

THE PULSE



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NATIONAL HEALTHCARE GROUP

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*Professor Klima and
Assistant Professor Kofidis*

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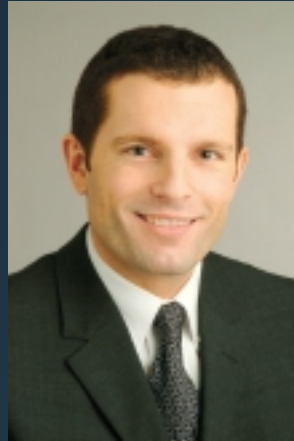


AT THE HEART OF THE MATTER IN BRIGHAM AND WOMEN'S HOSPITAL



EXCELLENT SERVICE AWARD

Singapore provides



Singapore is already an internationally acclaimed hub in Asia for Biotechnology, Shipping and Banking. It is now on its way to become a hub for healthcare services as well.

In December 2006, a 57 year old female US lawyer flew into Singapore to get her heart valve (mitral valve) repaired at the National University Hospital. On one hand she was repelled by the extensive costs for heart surgery in the US, on the other it was

Introduction of

As Singapore is developing into a centre for patient care and academic advancement, Asst/Prof Theodoros Kofidis decides to leave Europe and join the NUS. Theo has graduated from the Ludwig-Maximilians University of Munich, Germany in 1996. He completed his Internship at the Strong Memorial Hospital Rochester (NY, USA) and Texas Heart Institute (Houston, TX, USA). He then proceeded to train in the Department of Surgery and Division of Cardiothoracic and Vascular Surgery of the Hannover Medical School, Hannover, Germany from 1997–2002 and 2004–2005 and was certified by the German Medical Council as a Cardiac Surgeon in 2005. His training included minimal invasive procedures, OPCABs, assist devices, heart and lung transplantation, aortic surgery and clinical research. From 2002–2004 he was a postdoctoral fellow in the Dept. of CT-Surgery, Stanford University. He worked as a consultant cardiac surgeon in Hannover since 2005 before joining NUS/NUH. He was a faculty of the Hannover Medical School in September 2006. His major areas of interest are cardiac surgery, minimal invasive cardiac surgery and heart failure surgery (transplantation and assist devices).

FEEDBACK

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Top of the Class Heart Surgery!

difficult for her to find a surgeon who was willing to perform surgery on her. Being allergic to most analgesic drugs as well as blood thinners, the surgery was considered risky. Repair instead of the replacement of the valve was of the better option. Being aware of Singapore's medical expertise and facilities, she decided to come to Asia for surgery.

Not too long ago, it was a common practice worldwide to replace failing heart valves with mechanical or biological valve prosthesis. Valve prostheses require either lifelong intake of blood thinning drugs or a second surgery after 10 to 15 years. In the 80s and 90s more evidence suggest that the repair is superior to the replacement in terms of short and long term survival. However, this requires experienced and skilful surgeons to be successful. Professor Uwe Klima, a heart surgeon from the National University

Hospital in Singapore accepted this American as a patient, performed valve repair so that she could fly back home only five days after surgery.

Prof Klima was trained in Europe and the US. He is internationally recognised as an expert in state-of-the-art valve repair procedures, minimally invasive bypass surgery, thoracic organ transplantation, as well as repair of aortic arch and thoracic and thoracoabdominal aorta.

The successful treatment of the American patient was also publicized in the Singapore press. She was interviewed by The StraitsTimes before she left and she emphasized, that she was glad that she had the surgery done in Singapore and apart from the clinical excellence and affordable costs, she found dedicated doctors who would "listen" to her.

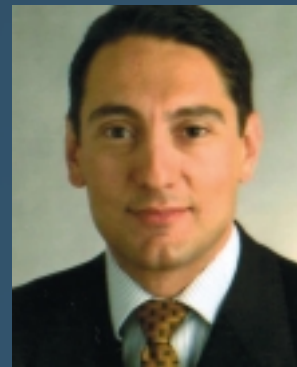
Dr Theodoros Kofidis

He has early experience in the field of tissue engineering and stem cell technology for the heart. He has authored more than 60 papers in peer reviewed international journals, book chapters, and introduced a series of patents. He is a reviewer of various medical and surgical journals including Circulation, JTCVS, JHLT and abstracts of annual conferences such as the AHA and Intl. Soc. for Heart and Lung Transplantation. He is Editor of the Bioscience Journal "Bio", and was invited lecturer at Media Briefings of the American Medical Association, the Bill Gates Research Institute and the Dept. of Medical Engineering at Stanford. He was awarded various prizes and funding awards, such as the Rockefeller Bioscience Award, the Bavarian State Scholarship, the Award of the European Thoracic Organ Transplantation Group, as well as international surgical research awards.

"An academic career brings about changes, sacrifices, sometimes losses. Some seek a high-tech environment, some seek vibrant culture, some seek gastronomic delicatesses, other seek financial incentives, or sunny beaches, while others are in the look for world-class science. Well, Singapore offers the entire package,

and lives up to the quintessence of the tune: "If I can make it there... I'll make it anywhere..."

In his short few months in Singapore and at NUH/NUS, Asst/Prof Kofidis has operated an array of cardiac cases, serving the NUH and other hospitals. He has represented NUH internationally. Further, together with Prof Uwe Klima, he has organized journal clubs, research meetings, rounds for medical writing, cultivated relations to industry and other scientific organizations, and promotes the establishment of a CTVSurgery scientific laboratory to study myocardial restoration. His immediate visions are to support the NUH and Dept. of CTVS Surgery with his cardiac surgery skills and enhance and support the Department's scientific output, back-to-back with his mentor and friend, Prof Klima.



