



Jan – Mar 2017

Featured Doctors of the Month



Dr Yap Yan Lin
MBBS, MRCS, MMED, FAMS

Consultant
Division of Plastic, Reconstructive & Aesthetic Surgery
National University Hospital

Dr Yap Yan Lin completed her speciality training in Plastic Surgery and is registered as a plastic surgeon in 2013. She underwent speciality fellowship training in oncological and trauma reconstruction in Sunnybrook Hospital, University of Toronto, Canada.

Her clinical interests include reconstructive and aesthetic breast surgery, skin cancer reconstruction, abdominal and limb reconstruction, microsurgery, trauma reconstruction, minimally invasive plastic surgery, aesthetic and laser surgery.

Autologous Fat Grafting

Fat grafting can be explained as a three-stage process:

- (1) **Harvesting:** Fat is removed by liposuction from the abdomen, thighs or other suitable areas.
- (2) **Purification:** Once enough fat is obtained from the donor area, the fat cells are purified using a centrifuge. Blood and oil layers are then removed and the purified fat is transferred to small syringes.
- (3) **Placement:** The prepared fat is carefully injected into the treatment area. The injection needle is usually passed in and out multiple times. Each time it is withdrawn, a line of fatty tissue parcels is deposited in natural tissue planes. This process is repeated until the desired correction has been achieved.

In breast reconstruction, autologous fat has classically been used for lipofilling contour irregularities. It can be used to correct contour deformity post-implant or flap surgery. It can also be used to augment volume, improve skin or scar quality post-irradiation. It is sometimes done for correction of lumpectomy defect in partial mastectomy.

Fat grafting is considered natural, flexible and replaces like-for-like, which are its main selling points. Fat grafting requires multiple sessions as the fat is partially resorbed by the body. Each session should be separated by at least three to six months.

Problems can include fat necrosis and oil cyst. These may cause pain, hardening, microcalcifications, skin changes, numbness or infection.

Use of Fat Grafting

Reconstructive surgery can be used for breast reconstruction, lipofilling for contour procedures and even treatment of complex wounds including burn, diabetic and irradiated wounds.

In aesthetic surgery, breast and buttock augmentation in addition to facial and hand rejuvenation are common areas for autologous fat transfer.



Dr Iyer Shridhar
MBBS, MS, FRCS, FAMS, MBA

Senior Consultant
Division of Hepatobiliary and Pancreatic
Surgery
National University Centre for Organ
Transplantation
National University Hospital

Dr Iyer Shridhar is the founding member and vice president of the Hepatopancreatobiliary Association (Singapore). He also holds the position of Programme Director in General Surgery and is responsible for postgraduate training.

His research interests are liver regeneration mechanisms, ischemia reperfusion injury of liver and living donor liver transplantation.

Hepatobiliary and Pancreatic (HPB) Service at NUH

The Hepatobiliary and Pancreatic (HPB) service at NUH provides extensive treatment for patients with primary and metastatic cancers of the liver, gallbladder, bile duct and pancreas. The programme also provides treatment for benign diseases including biliary stones/cystic tumours and biliary strictures.

Patients receive multi-disciplinary care from a team of hepatobiliary and transplant surgeons, diagnostic and interventional radiologists, medical oncologists, hepatologists, gastroenterologists and anesthesiologists.

Hepatocellular Carcinoma

Hepatocellular carcinoma (HCC) is the fourth most common cancer among males and third and fourth most common cause for death from cancer in Singapore. The incidence of HCC has tripled over the last three decades worldwide, mainly due to the emergence of Non-alcoholic Fatty Liver Disease (NAFLD) and Non-alcoholic Steatohepatitis (NASH).



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However, the survival rate is improving mainly due to early detection from screening, improved survival following resection and more options of loco-regional therapies.

A wide range of treatment options is available for patients with HCC, including liver resection (open and laparoscopic), radiofrequency and microwave ablation, trans-arterial chemoembolisation, yttrium-90 selective internal radiation therapy and molecular targeted therapies.

Liver transplantation is a common treatment option for HCC. Liver transplantation is the only treatment which offers a major chance of cure as it removes the underlying diseased liver at risk of cancer. At present, we use the UCSF (University of California, San Francisco) criteria for listing patients for liver transplant.

