香 港 醫 務 委 員 會

The Medical Council of Hong Kong

DISCIPLINARY INQUIRY
MEDICAL REGISTRATION ORDINANCE, CAP. 161

1st Defendant: Dr LAM Tat Shing (林達成醫生) (Reg. No.: M13475)
2nd Defendant: Dr LEUNG Hip Wing (梁協榮醫生) (Reg. No.: M13638)

Dates of hearing: 30 November 2020 (Monday) (Day 1);
22 May 2021 (Saturday) (Day 2);
24 May 2021 (Monday) (Day 3);
4 July 2021 (Sunday) (Day 4);
18 July 2021 (Sunday) (Day 5); and
31 October 2021 (Sunday) (Day 6)

Present at the hearing

Council Members/Assessors: Prof. LAU Wan-yee, Joseph, SBS
(Chairperson of the Inquiry Panel)
Dr HO Pak-leung, JP
Dr MAK Siu-king
Mr CHAN Wing-kai
Ms NG Ka-man, Rendy

Legal Adviser: Mr Edward SHUM

Defence Counsel representing the 1st Defendant: Mr Ashok SAKHRANI instructed by Messrs. Kennedys

Defence Solicitor representing the 2nd Defendant: Mr Chris HOWSE of Messrs. Howse Williams

Senior Government Counsel representing the Secretary: Miss Carmen POON
(Day 1 to Day 5)
Government Counsel representing the Secretary: Miss Jacqueline HUNG
(Day 6)

1. The charges against the 1st Defendant, Dr LAM Tat Shing, are:

> *"That on or about 2 March 2016, he, being a registered medical practitioner, disregarded his professional responsibility to his patient ("the Patient') in that he:*
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> *(a) failed to provide appropriate intraoperative and/or peri-operative management and care to the Patient;*
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> *(b) left the operating theatre without handing over the responsibility during anesthesia; and*
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> *(c) failed to advise the surgeon to discontinue the ankle arthroscopy operation and transfer the Patient to an intensive care unit when the circumstances so warranted.*
>
> *In relation to the facts alleged, either singularly or cumulatively, he has been guilty of misconduct in a professional respect."*

2. The amended charges against the 2nd Defendant, Dr LEUNG Hip Wing, are:

> *"That in or about March 2016, he, being a registered medical practitioner, disregarded his professional responsibility to his patient ("the Patient'), in that, he:*
>
> *(a) performed repair of the anterior talofibular ligament and/or the open ankle ligament repair on the Patient without informed consent;*
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> *(b) failed to discontinue repair of the anterior talofibular ligament after resuscitation following cardiac arrest; and*
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> *(c) failed to advise alternative option for ankle arthroscopic procedures using supplemental local anesthesia on top of monitored anesthesia care.*
>
> *In relation to the facts alleged, either singularly or cumulatively, he has been guilty of misconduct in a professional respect."*

Facts of the case

3. The name of the 1st Defendant has been included in the General Register from 2 July 2002 to the present. His name has been included in the Specialist Register under the specialty of Anaesthesiology since 2 September 2009.

4. The name of the 2nd Defendant has been included in the General Register from 2 July 2002 to the present. His name has been included in the Specialist Register under the specialty of Orthopaedics & Traumatology since 6 May 2009.

5. Briefly stated, the Secretary of the Medical Council received a letter from one Dr LEUNG, the Deputy Medical Director of Union Hospital ("UH"), on 27 May 2016 complaining against the 1st Defendant for "*highly probable professional misconduct during an ankle arthroscopy operation*" for the Patient on 2 March 2016 (the "Incident").

6. Dr LEUNG also highlighted in his complaint letter the following facts, which he said "*gave strong suspicion about professional misconduct during course of anaesthesia*" in respect of which the 1st Defendant was the Anaesthetist-in-charge:-

> "*1. ...*
> *2. There was no recording in oxygen saturation for about 25 minutes before cardiac arrest. If an anaesthetist was diligently monitoring the patient, the absence is impossible to escape attention, and action should have been taken.*
> *3. The anaesthetic machine used in this case was a model widely used in many hospitals in Hong Kong at present. The alert signals include alarm sound, flashing light, and clearly printed messages with changing colours on a big LCD screen. They were functioning during the operation. A duly alert anaesthetist would have observed the monitors and messages, and managed the patient properly according to information given by the monitoring system.*
> *4. There was video recording of Dr. Lam in the corridor for 3 times, the longest span being 1.5 minutes. There was no surveillance video recording at other areas of the Operating Theatre, such as the pantry.*
> *5. Post-cardiac arrest, the end tidal carbon dioxide level was very high after cardiac activity resumed. This is compatible with prolonged underventilation, which is exactly what an anaesthetist is expected to prevent under monitored anaesthetic care.*"