The Benefits of Minimally Invasive Thoracic Surgery

A/Prof John Tam, Department of Cardiac, Thoracic & Vascular Surgery @ NUH

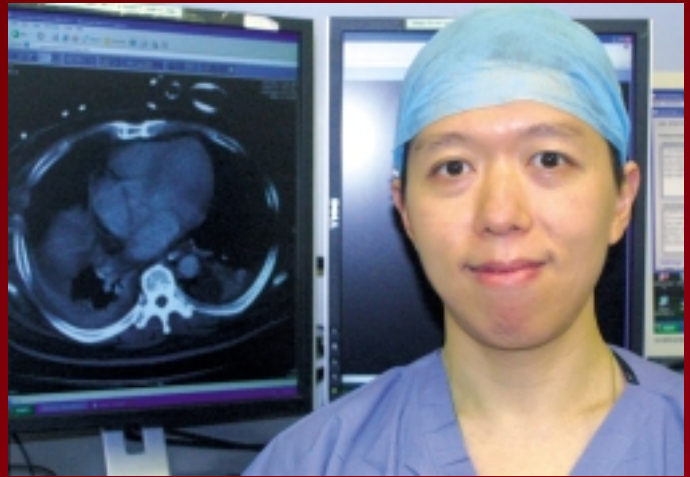
Video-assisted thoracic surgery (VATS) or thoracoscopy has been used to perform minor thoracic procedures for many years. Conventional indications for VATS include wedge lung biopsy, pleural biopsy, drainage of pleural effusion, pleurodesis, exploratory thoracoscopy, and thoracoscopic sympathectomy.

With improvements in techniques and technology, thoracic surgeons with advanced minimally invasive skills can apply VATS to perform major thoracic resections. These operations can be technically challenging and often require expert training in minimally invasive surgery. In the United States, it is estimated that only less than 5% of major thoracic resections are currently performed using VATS. The Department of Cardiac, Thoracic, and Vascular Surgery at the National University Hospital (NUH) in Singapore is now one of the few centers in the world that performs major thoracic operations using advanced minimally invasive techniques.

At NUH, current applications of minimally invasive thoracic surgery include:

1. Major anatomical pulmonary resections including lobectomy, segmentectomy, and pneumonectomy for lung cancer patients
2. Esophagectomy for esophageal cancer patients
3. Lung volume reduction surgery for COPD patients
4. Surgeries in the mediastinum, including resection of mediastinal mass
5. Mediastinal lymph node dissection
6. VATS pleurectomy or decortication
7. Pleural drainage and pleurodesis
8. Lung and pleural biopsy
9. Thoracoscopic sympathectomy for hyperhidrosis
10. Diagnostic and therapeutic thoracoscopy

Minimally invasive thoracic surgery confers many advantages to patients including significant reduction in postoperative morbidity, mortality, and pain. In one research study, VATS lobectomy has significantly fewer complications than conventional approaches. Operative mortality is rare. There is also significantly less intraoperative blood loss with VATS.



VATS procedures are performed with only three or four small incisions as opposed to a large thoracotomy incision. The majority of VATS incisions are only near one cm in length. The use of thoracoscopy eliminates the need for rib spreading. As a result, patients have much less postoperative pain and no risk of rib fractures. Pulmonary function is also much better preserved after surgery. Patients are mobilized to walk on the first post-operative day and they recover more quickly after surgery.

These benefits translate to significantly shorter duration of hospitalization and earlier return to full normal activities both at home and at work.

Most importantly, VATS resections are shown to have equal or improved long term survival compare to open surgeries.

With these advantages it is not surprising that patients and families commonly favor minimally invasive thoracic surgery over conventional approaches and they often express satisfaction with the surgical results.

Dr John Tam is a Consultant Surgeon in Thoracic and Esophageal Surgery at the National University Hospital in Singapore. He completed his surgical training in the United States and Canada. He is a Fellow of the Royal College of Physicians and Surgeons of Canada with Board Certification in Thoracic Surgery. Prior to working in Singapore, he completed the Advanced Minimally Invasive Thoracic Surgery Fellowship at the University of Pittsburgh Medical Centre. He was also a lecturer in the Department of Surgery at the University of Pittsburgh.



16th ASEAN Congress of Cardiology Tour De Bali

Dr Eric Chong & Dr Poh Kian Keong, THI @ NUH

The 16th ASEAN Congress of Cardiology was held during 18 to 21 April 2007 at the Bali International Convention Center, the Westin Resort, Nusa Dua Bali, Indonesia.

Many doctors, health professionals and amongst them cardiologists from all over ASEAN countries (including Singapore cardiologist from both private and public hospitals) attended the meeting. The scientific congress was held in a beautiful resort surrounded by gardens, pools, fountains and Balinese architecture. The clean beach and breathtaking view of the South Indian Sea was just meters away.

The congress was well organized with many concurrent sessions addressing various aspects of advancement in cardiology and recent research results. Our Singapore team also won the Young Investigator's award. The congress which lasted two and a half days was a good learning opportunity. It was also a good time for personal interaction and socialization with fellow doctors from neighboring countries meeting and for the junior doctors to meet up with seniors and learn from them.

Balinese people are friendly and showed great hospitality. Several Indonesian patients whom A/Prof Tan Huay Cheem have taken care of over the years took the time and effort to bring us on a tour around Bali despite their busy working schedules. We visited Kuta, a town area in Bali, had fresh local seafood and observed the memorial statue for the Bali bombing victims. We also visited a

local market in another town named Ubud (known for their wooden handicrafts and oil paintings) where we witnessed the running of a furniture factory owned by one of A/Prof Tan's patient. It's of great satisfaction to see how the patient's life was transformed after seeing medical help – previously he has frequent chest pain and now he is doing well building high quality furniture. We spent our lunch at a well known local restaurant located in the midst of a paddy field called the "Dirty Duck". With dining tables arranged under traditional Balinese tents, it was so named because on the opening day of the restaurant, their first customer was a group of dirty ducks passing across from the paddy field on a rainy day.

We also partook in the cultural night dinner organized at the Garuda Wisnu Kencana Cultural Park. Surrounded by huge ancient stone walls in an alfresco dining area, we feasted on traditional Indonesian cuisine and enjoyed performances featuring Balinese dance and songs. Representatives from each country put up a performance and our Singapore doctors cited poems and sang a song "I love Bali" penned by Dr Richard Ng. We had a truly memorable night.

The ASEAN Congress of Cardiology was an enjoyable experience. The most fulfilling part of the trip was to realize that how we have helped our overseas patients and experienced their way of life in Bali. We look forward to next year's meeting in Hanoi, Vietnam 2008.

