

GP IN-SYNC

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NUH GP Liaison Centre



**GP Appointment
Hotline +65 6772 2000**

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Specialist in Focus

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A/Prof Graeme MacLaren is an Adult and Paediatric Intensivist and Director of Cardiothoracic Intensive Care in the Department of Cardiac, Thoracic, and Vascular Surgery at the National University Heart Centre, Singapore.

A/Prof MacLaren graduated from the University of Melbourne, Australia, and trained in critical care medicine at St Vincent's Hospital, The Alfred Hospital and The Royal Children's Hospital in Melbourne. Since 2005, he has been working as a Paediatric Intensivist at The Royal Children's Hospital, Melbourne, Australia.

His main professional interests are extracorporeal life support and cardiac intensive care in adults and children. He is currently the Vice-President (Asia-Pacific) of the Paediatric Cardiac Intensive Care Society and serves on both the Executive Committee of the Society of Intensive Care Medicine of Singapore and the Steering Committee of the Extracorporeal Life Support Organization (ELSO).

Clinical Highlights

Extracorporeal Membrane Oxygenation (ECMO)

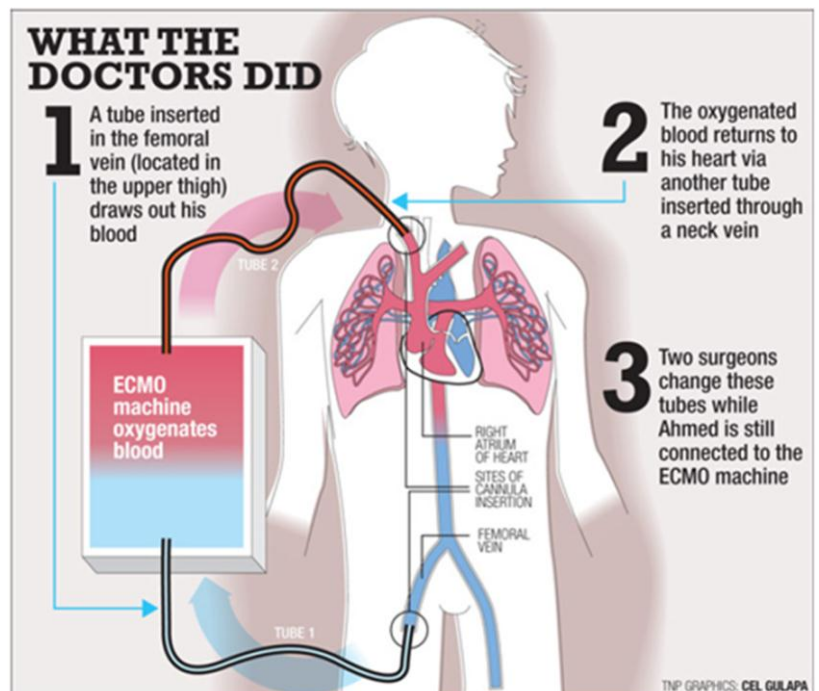
In intensive care medicine, extracorporeal membrane oxygenation (ECMO) provides both cardiac and respiratory support oxygen to patients whose heart and lungs are so severely diseased or damaged that they can no longer serve their functions.

After the H1N1 pandemic of 2009, swine flu seemed to disappear for a while. Then, at the beginning of 2013, it reappeared with a vengeance. We had a flurry of referrals for patients with such severe disease that they could not be kept alive with conventional life support. In 2009, there was a global resurgence of interest in a more advanced form of life support called extracorporeal membrane oxygenation (ECMO). Blood is pumped out of the body, given oxygen, and then pumped back in. This technique is not new but has improved a lot and is now much safer.

Last year, a 25-year-old woman who was 37 weeks pregnant, presented with severe breathing difficulties at another hospital. Despite getting 100% oxygen during the emergency Cesarean section and the birth of a healthy baby, the oxygen levels in her blood were less than a tenth normal. She was referred to the Cardiothoracic Intensive Care Unit (CTICU) at National University Hospital after being diagnosed with swine flu pneumonia, where she was placed on ECMO. After a week of ECMO, she still had severe lung disease but was clear of the virus. Although her lungs remained completely non-functional, the ECMO circuit did all the work for them. Now free of the

mechanical ventilator and not requiring heavy sedation, she was able to talk, eat and most importantly, spent time with her new-born son. A week later, her lungs recovered sufficiently and the ECMO could be removed. She was discharged from the hospital 5 days later.

Critical care physicians worldwide are becoming more aware of the benefits of keeping even the sickest of patients awake and alert.



