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A USEFUL BEDSIDE MANNER

Foundation for Surgery Peter King Research Scholarship recipient Dr Naseem Mirbagheri has completed her study on using bedside sonography for measuring post-operative gut function

ACS Fellow, colorectal surgery Trainee and PhD candidate Dr Naseem Mirbagheri has conducted and completed a study investigating the use of bedside sonography to measure liquid gastric emptying as a means to assess post-operative gut function in patients who have had abdominal surgery.

The recipient of a 2014 Foundation for Surgery Peter King Research Scholarship, Dr Mirbagheri conducted her research to determine if bedside sonography could offer surgeons a reliable diagnostic tool to measure postoperative gut function.

For the study, conducted through the Academic Colorectal Unit at Concord Hospital, Dr Mirbagheri recruited 30 healthy volunteers and 30 patients who had undergone major colorectal surgery and measured gastric emptying using a portable ultrasound machine.

Each patient was given 250mls of water while Dr Mirbagheri measured the gastric antral cross-sectional area every ten minutes to determine gastric emptying, measured as time to complete emptying of water.

While her results are still awaiting peer review, she said the study was the first to find that sonographic assessment of gastric emptying – as a surrogate measure of gut function – was practicable and useful in patients after colorectal surgery.

"My main aim with this research was to find out if such a method of measuring gastric function was feasible in a postoperative setting," Dr Mirbagheri said.

"The rate of prolonged ileus alone is reported to affect up to 14 per cent of patients after major colorectal surgery, however, it is a poorly defined clinical term with no objective markers to assess risk factors and limited modalities to assist diagnosis," Dr Mirbagheri said.

"The clinical signs surgeons have traditionally used to assess post-operative gastrointestinal dysfunction, such as nausea or vomiting, abdominal distension, delayed passage of flatus or faeces, are unsophisticated, nonspecific and may be influenced by other postoperative factors.

"I wanted to determine if ultrasound technology could offer surgeons a more objective assessment to facilitate more tailored post-operative care.

"The secondary aims were to establish the normal range of gastric emptying in a cohort of healthy volunteers using our technique, measure changes in the gastric emptying rate after major colorectal surgery and to assess the impact of gastric dysfunction as assessed by sonographic technique on postoperative gastrointestinal outcomes."

Working under the supervision of Professor Marc Gladman, the Director of the Academic Colorectal Unit at Concord Hospital, Dr Mirbagheri said she was particularly interested in assessing whether sonography could give surgeons another diagnostic tool to measure post-operative gut function that would be less burdensome and expensive than the tests currently used such as transit studies.

"Gastric emptying scintigraphy is the gold standard technique, but this relies on ingestion of a radioactive test meal followed by gamma camera images of the abdomen and is not a bedside tool," she said.

"This technique is also limited by its exposure to significant amounts of radiation, costly gamma cameras, a time-intensive protocol, a lack of standardisation of the test meals and the position and timing of acquired images.

"Sonographic assessment of the gastric function, however, has several advantages.

"It has the capacity to provide both quantitative and qualitative information, imposes no radiation risk to the patient or technician and the technique has already been established and validated."

Dr Mirbagheri said that finding a useful bedside tool to measure gastric function was also important now that post-operative patients who had undergone abdominal surgery were routinely given food and water the first day following surgery as part of the Enhanced Recovery of Patients Program.

She said that this paradigm shift in surgery made it important to tailor this early introduction of oral intake based on the functioning of the gastrointestinal tract.

"Even though surgeons are not radiologists, we have the underlying anatomical knowledge so I believe surgeons can easily use ultrasound technology as an extension to their clinical armamentarium," she said.

RESEARCH HIGHLIGHTS of Dr Naseem Mirbagheri

2015

- Sir Roy McCaughey Surgical Research Fellowship

2014

- RACS Peter King Scholarship
- 3min PhD thesis competition winner
- Early Career Research Award Concord Repatriation General Hospital
- NHMRC, Postgraduate Scholarship

2013

- Best Colorectal Paper Presentation, Peter Douglas Prize
- Australian Postgraduate Award, University of Sydney

2012

- Marshal Prize for Best Research Presentation

"We know that the sooner patients return to normal gut function, the shorter their hospital stay – so to have an easy and affordable way to measure this could also have benefits to the health system."

Dr Mirbagheri is also in the last year of completing a PhD Thesis on Phenotypic Variations in the Central and Peripheral Mechanisms of Sacral Neuromodulation in Faecal Incontinence with funding provided both by the College and the National Health and Medical Research Council (NHMRC).

She said she took on the sonography study while she gathered the resources and navigated the ethics approval system to begin her PhD and last year presented her findings to the Surgical Research Society of Australasia.

