



Murmurs

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HIGHLIGHTS

- A Dynamic Learning Experience at AsiaPCR/SingLIVE 2012
- Fellowship in Interventional Cardiology
- NHCS snags 148 awards at SHQSA



NCHB is First Tissue Bank outside North America to be AATB-accredited



A NCHB staff prepares a donated valve for preservation by trimming away excess fat tissue.

Just four years after its setup, the National Cardiovascular Homograft Bank (NCHB) became the first tissue bank outside North America to be accredited by the American Association of Tissue Banks (AATB). The AATB's standards for tissue banking are recognised in both the United States and around the world as the definitive guide for tissue banking.

"The AATB accreditation is part of NCHB's continuous improvement process of promoting the highest quality of homograft. The accreditation affirms our commitment in promoting the safety, quality and availability of donated human tissue for heart patients," said Dr Lim Yeong Phang, Medical Director, NCHB and Senior Consultant, Department of Cardiothoracic Surgery, National Heart Centre Singapore (NHCS).

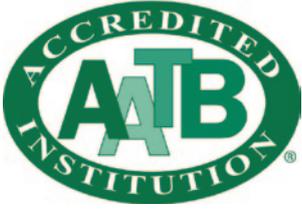
NCHB is Singapore's first national homograft tissue bank established by NHCS in 2008, with support from the Ministry of Health. Its aim is to create a safe, reliable and affordable local supply of cryopreserved human heart valves, vascular tissue and tracheal for transplants.

Staff Conferred as Certified Tissue Bank Specialists

The prestigious accreditation followed after an intensive nine-month process, including an onsite inspection by a specially trained AATB inspector. In addition, all NCHB staff have also been conferred the designation of certified tissue bank specialist - a professional mark conferred by the AATB, to those who have met the education, examination, experience and ethics requirement and are familiar with its tissue banking standards.

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"We are honoured that the National Heart Centre Singapore sought AATB accreditation, and we are equally as pleased that its National Cardiovascular Homograft Bank has

become the first AATB accredited tissue bank outside the North American continent," said Bob Rigney, AATB's Chief Executive Officer.

Homografts Safer and More Durable

Homografts are more durable and efficient, lasting up to 20 years compared to bioprosthetic valves which last about 10 years. They also do not get infected easily. Recipients do not have to take medications to prevent tissue rejection and/or blood clot formation.

These benefits are important especially for children, women of childbearing age, and for those who are very active and prone to injuries. A homograft from NCHB is also cheaper at about \$6,000 compared to overseas sources which costs about \$7,000 from UK.

To date, 39 patients have benefitted from donated tissues for transplantation.

Homograft tissues are needed for heart valve operations, for those born with abnormal or missing valves, patients whose heart valves do not function properly, and patients with narrowed, hardened or damaged trachea.

Shortage of Donors

"We currently have a shortage of donors. There are about six to eight patients on the wait list for a homograft with an average waiting time of about three months," said Dr Lim.

Homograft tissue are covered under the Medical (Therapy, Education and Research) Act (MTERA) which is an opt-in scheme. Anyone 18 years old and above can pledge to donate their organs and tissues (e.g. kidney, liver, heart, cornea, lung, bone, skin, heart valves, etc) for the purposes of transplantation, education or research after they pass away. In cases where a person had not pledged his organs under MTERA before passing away, the family members will be able to donate his organs under MTERA upon his death if they wish to do so.

Those who wish to sign up as an organ pledger can do so by completing the organ donation pledge form available on MOH website at www.moh.gov.sg and sending the completed form to the National Organ Transplant Unit.

Young Father Feels Surge in Energy Level After Homograft Transplant

At the tender age of five, Mr Lim Hwee Chong, 33, remembered vividly his mum bringing him to the hospital to check his heart. He was born with a hole-in-the-heart and had a surgery when he was eight years old.

After serving his national service, Mr Lim felt his stamina diminishing. By 2010, he felt very tired and experienced difficulty breathing and tightness in the chest after a day's work. Being a sports lover, he also had trouble exercising beyond 20 minutes.

His cardiologist, Dr Tan Ju Le, Senior Consultant, Department of Cardiology and Director, Adult Congenital Heart Diseases, National Heart Centre Singapore (NHCS) told him that he needed a homograft implant to fix his severely leaky valve. Mr Lim underwent the heart valve surgery on 30 March 2011 by Dr Lim Yeong Phang, Senior Consultant, Department of Cardiothoracic Surgery, NHCS and Medical Director, NCHB.

After the homograft implant, Mr Lim who works as a pastor, is no longer breathless and could cycle 45 minutes or longer before needing a break. He is also in a better shape to receive another gift – the birth of his daughter in late March, the couple's first child. "I'm grateful to the donor and the family members. They are the unsung heroes. Their gift helps to make a great difference in my life," said Mr Lim.