7. Attached to the complaint letter were: (i) a copy of the Investigation Report submitted by UH to the Department of Health on the Incident together with (ii) the attached documents (including medical reports prepared by the 1st and

2nd Defendants); (iii) CCTV footage captured at the Nursing Station of Operating Theatre of UH; and (iv) video demonstration of the anaesthetic machine's alarm system.

8. There is no dispute that the Patient was admitted to UH at 14:22 hours on 2 March 2016 under the care of the 2nd Defendant. It was mentioned in the Admission Arrangement Form signed by the 2nd Defendant that the "*Reason for Admission*" was "*left ankle arthroscopy + PRP (Platelet Rich Plasma) Injection*"; and the name of the 1st Defendant was put down in the column for "*Anaesthetist*".

9. It was also mentioned in the Nursing Assessment Form filled out by the nurse upon admission of the Patient to UH that the "*Operation (to be) Performed*" was "*left ankle arthroscopy + PRP inj* (*Injection)*"; and the mode of *"Anaesthesia*" was "*GA (General Anaesthesia)*".

10. There is however no dispute that the operations eventually carried out were (i) an arthroscopy that involved osteochondral lesions, shaving, microfracture; (ii) PRP injection; and (iii) repair of anterior talofibular ligament ("ATFL").

11. According to the 1st Defendant, he first saw the Patient at the pre-operative assessment area of the operation theatre of UH at around 18:40 hours. Having reviewed the clinical information taken by the ward nurses, he conducted physical examination on the Patient, which showed good general condition; normal airway; dual heart sounds with no murmur; normal respiratory system; and chest was clear with no wheezing. The history and physical examination findings confirmed his impression that the Patient was "*a normal healthy patient with no systemic illness*". He then offered and explained to the Patient 3 options of anaesthesia, namely, General Anaesthesia ("GA"); Monitored Anaesthetic Care ("MAC") and Spinal Anaesthesia ("SA"). Eventually, the Patient opted for MAC "*because he was particularly worried about 2 complications of GA, namely, damage to teeth and discomfort at throat (due to airway intervention)*".

12. According to the medical records obtained from UH, the Patient arrived at the Operation Theatre 1 ("OT1') at around 19:15 hours. He was put on blood pressure ("BP") monitoring, ECG (Electorcardiogram); and pulse oximeter, all of which were connected to an anaesthesia machine.

13. It was put down in the Pre-Operative / Procedure Checklist that the "*Operation / Procedure*" was "*left ankle arthroscopy + PRP injection*"; and consent for "*Surgical / Invasive Procedure"* and consent for Anaesthesia had both been obtained.

14. According to Nurse CHOW, the Circulating Nurse during the Incident, he carried out the "*Time Out Procedure*" after the 1st and 2nd Defendants had entered OT1. He read out, amongst others, the name of the Patient and the name of the Surgical / Invasive Procedure to be performed. When he read out the type of anaesthesia, the 1st Defendant corrected him that the type of anaesthesia would be changed from GA to MAC; and the Patient agreed.

15. The type of anaesthesia mentioned in the Consent for Anaethesia Form was therefore changed from "*General Anaesthesia*" to "*Monitored Anaesthetic Care*"; and both the Patient and the 1st Defendant had signed to acknowledge this change.

16. According to the 2nd Defendant, with whom the 1st Defendant agreed, when Nurse CHOW read out the name of the Surgical / Invasive Procedure, he voiced out that the procedures also included "ATFL".

17. The Consent for Surgical Invasive Procedure Form, which was signed by the Patient and the 2nd Defendant, however merely recorded that the Patient voluntarily gave his consent to undergo the procedure of "*left ankle arthroscopy + platelet rich plasma injection*".