Background Dr Eric Chong is on the leftmost and Dr Poh Kian Keong is third from the left.



Multi-modality imaging in Northeast Ohio

Dr Ong HeanYee, THI @AH



In many ways Cleveland is similar to Singapore: greater Cleveland has also a population of more than three million; both are multi-racial, multi-ethnic societies and both regard health visitors as a major economic force. However the similarities end there. Cleveland used to be the industrial heart of America in the late 19th century with its steel and auto industry; Euclid Avenue in Cleveland used to be the 90210 of the USA with the most expensive real estate and was known as “Millionaire’s Row”. However with the decline in manufacturing industry in the 1960’s, the city fell into decline. Fortunately for the city, Cleveland Clinic, established in 1921, rose to be the top hospital for cardiology care for 12 straight years in a row, as ranked by the annual U.S. News & World Report and became one of the largest employers in the city. Patients travel from all corners of the world to seek advice and treatment.

My plan was to complete a one-year fellowship in echocardiography and cardiac CT under the umbrella of multi-modality imaging fellowship. Learning echocardiography in the “Clinic” (as it is known by Clevelanders) is exciting. We would divide our time between the operating theater, elective transesophageal echocardiography, surface and stress imaging. Most of the surgical cases were redo procedures or complex valvular heart diseases. There was a strong “just-do-it” attitude. I learnt from folks that wrote some of the echo text books. Dr Klein was our research director and we took part in several projects including multi-modality pulmonary vein assessment.

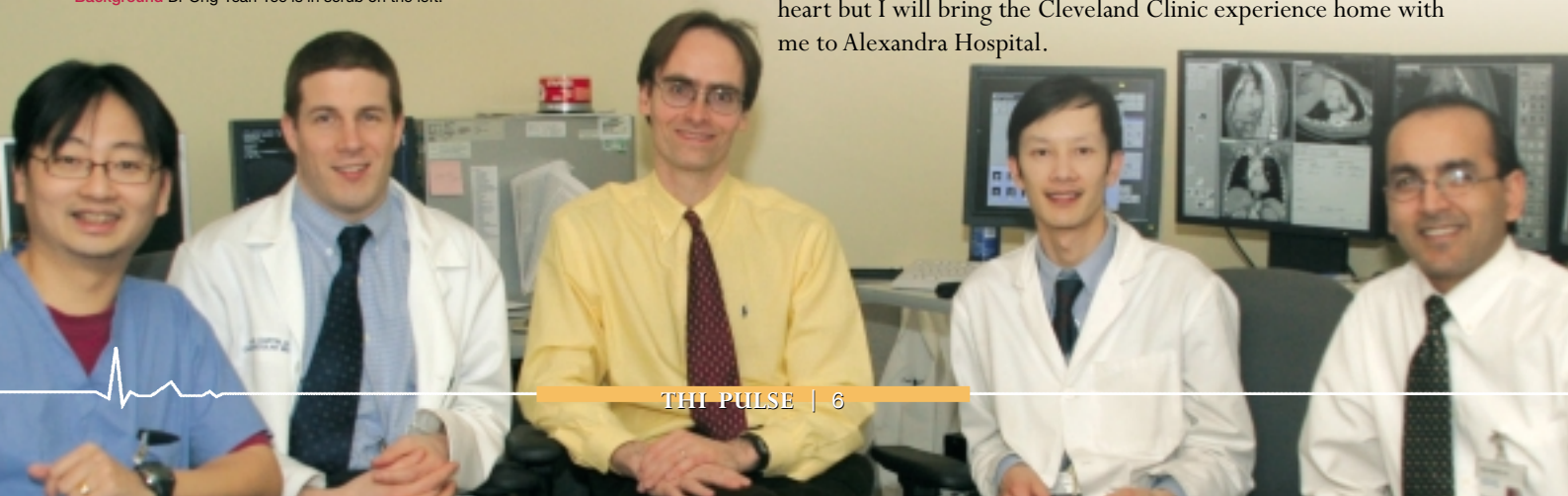
When I started my cardiac CT training in June, Dr Mario Garcia, the chief and pioneer of cardiac CT imaging was one of the warmest and most genuine man I have ever met. We were reading more than 20 complex cardiac CTs per day, with images transmitted from other States and also from a mobile CT scanner that scan from nearby cities in Northeast Ohio. The department

had purchased a Philips 64-slice scanner followed by the state of the art dual-source 64-slice scanner from Siemens. This promised faster scanning time (one of the Achilles heel of cardiac CT imaging was the need for a faster scanning time to cope with a rapid heart rate). We had true real time reporting with our cardiologist, Dr Paul Schoenhagen, radiologist Dr Scott Flamm and others. Even after having read nearly a thousand CTs at that time. I realize that the more I see, the more I am aware of what I did not know – the learning never ends.

I had dragged my family over with trepidation, as statistically, Cleveland was ranked # 9 in crime in the USA. But friends and colleagues already in Cleveland on HMDP reassured us. I had spent many years during the “Troubles” in Belfast and knew there was a difference between reality and front-page news. We lived in a suburb in Cleveland which was 30 minutes by car to work. My predecessor Dr Chuang and Dr Lim, both from National Heart Center made sure we had a warm bed to sleep in on arrival. My two girls enrolled into Grade 1 and 3 (Primary 1 and 3) respectively and went to school in a big yellow bus that I used to see only on TV. They made friends quickly; the schools (like the Clinic) were a mini United Nations with children from all over the world. They were in tears and had endless farewell parties by their friends in the weeks prior to our return.

We were joined by two other fellows from National Heart Center and in June, Dr Teo Swee Guan from NUH Cardiac Department arrived with his family to start his vascular medicine fellowship. There was much camaraderie and as we had children of similar age, most of our activities were planned together. Each season in Ohio is strikingly beautiful in its own way. We were less than 4 hours by car to Niagara Falls and Frank Lloyd Wright’s iconic Falling Water house. Autumn was especially beautiful and poignant for me as it meant that it was time to pack up. We left with a heavy heart but I will bring the Cleveland Clinic experience home with me to Alexandra Hospital.

Background Dr Ong Hean Yee is in scrub on the left.