Approximately 40% of liver transplants performed at NUH are for HCCs. NUH has the largest liver transplant programme in Singapore and in the region. We are an established centre for living donor liver transplant and have the capability for complex living donor liver transplant procedures (Figures 1 and 2).

The cumulative 1, 2 and 5 year survival following resection is 94%, 85% and 67% respectively. The 1, 5, and 10 year cumulative survival following liver transplantation is 82%, 68% and 64 % respectively. The newly established HCC clinic offers a patient-centred multi-disciplinary service.



Figure 1: Donor right hepatectomy for living donor liver transplant



Figure 2: Living donor liver transplant with right lobe graft

In The News

Risk Groups: Asians, the Elderly and Smokers

Gastric or stomach cancer is often referred to as an Asian cancer, because it affects Chinese, Japanese and Koreans far more than people of other races. Professor Jimmy So, head of surgical oncology at the National University Cancer Institute, Singapore (NCIS), said the incidence of this cancer fell dramatically in the West with the advent of the refrigerator.

This is because the cancer is strongly linked to salt and preserved foods. With refrigeration, people in the West ate more freshly cooked food. But preserved foods remain popular in Asia. Another major cause of gastric cancer is the presence of the *Helicobacter pylori* bacterium which causes stomach ulcers.

Prof So said not only do many Chinese have *H. pylori*, but they also have “the more carcinogenic type of *H. pylori* called Cag-A”. *H. pylori* is usually transmitted through unclean water or utensils, since it can be passed from one person to another through saliva and other bodily fluids.

The United States’ National Institutes of Health classifies *H. pylori* as a “Class 1 carcinogen”. The United States’ National Institutes of Health classifies *H. pylori* as a “Class 1 carcinogen”. Prof So said although it can be treated with antibiotics, that could lead to resistance, so it is used only if a person is at high risk. In Singapore, gastric cancer is the seventh most common cancer for men and the ninth for women, affecting more than 500 people a year. In terms of cancer deaths, it ranks fourth. The good news, however, is that the incidence of this cancer has been falling by about 2.5 per cent a year for several decades, said Prof So, “likely due to improvements in hygiene and the decrease in incidence of *H. pylori*”.

At NCIS, he said, more people are diagnosed earlier, with almost one in two caught at stages one and two now, compared to fewer than one in four about 30 years ago. It is a bit lower on the national level, with one in three caught in the early stages. But Prof So added that doctors are seeing a “reverse trend” for a particular type of gastric cancer that affects the upper part of the stomach. Called gastric cardia, it now accounts for one in five stomach cancers – up from one in 20 a couple of decades back.

This cancer is largely found in people who are obese and suffer from reflux, where the acid in the stomach rises to the throat. This acid eats into the stomach lining.

Prof So said one in 100 Chinese men would get gastric cancer in their life time. It is a little lower for Chinese women, low among Malays and very rare among Indians. In general, as symptoms are non-specific, he recommended that Chinese who are over 40 years of age and suffering from gastric pain, vomiting and loss of weight and appetite should check for this cancer. In Japan and South Korea, where the incidence of this cancer is high, there is national screening for people aged 50 and above.



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As a result, two in three gastric cancers are diagnosed early, before they have spread beyond the stomach. But national screening is not a feasible option in Singapore because of the high cost and the low risk for other ethnic groups, said Prof So. The incidence of gastric cancer here is also only about a quarter of that in Japan or South Korea.

So it is better to find and screen only those at high risk, he said. The Singapore Gastric Cancer Consortium, comprising doctors and scientists, was formed to develop early detection and better treatment and gain a better understanding of the cancer. It was given a \$25 million research grant in 2007 by the National Research Foundation, followed by a second \$25 million grant five years later. The team has come up with some promising tests and treatments. With more knowledge of the cancer, the team has also been able to develop more targeted treatment. It has identified four risk factors for this cancer, aside from being Chinese, and any Chinese who has all four has 12 times the risk of getting this cancer than the population at large. They are: being 70 years old and older; a smoker; having low stomach acidity; and the *Helicobacter pylori* bacteria.

Tests

The team is finalising a blood test that comprise of a panel of 24 molecules found in tumours to check for gastric cancer. Early studies show the test is able to pick out nine in 10 cases of such cancer. But it wrongly identifies one in four cases as cancer. Prof So said wrongly identifying cancer in someone who does not have it is distressing, but not damaging, as the stomach can be checked with a scope. Of more concern is giving a clean bill of health to someone who does have the cancer.

