CAIR EXPRESS

Spring 2018

President's Blog

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CIRA has a new name and a new vision for the future!

Moving forward, we will be called the *Canadian Association for Interventional Radiology* (CAIR). Our new acronym (pronounced CARE) phonetically expresses the Association's vision of making the care and treatment provided by Interventional Radiologists widely accessible to all Canadian patients.

We plan on working with patient groups and other professionals of our field to raise awareness about IR and to help Canada catch up to other developed countries with respect to the utilization of IR treatments. I find it embarrassing that Canada ranks so poorly on this count in comparison to the US, the UK, Germany and so many other countries.

We recently launched our new website. It reflects our strategic direction of being more patient focused. Go take a look at the new website at www.cairweb.ca and let us know how you like it.

Our members need not worry. CAIR will continue to provide exceptional professional development meetings and courses to our IR physicians, technologists and nurses. In fact, membership with CAIR now enables physicians to obtain all their required section 1, 2 and 3 CME credits. Starting this year, CAIR is a one-stop shop for CME credits! Thanks to this new benefit, along with all the others CAIR already provides, I expect this year's member recruitment campaign to be the best ever. There has never been a better time to be a CAIR member.

Dr. Jason Wong

Jason Wong,
President

Catching up with... Dr. C.S. Ho

Introduction

Dr. Chia Sing Ho, or simply C.S. is one of the early pioneers of interventional Radiology in Canada. He graduated from the University of Hong Kong and completed his post-graduate Radiology training in Canada. He has been on staff at the Toronto General Hospital since then, taking on different roles including Division head and Radiologist-in-Chief. He is presently a professor of Radiology at the University of Toronto and consultant radiologist at University Health Network, Toronto.

Dr. Chia Sing Ho

Beginning his professional career as a GI radiologist, he was attracted to the emerging interventional field using fluoroscopy to guide procedures like CBD stone removal and percutaneous biliary drainage. In the early 80s, he popularized percutaneous fluoroscopy-guided gastrostomy and was the first Canadian IR to combine endoscopy with imaging for biliary interventions. Later in his career, he expanded his practice to include liver cancer ablation and is known for his innovative approach for patient-centered palliation. After retiring from IR service 3 ½ years ago he continues reading and teaching CT colonography.

"Patients are often ill-informed or influenced by their clinicians often with biased viewpoints. IRs are seldom consulted during decision-making."

CAIR Interview Question & Answers

1. What in your opinion have been some of the biggest challenges to developing Interventional Radiology as a dedicated clinical service over the years?

In our tertiary teaching hospital, the most important challenge has been to build a consensus as to who best serves patients' interests. Other clinical specialists think they are the best and interventional radiologists think otherwise. As objective outcome measures are often lacking, the decision is often left to administration. Patients are often ill-informed or influenced by their clinicians often with biased viewpoints. IRs are seldom consulted during decision-making.

For example, we have to be cognizant that vascular surgeons have been repairing aortic aneurysms long before stent grafting was introduced and are trying hard to protect their domain. A truly 50-50, collaborative model between vascular surgeon and interventional radiologist in aortic grafts would best serve patients' interests. This collaborative model is functioning well at the UHN and should be encouraged at other centers.

Such a collaborative approach also works in liver cancer treatment. We rely on a multidisciplinary meetings to decide treatment of HCCs. Without a collaborative approach, patients would miss out on the opportunity to

receive best possible care.

A second challenge is to staff the service around the clock. Setting up an on-call system creates inequality in workload for IRs compared to their diagnostic colleagues. An equitable compensation formula has been created to settle this issue.

Obtaining hospital admission privilege was the third challenge. We have requested this for many years and finally, both administration and our surgical colleagues realized this would benefit all parties.

The last challenge was an intradepartmental one. This was to allocate clinic times for the interventional radiologists to see patients prior to their procedure and follow up after that.