A mother of two young children, Dr Mirbagheri has won multiple research awards including being a finalist last year of the Early Career Research Awards and the 3min PhD thesis competition presented by Concord Hospital.

She said that she had been attracted to colorectal surgery because of an abiding passion in providing optimal care for patients suffering from pelvic floor disorders.

"As a female surgeon I have long wanted to help these patients, most of whom are women and most of whom suffer such disorders – particularly faecal incontinence – primarily because of obstetrics injuries," she said.

"However, we now appreciate that faecal incontinence is a multi-factorial disorder and possibly a progressive disease in some patients.

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"We also know that sphincter injuries are quite commonly caused during childbirth, yet faecal incontinence is not so common immediately after birth with peak incidence during middle age.

"In recent years, it has become apparent that continence is dependent on far more than anal sphincter function alone. Rather, it represents a complex interaction between somatic, enteric and autonomic nervous systems and smooth and striated muscles under higher cerebral control. My PhD particularly focuses on the possible role that the central nervous system plays."

Dr Mirbagheri thanked the college for the support given to her over the past two years and said she would not have been able to undertake the research without it.

"I greatly enjoyed doing the sonography research because it was very clinically oriented," she said.

"I liked the fact that I could work every day with patients, I could understand their problems and felt like I could help them while they were helping me.

"I also appreciated for the first time that being a good surgeon is about much more than being good at surgery.

"I think academic research is vital in allowing surgeons to become good decision-makers, giving us the skills needed to understand complex data, appraise the literature, thus ensuring that we base our managements on the best current evidence.

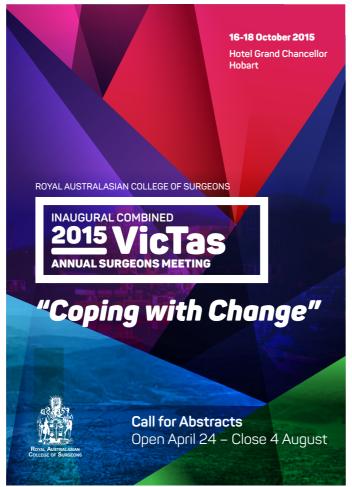
"The downside with any research, however, is that you quickly realise how much you don't know and how much there is to learn."

The Foundation for Surgery Peter King Research Scholarship was established in recognition of the contributions of Mr Peter King to the College, particularly in the area of rural surgery. The purpose of the scholarship is to support research on a topic relevant to the practice of surgery outside metropolitan areas.

With Karen Murphy



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Audience, Impact & Conferences

The importance of conference presentations should never be overlooked



GUY MADDERN CHAIR, ANZASM

In previous articles I've written on a measure of publication and author success (H-scores) and how to get your work noticed (5 top tips).

The one shortcoming of this measurement and promotion is that it doesn't provide feedback on your audience. There is little you can do to identify the readers of your work, or whether you even reached your intended audience. In addition, any dialogue related to a published manuscript is often limited to a letter in response, or more informal communication on the email which may not be representative of the readership as a whole.

One of the best ways to create impact and to get your work noticed by the right people is through conference presentations. Conferences bring together your target audience and place them right there in front of you – literally.

To date, ASERNIP-S research has been featured in 319 presentations and talks, and, I am pleased to note that ASERNIP-S staff have recently had a further three presentations accepted; two at the HTAi and one at the HTAsiaLink conferences.

HTAi is the leading international conference for Health Technology Assessment, and this year's conference is being held in Oslo. As it typically is the main conference for North American and European HTA agencies, it provides an excellent opportunity to reach a broad range of our counterparts quickly. HTAsiaLink is a newer conference, and although held less frequently it allows engagement with HTA agencies that are closer to home.

The ASERNIP-S research team will be presenting work completed for the Victorian Department of Health and Human Services, a Medical Benefits Scheme review and a recent report for the Health Policy Advisory Committee on Technology (HealthPACT):

- 'The application of rapid review and mini-HTA methodologies in the development of Australian health policy'
- 'Image guidance reduces total, major and orbital complications in complex sinus surgery: A systematic review and meta-analysis'
- 'Horizon scanning on a range of orthopaedic technologies: experience and outcomes'

Presentations like these allow us to demonstrate our achievements to our target audience; they provide us with opportunities to improve our professional networks; and – as we've all seen at the recent ASC – they provide researchers and innovators the opportunity to debate, test and develop new paradigms.

I believe conference presentations are an excellent way to promote ones' work because they provide a level of immediacy to one's peers. They are also critically important opportunities for ASERNIP-S and the College to continue to demonstrate our place as a leading surgical HTA and research agency.



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