Having said that, being able to identify nine out of ten cases is better than any other blood test now on the market. The group has taken out a patent for this test and, if current trials confirm the level of sensitivity, it will be rolled out for use. The test is expected to cost about \$200 – less than a fifth the cost of a scope.

Treatment

The most common site of relapse for gastric cancer is in the peritoneum or abdominal cavity. When that happens, “it’s bad news”, said Prof So, because it is difficult to manage and life expectancy is usually three to six months. Since 2013, NCIS has been doing a clinical trial where such patients are given intra-peritoneal cavity chemotherapy, which is a bit like dialysis for kidney failure patients, he explained.

Patients have a permanent bottle-cap-like metal port inserted in their abdomen. A liquid inserted through the port sloshes around the abdomen, killing cancer cells, then is drained. This is done twice in three weeks, and repeated eight times for the full treatment. Because the drug is a “big molecule”, very little is absorbed into the body. This is carried out in addition to the normal treatment of drugs.

The trial, involving 22 patients, is promising, with 72 per cent surviving one year. The median survival so far is 18 months. Prof So presented the team’s findings at a science and medical conference in San Diego in May. He said: “This is a technically simple outpatient procedure. It has improved the quality of life of patients.”

Another new procedure that the group is testing is extensive washing with salt water after surgery to remove the tumour. Surgeons do wash with saline, as a matter of course, to clean up after surgery.

What is different is that instead of washing it just once or twice as is usual, they do it 10 times. The idea is to remove any free cancer cells that might be left in the peritoneum, to reduce the risk of a relapse there.

A total of 16 hospitals here and in Japan, South Korea, Hong Kong and China are involved in this trial that plans to compare washing 10 times, against washing twice or less, in 600 gastric cancer patients. Results are expected by 2021.

Said Prof So: “We will know by 2021 if there are any benefits from this simple, 15-minute technique.”

Understanding the Cancer

Professor Patrick Tan of Duke-NUS Graduate Medical School and the Genome Institute of Singapore has found two distinct types of gastric cancers that react differently to chemotherapy drugs. Identifying which type a patient has – this can be done once the tumour is removed – means doctors can give him the drug most likely to work.

Shock of cancer diagnosis despite regular checks



Mdm Chua is well five years after surgery for stomach cancer. Although her entire stomach was removed, she is still able to eat.

Out of the blue, Madam Serene Chua, 54, started experiencing severe pain in her stomach and giddiness, and was throwing up blood. It was late on Saturday and her usual doctor’s clinic was closed. She thought it was food poisoning and took some Chinese medicine, but continued to vomit. Her family eventually took her to Tan Tock Seng Hospital where a scope of her stomach revealed she had well-developed gastric cancer.

This was in October 2011. She was shocked, as she had been going to the National University Hospital (NUH) for checks every year because her mother had been diagnosed with gastric or stomach cancer in 2004.



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Her mother's cancer was discovered in the early stages and the tumour, in the lower part of her stomach, was surgically removed. She is still fine.

Professor Jimmy So, head of surgical oncology at the National University Cancer Institute, Singapore, suggested that Madam Chua and her siblings monitor for the cancer as it could run in families. Madam Chua said she had done so as she, like her mother, ate a lot of salted fish and vegetables, known to increase the risk of stomach cancer.

When she heard that she had a fairly big tumour, she said: "I couldn't believe or accept it. I had been going to the NUH to check so regularly." Fortunately, her cancer was still within the confines of her stomach, with no spread beyond.

However, because of its location – at the top of the stomach – surgeons could not simply remove the affected part. They had to remove her entire stomach. But she is still able to eat. Prof So explained: "Our food is digested by the small intestine. The stomach is just a reservoir. Hence, even though Madam Chua's stomach has been removed, she can still digest all food that she eats."

But immediately following the surgery, she could only drink fluids and her weight dropped from 53kg to 38kg. The doctors recommended chemotherapy but she declined. She gradually progressed to porridge and other semi-fluid foods.

