

THE PULSE



THE HEART INSTITUTE
NATIONAL HEALTHCARE GROUP

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Course in Interventional Cardiology*
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The Next



Technology seminar and workshop

Dr Michael Caleb, Organising Chairman.

Senior Consultant, Director of Mechanical Heart Support, THI @ NUH

Our department organised this seminar in conjunction with the International College of Surgeons meeting held here in Singapore on 31st March 2006.

Cardiac, thoracic and vascular surgery have undergone many changes in practice standards due to advances in technology and devices. As a leading cardiothoracic and vascular institution in Singapore, we chose to highlight some of these advances that have already been adopted by our department or are being assessed closely as they appear on our technology radar, what we call horizon technologies.

Topics covered included the latest axial flow and centrifugal heart pumps for adult and pediatric patients, percutaneous heart valves under development, new mini heart-lung machines and their advantages, robotic heart surgery and its promises, tracheal stents for malignant airway management, endovascular surgery advances, new pharmacotherapy for heart failure and umbilical cord stem cells in wound management.

A total of 122 participants and 44 vendors from 15 companies spent the day on the Sentosa Riverboat taking in the beautiful view of the promenade and enjoying delicious Texas-Mexican food whilst getting an update on the next technology. Participants from Indonesia, Cambodia and Malaysia enjoyed our unique Singaporean hospitality. Vendors and sponsors were happy that we were able to promote an atmosphere where participants could mingle closely next to the exhibits. The final programme for the day was the riverboat rooftop endovascular workshop where three groups of participants had the opportunity to play with devices from the three major companies.

In all, it was a day well spent away from work and the good weather made the event on the boat a truly memorable one. We wish to thank all our sponsors who contributed to this educational event. Next year we will be organising another exciting event which we will unveil in the coming months.



the heart and I

In the 21st century, medical science is advancing at a tremendous pace like never before. New advancements in medical technology are outpacing one's ability to keep up to date. This poses a major challenge to a day-to-day medical practitioner, let alone the general public. Good novel treatments and medical innovations serve no purpose if they do not reach their target population, our patients. As part of The Heart Institute (THI) effort to educate and update our public on the latest progress in the field of cardiology, we organised the "Heart and I" public symposium on the 15th April 2006 at the main auditorium at the Suntec Convention Centre.

GO RED FOR WOMEN

This year's symposium was conducted in a bilingual format targeting both the English and Mandarin speaking population. Instead of focusing on the traditional ischaemic heart disease related topics, we decided to make this year's symposium a different experience for the public. We targeted current "hot" cardiology topics namely:

1. women and heart disease,
2. new cardiac diagnostic imaging techniques,
3. obesity and the metabolic syndrome and
4. sudden cardiac death.

As part of the "Go Red for Women" worldwide campaign, we collaborated with the Singapore Heart Foundation to promote awareness of heart diseases in women. This meeting also allowed us to showcase some of the latest imaging techniques available at The Heart Institute's hospitals.



TRUE THI EVENT

In an effort to make this a true THI event, we invited speakers from all three THI restructured hospitals (Alexandra Hospital, National University Hospital and Tan Tock Seng Hospital) as well as Dr Chee Tek Siong, representing the Singapore Heart Foundation. The symposium began with a humour-filled welcome address by the ever-charismatic Dr James Yip, our emcee. This was followed by an innovative dance exercise performance, Bhangrarobics, led by the very talented Mrs Rashid. The performance was obviously well received by the audience judging from the thunderous applause. The English forum formally started with the first talk delivered by Dr Jimmy Lim, consultant cardiologist from Tan Tock Seng Hospital on "Women and Heart Diseases: A tale of Mars and Venus". All the talks went smoothly with the focus on being informative with an easily understood take home message. We witnessed very encouraging responses from the audience during the questions and answers session. The crowd was obviously delighted to be able to learn about their heart and health in a language that they could understand.



— a THI effort to educate the public

Dr Soon Chao Yang, THI @AH



We were also fortunate to have the participation of our esteemed organising partners, which included strong support from the Singapore Heart Foundation, as well as sponsorship from the following industry members, Sanofi Bristol-Myers Squibb, MSD Schering-Plough, Pfizer, Boston Scientific, Medtronic International and OrbusNeich. Other participating sponsors include Omron International and Nestle Singapore. To facilitate the public understanding of how some of the commonly done cardiac investigations are conducted, we were privileged to have Siemens Medical showcasing live demonstrations of echocardiography and GE Healthcare demonstrating a treadmill exercise stress examination. As it were, these two new programmes turned out to be a major crowd puller.

