

Medical Spotlight

THE HEART AND VASCULATURE IN COVID-19

Singapore's response to the COVID-19 pandemic has been exceptional, with few lives lost compared to more than 1.6 million fatalities worldwide. Much of the credit goes to the government and frontline workers who worked hand-in-hand to fight the virus, with the co-operation of the general public. General practitioners played a crucial role at the forefront, identifying cases early and referring them for testing and diagnosis. With the arrival of vaccines, we can anticipate better times ahead, though complacency must be avoided, or the gains achieved may be easily lost.

SARS-CoV-2, the pathogen causing COVID-19, gains entry into cells utilising the ACE-2 (angiotensin-converting enzyme-2) receptors. These receptors are abundant in the pulmonary epithelial cells, endothelial cells lining the blood vessels as well as the heart¹. This can explain much of the atypical systemic manifestations of the disease.

During the initial pneumonia phase, pneumocytes are primarily involved, whereas the subsequent phase of illness is characterised by diffuse immunothrombosis – small vessel thrombi in the pulmonary vasculature secondary to inflammation² – which often progresses to diffuse lung injury and acute respiratory failure.

Cardiovascular manifestations of COVID-19 are common, for instance myocarditis, right ventricular failure and thrombotic events in both the systemic and coronary circulation. COVID-19 myocarditis is likely a result of microthrombosis or from the systemic inflammatory response³ rather than direct viral invasion, as pathology studies have only rarely shown presence of viral material within the myocardium. Right ventricular dysfunction is multifactorial and may be secondary to acute respiratory distress syndrome or acute pulmonary thrombosis and embolism.⁴

Involvement of the pulmonary vasculature is common in COVID-19 and may lead to gas-exchange abnormalities even before development of dyspnea. Termed 'silent hypoxemia', this warrants pulse oximetry monitoring even in asymptomatic high-risk individuals with COVID-19, as this is an ominous sign indicating substantial vascular involvement and risk of rapid deterioration⁵. In spite of recovery from COVID-19, persistent dyspnea or hypoxemia on exertion⁶, or abnormalities on perfusion imaging⁷ may indicate significant underlying thrombotic vascular occlusion.

If present, these patients warrant referral to a pulmonary hypertension service to screen for chronic thromboembolic hypertension.

For many existing patients with cardiovascular disease, the pandemic led to prolonged suspension of multiple cardiology services, including elective procedures and especially exercise-based cardiac rehabilitation. Nationwide, healthcare providers managed to use this opportunity to utilise Singapore's tech-savviness to accelerate alternative methods of patient engagement. Freely accessible resources⁸ coupled with telehealth-based consultations empower patients to take charge of their health like never before. Perhaps there is a silver lining in this pandemic after all.

[References can be found on page 4]

Dr Robin Cherian

MBBS (India), MRCP (UK)

Consultant

Department of Cardiology, National University Heart Centre, Singapore

Sub-specialty: Cardiac Intensive Care, General Cardiology, Heart Failure



Dr Low Ting Ting

MBBS (S'pore), MRCP (UK)

Consultant

Department of Cardiology, National University Heart Centre, Singapore

Sub-specialty: Adult Congenital & Structural Heart Disease, Women's Heart Health, Pulmonary Hypertension



Dr Yeo Tee Joo

MBBS (S'pore), MMed (Int Med), MRCP (UK), Certified Clinical Exercise Specialist (American College of Sports Medicine)

Consultant

Department of Cardiology, National University Heart Centre, Singapore

Sub-specialty: Cardiac Rehabilitation, General Cardiology, Sport Cardiology



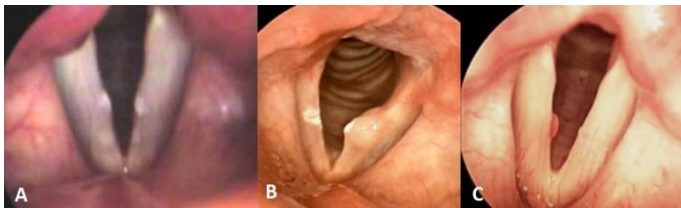
VOICE DISORDERS DURING THE PANDEMIC

Our voices do not simply communicate the spoken words; we use our voice to express our emotions and personality. A number of professions rely on their voices as a primary tool of trade, including teachers, salespeople, singers, coaches, etc. A well-functioning voice enables us to play our roles in society. During this pandemic, we continue to see a rise in voice disorders. Let us have a look at some of these conditions.