Dr Lim Yeong Phang, Medical Director, NCHB and Senior Consultant, Department of Cardiothoracic Surgery, NHCS (right) with homograft recipient, Mr Lim Hwee Chong.

A Dynamic Learning Experience at AsiaPCR/SingLIVE 2012

Over 1,800 participants from 61 countries attended the AsiaPCR/SingLIVE 2012 held from 12 to 14 January 2012. The scientific meeting was packed with more case discussions and well paced live demonstrations on core topics such as coronary, structural heart and endovascular interventions. A higher level of interactivity was weaved in through the lively exchange of practices, techniques and ideas, to allow for a better educational experience.



A packed room of participants observing a complex case in action during the live transmissions at AsiaPCR/SingLIVE 2012.

Giving Participants the Best Mileage

The course gave an in-depth coverage on percutaneous coronary interventions (PCI) in patients with complex left main disease; complex PCI in patients with difficult subsets; PCI in patients with high-risk acute coronary syndrome (ACS); PCI in patients with complex bifurcation lesion; and non-coronary transcatheter interventions – transcatheter aortic valve implantation, atrial septal defect, renal denervation. Over 82 sessions covering a broad range of topics including new therapies, endovascular interventions, intervention-oriented imaging updates (IVUS/FFR/OCT, CTA) and late breaking clinical trials, allowed participants to gain maximum mileage from the course.

A new session format was added in the form of a mini debate. This was based on short lectures on challenging topics, compiled from doctors practising in different parts of the world. Speakers from different countries reflected on recent publications and shared with the audience how it could be applied.

Live case transmissions were beamed from five centres in China, India, Indonesia and Singapore. This allowed the participants to have a first hand experience learning from experienced faculty and see complex cases, new techniques and technology in action.

This year, there were four abstracts sessions on PCI in ACS, imaging, structural heart disease and PCI-bifurcation stent implantation.

A total of 89 abstracts from 25 countries were accepted. Of these, 28 were scheduled for oral presentation. In addition, there were three moderated sessions in the posters gallery, which hosted 43 posters. Also, 133 clinical and complication cases were submitted.

The three best abstract winners were "Influence of technique and anatomy on strut apposition in provisional stenting: insights from micro-computed tomography and optical coherence tomography" (1st place), "Clinical impact of small-sized stent malapposition after stent implantation as detected by optical coherence tomography" (2nd place) and "Dual axis rotational coronary angiography - the preferred mode of coronary angiography?" (3rd place).

Collective Learning for Better Care

AsiaPCR/SingLIVE underlines the importance of communication and open exchange across different continents. Collectively, the organisations and participants present a rich depository of experience. By comparing and contrasting the various perspectives, techniques and treatment strategies for different patient populations, we create a dynamic learning experience for our participants. The practice of medicine is ever evolving. Staying at the leading edge of medicine is crucial for healthcare practitioners to be able to deliver the optimal care for the patients.

Stay tuned to AsiaPCR/SingLIVE 2013 taking place from 24 to 26 January 2013!

Fellowship in Interventional Cardiology

This issue, the Murmurs team speaks to Dr Ho Kay Woon, Consultant, Department of Cardiology at the National Heart Centre Singapore (NHCS) on his fellowship at the Toronto General Hospital, Toronto, Ontario, Canada from 2010 – 2011.



Dr Ho Kay Woon (2nd right) with his mentor Dr Eric Horlick (far right), Dr R.J. Cusimano (in blue), Dr Mark Osten (in green jacket) and other members of the multidisciplinary TAVI team.

Why Toronto General Hospital

Toronto General Hospital is one of the leading hospitals in North America for complex cardiac conditions especially in structural/congenital heart disease with its close affiliation to The Hospital for Sick Children. Its structural/congenital heart disease programme is the largest of its kind in the world with more than 5,500 actively follow-up patients. Its care standards and research have helped advance structural/congenital heart disease care around the world.

The Focused Training

My training was divided between outpatient clinics/inpatient assessments/follow-up of interventional cardiology patients, hands-on attachment to the cardiovascular laboratory for proctored training of interventional cardiology procedures and research.

The fellowship benefitted me in various ways. As the Toronto General Hospital is a tertiary centre, we see mostly complex cardiovascular cases. The Canadian regulatory system also allowed for earlier access to new technology. I received patient and dedicated teaching by the staff interventional cardiologist on percutaneous coronary interventions (PCI) and transcatheter aortic valve implantation (TAVI). There was emphasis on didactic background training supplemented by hands-on proctor performance of interventional cardiology. Over the course of my training, I performed over 300 PCI cases. I also had a six-month stint on TAVI which was held bi-weekly, alternating between transapical and transfemoral surgeries. I operated in over 30 TAVI patients and was exposed to different types of valves such as CoreValve and Edwards Sapien. For the TAVI patients, I had the opportunity to present cases for discussion for the multidisciplinary team comprising cardiothoracic surgeons, interventional cardiologist, echocardiographers, anaesthesiologist and nurses during rounds and meetings.