VERY POPULAR HEALTH-SCREENING

Apart from the public forum that took place in the main auditorium, there was no lack of activities around the venue with a host of sponsor's booths and the ever popular health-screening station. The health-screening programme included blood pressure checks, cholesterol level measurements and blood sugar screening. As expected, this has turned

out to be hugely popular with a long queue snaking all the way to the escalator area and the floor below! Other popular booths include the health food stalls, Omron's equipment demonstration, and not to forget the free goody bags which contain a hosts of healthy cooking oils, brochures, drinks, health food and so on.

I would like to thank my organising committee for their marvelous effort in ensuring the successful organisation of yet another landmark event in the history of THI. Once again, this successful event demonstrates the strength and enthusiasm of a group of very capable young people with the common aim of "Adding Years of Healthy Life to the People of Singapore".



live transmission to the 11th Annual Angioplasty Summit 2006 – TCT Asia Pacific

Dr Mark Chan, THI @ NUH



We were most honoured to have five cardiologists from THI listed as members of this stellar cast of interventionists.

The Heart Institute (THI) has been heavily involved in several interventional cardiology meetings in the last 24 months, including the organisation of the Singapore Interventional Cardiovascular Therapeutics Conference in 2004 and the Asian Interventional Cardiovascular Therapeutics Course in 2005. The latest in this slew of events was the 2006 Transcatheter Therapeutics Asia Pacific course organised by world-renowned interventional cardiologists Dr Park Seung-Jung from the Asan Medical Centre in Seoul, Korea and Dr Gary Mintz from the Columbia University Medical Center in New York, USA. This was a 3-day interventional meeting held on the 26–28th of April 2006 at the Sheraton Walkerhill Hotel in Seoul, Korea. The Heart Institute @ National University Hospital (NUH) received an invitation late last year to participate as a transmitting centre for 'live' case demonstrations of complex coronary interventions. Only seven centres around the world received invitations to provide 'live' case transmissions via satellite for this event, and the operators included top interventionists such as Dr Gregg Stone (Columbia University Medical Center, New York, USA) and Dr Marie-Claude Morice (Institut Hospitalier Jacques Cartier, Massy, France). We were most honoured to have five cardiologists from THI listed as members of this stellar cast of interventionists, our very own Associate Professor Lim Yean Teng, Dr Tan Huay Cheem, Dr Ronald Lee and Dr Adrian Low from the National University Hospital, and Dr Jimmy Lim from Tan Tock Seng Hospital. Overall, this is a highly educational and enjoyable event for all. I eagerly look forward to our next live transmission to the July Tokyo Percutaneous Coronary Intervention Conference (TOPIC) and 2nd Asian Interventional Cardiovascular Therapeutics (AICT) to be held in New Delhi, India, in October.



Siemens-NUH simulator course in interventional cardiology

Dr Mark Chan, THI @ NUH



This was held on the 3rd & 4th of June this year and was attended by 15 delegates from around the Asia-Pacific region. The course featured realistic computer-simulated training where virtual patients were linked to actual interventional devices used in the cardiac catheterisation laboratory. Just as no pilot would be allowed to fly a real aeroplane before successfully mastering the flight simulator, this course allowed trainee interventional cardiologists to practise exclusively on the simulators in order for them to gain an additional margin of experience and safety before entering the actual catheterisation laboratory. The 2-day event was extremely well-received by instructors and delegates alike and we look forward to many more similar sessions.

SINGAPORE CARDIAC SOCIETY

Annual Scientific Meeting 2006

— Young Investigator's Award (YIA)

Dr Raymond Wong, THI @ NUH



A basketful of rosy delights, and a whole lot of sweet chocolate to go along – that's how I felt after the prize presentation of the Young Investigator's Award at this year's Singapore Cardiac Society Meeting.

The story began when I received an email from Ru San that my study was selected for the YIA. I had great excitement to share my data with the judges and the audience, but on deeper contemplation I was reminded repeatedly that I had on my shoulder the burden of responsibility to compete for the first prize. I greatly disliked the idea, but with a string of successes from my predecessors in previous years I knew that failure was not an option.