18. According to the medical records obtained from UH, between about 19:25 to 19:29 hours, the 1st Defendant used incremental concentration of Sevoflurane up to 6%. As 6% Sevoflurane was given, the Patient was in the plane of GA from about 19:29 to 19:45 hours. Spontaneous respiration via facemask with circle circuit was used. Between about 19:30 to 19:44 hours, the 1st Defendant gave intermittent boluses of Pethidine in a total of 50mg. At around 19:45 hours, the 1st Defendant turned off Sevoflurane and switched to use Propofol target-controlled infusion ("TCI"). Spontaneous respiration via facemask was changed to spontaneous respiration via nasal cannula at 6L/min. No more respiratory rate or EtCO2 was measured from the anaesthesia machine.

19. Meanwhile, one Dr YEE, an assistant surgeon, arrived at OT1 at around 19:43 hours to assist the 2nd Defendant. According to the medical report submitted by Dr YEE to UH after the Incident, the contents of which are unchallenged by the 1st and 2nd Defendants, "*[l]eft ankle arthroscopy was first performed... The ankle arthroscopy was completed at around 8:15 pm. Dr Leung then proceeded to repair the ATFL. A curvilinear skin incision was made at the left lateral ankle. The lax ATFL was identified and defined. At around 8:24 pm, Dr Lam asked for help because the condition of the patient deteriorated. I have gone out of the Operation Theatre and informed the staff for instant help and assistance. Cardiopulmonary resuscitation was performed and the patient was*

intubated. Another nearby anaesthetist Dr KOO... has participated in the resuscitation. The patient's vital signs were stabilized at around 8:45 pm."

20. According to the Statement of Agreed Facts between the Secretary and the 1st Defendant, "*without delegating duty to anyone, [the 1st Defendant] left OT1 thrice, namely, (i) for about half a minute during 19:45 to 20:00 hours to get Rocephin; (ii) for about half a minute to get a mobile phone charger during 20:14 to 20:16 hours; and (iii) for about a minute to get an adaptor and charging cable for his mobile phone during 20:14 to 20:16 hours*".

21. There is no dispute that the anaesthesia machine was functioning properly at all material times. And yet, according to the 1st Defendant, from 20:01 to 20:10 hours, he "*did not notice any alarm ringing from the monitor. Nor did [he] notice that the reading of SpO2 was absent from the monitor screen*".

22. According to the 1st Defendant's medical report to UH dated 5 April 2016, after his return to OT1 at around 20:16 hours, he "*assessed the [P]atient's airway (no obstruction, coloration (no cyanosis), respiratory rate (about 10-14/min) and effort (chest movements adequate), [he] also read the displayed figures of BP and heart rate, but noted that the SpO2 reading did not display on the monitor screen. [He] immediately inspected the [P]atient's finger on which the oximeter probe was affixed and it appeared to [him] that the position of the probe was correct. [He] checked and noted that the probe wire was plugged properly into the socket of anaestheic machine... [He] adjusted the probe against the [P]atient's finger and then SpO2 reading displayed intermittently, with a few transient readings of above 90%. [He] reconfirmed that oxygen was delivered to the [P]atient via the nasal cannula...; there was no ringing from the oxygen pressure alarm or the disconnection alarm...*"

23. There is however no dispute that the following data were retrieved from the anaesthesia machine after the Incident:-

Time	BP (mmHg)	HR (heart rate per minute)	SpO2 (%)
20:01	122/60	88	Undetectable
20:02		78	Undetectable
20:03		76	Undetectable
20:04		82	Undetectable
20:05	101/51	79	Undetectable
20:06		77	Undetectable
20:07		76	Undetectable
20:08		80	Undetectable

20:09		81	Undetectable
20:10	86/47	90	Undetectable
20:11		101	Undetectable
20:12		113	Undetectable
20:13		110	Undetectable
20:14		64	Undetectable
20:15	116/60	59	Undetectable
20:16		52	Undetectable
20:17		46	Undetectable
20:18		45	Undetectable
20:19		46	Undetectable
20:20	81/36	35	Undetectable
20:21		35	Undetectable
20:22		34	Undetectable
20:23		31	Undetectable
20:24		0	Undetectable
20:25		0	Undetectable
20:26		0	0%
20:27		0	38%
20:28		0	0%
20:29	78/49	115	100%
20:30		144	99%
20:31		158	97%
20:32		162	99%
20:33		162	99%
20:34		161	99%
20:35		160	100%
20:36		157	100%
20:37		155	100%
20:38		150	99%
20:39	165/98	144	99%
20:40	153/89	138	99%
20:41		134	99%
20:42		130	99%
20:43		128	99%
20:44		126	99%
20:45		121	99%
20:46		118	99%
20:47		116	99%
20:48		116	99%
20:49		114	99%
20:50		112	99%