On the research front, I was closely involved in randomised and controlled trials as co-investigators as well as retrospective studies of interventional cardiology databases. I also presented abstracts at the American College of Cardiology's scientific meeting which were published in peer-reviewed journals.

Memorable Experience

Patients in Toronto are amongst one of the most gracious patients that I have seen. I remembered treating one patient with very symptomatic severe aortic stenosis who had frequent recurrent hospital admissions for heart failure. Due to her multiple pre-morbid status, she was turned down for conventional aortic valve surgery because of high surgical risks. She subsequently underwent a successful transcatheter aortic valve implantation procedure and had marked improvement of her symptoms which kept her out of hospital. During her follow-up, she and family members broke down in gratitude, thanking us for giving her a new lease of life; embracing and kissing each member of the team. Needless to say, this made months of evaluating and treating her all worthwhile.

Canada is a vast country with so many places to explore with each change of session. One of our favourite places to visit was the Niagara Falls which is a must for every visiting relative when they visit us. We must have seen it from the greenery in spring to the spectacular splendour in summer, palette of colours in autumn and serene white in winter.

Each weekend allowed us to experience a different aspect of Canada such as apple picking and skiing which we would otherwise not have a chance.

What's next

My attachment has allowed me to further my training in both percutaneous coronary interventions as well as in aspects of structural heart disease especially in transcatheter aortic valve implantation as well as para-valvular leak closure, areas which I hope to develop further in NHCS.

Various plans are in pipeline including review and setting up of a multidisciplinary TAVI team, improve interaction/coordination among team member through scheduled multidisciplinary clinics and case conferences; review and develop protocols for assessment and selection of TAVI patients to improve patient safety and outcomes and develop a database for future research involving TAVI patients.

A family man, Dr Ho Kay Woon devotes his energy and focus on his two young children when he's not at work. The family enjoys spending the weekends going to the beach, kite flying and swimming.



Dr Ho Kay Woon with his family enjoying the change of seasons in Toronto.



Peter Munk Cardiac Centre at Toronto General Hospital.

Contact Us



National Heart
Centre Singapore
SingHealth

GP FAST-TRACK APPOINTMENT

Tel 6436 7848

OUTPATIENT APPOINTMENT UNIT

Tel 6436 7840 Fax 6222 9258
Email central.appt@nhcs.com.sg

GENERAL ENQUIRIES

Tel 6436 7800 Fax 6227 3562
Email nhcs@nhcs.com.sg

NHCS Interventional Cardiology Procedures

- Coronary angiography / cardiac catheterisation
- Percutaneous coronary intervention (PCI) – angioplasty, stent implantation and rotablator treatment
- Percutaneous device closure of atrial septal defect (ASD) / patent foramen ovale (PFO)
- Percutaneous closure of the left atrial appendage using the Watchman device
- Percutaneous balloon valvuloplasty of mitral, aortic and pulmonary valves
- Transcatheter aortic valve implantation
- Intraaortic balloon counterpulsation
- Intravascular ultrasound imaging (IVUS)
- Pressure wire measurement
- Percutaneous cardiopulmonary bypass
- MitraClip procedure
- Renal denervation
- Peripheral vascular intervention

OUR SPECIALISTS (INTERVENTIONAL CARDIOLOGY)

A/Prof Koh Tian Hai	Medical Director and Senior Consultant
A/Prof Lim Soo Teik	Head and Senior Consultant, Director, Cardiac Catheterisation Laboratory
A/Prof Philip Wong	Senior Consultant, Director, Research and Development Unit
Dr Aaron Wong	Senior Consultant and Director, Interventional Cardiology
Dr Paul Chiam	Senior Consultant
Dr Stanley Chia	Senior Consultant
Dr Jack Tan	Consultant
Dr Rohit Khurana	Consultant
Dr Yeo Khung Keong	Consultant
Dr Chin Chee Tang	Consultant
Dr Ho Kay Woon	Consultant

For a comprehensive list of NHCS services and specialists, please visit www.nhcs.com.sg

Research Publications Jan- Mar 2012

Angela S. Koh, Shoen C. Low, Ju Le Tan. Kommerell's diverticulum with vascular ring in adulthood: Can it be left untreated? *European Journal of Radiology Extra Volume 77, Issue 3, March 2011, Pages e99–e101.*

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NHCS Snags 148 Awards at SHQSA

National Heart Centre Singapore's efforts in delivering quality service bore fruits at the Singapore Health Quality Service Award (SHQSA) ceremony on 13 January 2012. The centre bagged an impressive 148 awards with 106 Silver, 32 Gold, 8 Star, 1 Superstar and 1 Best Team Merit (Clinical Practice Improvement). The award evaluates exemplary service behaviour and recognises service champions in public healthcare.