Voice Overuse, Also Known As Voice Abuse

A large number of voice disorders stem from voice overuse. When we speak, the vocal cords adduct to the midline, and allow for voice production and phonation. When we use our voices for prolonged periods, i.e. during a long Zoom meeting, singing a lullaby to coax a child to sleep or raising our voices to discipline naughty children at home, the vocal cords hit each other hard and repeatedly. This repeated trauma leads to vocal cord lesions such as vocal cord nodules, vocal cord cysts and vocal cord polyps.

This is an endoscopic view of the voice box, via a flexible nasoendoscopy performed in the ENT clinic.



Picture A shows vocal cord nodules affecting the vocal cords bilaterally. *Picture B* shows a vocal cord cyst that requires surgical excision for voice improvement. *Picture C* shows a vocal cord polyp.

Other risk factors include talking in noisy environments, yelling, screaming, cheering, giving long speeches or lectures, and spending time in smoky environments. Most of these lesions can be treated conservatively, by having our ENT speech therapist provide training in vocal hygiene and effective voice use. However, some laryngeal lesions like vocal cysts require surgery.

Laryngopharyngeal Reflux

Some of us have put on the “covid-kilos”, and some of us have gone back to old habits of drinking, smoking and even binge eating, to relieve stress. These diets lead to weight gain and increased risk of reflux. The foods that cause “heatiness” are in fact the ones that lead to regurgitation of the gastric content into the throat and voice box, leading to sore throat and other symptoms.

These patients complain of persistent phlegm in the throat and require constant coughing and throat clearing. Some feel soreness in the throat and globus sensation every morning and almost immediately after their meals. This regurgitated gastric content injures the vocal cords and causes inflammation and edema. In subtle cases, patients complain of vocal fatigue and the inability to reach the high notes during singing. In the more severe cases, their speaking voice deepens and becomes hoarse.



Picture 1 shows severe Reinke’s edema affecting the vocal cords. The patient would complain of a deep and rough voice, and may even have difficulties breathing due to the narrowed passage between the edematous vocal cords. *Picture 2* shows a granulation tissue affecting the right vocal cord, which is caused by chronic laryngopharyngeal reflux.

We usually treat these lesions with anti-reflux medication, as well as reflux education by our ENT speech therapist. Severe cases, such as Reinke’s edema or granulation formation, may require surgery for voice recovery.

In conclusion, a patient with hoarseness or voice change lasting more than two weeks should be referred to the ENT voice clinic to have their voice box examined.

Dr Ker Liang

MBBS (Singapore), MRCS (Edin), MMed (ORL),

Consultant

Department of Otolaryngology
(Ear, Nose & Throat) – Head & Neck Surgery
National University Hospital

Clinical Interests: Laryngology, General ENT

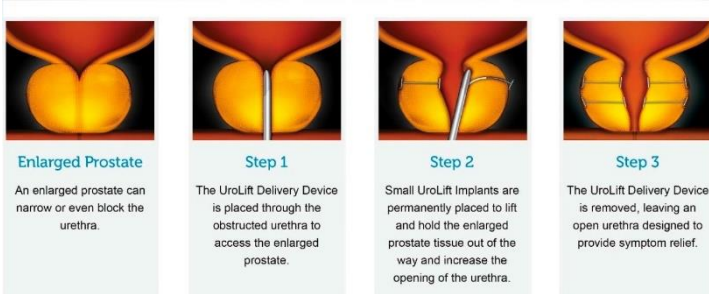


NEW MINIMALLY INVASIVE TREATMENT OPTIONS AT NUH FOR ENLARGED PROSTATE

Men with mild to moderate prostate enlargement or **Benign Prostate Hypertrophy (BPH)** can now be treated with two new minimally invasive procedures in NUH – UroLift and Rezum. These procedures offer faster recovery, enabling patients to return to their normal day-to-day activities within 1 to 2 weeks.