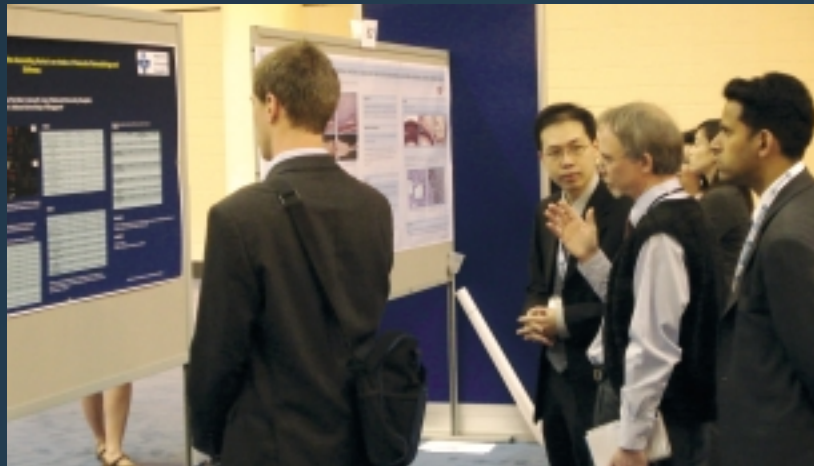


NEW ORLEANS, LOUISIANA

American College of Cardiology 2007

Dr Edgar Tay, THI @ NUH

My prior impression on post-Katrina New Orleans was that there would not be much to do. The internet posted reports that only about 50% of people had returned after the Hurricane onslaught. Also some of the hotels informed that the nice looking hotel photographs on the web may not be what they are now. However, A/Prof Tan Huay Cheem, Dr Poh Kian



Keong, Dr Melissa Co (our interventionist fellow from Philippines) and myself were fortunate enough to be given the opportunity to attend this important annual cardiac meeting. I arrived late at night and was greeted kindly by an affable cab driver who introduced me to the city whilst driving me. He had survived Katrina and had numerous short stories to share about the courage of his fellow men and the devastation of their loved city. The first day was spent registering and familiarising ourselves with the location. To our surprise, the city centre had been cleaned up nicely: there was almost no trace what happened few years ago. That night, following traditional New Orleans styled dinner, we strolled down Bourbon street. This was an entertaining area with psychedelic neon lighting and loud music. There were also attractive dancers who gyrated wildly at the rhythmical beat of the drum and jazz musicians who played fantastically. Interesting local street buskers, some of them children, were able to create a medley of songs with simple instruments such as glass bottles, combined with the traditional trumpet, trombones and drums. Their vocal rendition of "stand by me" was captivating in the small street corners.

Day 2 to Day 3 was essentially packed with scientific programs. We started the day early at 7am and attended a variety of lectures. I attended the general cardiology updates while the others attended smaller meet-the-expert sessions pertaining to specific issues such as stent thrombosis, stem cell therapies etc. I attended late breaking trials to keep abreast with the latest clinically

relevant information. ACC 07 was a year to herald the trials on CETP inhibitors. This therapy had showed promise to raise HDL levels and was meant to slow or reverse coronary or carotid plaque progression. However, the drug was taken off the market because of safety issues. We however had detailed discussions on

the mechanism of the drug and the likely causes for failure. There was a silver lining, with new perhaps safer agents on the horizon. Another very important landmark study, the COURAGE trial gave us new insights on the treatment of chronic stable angina. As an initial management strategy, percutaneous coronary intervention did not reduce the risk of death, myocardial infarction, or other major cardiovascular events when added to optimal medical therapy. This study illustrated the importance of optimizing medical treatment for our cardiac patients.

We present our studies to the international community. Dr Poh presented his research on real time three dimensional echocardiography; Melissa represented us on the use of the Genous stents (coated with antibody to endothelial progenitor cells) in acute ST elevation myocardial infarction patients and I presented a study on vascular stiffness of the ascending aorta. There was great interest judging by the numerous scientists and clinicians who came to find out about our research. Aside from the intense scientific exchanges, we caught up with old friends and colleagues. The last part of the trip was spent strolling along the banks of the Mississippi River for some last minute shopping.

This meeting was a great opportunity for academic exposure for me. It shows the healthy explosion of research in cardiac science and therapeutics which allows us to further our knowledge and improve managing our cardiac patients in Singapore.

Lifewise Exhibition

Dr Edgar Tay, THI @ NUH

As part of our community outreach efforts, our Cardiac team participated in the first NHG LifeWise Health Fair, The Art of Healthy Living, held at Suntec City on 26 and 27 June where all the NHG institutions came together to offer various health services to the busy working population. This event was warmly received by the members of the public. Our nurses from the cardiac centre were actively involved in measuring the blood pressure

of almost 450 participants and counselling when necessary. There was also a display of diagnostic equipment like the exercise treadmill test which attracted the attention of many people.

Our Consultant Cardiologist, Dr Teo Swee Guan gave a talk on “The Rhythm of Life – Keeping Your Heart In Tip-Top Condition” This talk focused on the topic on sudden cardiac death. It drew a large crowd because of the recently



published reports of sudden cardiac deaths among the community. Many of the participants came forth to seek further understanding of the condition after the talk. Most of them also shared that the event was well run and hoped that these events would continue in future.

At the Heart of the Matter

IN BRIGHAM AND WOMEN'S HOSPITAL

Dr Eric Hong, THI @ NUH

Brigham and Women's Hospital (BWH), a teaching hospital of the Harvard Medical School is situated in Boston, Massachusetts. I was honoured to be accepted into their Multimodality Cardiovascular program. Cardiovascular (CV) imaging has experienced major growth and technological advances recently with multimodality and hybrid imaging yielding fused images. This include gated single-photon emission computed tomography (SPECT), positron emission tomography (PET), CT scanning for coronary calcification, CT coronary angiography, carotid and peripheral vascular imaging and molecular imaging of biologic processes that is still in the preclinical investigative phase.