20:51	127/76	112	99%
20:52		111	99%
20:53		110	99%
20:54		109	99%
20:55	114/68	109	99%
21:00	103/57	101	99%
21:05	84/56	97	99%
21:10		92	99%
21:15	79/47	83	99%
21:20	62/44	80	99%
21:25		87	99%
21:30	79/42	85	99%
21:35		74	98%
21:40	89/61	76	96%
21:45		89	99%
21:50		90	98%

24. According to the 1st Defendant's medical report to UH dated 5 April 2016, "*[f]rom 20[:]20 to 20[:]21 hours, [he] noticed that the [Patient's] heart rate dropped to 35/min...[His] impression was a vaso-vagal attack, which was precipitated by intense pain stimulation in the surgical site...*" However, the Patient's heart did not respond to Atrophine 1.2mg that he gave. He stopped the TCI Propofol at 20:22 hours. However, the Patient was found to have no heart rate at 20:24 hours. Facemask hand ventilation was started. "*Due to severe bradycardia and unrecordable BP, the first dose of Adrenaline 1mg IV was given by a nurse*" at 20:26 hours. The Patient was intubated and put on mechanical ventilation at 20:27 hours. "*Cardiac arrest was witnessed and [he] immediately started external cardiac massage, while a nurse administered the second dose of Adrenaline 1mg IV*" to the Patient at 20:28 hours.

25. According to the Investigation Report prepared by UH, the contents of which were unchallenged by the 1st and 2nd Defendants, the 1st Defendant asked Nurse CHOW at around 20:24 hours "*to check the oximeter probe*". Nurse CHOW "*found it on the ground at right side of the [P]atient's operation bed and reconnected the oximeter immediately*". The 1st Defendant then "*ordered Adrenaline 1:10,000 (1mg in 10 ml) and prepared intubation at the same time*". Nurse CHOW immediately gave the Patient Adrenaline by injection. Meanwhile, the scrub nurse, one Nurse WONG, informed the 2nd Defendant "*to stop the operation and [she] de-gowned to call for help*". The Operating Theatre Assistant, one Mr TO, "*arrived and assisted intubation*". At around 20:28 hours, another Anaesthetist, one Dr KOO, the Deputy Nurse-in-Charge, one Nurse LI and another nurse also "*arrived to support*". The 1st Defendant

then "*ordered 2nd dose of Adrenaline 1:10,000 (1mg in 10 ml)*" and "*performed chest compression around 5 times*". At around 20:29 hours, Dr KOO told the 1st Defendant "*to stop chest compression*".

26. The Patient had a return of spontaneous circulation at around 20:29 hours. According to the Investigation Report prepared by UH, the 1st Defendant and Dr KOO "*closely monitored the [P]atient*" from 20:35 to 20:40 hours.

27. According to Dr KOO's written report to UH dated 3 March 2016, he was requested to "*help in cardiopulmonary resuscitation of a patient in Operating Theatre 1 of Union Hospital*" and he *"[r]esponded immediately and rushed to the scene... On arrival, the patient was already intubated and ventilated with oxygen by the anaesthetic machine. Carbon dioxide signal was noted in the capnograph. The end-tidal carbon dioxide was low (?). Both chest walls were percussed to look for tension pneumothorax. Return of spontaneous circulation was noted in about one minute's time. The patient has tachycardia and the end-tidal carbon dioxide was noted to be high. Body temperature measurement was requested and the patient was afebrile clinically. The patient was hyperventilated with oxygen to lower the end-tidal carbon dioxide. There was sustained return of spontaneous circulation. The patient's pupils were examined and both were noted to be about 5mm dilated..."*

28. According to the 1st Defendant's medical report to UH dated 5 April 2016, after communicating with the 2nd Defendant at around 20:45 hours, "*[he] knew that it would take only about another 20 minutes to complete the operation*". There is no dispute that the 1st Defendant did not advise the 2nd Defendant to discontinue the remaining procedures for repair of ATFL and intra-articular injection of PRP. The remaining procedures were completed at around 21:15 hours.