Celebrating service excellence - SHQSA winners at the award ceremony at Kallang Theatre on 13 January 2012.

Promotions



DR STANLEY CHIA
Senior Consultant,
Department of Cardiology



DR TAN SWEE YAW
Senior Consultant,
Department of Cardiology



DR CALVIN CHIN
Associate Consultant,
Department of Cardiology

Honouring the Best

The crème de la crème from the five broad categories of staff – Clinician, Nurse, Allied Health, Ancillary and Admin were awarded the GCEO Excellence Awards at the 2nd SingHealth Excellence Awards Ceremony held on 23 March 2012 at Shangri-La Hotel.

The dinner event saw more than 200 guests coming together to honour the best in SingHealth with Dr Amy Khor, Minister of State for Health as the Guest of Honour.



Left to right: A proud moment for GCEO Excellence Awards winners, A/Prof Lim Soo Teik, Ms Tay Ai Liu and Mr Chia Li Sen with Prof Ivy Ng, GCEO, SingHealth (2nd from right) at the 2nd SingHealth Excellence Awards Ceremony held on 23 March 2012 at Shangri-La Hotel.

OUTSTANDING CLINICIAN AWARD

A/Prof Lim Soo Teik
Head and Senior Consultant,
Department of Cardiology

OUTSTANDING NURSE AWARD

Ms Tay Ai Liu, Amy
Nurse Clinician, Ward 44

OUTSTANDING ALLIED HEALTH PROFESSIONAL

Ms Tan Hwee Thiang
Chief Radiographer, Nuclear Cardiology

OUTSTANDING ANCILLARY STAFF

Mr Chia Li Sen
Patient Care Assistant, Ward 56

OUTSTANDING ADMINISTRATIVE STAFF

Ms Amber Yeong
Director, Operations (Management Information and Performance)

Asia's First Perfusion Simulation Workshop

Perfusionists in Singapore were given the opportunity to learn the necessary skills and techniques to manage case scenarios like poor/loss of venous return, aortic dissection and power failure at the first basic-intermediate perfusion simulation workshop conducted by National Heart Centre Singapore on 7 April 2012. The first in Asia, the workshop was conceptualised following the trend in United States, Australia and New Zealand which saw the integration of simulation training to their perfusion education programme. Simulation training plays a vital role in advancing the skills and knowledge of the perfusionists. The workshop also allowed them to gain a deeper appreciation of the importance of communication with other surgical team members, especially during catastrophic events.



Participants working on one of the simulated scenarios at the first basic-intermediate perfusion simulation workshop conducted by NHCS perfusion unit on 7 April 2012.

Nursing Director Receives Prestigious Award from Curtin University

A/Prof Lim Swee Hia, Director, Nursing at National Heart Centre Singapore became the first nursing professional from Singapore to be conferred the award of Honorary Doctor of Science by Curtin University on 10 February 2012. This recognition is in honour of her outstanding achievements and contributions to the field of nursing in SingHealth, Curtin University and the community in Singapore and internationally.



A/Prof Koh Tian Hai, Medical Director, NHCS (3rd from left) with NHCS staff congratulating A/Prof Lim Swee Hia, Director of Nursing (4th from left) who was conferred the award of Honorary Doctor of Science by Curtin University on 10 February 2012.

NHCS Staff Shares CNY Joy with Elderly

Some 45 NHCS staff brought joy to over 200 residents of the Apex Harmony Lodge on 4 February 2012. To create the lunar new year atmosphere, the staff made over 300 mini lanterns and packed red little goodie bags with mandarin oranges. They even brought in a lion dance troupe and dressed up as the God of Fortune, a fave hit with the elderly. Over a sumptuous buffet spread, the staff entertained the residents with songs, dance and games. They also made a donation of over \$4,000 to help with the purchase of necessities like milk powder and health supplements.



A NHCS staff dressed as the God of Fortune, spreading wealth and prosperity to Apex Harmony Lodge residents on 4 February 2012.

For feedback on Murmurs, please direct to

THE EDITOR, MURMURS C/O CORPORATE DEVELOPMENT

National Heart Centre Singapore
168 Jalan Bukit Merah, Connection One (Tower 3) #07-08
Singapore 150168

Tel 6436 7800 Fax 6227 3562

Email nhcs@nhcs.com.sg Website www.nhcs.com.sg

Reg No. 199801148C

EDITORIAL BOARD

Advisor

A/Prof Koh Tian Hai

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