She recalled: "When I ate food, I felt very bloated and had cramps. I had to lie flat for the cramps to ease." Now she is able to eat, but avoids high-fibre food or things like glutinous rice as she says they are difficult to digest and can cause pain. On a holiday in South Korea a few years ago, she ate a lot of *kimchi*. This resulted in severe abdominal pain on her return. She said: "The pain was so bad, it was worse than labour when giving birth." She was given morphine to dull the pain and was on a drip for four days.

Since then, she has been very disciplined about what she eats. However, Prof So said the abdominal pain was caused by adhesions and "it is not proven that high-fibre intake can cause more obstruction". He added that her "prognosis is excellent as she has been well for more than five years after the cancer surgery". While Madam Chua regrets not being able to eat all her favourite foods, she said: "I feel very blessed to be still living. My family and friends give me a lot of love and care. I feel motivated to live."

Passion Beyond Duty

The Surgical Outreach for Underprivileged Localities (SOUL) Mission - Touching Rural Communities

The SOUL outreach is an initiative by the NUH University Surgical Cluster (USC) to participate in the improvement of communities that have limited healthcare support.

This initiative ranges from educational exchanges with local doctors and surgeons to developmental projects that improve general health of local populations.

In the last two years, a multi-disciplinary team of surgeons, paediatricians, family medicine practitioners and nurses have been operating at a large orphanage and township clinic in Kyaikto, Mon State, Myanmar. There was a need for child health screening services for over 400 children and surgical services for over 100 patients in the surrounding rural community.

Providing surgical services in a rural setting comes with many challenges, as entire logistical support is required to carry out safe and effective surgeries. We had to deal with power outages and hygiene issues at the destination which required improvisation and innovation.

Each year, we endeavour to perform additional special projects such as dental services, paediatric surgical services and this year, to improve an outdoor kitchen at an orphanage.

An essential part of this mission is the involvement of NUS undergraduate medical students. It provides an opportunity for our students to expose themselves to a wider world and develop the aspiration to help other communities in the future. Our students are deeply involved in educational exchanges with local students as well as painting of wall murals.

In all, the SOUL mission has enabled the team to learn many skills from operating in rural localities and to fulfill the educational mandate of our institution.

For more information, please refer to <http://medicine.nus.edu.sg/medsur/soul.html>



Figure1: Surgeons operating at a make - shift room



Figure2: SOUL Mission Team - Myanmar



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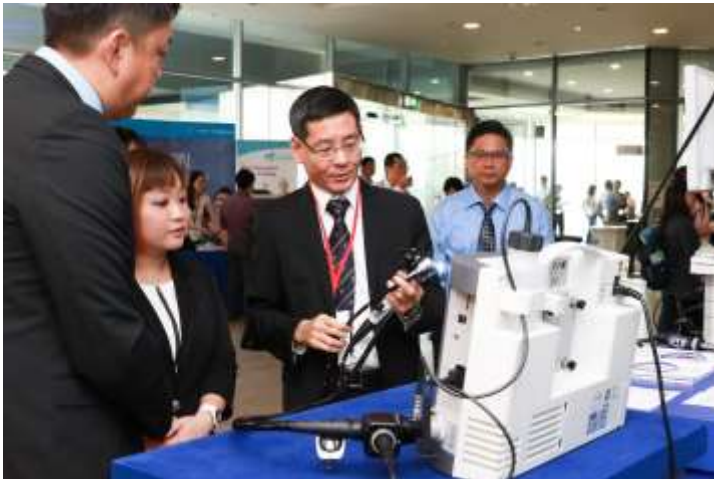
What's Happening @ NUH

Singapore Gastric Cancer Consortium

Singapore Gastric Cancer Consortium (SGCC) - 10th Annual Scientific Meeting will be held on 19th and 20th July 2017.

The 2-day conference involves interactive discussions in the diverse fields of gastrointestinal cancer research between invited speakers and participants.

Please refer to <http://www.sgcc.sg/asm> for upcoming details.



Colorectal Cancer Symposium

The organising committee at NUH has crafted an exciting 2-day programme focusing on an interactive platform to discuss the challenging management of metastatic colorectal cancers.

Please refer to

<http://medicine.nus.edu.sg/medsur/upcomingevents.html> for upcoming details.



Upcoming CME Events

Date	Topic
* 21 Jan'17	Practical Tips in Sports Medicine

Registration & lunch will start at 1.00 pm

*Event Venue:
NUH Sports Centre
Main Building, Level 1
National University Hospital
Singapore 119074.

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