29. When it was noted that the Patient failed to regain consciousness during the reversal of anaesthesia, the 1st Defendant asked for one Dr CHAN to come and help. Dr CHAN arrived at around 22:00 hours and assessed the Patient's condition. In view of the critical condition of the Patient, decision was later made to transfer the Patient to the ICU of Queen Elizabeth Hospital ("QEH") for further management. Meanwhile, the Patient had 2 episodes of seizure at around 23:20 and 23:50 hours respectively. There were also 3 episodes of hypotension at 23:30 hours; 23:35 hours and 23:40 hours respectively. From around 00:30 to 00:43 hours, the 1st Defendant together with a nurse escorted the Patient from UH to QEH by ambulance.

30. MRI for the Patient at QEH later confirmed hypoxic ischaemic brain injury. The Patient subsequently developed nosocomial infection and bilateral limb

contractures. Upon discharge from QEH to convalescent institution, the Patient remained urinary and fecal incontinent. He was bed bound and not communicable. He also required feeding with nasogastric tube and medication to prevent seizure and myoclonus.

31. On 7 July 2016, the Secretary of the Medical Council further received a complaint from the Patient's father against the 1st and 2nd Defendants in respect of the Incident.

Burden and Standard of Proof

32. We bear in mind that the burden of proof is always on the Secretary and the Defendants do not have to prove their innocence. We also bear in mind that the standard of proof for disciplinary proceedings is the preponderance of probability. However, the more serious the act or omission alleged, the more inherently improbable must it be regarded. Therefore, the more inherently improbable it is regarded, the more compelling the evidence is required to prove it on the balance of probabilities.

33. There is no doubt that each of the allegations against the Defendants here is a serious one. Indeed, it is always a serious matter to accuse any registered medical practitioner of misconduct in a professional respect. We need to look at all the evidence and to consider and determine the respective disciplinary charges against them separately and carefully.

Findings of the Inquiry Panel

Charges against the 1st Defendant (Dr LAM Tat Shing)

34. The 1st Defendant admitted the factual particulars of the 3 disciplinary charges against him and indicated through his counsel that he would not be contesting these proceedings.

35. It remains however for us to consider and determine whether the 1st Defendant has by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong.

36. There is no dispute that the anaesthesia machine was functioning properly at all material times. However, both the 1st and 2nd Defendants were adamant that they did not notice any alarm ringing; and their evidence was corroborated by the testimony of Nurse CHOW.

37. Anaesethesia machine, no matter how reliable or sophisticated it might be, still required the vigilance of the 1st Defendant who put it into use.

38. Our attention was drawn by Dr LUI, the Secretary's expert witness in anaesthesiology, to the Hong Kong College of Anaesthesiologists' *Guidelines for Safe Sedation for diagnostic and therapeutic procedures* (April 2012) (the "HKCA Guidelines"). And it is clearly stated in the HKCA Guidelines that:-

> "*2.2 The registered medical practitioner is ultimately responsible for the sedative management, adequacy of the facility and staffing, patient assessment and preparation, recovery and discharge, diagnosis and treatment of emergencies and complications related to sedation and providing equipment, drugs, documentation, training and protocol for patient safety.*
>
> *...*
>
> *2.5 In situations where an anaesthesiologist is involved in the monitoring of a patient, with or without prescribing any sedation, the care involved is termed "monitored anaesthetic care*"

39. It is evident to us from reading the medical records obtained from UH that the Patient's respiration under sedation was not monitored by capnography or other form of mechanical respiratory monitoring after spontaneous respiration via facemask was changed to via nasal cannula. It follows in our view that the 1st Defendant ought to be vigilant in ensuring adequate oxygenation for the Patient at all material times.

40. The 1st Defendant claimed in his medical report to UH dated 5 April 2016 that from 20:01 to 20:10 hours, he *"scanned through the displayed readings of heart rate, BP and SpO2 on the monitor screen*". He also claimed that his clinical assessment of the Patient from 20:11 to 20:13 hours "*did not suggest hypoxia*". Although he noticed that the Patient "*had mild arm movements, and the heart rate increased*", he interpreted "*these changes of heart rate and arm movements as his response to pain stimulation in the surgical site (ankle)*".