The YIA presentation has always been a well-attended session, both for the research-minded and those looking for a spot of entertainment. The presence of many familiar faces in the audience consisting of the brightest and best in the local cardiovascular community all but heightened the heated competition right from the moment the first presenter in Basic Science fired off.

Basic Science, as the name suggested, went so basic and molecular that my mind quickly wandered off the moment the first sentence was uttered by the presenter. Frankly, I spent more time scanning for Clinical Science abstract presenters than looking at the pictures of myofibrils and cells. My attention soon moved to the judges, to the complexity of questions asked, to the colour of the jackets and to the half-filled cups of water they sipped. Then my mind ran wild with questions on my research that I scantily had any idea how to answer.

I enjoyed Ru San's slides and Edgar's fluency. Chee Tang proved to be the next person to watch in Imaging. As for my presentation, I timed myself poorly, my speech was somewhat hesitant, but Associate Professor Ling's colourful cartoon slides saved the day. When I received the YIA award from Dr Terence Chua, and the camera flashed and clicked, I knew I made a lot of people proud.

What did I gain from the experience? Well, ...a basketful of rosy delights, and a whole lot of sweet chocolate to go along! Certainly something to savour for a long time.

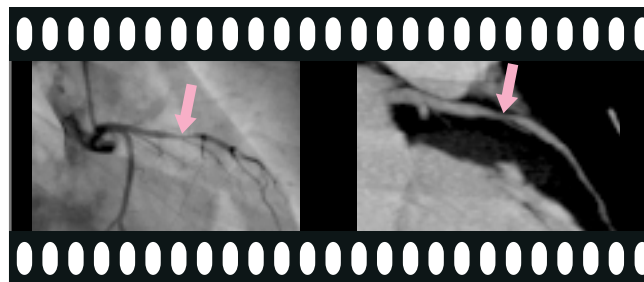
64-slice computed tomography (CT) coronary angiography service at

Associate Professor Lim Yean Teng, Dr Mark Chan
& Dr Eric Hong, THI @ NUH

It is with great pride that we announced the introduction of the Non-invasive Coronary Angiography service on the 1st of April this year. This is a collaborative project between Department of Diagnostic Imaging and the Cardiac Department with Associate Professor Lim Yean Teng manning the helm as director of the service. It took a while for CT angiography to be rolled-out in NUH as we wanted to ensure comprehensive staff training and proper equipment setup so that we would have a fully functional service from the word go.

NEW TECHNOLOGY

CT imaging of the heart started coming into mainstream imaging in the 1990s where the focus was primarily on coronary calcium scoring. At that point in time, the technology was not mature enough to acquire accurate images of the coronary arteries due to the limited imaging capabilities of the earlier 4 and 16-slice CT scanners. This limitation has been largely overcome with the advent of the newest 64-slice imaging machines that allow clear images of the coronary tree to be obtained despite the rapid motion of the heart during each cardiac cycle. Proponents of



this technology tout it as being a replacement for conventional coronary angiography, which until now, has been the only method available for obtaining precise delineation of coronary artery anatomy. This fact that CT angiography is non-invasive makes it a very attractive alternative to conventional angiography, which is in essence an invasive procedure with small but significant risks involved.

CT ANGIOGRAPHY GUIDELINES

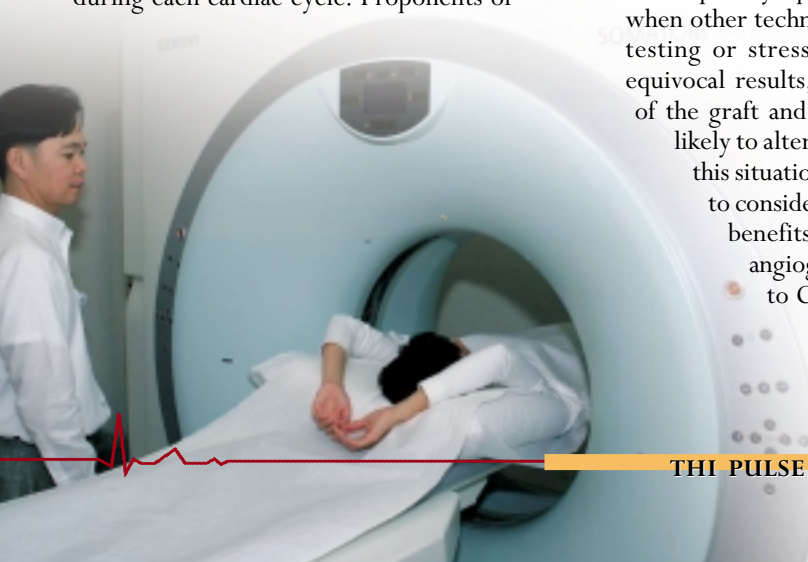
The recently launched CT angiography guidelines by the Ministry of Health recommended the following for consideration for CT angiography:

