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For Immediate Release

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NUHS Surgeon Pioneers Single Port Lung Surgery

A surgical technique pioneered in Singapore that uses just one small opening in the body to reach and operate on organs in the chest cavity has enabled patients to recover within a week, with minimal pain.

Through a 3 cm-wide incision on the side of the patient’s body, Dr John Tam, who is Head of Thoracic Surgery and Senior Consultant at the National University Heart Centre, Singapore (NUHCS) was able to carefully work his way through to remove diseased tissue from lungs, without causing trauma to the muscle tissue or ribs.

“The 300 patients who had undergone single or uniportal video-assisted thoracoscopic surgery (UVATS) were pain-free and resumed daily activities within a week after their operation,” said Dr Tam. The procedure and its early results were documented in a study that was published in the Annals of Thoracic Surgery in December last year (2013).

Single port access in minimally invasive surgery a key step forward

The single port access approach, which he first performed on a patient at the National University Hospital in 2009 as a world first, represents a key step forward in minimally invasive surgery techniques. “In conventional video-assisted thoracoscopic minimally invasive surgery, three to five incisions are made. Muscles may be cut, chest wall nerves may be affected, and patients need one month to recover. The single port access method means we only make one small cut, and the muscle tissue and ribs are totally spared.”

“It was a technique that was progressively developed, from using three or four incisions to the use of two incisions, and eventually to only a single access incision without any auxiliary ports. The results were published in the study and demonstrated the technical feasibility of total muscle-sparing UVATS lobectomy for both cancerous and non-cancerous lung diseases”, said Dr Tam. This technique can be applied to remove any area of the lung. It is also applicable to the mediastinum area, i.e. the central region of the chest.

“Because of the better recovery, we can extend this service to older and weaker patients who may not be considered good candidates for surgery in the past,” added Dr Tam, who is also teaching the technique to other surgeons.
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"I did not feel any pain after the operation. The recovery was very fast and I was back to normal within a few days," said Mdm Grace Kumala, who is 87 years old and underwent the innovative surgery to remove her lung cancer last year.

Mr Cheong Yip Chong also had single port lung surgery three years ago. “The surgery was painless with fast recovery. It was a very minor cut, and I was surprised that the cut was so small. When I came out of surgery and became awake and conscious, I was surprised that I could stand and walk right away. I didn’t take any pain killers, and I didn’t expect that I could be discharged home so quickly.”

Commenting on Dr Tam’s work, Professor Lee Chuen Neng, Chairman of the Surgical Cluster at the National University Health System, said lung surgery used to require a long incision into the chest wall. “That was painful and recovery used to take a long time. It then progressed to four smaller incisions on the chest, but only a few surgeons can safely perform this type of surgery.”

“Now in a world’s first, Dr John Tam had pioneered a single incision procedure for lung surgery (for lung cancers and other diseases). This improves the post-operative recovery, is much less painful and is better for patients. He has now performed the largest numbers of such surgery in the world and is teaching others how to do this surgery. We are proud of this achievement by a member of surgery here at the NUHS.”

About Total Muscle-Sparing Uniportal Video-Assisted Thoracoscopic Surgery Lobectomy

The study of 38 major resections of the lung using UVATS performed between June 2009 and September 2011 affirmed the benefits of the procedure for patients. The study was published in the December 2013 issue of The Annals of Thoracic Surgery.

Thirty-two patients (84%) had malignant diseases, and 6 patients (16%) had benign diseases. Of the primary lung cancers, 85% were in stage I. Of the 38 attempted major resections, 32 UVATS lobectomies were successfully completed and 6 were converted to open thoracotomy. Analysis of the early outcomes of successful UVATS lobectomy indicated that 97% of patients had no postoperative complications, with only 1 patient exhibiting postoperative atrial fibrillation. There were no other postoperative complications, mortality, or readmissions. There were no deaths.

Mean pain score was very low at 0.4 out of 10 on postoperative day 1, and decreased to 0 by 1 week. Ninety-seven percent of patients received only oral analgesia postoperatively. Eight percent of patients experienced mild intercostal neuralgia not requiring treatment. No patients complained of shoulder dysfunction. The median duration of returning to full normal activities was 7 postoperative days.

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About the National University Health System (NUHS)

The National University Health System (NUHS) groups the National University Hospital (NUH), the NUS Yong Loo Lin School of Medicine, the NUS Faculty of Dentistry and the Saw Swee Hock School of Public Health under a common governance structure to create synergies to advance health by integrating clinical care, research and education.

The enhanced capabilities and capacity will enable the NUHS to deliver better patient care, train future generations of doctors more effectively and bring innovative treatments to patients through groundbreaking research.

For more information about the NUHS: www.nuhs.edu.sg

About the National University Heart Centre, Singapore

The National University Heart Centre, Singapore (NUHCS) brings together the resources, expertise and capabilities in the areas of Cardiology, Cardiothoracic and Vascular Surgery to better meet the needs of the growing number of patients with heart disease. A key centre for the treatment and management of complex cardiovascular diseases, its core clinical programmes include heart failure, structural heart disease, acute coronary syndrome, vascular medicine and therapy, women’s heart health and heart rhythm.

Comprising a team of cardiovascular specialists and experts from a multitude of medical and surgical disciplines, the NUHCS provides a comprehensive and holistic approach to the treatment of patients with heart problems. This approach is backed by cutting edge knowledge and information gathered by the Cardiovascular Research Institute (CVRI).

The CVRI focuses on developing niche research work in creating new knowledge in support of NUHCS’ core clinical programmes by working in close collaboration with both local and international renowned research institutes such as the Agency for Science, Technology and Research (A*STAR) and New Zealand’s Christchurch School of Medicine and Health Sciences.
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Partnerships are formed with various medical institutes as the NUHCS is a selected training centre for international physicians. Education and training ensures that our medical professionals are kept abreast of the latest findings, with our specialists also actively involved in conducting workshops and teaching programmes for medical undergraduates.

For more information about the NUHCS: www.nuhcs.com.sg