In a community hospital setting, the challenges would be different. There is less demand for interventional service which is often shared amongst the radiologists with different skill sets. Those with interventional skills are overburdened with work compared to those without. Equitable resolution of this is essential to maintain a collegial working environment and for the continued progress of IR.

2. What were the most challenging cases you've been involved with? Does any particular one come to mind?

The most challenging cases are those in which traditional methods fail to provide adequate palliation.

One example involved an elderly man with hypopharyngeal carcinoma who developed a post-radiation stricture preventing feeding. For this, he had a percutaneous feeding gastrostomy. Two years later, the hypopharynx was completely occluded, and he was unable to swallow his own saliva; he had to spit frequently. He had learnt of stricture dilatation in the US and sought to travel but we convinced him to try it at our hospital. However, we were unable to pass any guidewire through the stricture. We then modified the technique of magnet compression anastomosis for biliary strictures to create a channel between the oral cavity and the pharynx. Over time, the compression of magnets causes ischemia and later necrosis of the intervening tissue, thus creating a new passage. The 2 magnets join together and are safely dislodged into the GI tract. He has since been able to drink and take on fluid diet, is no longer spitting saliva frequently and no longer needs a gastrostomy.

A second case involved a middle-aged active woman who developed a left ureteric UV junction stricture post-radiation for ovarian cancer. She had a left percutaneous nephrostomy for hydronephrosis and was unhappy with the urine bag. We consented for conversion of the percutaneous nephrostomy into a nephroureterostomy but, all attempts at bypassing the stricture to reach the bladder were unsuccessful. We finally placed a RF wire (power-wire) in the left ureter at the site of obstruction and created a new channel to the bladder for a successful bypass. Prior to the procedure we had assessed her CT scan of the pelvis to make sure the length of the new channel was short and there were no adjacent vascular structures.

3. You were one of the pioneers of percutaneous gastrostomy as it developed in Canada. What were the

'In the late 70s and early 80s, percutaneous endoscopic gastrostomy was beginning to replace traditional surgical gastrostomy (...). Ironically, 42 years later, safety remains the main concern. "

challenges in developing this procedure which would basically replace a common surgical procedure?

In the late 70s and early 80s, percutaneous endoscopic gastrostomy was beginning to replace traditional surgical gastrostomy which requires general anesthesia and has significant morbidities. At the time, I thought fluoroscopically-guided gastrostomy would be easy to perform since the distended stomach provides a huge target and would require much less sedation than endoscopy. The challenge at the time was to show it was safe. We published comparison results of our first 100 cases with 100 surgical cohorts. Gastroenterologists soon gave up routine gastrostomy since they realized it was much simpler, faster and less labour-intensive when done under fluoroscopy. Today, the technique has been much improved and gastrostomy is the most common interventional procedure at our Hospital, both for short-term (patients with ENT cancers) and long term (patients with strokes etc) feeding. Ironically, 42 years later, safety remains the main concern. Even though leakage of gastric contents rarely occurs, a dislodged G tube can lead to peritoneal feeding causing peritonitis. This risk can be mitigated if care-givers monitor and stop feeding when abdominal pain occurs on initiation of tube feeding.

4. Are you happy with the way IR has developed over the years in Canada? Any specific advice to the younger generation of IRs?

What I feel about what happened in the past is immaterial. Our conversation should focus on the future and the younger generation. They are facing a diversity of challenges – regulations, technologic advances such as AI and automation, training and interaction with other specialties. It is very hard to prepare for a future as it is so uncertain and unpredictable. In my opinion, we should never forget that we are physicians; it is our sacred task to act in the best interest of our patients and advocate for them at all times. This focus has helped me in my career and will continue to help all physicians, including our IRs. Patients place their life and well-being to the trust of their physicians; if this is breached, it will hurt not only the patient but also the profession as a whole.

5. Do you have any advice for CAIR as an organization, as we move into a new phase of subspecialty recognized IR practice?