PET is increasingly used instead of SPECT to assess myocardial perfusion in certain groups of cardiac patients. PET in combination with computed tomography (CT) allows simultaneous determination of anatomic stenosis detection and its physiologic manifestation on stress perfusion scans in a single examination. BWH was home to one of the world's first 64-slice PET/VCT scanners. It can capture images of the heart and coronaries in fewer than 5 heart beats. In a single rotation, the system creates 64 credit card thin images, totaling 40 mm of anatomical coverage. These images then combine to create a three dimensional view of patient anatomy. Functional, anatomical data,



cardiac perfusion maps, CT coronary angiography and calcium scores can be acquired all in one setting. Since it is able to determine the degree of the blockage, the PET/VCT scanner may help physicians plan treatment options such as medical therapy for minor blockages or a stent or bypass surgery for a more significant blockage. The adoption of PET and PET-CT imaging is accelerating; however, relatively few centres in the world have such extensive experience nor the volume with these specialized imaging modalities. The centre is investigating using a dual headed 64- slice CT to characterize plaque morphology and visualize stents. Thus, even members of the White House come to BWH for their cardiac evaluation!

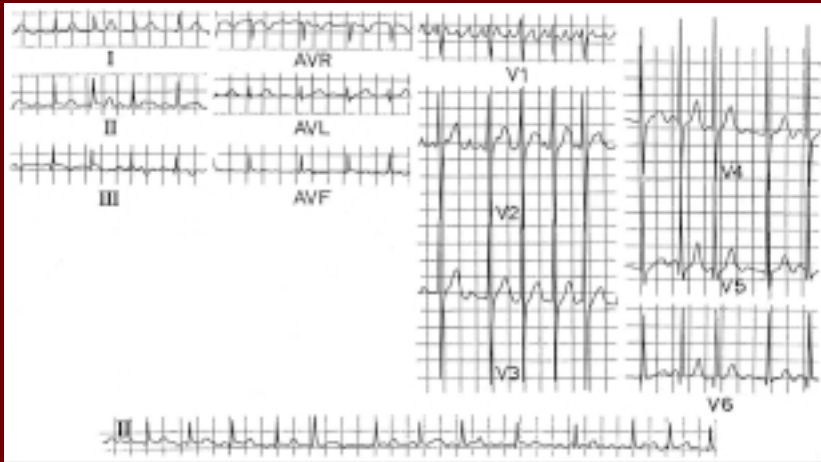
The training to date has been rigorous but interaction with international peers and forging mutually beneficial vendor relationship, business models have made my experience enjoyable. It has truly been an honour to work with a dynamic and talented group of physicians. Witnessing their commitment and dedication to improving care for patients was truly inspiring.

Although I am sad to leave BWH, I look forward to my return this summer. I am excited to apply what I have learnt to enhance the cardiology services in NUH and NHG.



ECG Case study

Dr Lee Li Ching & Dr Poh Kian Keong, THI @ NUH



A 50 year old man presented with one week history of shortness of breath on exertion. On examination, his BP was 120/80, HR was 140/min, irregularly irregular and there was a pansystolic murmur at the apex, grade 4/6, radiating anteriorly. Clinically he was in heart failure. His presenting ECG is shown above.

WHAT IS THE DIAGNOSIS AND UNDERLYING AETIOLOGY?

ECG showed narrow complex irregular tachycardia with no obvious P waves. It was consistent with the diagnosis of atrial fibrillation. This was likely to be secondary to mitral regurgitation detected on physical examination. He was treated for congestive heart failure precipitated by fast atrial fibrillation.

WHAT INVESTIGATION WOULD YOU ORDER?

Transthoracic echocardiography revealed a flail posterior mitral valve leaflet with severe mitral regurgitation. The mitral regurgitant jet was eccentric and directed anteriorly. The patient subsequently underwent mitral valve repair and had an uneventful recovery.

DISCUSSION

In patients with mitral regurgitation (MR) due to flail leaflets, the rate of development of atrial fibrillation (AF) was about 5% per year. Development of AF was independently associated with higher risk of cardiac death or heart failure. In addition, in patients undergoing mitral valve repair for degenerative MR, preoperative AF was an adverse predictor of early and late survival. Therefore, besides treating AF to alleviate symptoms and prevent thromboembolic event, it is important to determine the underlying aetiology.

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Pulmonary hypertension

Ms Margaret Choong, Cardiac Dept @ NUH



From Left Dr Edgar Tay, Mr Mohd Amin (Pt Activist),

The date 07/07/07 was a significant day for our pulmonary hypertension patients here in THI. We had organized our first pulmonary hypertension support group meeting. The program was simple, with patient

and physician's participation in a fun game and a more serious informative session. The feedback that was gathered shows that they enjoyed the information learnt about the emerging drugs for treatment, giving them hope for a longer lease of life. Some were even busy taking notes on their PDA!!

For one particular patient, it was especially momentous as he is the patient activist and intends to drive the support group. He mentioned in a near tearing moment during his speech, that the event, is the beginning of a dream come true.

The aims of the support group, put simply, is to promote awareness of the disease and it's treatment and to encourage patient to actively participate in their own care and advocate for the cause of their disease treatment. The longer term goals, as put by the patient activist, Mr Muhammad Amin, is also to raise funds and a dim hope of getting governmental help. It will be a long road ahead for the group as treatment is expensive, although many more new drugs are developed to treat this disease. All is not lost, as new trials are on the way, and our own team in NUH is working hard at finding novel treatments that are cost effective and sustainable for our patients. Keep a look out for future papers by our team!!

Associate Professor Lim Yean Teng departs NUH

Dr James Yip, THI @ NUH

A/Prof Lim Yean Teng or more affectionately called Y.T. leaves the National University Cardiac Department after 20 years of public service. In his own words: "I am the last link from Day One NUH till today in the cardiac department."

Y.T. is known in Singapore, China and the Asia Pacific region as a "peerless" interventional cardiologist. He is co-director and founder of the Singapore and Asian Interventional Cardiovascular Therapeutics Meeting and is a regular feature in many international live course meetings. A little known fact is that his initial training was in Nuclear Cardiology for which he was still reporting regularly up to the eleventh hour of his departure in NUH and still helps out as a visiting consultant. He joined as a registrar in the department in 1988 and rose within ten years to become its chief in 1999. In 2003, he was called upon for higher service and was appointed Chairman Medical Board (CMB) of NUH. No sooner had he taken over this mantle did the SARS outbreak occur and his abilities were severely tested. Although some of our doctors developed SARS in NUH, there were no fatalities or serious transmissions to the community under his leadership.