1. Assessment of graft and stent patency in patients with previous coronary artery bypass grafting or stenting and have subsequently developed symptoms especially when other techniques (e.g. stress testing or stress imaging) yield equivocal results, and knowledge of the graft and stent patency is likely to alter management. In this situation, it is important to consider the risks versus benefits of conventional angiography compared to CT angiography.

2. Diagnosis of coronary artery disease when other modalities (e.g. stress testing or stress imaging) provide equivocal results.
3. Diagnosis of coronary artery disease when other modalities (e.g. stress testing or stress imaging) yield negative results but the patient has persistent symptoms or other clinical findings that result in a continued suspicion of coronary artery disease. Before ordering the test, the physician should consider whether the results are likely to alter clinical management.
4. Patients with unusual symptoms for coronary artery disease (e.g. chest pain unrelated to physical exertion), but low to intermediate risk profiles for coronary artery disease.
5. Patients with a low risk profiles for coronary artery disease but have positive stress-test results.
6. Patient in whom there is a suspicion of congenital anomalies of the coronary arteries.

LIMITATION OF CT ANGIOGRAPHY

However, as with all new technologies, CT angiography is not for everyone. CT angiography is of limited value, of no use,



new state-of-the-art biplane flat panel imaging system

Dr Adrian Low, THI @ NUH

in the following clinical scenarios where technical factors may render the images non-interpretable:

- Patients with very high heart rates where the use of beta blockers is contraindicated. The heart rate can be lowered with other medications e.g. calcium channel blockers administered by a clinician with the use of adequate monitoring.
- Patients with severe coronary artery calcification where blooming artifacts interfere with accurate lumen assessment.
- Patients with arrhythmias, in particular ventricular ectopic beats, resulting in image discontinuity.
- Patients who are unable to hold their breath for the time needed to acquire the images.
- Situations where the patient cannot fit through the gantry or lie comfortably on the examination couch.

As such we would advice consultation with a cardiologist with relevant background training in CT angiography before subjecting yourself to such a test.

Overall, we are very pleased to be able to offer this exciting new service to our patients. Used appropriately, this is a imaging modality with great potential for both clinical and research applications.

For those interested in our CT angio services, please feel free to contact Ms Yeo Hong Lan at 9299 1997. If you would like to make an appointment with one of our cardiologists, please contact our appointment line at 6772 2222.



Our cardiac catheterisation laboratory recently acquired a new state-of-the-art biplane flat panel imaging system for use in diagnostic and interventional cardiovascular procedures.

Using two 25 cm diagonal digital flat panel detectors made of amorphous silicon that converts X-ray information into digital images, the system delivers excellent contrast resolution and allows clinicians to visualise the finest vascular structures in detail even in dense areas such as the diaphragm or spine. The images are also virtually free of artifacts or distortions seen in conventional X-ray technology.

The advantage of a biplane system is that twice the number of images can be obtained using the same quantity of contrast and without increase in procedure time. This is particularly important in patients with kidney dysfunction or heart failure where an increase in contrast volume might worsen the clinical situation.

Our new imaging system also incorporates features that minimise radiation exposure to both the patient and operator. These include a specially developed copper prefiltration system that automatically adjusts the filter to patient anatomy during the examination. Hence, optimal contrast is obtained with minimal skin dose. Additionally, the ability to adjust the collimators and filters without active fluoroscopy further minimises the radiation exposure.

With the availability of an additional monitor for auxillary input, this enables the hookup of additional systems providing incremental information to guide therapy. This additional information include intravascular ultrasound, as well as images from our 64-slice CT-angiogram scanner. This integration of patient information will facilitate patient care.