I think CAIR is doing the right thing to set up a distinct subspecialty for IR. This helps to promote the profile of the specialty and discourage other specialty from crossing the line. However, it has a lot more to accomplish, including more training for radiologists so that the manpower issues can be properly addressed. There is no shortage of demand for interventional work. When there is insufficient workforce to meet the demand, it opens up opportunities for other specialties to fill it. We have lost cardiac intervention even though his was introduced by our angiography colleagues years ago. Angiography has followed similar path in some areas of US and so on. I do see education at different levels (medical students, residents and fellows, family physicians and other specialists as well as the public) to be an important function for CAIR as for other IR societies.

Dr. C.S Ho

The HeRO Device

Interview with Jackson Taggart, Product Manager, HeRO device.

1. How did the idea for the HERO device originate?

A surgical resident came up with the idea while watching a surgery in Connecticut more than 10 years ago. He then worked with several surgeons who specialized in vascular access surgery to perfect his idea. Many of physicians involved in the creation and eventual launch of the HeRO graft are still practicing today.

2. What makes this device special/unique?

The HeRO (Hemodialysis Reliable Outflow) graft is a subcutaneous AV access solution for long-term dialysis access in patients with central venous stenosis. It consists of two primary components: the Arterial Graft Component is a 50cm ePTFE hemodialysis graft with PTFE beading applied to the proximal end of the graft to provide kink resistance near the proprietary titanium connector that attaches the Arterial Graft Component to the Venous Outflow Component, which is a 40cm silicone coated nitinol tube with a radiopaque marker band residing in the mid to upper right atrium of the heart. The Venous Outflow Component is removable and replaceable. The Super HeRO Adapter and Support Seal allows a choice from different ePTFE graft options, including early cannulation grafts which when used with the HeRO graft allows for dialysis the next day, thus eliminating the need for a bridging catheter while the graft incorporates.

3. Who are the ideal patients for the HERO graft?

Two patient groups can benefit from the HeRO graft. The first type of patient would be considered "catheter dependent", meaning their central veins are so stenosed that only a permanent dialysis catheter will provide a means for adequate hemodialysis access. Tunneled dialysis catheters carry a risk of infections.

The second type of patient would have a functioning fistula or AV graft in place that is only failing due to central venous stenosis. The HeRO graft can be utilized to salvage the existing fistula or AV graft by bypassing the central venous stenosis, thus preserving the pre-established dialysis access site and preventing the need for a new access.

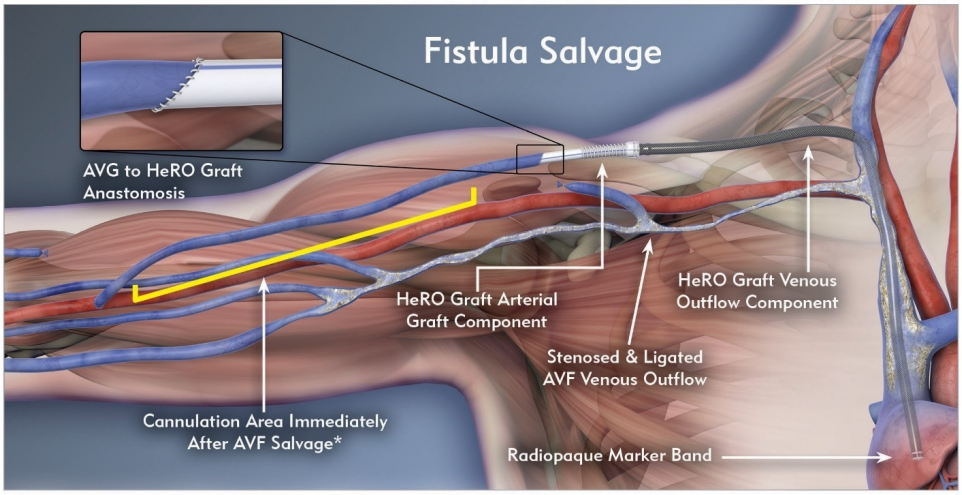
4. What are the commonest problems/complications with this device?