Source : The New Paper



GP Liaison Centre (GPLC)

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Specialist in Focus



Dr Pipin Kojodjojo

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Department of Cardiology,
National University Heart Centre, Singapore (NUHCS)
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Yong Loo Lin School of Medicine, NUS

Dr Pipin Kojodjojo graduated from St.Bartholomew's and Royal London Hospital Medical School, University of London in 1998 and has been a member of the Royal College of Physicians since 2001. He underwent training in cardiology and cardiac electrophysiology at St. Mary's Hospital, Imperial College London, UK and Brigham and Women's Hospital, a teaching affiliate of Harvard Medical School in Boston, USA.

Prior to joining NUHCS, he was a Consultant and Clinical Senior Lecturer in Cardiac Electrophysiology at Imperial College Healthcare NHS Trust in London, UK.

Dr Kojodjojo is actively involved in clinical research with an emphasis on applying novel techniques and therapies to optimize catheter ablation and device-based treatment of complex cardiac arrhythmias.

He has been awarded several nationally competitive research grants. In 2005, he was conferred a Ph.D. in clinical cardiac electrophysiology from Imperial College London for his research on atrial fibrillation. He performs simple and complex electrophysiology procedures including catheter ablation and device implantation. He is accredited by the International Board of Heart Rhythm Examiners as a Clinical Cardiac Devices Specialist in 2008.

Clinical Updates

Percutaneous Pulmonary Thrombectomy

A Minimally Invasive Procedure for Treatment of Life-Threatening Pulmonary Embolism (PE)

Each year, more than 1 million people globally are affected by PE. The risk of death is 58% in PE patients with low blood pressure (massive PE).

Patients who are older, have undergone recent surgery, have a past medical history of cancer or have been immobilised for prolonged periods of time are at greater risk. However, PE can also happen to super-fit, young professional athletes.

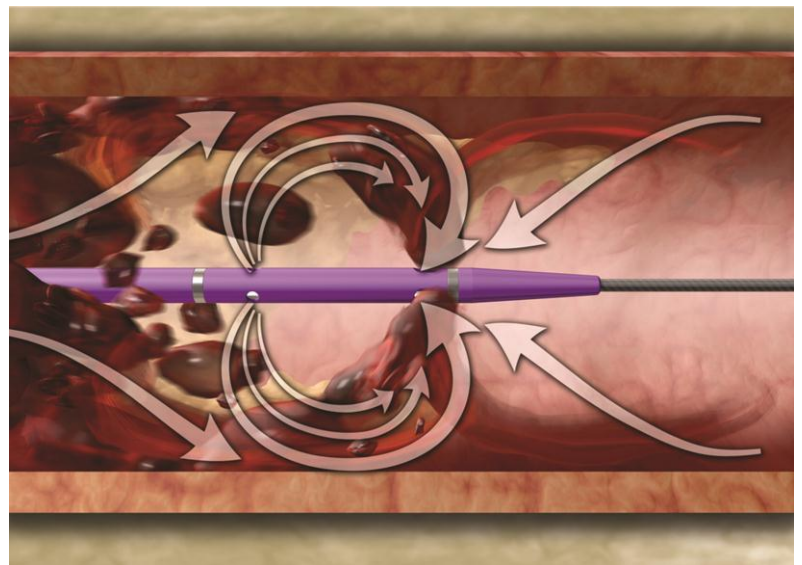
Thrombolysis or clot-busting medications help break up the clots and restore normal circulation for patients with massive PE. Yet, half of them are ineligible for thrombolysis due to other co-existing medical conditions, such as recent surgery or stroke, which greatly increase the risk of bleeding complications.

The only option available in the past was surgical embolectomy, an open-chest surgery that removes clots from the lungs. This surgery is very risky as patients are already unstable and is less effective if there are multiple clots in the lungs.

A new minimally invasive technique, Percutaneous Pulmonary Thrombectomy (PPT), was launched in the National University Heart Centre, Singapore (NUHCS).

During the hour-long procedure with minimal side effects, a tiny catheter is inserted into the circulation from the large vein of the leg (femoral vein) and positioned into the blood vessels of the lung where the clot is obstructing blood flow. A specialised catheter delivers high-velocity jets of saline to break up and remove the clot.

The first PPT patient, a 71-year-old man, was treated at the National University Hospital (NUH) in March 2015. An emergency computed tomography (CT) scan performed after he collapsed during his recovery from stroke confirmed the presence of multiple large PE, which meant that thrombolysis was not possible. The PPT operation he received improved his blood pressure and a CT Scan, two weeks later, showed that his body has naturally removed all the clots in his lungs.



Angiojet Mechanical Thrombectomy



Shaping Medicine for the Future

CME Registration: <https://nuhcme.com.sg/>

News Updates

NUH Delivers Asia's First Baby Conceived Naturally from Ovarian Tissue Transplant



Mr Raihan Haji Rajin and Madam Siti Nurjannah with their daughter Hannah. Doctors had preserved part of Madam Siti's ovarian tissue and implanted it back after her recovery, to enable her to conceive naturally.