THI @ Alexandra Hospital — a growing story

Dr Soon Chao Yang & Dr Ong Hean Yee,
THI @ AH

As one of the oldest and finest hospital in the history of Singapore, Alexandra Hospital (AH) has walked through World War II and evolved into a major restructured public hospital under the National Healthcare Group today. However, cardiology services at Alexandra Hospital have been relatively underdeveloped over the years compared to other general medical specialities such as endocrinology.

Traditionally, cardiac services have been cross-provided by the National University Hospital (NUH) cardiac department together with visiting cardiologists from the private sector. With the arrival of Dr Deb Binayak, an Indian cardiologist trained at United Kingdom, the era of independent cardiology practice at Alexandra Hospital finally came about in 2002. Apart from inpatient cardiology ward work, AH provides treadmill stress examination and echocardiography services. With the departure of Dr Binayak in 2005, Dr Ong Hean Yee and me have since joined Alexandra Hospital after completing our cardiology training at NUH. With our continued efforts, we aim to expand the cardiac services in this 360-bed public hospital. Holter monitoring finally was added to the service menu in May 2006 and we aim to provide an ambulatory blood pressure service in the near future. Together with the capable Ms Janice Wong, Vinotha and Mae, our cardiac workforce has strengthened and consolidated. We aim to extend our service to serve the Jurong population soon and provide them with a one-stop comprehensive cardiology workup clinic through our satellite clinic network.

With the prospect of moving to the new Alexandra Hospital @ Yishun, which serves a growing population in Northern Singapore, patient load and service demands are poised to increase significantly. Newly planned services at Alexandra Hospital @ Yishun include emergency interventional cardiology, coronary care unit and a cardiology ward. We are both excited and keen to face the challenges lying ahead. Cardiology services at Alexandra Hospital are set to blossom over the next few years ...



With the prospect of moving to the new Alexandra Hospital @ Yishun, which serves a growing population in Northern Singapore, patient load and service demands are poised to increase significantly.



A heart for children

Ms Margaret Choong,
Cardiac Dept @ NUH

The cardiac department has been actively involved with charity activities for the children of the Melrose home. Since 2004 until now, we have organised a few outings as well as visits to the home during the Chinese New Year. As the residential arm of the Children's Aid Society, the Melrose Home generally caters to the needs of children between the ages of 4 and 12 years old, which require care or protection from dysfunctional families or abusive parents.

Volunteering for the home has certainly opened my understanding and widened my perspective on life. The road forward for them will not be as smooth sailing as the average Singaporean child. Even though life is tough for these kids, yet they are resilient and still full of aspirations, with ambitions to be genetic scientist, doctors and policemen. That's a lesson we all can learn from them. There is always hope for a better future.



The visits and outings organised by the department representatives has brought enriching experiences both for the children as well as our staff. The children and staff of the Melrose are thankful for the love and warmth our staff shares during the limited contact time with them. To express their gratitude, the home has even awarded a certificate of appreciation to the department. More activities are in the pipeline and I look forward to seeing more staff participation.

visit by Dr Renu Virmani

Dr Lee Yian Peng, THI @ NUH

The Cardiac Department was greatly privileged to have Dr Renu Virmani give a lecture on "Late Stent Thrombosis" on 28th February 2006.

Dr Virmani is the Medical Director of CVPPath, International Registry of Pathology. She graduated from the Lady Hardinge Medical College, Delhi University in New Delhi in 1973 followed by residency and fellowship in the prestigious George Washington University and the National Heart, Lung, and Blood Institute, NIH, respectively.

She was instrumental in evaluating tissue responses to radioactive stents and widely attributing for exposing the hazards associated with vascular brachytherapy. At the lecture she chuckled that from her research, she had whittled out a role as a "thorn in the side of interventionists". She is currently focusing her research on cellular responses to experimental and drug eluting stents.

Dr Virmani spoke on the pathophysiology of drug eluting stents and how they limit coronary neointimal hyperplasia. Her greatest qualm with drug eluting stents is the persistence of



fibrin, inflammation and necrosis in the vessel wall after six months. As a consequence of this, there may not be a permanent, long lasting prevention of restenosis. She also believes that the lack of endothelialisation would lead to late stent thrombosis and that this was dependent on the type and dose of drugs used in the stent.

