specialist service out of Cairns Base Hospital.

Dr Howson, originally from South Africa, completed his specialist training in Johannesburg through the College of Medicine of South Africa, attaining his Fellowship in 1998. He went on to practice in the United Kingdom as an ENT consultant with the East Kent NHS Foundation Trust for nearly six years, running a busy ENT service.

In addition to his South African ENT specialist Fellowship qualification, he also holds a Fellowship from the Royal Australasian College of Surgeons, having successfully completed the examination in 2007. He is also a member of the Australian Society of Head and Neck Surgeons.

Dr Howson welcomes all referrals and looks forward to assisting you in the management of your patients. Having just moved into new rooms at Sunnybank he is available for discussion and advice regarding any concerns you may have.

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Dr Steven Yang

Orthopaedic Surgeon

Dr Steven Yang is an orthopaedic surgeon who specialises in complex spine reconstruction and vertebral tumour surgery as well as all aspects of adult and paediatric spine surgery, hand and peripheral nerve surgeries. Prior to joining BrizBrain & Spine in 2013, he was the Director of orthopaedic surgery and the Director of spine surgery Fellowship at the Royal Brisbane and Women's Hospital.

After completing his medical training in 1994 he spent several years working in different specialty areas. He undertook advanced training in orthopaedic surgery and obtained the Fellowship of the Australasian College of Surgeons in 2004. Dr Yang then completed a Fellowship in hand surgery in Sydney followed by a Fellowship in complex spine surgery.

Dr Yang has gained experience in leading edge spine surgery in Cleveland, Ohio, New York and Germany where he had visiting fellowship appointments. He is also actively involved in research in spinal infection and oncology through the Royal Brisbane Hospital, whilst also being a Senior Clinical Lecturer at the School of Medicine, University of Queensland.

Dr Yang is a member of the Australasian College of Surgeons, the Australian Medical Association, the Asia Pacific Orthopaedic Association and the Spine Society of Australia.

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Dr Janusz Bonkowski

Neurosurgeon

Dr Bonkowski is an experienced neurosurgeon and spinal surgeon with a wealth of expertise in disorders of the brain, spine and peripheral nerves. He is new to the Wesley, having come from private practice in Christchurch, New Zealand where he practiced for 19 years. Since his arrival in Brisbane, he has worked as a VMO in Neurosurgery at the Royal Brisbane Women's Hospital and locum co-ordinator of the undergraduate surgical training program at the University of Queensland, before joining BrizBrain & Spine in February 2013.

His special interest is degenerative disorders of the spine and microsurgical techniques in the management of spinal pathology. He also lectures and is published on the role of anterior foramenotomy in cervical disc disease and on skull base surgery, cerebrospinal fluid dynamics, endocrine disturbances in SAH and Medical Ethics.

After completing his medical training at the University of Adelaide in 1971, he then studied in London, qualifying as a General Surgeon in 1975 before completing his neurosurgery training. Dr Bonkowski has practiced in London, across the UK, Auckland, Christchurch and Australia.

He is a member of the Neurological Society of Australia, the Neurological Association of New Zealand, AO Spine and the North America Spine Society.

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Neurology, Neurosurgery,
Spinal Surgery & Rehabilitation

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