UroLift

The UroLift System uses a revolutionary approach to treat BPH by lifting and holding the enlarged prostate tissue out of the way, so it no longer blocks the urethra. There is no heating, cutting or removal of prostate tissue.



The UroLift procedure is performed as a day case. It is free from possible serious adverse effects of traditional BPH surgery, such as stress urinary incontinence and transfusion, and provides quick relief of BPH symptoms with a shorter recovery time.

Rezum

Rezum is a transurethral thermal therapy that uses steam to treat BPH by delivering targeted, controlled doses of thermal energy directly to the prostate gland. The steam is dispersed between cells, releasing heat that gently kills the excess prostate cells. Over time, the body's natural healing response removes the dead cells, shrinking the prostate and opening up the urethra, thus relieving the BPH symptoms.



Rezum is similarly performed as a day case. Post procedure, patients need to be on a urinary catheter for 10 to 14 days. Most men experience symptom relief in 1 to 3 months and will be able to return to normal activities within 2 to 4 weeks after treatment.

Selection of Patients

Suitable patients for UroLift and Rezum:

- Moderate BPH symptoms
- Want to preserve sexual function
- Failed or does not wish to be on long-term medication
- Not able to tolerate the side effects of medication
- Prostate volume to be 30 to 80mls

Our Initial Experience

Both UroLift and Rezum have shown to be safe and effective in relieving the symptoms of BPH. Patients treated with either procedure have shown statistically significant symptomatic relief from bothersome symptoms.

Minimally invasive surgeries fill a void between medical therapy and Transurethral Resection of Prostate (TURP) by being a compromise between the limited efficacy of drug treatment and the invasiveness of surgery.

We propose minimally invasive surgeries as a second line treatment when medical therapy fails to improve a patient's obstructive and irritative symptoms. It can also be proposed to patients who wish for a rapid treatment in a day surgery setting, or who wish to preserve sexual function.

Dr Chua Wei Jin

MBChB (UK), MRCS (Edin), MMed (Surgery), FAMS (Urology)

Senior Consultant

Clinical Director & Director of Endo-Urology

Department of Urology

National University Hospital

Sub-specialty: Laparoscopy and Endo-Urology (Laparoscopic Surgery, Stone Diseases, Small Renal Mass and Minimally Invasive Surgery (MIS) for BPH)



Happenings @ NUH

New Zone System for Getting Around NUH

The NUH campus is now organised into zones to help our patients and visitors get around easily.

Find your zone

Zones are clearly marked around the campus. Lift lobbies and carparks follow the zones they are located in.



Locate your facility

Like your home, facilities in NUH have a unit number to help you locate them easily.

C04-03

Zone Level Unit No.

You can find unit numbers on:


Signs


Appointment Cards


Appointment Reminders


NUH Website's Facilities Page



ZONE A	ZONE B	Medical Centre
ZONE C	ZONE D	Kent Ridge Wing
ZONE E	Khoo Teck Puat – National University Children's Medical Centre	
ZONE F	ZONE G	Main Building
ZONE T	NUHS Tower Block	
Emergency / Children's Emergency		
Visitor Registration		

Locations of National Centres	
ZONE B	National University Cancer Institute Singapore
ZONE F	National University Heart Centre Singapore
ZONE H	National University Centre for Oral Health Singapore
Ward Locations	
ZONE D	Wards 5A - 9B Register at Level 3
ZONE G	Wards 20 - 64 Register at Level 1



Scan QR code for full list of facilities at NUH

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