I remember Y.T. most as a leader who walks his talk. The "buck" literally stops with him. I remember an occasion when an elderly lady (who was not his patient) needed a bedpan. As all the nurses in the ward were busy attending their duties he personally went to the utility room grabbed a bedpan and assisted the patient.



Above A/Prof Lim Yean Teng is in the centre.



A few minutes later a few red faced nurses appeared to assist the CMB in his 'duties'. Dr Adrian Low remembers an occasion when a relatively young man who was dying from a heart attack, Y.T. spent half an hour squatting with his family members outside the coronary care unit comforting the family.

Despite his departure from full time service in the hospital and the university, Y.T. is still a visiting consultant who comes back EVERY week to lend his expertise in the cath lab training our interventional fellows. He is known for his high and exacting standards in cath lab and many a Fellow would have painful stories to tell of being 'dressed down' for their shoddy work. Some of these lifelong lessons they would care to repeat with pride as they in turn impart their skills to others.

On behalf of our chief, A/Prof Tan Huay Cheem, we wish you God's blessing and success in your new practice, Cardiology Associates in Mount Elizabeth Hospital.



How can I Forget NUH?

Dr Ronald E Cuyco, TH1 @ NUH

It all started when Hazel Penafiel, also a Filipino and a former clinical fellow of the NUH-Cardiac department gave me the email address of the chief of the department – A/Prof Tan Huay Cheem. Right away, I sent him a letter of my intent to have further training in cardiovascular imaging in this institution and to my surprise, in just a couple of days I obtained a positive response. I am also privileged to be sponsored by the Singapore Cardiac Society.

Without any hesitation, I came to Singapore filled with excitement on the 30 May 2006. Immediately, I went to NUH where I was introduced to the consultants and staff, and had a tour of the hospital. On that very day I said to myself: “I was in the right place at the right time with the right people.” Such an impression never faded as the time went by, for it even surpassed my expectation of the institution’s ability to train foreign cardiologists like myself.

The day I met my supervisor was a great day for me too. It was the day that I received details of my training schedule. I was fortunate that he is a cardiologist trained in cardiac magnetic resonance imaging (CMR). He is also kind, intelligent and a dedicated mentor. I remember his sacrifices of spending many Saturdays with us for specially arranged teaching sessions on cardiac MRI, instead of spending time with his kids and family. And not to forget his staying late with us in weekdays, teaching echocardiography and cardiac CT (angiography). There are no



Above Dr Ronald E Cuyco is fourth from the right.

words I can think of to express my utmost gratitude and thanks to Dr Chai Ping.

My interest in research was also well supplanted especially with the guidance of A/Prof Ling Lieng Hsi. Though, it would ‘eat up’ my weekends because I had to come to the laboratory for data collection, I enjoyed it very much. I learned a lot from Prof Ling especially about basic and advanced concepts in echocardiography, even if it would mean staying in the laboratory until 9 or 10pm. Thank God if it is Friday, because we would have free dinner first in the medical lounge.

I was very fortunate to have been given the chance to have my training in non-invasive cardiovascular imaging at NUH. Not to mention that the Heart Institute is well equipped and filled with cardiologists who are also experts in their respective fields of specialization, such as Dr James Yip, Prof Chia Boon Lock and A/Prof TC Yeo.

As a trainee, how can I forget NUH ?



Excellent Service Award 2006

Star award Aik Foon Lan, Eunice Teo, Kee Li Leng, Lo Chew Yong, Susan Lam & Zhao Jianxin

Gold award Catherine Labalan Martagon & Nyeo Hui Qing

Silver award Betsy Thomas, Editha Erago Aquino, Hamimah Bte Samad & Maria Theresa Tablada Erpelo

Excellent Service Award

Susan Lam, Nursing Officer, NUH Coronary Care Unit

EXSA, an Excellent Service Award, is a national award that recognises individuals who deliver outstanding services. The purposes of the award are to inspire service staff to scale new heights and to develop service models for others to emulate. It creates service champions, recognises efforts of service staff and professionalizes services. In 2006, 12 of the CCU (NUH Coronary Care Unit) nurses were awarded EXSA. This is despite challenging circumstances in the setting of a crowded CCU.

Besides attending to the medical needs of sick patients, CCU nurses have also to alleviate emotional and psychological concerns of patients. Our nurses were able to carry smiles and to lend listening ears to patients and their families despite the busy and often stressful working environment. For example, a patient complained of coldness of her feet. The nurse made a special effort of getting the patient a pair of socks from a convenient shop to get her a pair of socks. This simple gesture was much appreciated.

Each EXSA recipient has made NUH Coronary Care Unit proud. Heartiest congratulations to each one of them (Four Silvers, Two Golds and Six Stars). By adhering to the NUH mission, CCU nurses continue to hold the interest of patients paramount and provide excellent services to our patients.

Conferment of Visiting Professorship BY SHANGHAI JIAOTONG UNIVERSITY

A/Prof Tan Huay Cheem was conferred Visiting Professorship of Shanghai Chest Hospital in June 2007. The Shanghai Chest hospital is affiliated to Shanghai Jiao Tong University, a prestigious academic institution in the city. A/Prof Tan has been active in the Chinese interventional cardiology arena and has participated as faculty in numerous meetings there as both lecturer and operator performing live demonstrations of percutaneous coronary intervention. Very fluent and effective in Mandarin, Prof Tan is popularly known in many parts of China and has trained several Chinese interventionists in the past few years. The appointment ceremony was chaired by Prof Feng Yun, the President of the hospital, who praised Prof Tan for his “outstanding contribution to the development of intervention cardiology in China”. He looks forward to greater cooperation between Shanghai Chest Hospital and The Heart Institute @National University Hospital.



Dr Rodolfo C Soto Professorial Lecturer



Above A/Prof Tan Huay Cheem is second from left.