The lecture culminated in a barrage of questions from the enthusiastic audience, ranging from the duration of dual antiplatelet agents required post stenting to the various aspects of drug eluting stents. An intense discussion ensued which ended on a light hearted note with one of the cardiologists commenting that her son had followed her in the family tradition of being a physician and is currently training to be an interventionist. She laughed and quipped, "The irony of it all is not lost on me but he agrees totally with me!"

my overseas training experience in Boston Massachusetts



Dr Poh Kian Keong, THI @ NUH

In May 2004, I made my maiden trip to Boston, Massachusetts for my HMDP posting. The trip was unforgettable. To begin with, I was on board one of the first non-stop flights to the United States from Singapore. At that time, Singapore Airlines started flying the Leadership to Los Angeles, and only later, extend non-stop flights to Newark, New Jersey. She was indeed comfortable, with sufficient leg space, new seats and more than enough movies-on-demand to watch in the 16-hour journey. However, no one would have expected the flight to be escorted by US F16 planes in the air and stormed by armed police on landing in LA international airport.

The first part of my HMDP was at the St Elizabeth's Medical Center, Boston, USA. Ms Diane Giacalone, Manager of the Post-graduate programme was particularly supportive and helpful. During my stay at St Elizabeth's Medical Center, she invited me for gatherings during Thanksgiving and Christmas. The warmth felt at her family of Italian-Americans was much appreciated for someone like myself, half-way round the world during cold winter in the States. In fact, that year, Boston experienced one of its most severe winters, with several blizzards and large accumulation of snow.

CARDIOVASCULAR RESEARCH

Workwise, my early days were engaged in basic bench research. The cardiovascular research division of St Elizabeth's Medical Center has been made famous by the late Professor Jeffrey Isner who is fondly remembered as the father of gene therapy in cardiology. It is here that he carried out his pioneering work of applying human plasmid pVEGF165 to the hydrogel polymer coating of an angioplasty balloon and subsequently transferred this plasmid DNA to the distal popliteal artery of a patient with limb ischaemia. Under his direction, investigators here isolated putative progenitor endothelial cells (EPCs) for angiogenesis and in the Valentine Day issue of Science in 1997, their elegant work was published. This led to much research on the EPCs, including the pre-clinical as well as clinical utility of these cells. I was

fortunate to be driving the translational part of this research with Professor Doug Losordo, chief of the cardiovascular research division. Here, in patients with refractory angina who ran out of options for conventional therapeutics, we offered stem cell therapies in the form of percutaneous intramyocardial injections of autologous EPCs mobilised from the bone-marrow. I was privileged to be able to recruit several of these patients and follow up on their progress. Some originally had incapacitating Class IV angina, but were subsequently relieved of their symptoms and

were able to return to work. This was particularly satisfying since as a physician, we are always on a lookout for safe and effective therapies for the sickest patients who have tried or were unable to have the usual treatments (for various reasons) and remained symptomatic.

AMERICAN HEART ASSOCIATION

At the same time, I was directly involved in a pivotal clinical trial of gene therapy on patients with chronic ischemic heart disease using the Boston

Scientific Stiletto catheter and in 2005, I was fortunate to have abstracts accepted for presentations at the annual meetings of the American Society of Echocardiography, the Transcatheter Cardiovascular Therapeutics, the American College of Chest Physicians and the American Heart Association. It was a privilege to get two of my first-authored submissions picked for oral presentations at the American Heart Association meeting in Dallas, probably the most prestigious meetings amongst the cardiology scientific community. One was on basic science research and provided insights into the mechanism of hypertension. The other was on clinical application of stem cell therapy in ischemic heart disease.

I went back to Singapore in October 2005 to change my visa status. It was great to meet up with family, close friends and supportive senior staff in the department, albeit only briefly. When I returned to Boston once more, winter temperatures were now less chilling. Sitting at my apartment window where I get a superb view of the blond sun, blue sea and historic downtown Boston, I look forward to yet another good, if not better year.



my experience as an international fellow at The Heart Institute, NUH

*Dr Hazel P. Penafiel, MD Honorary Fellow
in Echocardiography, THI @ NUH*

Sometimes we forget how we got to where we are and the choices we made to get there. I can confidently state that my career path was placed in the right direction when I met Dr Tan Huay Cheem who visited our hospital some two years back. Summoning enough courage to approach him, I asked if I could apply for a fellowship in echocardiography at NUH. He gave me his calling card and the rest is history.