Just like any other ePTFE graft, the system requires occasional maintenance to maintain patency. A de-clot procedure can be performed endovascularly or through a surgical approach in the same fashion as any other vascular ePTFE graft.

Patient selection is very important when deciding who is the ideal candidate Patients with abnormally low blood pressure and/or ejection fraction could thrombose earlier.

5. Is there a steep learning curve and how could Canadian IRs learn to use the HeRO graft?

The HeRO graft system is a two-part procedure. Placing the Venous Outflow Component requires endovascular skill and involves placing a 40cm long, 6.3 mm (19 French) outside diameter silicone coated nitinol component over a stiff wire and through a 20 French sheath, ideally through the right internal



*If AVF is matured or AVG is incorporated. Follow your dialysis facility protocol for care and cannulation.

"The HeRO (Hemodialysis Reliable Outflow) graft is a subcutaneous AV access solution for long-term dialysis access in patients with central venous stenosis."

jugular vein. These patients typically have significant central venous stenosis, making it challenging to get the Venous Outflow Component down to the right atrium of the heart. The second part of the procedure requires surgical tunneling and anastomosis of the graft to an artery that is at least 3mm in size, which is routine for any surgeon that specializes in dialysis access. The manufacturer offers "Think Access" courses quarterly, which allows physicians the opportunity to learn and practice the procedure on cadavers. Proctors are available as well.

6. What were the challenges you faced during development of the HERO graft?

This biggest challenge in developing the HeRO graft is that it is truly a unique device. During the development stages, predicate medical device features could not be leaned upon as the product evolved through the development process. One major hurdle was figuring out how to effectively connect an ePTFE graft to the silicone coated nitinol component and then trust that the system would hold up long-term within the patient.

Only a small number of procedures were completed prior to FDA approval. Certain aspects of the product and procedure needed to be learned over time as this was a completely new procedure. Time has allowed the product to develop into the best version of itself and allowed physicians to gain a sound understanding of effective procedural technique as well as proper patient selection.

7. Can you tell us briefly what clinical data exists supporting the HERO device?

There have been more than 100 publications since 2008. The data looks at dialysis adequacy, infection rates, patency rates, re-intervention rates, cost savings when compared with catheters and other important factors. The HeRO Bibliography Brochure is a fantastic resource.

Jackson Taggart.

NOTE: Before using refer to Instructions for Use for indications, contraindications, warnings, precautions, and directions for use.

Upcoming Event

This year at CAIR Annual Meeting:

MRT & RN Training Session

MRT & RN Special Program

Distinguished guest speakers

Dr. Alda Tam, *MD, MBA, FRCPC, FSIR*

Dr. James Benenati, *MD*

Dr. Scott Trerotola, *MD*

Dr. Suresh Vedantham, *MD*

Special Guests:

Sarah Hoffman, *Alberta Health Minister*

Dr.Greg Powell, *MD., OC*

Roseline Carter, *Dir. Of Program, Calgary Sexual Health Centre*

Cook Medical's Beacon® Tip Catheters are back!

More information here.

Philips 2D Perfusion imaging technology provides interventionalists with an objective understanding of the impact of their critical limb ischemia treatment procedures. More information here.

Siemens Healthineers: Save the Date: October 26-28 for Innovations Symposium 2018 in Toronto. More information here.

Please join us at the Terumo booth and our lunch symposium at the 2018 CAIR meeting to learn about the recently Health Canada Approved Occlusafe Balloon Occlusion catheter and its role in Balloon TACE (B-TACE) procedures.

www.terumois.com

Lutonix® Drug Coated Balloon is now approved and available in Canada for AV Fistula indication!

More information here.