A/Prof Tan Huay Cheem was accorded the rare distinction of being the first foreign guest speaker for the Dr Rodolfo C Soto Professorial Lecturer at the recent Philippines Heart Association Annual Scientific Meeting. Dr R Soto is recognised to be the Father of interventional cardiology in the Philippines and is well respected by his peers and colleagues. Cited by Dr Myra Torres, the organising chairperson for the meeting, Assoc Professor Tan was described as “an achiever who has carved a niche in the Asian cardiology circle. A reputable and prominent cardiologist, lecturer, author and professor, he has made strides that took him to places.” Assoc Prof Tan spoke on the topic of “Managing Coronary Artery Disease in the 21st Century: Diagnostic and Therapeutic Challenges” to a packed audience and was presented with a commemorative plaque by Dr R Soto himself at the end of the lecture.

happenings



GP SYMPOSIUM
10 MARCH 2007



**1ST NHG PACEMAKERS AND
DEFIBRILLATOR WORKSHOP**
6 JANUARY 2007



**WORKSHOP ON CHEST
TUBE AND CENTRAL LINE
INSERTION**
31 MARCH 2007



**YOUNG INVESTIGATOR AWARD FINALISTS
AT SINGAPORE CARDIAC SOCIETY
19TH ANNUAL SCIENTIFIC MEETING**
17 – 18 MARCH 2007



NHG LIFEWISE EXHIBITION
26 – 27 JUNE 2007



**HEART FAILURE SYMPOSIUM FOR
PATIENTS AND CAREGIVERS**
28 APRIL 2007

abstracts

AMERICAN COLLEGE OF CARDIOLOGY SCIENTIFIC SESSIONS 2007, NEW ORLEANS, 24-27 FEB, 2007

1. Systolic Tissue Doppler Velocity of the Ascending Aorta is an index of Vascular Remodeling and Stiffness. Tay EL, Gong LL, Daw HY, Ling LH.
2. Novel Assessment of Aortic Stenosis Using Real-time Three Dimensional Echocardiography: Comparison of Continuity Equation Derived Aortic Valve Area with Planimetry. Poh KK, Solis J, Flaherty M, Kang YJ, Levine RA, Jung J.
3. Safety and Efficacy of the Use of Endothelial Progenitor Cell Capture Stent (Genous Bio-Engineered R Stent) in the Setting of Acute Myocardial Infarction: A Clinico-Angiographic Follow-up. Co M, Lim YT, Low A, Lim J, Lee CH, Lim IH, Tay EL, Tan HC

18TH ANNUAL SCIENTIFIC SESSIONS OF THE AMERICAN SOCIETY OF ECHOCARDIOGRAPHY, SEATTLE, USA, 16-20 JUN, 2007

1. Left Ventricular Vortex Formation Index as a Novel Predictor of Myocardial Performance after Exercise. Poh KK, Tournoux FB, Neilan TG, Ton-Nu TT, Wood MJ
2. Myocardial Adaptation and Efficiency in response to Intensive Physical Training in elite Speedskaters. Poh KK, Tournoux FB, Ton-Nu TT, Neilan TG, Picard MH, Wood MJ
3. Left Ventricular radial Systolic function is Impaired in Asymptomatic Patients with obesity and Normal ejection fraction. Chen AA, Neilan T, Poh KK, Tournoux F, Moukarbel GV, Kaplan LM, Semigran MJ, Wood MJ, Wang TJ, Scherrer-Crosbie M
4. Longitudinal Mitral annulus velocity before and after pericardiectomy in patients with constrictive pericarditis. Dal-Bianco J, Ling LH, Sundt TM, Barnes ME, Oh JK.

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1. Long-term efficacy and late arrhythmia recurrences with wide circumferential electrically isolating pulmonary vein ablation for persistent and permanent atrial fibrillation. Seow SC, Lim TW, Koay CH, Ross DL, Thomas SP
2. Attenuation of Left Ventricular Vortex Formation Ability in Heart Failure. Lee LC, Tan YL, Chia BL, Poh KK

3. A comparison of the use of endothelial progenitor cell capture stent and a bare metal stent in the setting of acute myocardial infarction. Co M, Tay E, Tan HC, Lim YT, Low A, Lee CH, Lim J, Lim IH
4. Diabetic patients without baseline renal impairment are at increased risk of developing contrast induced nephropathy post percutaneous coronary intervention. Chong E, Shen L, Tan HC

CHEST 2007, CHICAGO, USA 20-25 OCT, 2007

1. Vortex Formation Index in Heart Failure: Novel Role of Transthoracic Echocardiography in Assessing Left Ventricular Performance. Lee LC, Tan YL, Tan HC, Yeo TC, Chai P, Low A, Chia BL, Poh KK

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1. Eur Heart J. 2007 Jan;28(1):19-25. Epub 2006 Nov 28. Pretreatment with intracoronary adenosine reduces the incidence of myonecrosis after non-urgent percutaneous coronary intervention: a prospective randomized study. Lee CH, Low A, Tai BC, Co M, Chan MY, Lim J, Lim YT, Tan HC
2. Int J Cardiol. 2007; In Press Acute occlusion of the left anterior descending artery following intravascular ultrasound examination of left main coronary artery. Lee CH, Lim IH, Tan HC
3. American Heart Journal 2007; 153(1): 14. e13-9 Incidence, predictors, and outcomes of device failure of X-sizer thrombectomy: real-world experience of 200 cases in 5 years. Lee CH, Tan HC, Wong HB, Zhang XL, Fun S, Gay M, Qu L, Lim J, Low A, Lim YT
4. Int J Cardiol. 2007; In Press Dilemma of drug-eluting stent implantation in a patient with Systemic Lupus Erythematosus. Lee CH, Chan MY
5. Int J Cardiol. 2007; 117(3):360-4. Repeated Direct Endomyocardial Transplantation of Allogenic Mesenchymal Stem Cells: Safety of A High Dose, "Off The Shelf", Cellular Cardiomyoplasty Strategy. Poh KK, Sperry E, Young RG, Freyman T, Barringhaus KG, Thompson CA
6. Ann Acad Med Singapore 2007; 35: In Press Clinically Compressed Digital Echocardiography: A Patient-Safe Alternative to Videotape Review. Poh KK, Yang H, Omar AR, Yip JW, Chan YH, Ling LH