STRONG CLINICAL AND RESEARCH TRADITION

Today as I ponder about the year that was, I cannot help but feel blessed for having had the opportunity to work with such wonderful people here in Singapore. I have to admit that I was initially half-hearted when I left for Singapore, mainly because I was leaving my little baby behind. The first few months were difficult as I tried to battle homesickness and adjust to my new workplace. Without the guidance of everybody, I probably would not have lasted this long. I came here with the expectation of being able to hone my skills in the performance and interpretation of echocardiography and its various techniques. Instead I got so much more! I was exposed to an extensive variety of cases and was meticulously coached on the interpretation of echocardiograms. I was also instructed on research methodology and was amazed at the wealth of data that could be used for this purpose, given the readily accessible images from the Xclera digital archive and the efficiency of the 4D database. My knowledge of general Cardiology has likewise been nurtured by the weekly talks that deal with complicated cases, updates and controversies in the different subspecialties of Cardiology. Indeed, The Heart Institute can boast of having state-of-the-art diagnostic and therapeutic facilities complemented by competent medical staff with a strong clinical and research tradition.



THANK YOU TO ALL

I have truly enjoyed working here and appreciate the support provided to me during my tenure with the department. Everyone has been so helpful and hospitable, from the consultants, registrars and all the staff of THI especially the people in the Cardiac Centre. Thank you for the opportunities for professional and personal development that you have given me. Thank you for making me feel like family. You are such good people – with good hearts, good minds and good souls.

To my mentors, especially Dr Yeo Tiong Cheng, Associate Professor Ling Lieng Hsi, Dr Chai Ping and Dr James Yip – thank you for sharing your knowledge and wisdom. You have taught by example and guided me with patience. Your time, effort and devotion to mentoring me have made such a difference in my life.

I will always cherish the pleasant memories I have of NUH and its beautiful people. May God bless all of you and always keep you safe. I look forward to the day when our paths will cross again.



happenings



VISIT TO CHILDREN'S AID SOCIETY MELROSE
26 JANUARY 2006



**GP SYMPOSIUM:
CURRENT
MANAGEMENT OF
VENOUS DISEASE**
11 FEBRUARY 2006



CCU PARTY 17 FEBRUARY 2006



**HEART WALK 2006,
BISHAN PARK II**
11 MARCH 2006



**THE NEXT TECHNOLOGY, CTVS
SEMINAR & WORKSHOP @
RIVERBOAT, SENTOSA** 31 MARCH 2006



HEART & I PUBLIC SYMPOSIUM
15 APRIL 2006



**LIVE TRANSMISSION TO THE
11TH ANNUAL ANGIOPLASTY
SUMMIT 2006 – TCT
ASIA PACIFIC** 27 APRIL 2006

abstracts



AWARDS

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the heart fund
Dr Eric Hong, THI @ NUH

The Heart Fund was jointly set up by National University Hospital's (NUH) Endowment Fund and The Heart Institute (NUH) in 2005. It caters to needy patients and supports both continuous medical research and education programmes in the field of cardiology so as to improve patient care. The Heart Fund brings a ray of hope to needy patients when other avenues of financial support are not available or insufficient. Heart diseases require procedures and long term medical treatment. These treatments are indeed a heavy burden for needy patients, who without financial assistance would lose hope. The Heart Fund supports needy patients suffering from heart diseases and caters to patients from all age groups.

The Heart Fund also supports doctors and nurses embarking on research programmes that enhance: the understanding of heart diseases; medical treatment for patient with heart diseases; and disease prevention. Our support of medical research today is our commitment to a better quality of life for our loved ones for the generations to come.

Continuous medical education is essential to the healthcare professionals, and knowledge is pivotal to better patient care. The Heart Fund supports the constant upgrading of skills and acquisition of knowledge by healthcare professionals that will translate into better patient care.

To make a donation, please contact Ms Eunice Toh at Eunice_Toh@nhg.com.sg or tel 6357 2490.

congrats!

Dr Yong Quek Wei has been promoted from
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