A team at the National University Hospital Women's Centre, led by Dr Anupriya Agarwal (Consultant, Department of Obstetrics & Gynaecology) has helped restore a cancer patient's natural ability to conceive by preserving part of her ovarian tissue through ovarian tissue cryopreservation before she received chemotherapy, then implanting it four years later when she had recovered from the cancer. She conceived naturally and delivered a healthy baby in May 2015.

Ovarian tissue cryopreservation is a process whereby part of a woman's ovaries are removed then preserved via a slow-freeze method for future re-implantation into the body. This is done to help preserve the woman's fertility, as invasive treatment for diseases such as cancer can typically affect her reproductive system and ability to conceive. In October 2009, Mdm Siti Nurjannah, then 26 years old, was diagnosed with Stage 2b synovial sarcoma of the thigh, a rare cancer of the soft tissues that typically occurs near the large joints of the arms or legs.

"Siti had plans to get married and have children. As there was a 30%-40% chance that she would become menopausal as a result of the chemotherapy, we referred her to Dr Agarwal to discuss how best to preserve her fertility before starting treatment," said Dr Andrea Wong, Consultant at the National University Cancer Institute, Singapore (NCIS), who had treated Mdm Siti's cancer.

Dr Agarwal offered for Mdm Siti to undergo ovarian tissue cryopreservation. Subsequently, Dr Agarwal and Associate Professor Fong Yoke Fai (Senior Consultant, Department of Obstetrics & Gynaecology) carried out a laparoscopy to harvest tissue from both of her ovaries. This involved cutting half of her two ovaries and sewing them. Then, with the help of NUH's Chief Embryologist, Ms Joyce Matthew, and her team, the cortex – the portion of the ovaries where the eggs are stored was preserved via a special freezing technique. "While this procedure was not the usual method of treatment, I decided to try it after weighing the pros and cons.

Also, given my medical condition at the time, it was my best possible chance to save my fertility as I wanted to have children in the future," said Mdm Siti.

Following the completion of her cancer treatment, Mdm Siti became menopausal and stopped having her periods. Hence, she was started on Hormone Replacement Therapy (HRT) to alleviate the effect of premature menopause on her body and gynaecological organs.

By March 2013, she had recovered from cancer, was married and was ready to have children. At this juncture, Dr Agarwal and Associate Professor Fong carried out a mini laparotomy to implant Mdm Siti's preserved ovarian tissue, using extremely fine sutures.

"The surgery was critical as we had to be quick, in order to avoid damaging the eggs in the thawed ovarian tissue pieces, and careful, so as not to damage any surrounding organs and prevent scarring, which could have reduced her chances of conception," said Associate Professor Fong.

The laboratory technique of preserving the ovarian tissue and thawing it just before it was implanted back into Mdm Siti's body was important as well. For Ms Matthew, the most crucial part of the freezing procedure in the laboratory was to ensure that there would be no freeze damage to the egg cells in the cortical tissue. The frozen tissue was later thawed and rinsed with a special thawing solution, which was prepared in the laboratory, before it was re-implanted back into Mdm Siti.

Three months after the procedure, Mdm Siti's first menstrual cycle returned and she continued to have regular menstrual cycles subsequently. She returned to NUH in October 2014, this time nine weeks pregnant with her first child.

Under close and careful supervision by Dr Agarwal, the pregnancy proceeded smoothly and baby Hannah was delivered on 21 May 2015. Both mother and daughter are currently doing well.

"We are extremely heartened by the outcome of Siti's progress and feel very honoured to have been able to journey with her the past six years. We hope that her story encourages women not to give up on their future fertility in the face of illness and believe that every cloud has a silver lining," said Dr Agarwal.

Baby Hannah is one of the 1,879 SG50 babies born at NUH this year and reportedly one of only 21 babies conceived naturally and born worldwide following ovarian tissue cryopreservation.

Source: *The Straits Times* (Published on 8 July 2015).

Upcoming CME Events

Date	Topic
22 Aug	Common Eye Diseases – Screening Techniques & Management (Part II)
22-23 Aug	4 th Wong Hock Boon Paediatric Masterclass
19 Sep	Primary Care Management of Endocrine Surgery Disease

Registration & lunch will start at 12.30 pm

Event Venue:

NUHS Tower Block, Auditorium, Level 1
1E Kent Ridge Road, Singapore 119228

Please visit our CME Portal at <https://nuhcme.com.sg/> for registration. For registration enquiries you may contact the GP Liaison Centre at gp@nuhs.edu.sg