7. Expert Opinion in Biological Therapy 2007; 7(1): 5-15. Gene and Cell Therapy for Chronic Ischemic Heart Disease. Poh KK
8. Circulation 2007; Mar 27;115(12):e339-41 Complementary Role of Multi-modality Imaging in the Evaluation of Intracardiac Lymphoma. Poh KK, Cury RC, Solis J, Fischman AJ, Wood MJ
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10. Int J Cardiol. 2007; In Press Long-term follow-up after percutaneous coronary intervention in patients with systemic lupus erythematosus. Lee CH, Chong E, Low A, Lim J, Lim YT, Tan HC
11. Circulation 2007; In Press. Cardiac structure and ventricular-vascular function in persons with heart failure and preserved ejection fraction from Olmsted County, Minnesota. Lam CSP, Roger VL, Rodeheffer RJ, Bursi F, Borlaug BA, Omen SR, Kass DA, Redfield MM
12. J Am Coll Cardiol 2007; In Press. Alternating Circulating ProBNP and BNP Forms in the General Population. Lam CSP, Burnett J, Costello-Boerrigter L, Rodeheffer RJ, Redfield MM
13. Heart Rhythm 2007; In Press Electrical isolation of the posterior left atrial wall and pulmonary veins for atrial fibrillation: feasibility of and rationale for a single ring approach. Thomas SP, Lim TW, McCall R, Seow SC, Ross DL
14. J Invasive Cardiol.; In Press Sirolimus-eluting, bioerodable polymer-coated Constant stent (Cura™) in acute ST-elevation myocardial infarction- clinical and angiographic study. Lee CH, Lim J, Low A, Zhang XL, Kyaing TT, Chan MY, Wong HB, Lim YT, Tan HC
15. Clinical Cardiology 2007; In Press Cardiac Metastases from Malignant Melanoma. Poh KK, Avelar E, Hua L, King ME
16. European Heart Journal 2007; In Press Prominent Posterior Mitral Annular Calcification causing Embolic Stroke and Mimicking Left Atrial Fibroma. Poh KK, Cury RC, Wood MJ
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18. Hong Kong Med J.; In Press Acute anterior myocardial infarction due to left anterior descending artery occlusion with stand-alone ST elevation in leads I and aVL. Co M, Lee CH
19. Int J Cardiol. 2007; In Press CA 19-9 and right heart failure secondary to pulmonary embolism. Chan WX, Hoi WH, Lee CH
20. Int J Cardiol. 2007; In Press Isolated severe tricuspid regurgitation: the importance of identifying underlying mechanism Poh KK, Solis J, Hung J
21. Int J Cardiol. 2007; In Press. Myocardial Adaptation and Efficiency in Response to Intensive Physical Training in Elite Speedskaters Poh KK, Ton-Nu TT, Nelian TG, Tournoux FT, Picard MH, Wood MJ
22. Journal of Cardiac Failure 2007; In Press Heart Failure Mortality in Southeast Asian Patients with Left Ventricular Systolic Dysfunction Seow SC, Ping C, Lee YP, Chan YH, Kwok BWK, Yeo TC, Chia BL
23. Singapore Med J 2007; 48: 131-136 The impact of time-to-balloon on outcomes in patients undergoing modern primary angioplasty for acute myocardial infarction. Soon CY, Chan WX, Tan HC
24. Singapore Med J. 2007 Jun;48(6):528-31 Efficacy of community-based multidisciplinary disease management of chronic heart failure. Omar AR, Suppiah N, Chai P, Chan YH, Seow YH, Quek LL, Poh KK, Tan HC
25. Int J Cardiol. 2007; In Press A novel drug-eluting stent using bioabsorbable polymer technology: two-year follow-up of the CURAMI registry Hay ET, Hou XM, Lim J, Low A, Teo SG, Tan HC, Lee CH
26. Int J Cardiol. 2007; In Press Impact of different Asian ethnic groups on correlation between heparin dose, activated clotting time and complications in percutaneous coronary intervention Lee CH, Tan E, Wong HB, Tay E, Low A, Lim YT, Tan HC
27. Circulation 2007; 115(25): 3165-3172 Intramyocardial Transplantation of Autologous CD34+ Stem Cells for Intractable Angina: A Phase I/IIa Double-Blind Randomized Controlled Trial. Losordo DW, Schatz RA, White CJ, Udelson JE, Veeresh V, Durgin M, Poh KK, et al.
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BOOK CHAPTER

1. Acute Coronary Syndromes. TN Nguyen, HC Tan, B Agarwal et al. Management of Complex Cardiovascular Problems. Third Edition 2007; 1-18



directory

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Awards

16TH SINGLIVE 2007

Young Investigators Award 2007 1st Prize Dr Rajesh Babu Dharmaraj, Prof CN Lee and A/Prof Peter Robless Our initial experience with Fenestrated Branched Endovascular Stent Grafts for Complex Aortic Aneurysms.

SINGAPORE CARDIAC SOCIETY 19TH ASM 2007

Young Investigator Award 3rd Prize Dr Lee Li Ching, Dr Tan Yee Leng, Dr Poh Kian Keong Attenuation Of Left Ventricular Vortex Formation Ability In Heart Failure

Young Investigator Award Finalist Dr Eric Chong, Shen Liang, A/Prof Tan Huay Cheem Diabetic Patients Without Baseline Renal Impairment Are At Increased Risk Of Developing Contrast Induced Nephropathy Post Percutaneous Coronary Intervention

SINGAPORE MEDICAL JOURNAL 2006

Recognition award for Reviewing with Distinction
Dr Poh Kian Keong

ANNALS OF INTERNAL MEDICINE 2006

Outstanding Reviewer Dr Poh Kian Keong

new doctors on board

Dr Harvindar Raj Singh – Vascular Registrar
Dr Trans Nguyen An Huy – Interventional fellow
Dr Zhang Juan – Echo fellow

congrats!

Cardiac Dept, National University Hospital
A/Prof Ling Lieng Hsi has been conferred doctor of medicine (MD) at the Yong Loo Ling School of Medicine NUS

Dr Ronald Lee has been appointed as
Associate Professor of Medicine