41. It is however evident to us from reading the data retrieved from the anaesthesia machine that SpO2 reading was "*undetectable*" from 20:01 to 20:25 hours. We find it implausible for the 1st Defendant to have overlooked the conspicuous absence of SpO2 reading when he *"scanned through the displayed readings of heart rate, BP and SpO2 on the monitor screen*". It follows in our view that the 1st Defendant was not reading the displayed figures carefully.

42. When being asked by us, Professor CHEUNG, the expert witness for the 2nd Defendant in anaesthesiology, agreed and we accept that unlike 30 years ago when patients were monitored clinically, the 1st Defendant "*cannot just monitor the Patient clinically (and) make the judgment whether the Patient's oxygenation is enough or not... nowadays... using the SpO2... reading is mandatory*". Professor CHEUNG also agreed and we accept that "*[i]t is possible that... without the SpO2 tracing (and) without... appropriate clinical monitoring, the Patient [might] have hypoxia leading to the low heart rate and hypotension*"; and his hypoxic brain damage was more likely to be due to "*a prolonged period of hypoxaemia*".

43. It is well known in medicine that when oxygen levels in arterial blood drop significantly, hypoxaemia occurs. Initially, heart rate will rise because oxygen is required to increase the oxygenation of the vital organs. But when hypoxaemia worsens, hypoxia may follow. If hypoxia occurs, damage to vital organs, specifically the heart and brain, may occur within minutes and can lead to cardiac arrest; and hypoxic brain damage or death.

44. Although tissue hypoxia is not commonly measured clinically, if severe hypoxaemia is diagnosed, it suggests that hypoxia is also present due to reduced amount of oxygen being delivered to the tissues and organs.

45. It is evident to us from reading the data retrieved from the anaesthesia machine that the Patient's heart rate increased to 101 at 20:11 hours and further to 113 and 110 respectively at 20:12 and 20:13 hours. Apparently, hypoxaemia initially resulted in compensatory tachycardia. But with continuous hypoxaemia, the Patient's heart rate suddenly dropped to 64 at 20:14 hours and continued to drop to 31 at 20:23 hours. The Patient developed asystole from 20:24 to 20:28 hours. Despite intubation and ventilation with 100% oxygen, the Patient's SpO2 was 0% at 20:26 hours; 38% at 20:27 hours and 0% at 20:28 hours. There is no doubt in our minds that the Patient was suffering from tissue hypoxia at that time. In our view, the 1st Defendant's failure to review these important data was inexcusable.

46. We agree with Dr LUI that "*[t]he fact that the [P]atient had been deeply sedated should raise genuine hypoxaemia as the priority rather than a faulty equipment as the priority differential diagnosis*". In this connection, it is clearly stated in the HKCA Guidelines that:-

> "*If hypoxaemia is detected, staff should devote their whole attention to correcting this situation which may include ceasing the procedure until hypoxaemia is corrected*".

47. Whilst early diagnosis and prompt treatment of hypoxaemia are crucial, it is equally important in our view to find out the underlying cause(s) of the condition in order to prevent further episodes that may cause further damage to vital organs and lead to hypoxic brain damage or death. And yet, the 1st Defendant advised the 2nd Defendant to proceed with the remaining procedures of repair of ATFL and intra-articular injection of PRP without the results of blood investigations and Arterial Blood Gas Test.

48. The 1st Defendant claimed in his medical report to UH dated 5 April 2016 that:-

> "*32. From 2045 to 2114 hours*
>
> *a. After excluding other causes of severe haemodynamic disturbance, I considered that the patient probably suffered from a resistant vaso-vagal attack leading to cardiac arrest. Spontaneous circulation resumed promptly after initiation of resuscitation, and thereafter, his vital signs remained normal and stable. After communicating with Dr. Leung Hip Wing, I knew that it would take only about another 20 minutes to complete the operation. The ongoing procedure was not expected to induce excessive physiological stress to the patient. We decided to complete the procedure of repair of anterior talofibular ligament and intra-articular injection of platelet rich plasma at the same setting, rather than making this patient undergo another episode of anaethesia (thereby exposing him to anaesthetic risk) for fixing the unfinished procedure in another day.*
>
> *b. His systolic BP was around 120-100mmHg, heart rate around 90-110/min, SpO2 around 99% with 50% O2 all along. Pupil's sizes were 3mm and reactive.*
>
> *c. Post-operative Intensive Care Unit (ICU) care was considered.*
>
> *d. Tourniquet was deflated. Total duration was 68 minutes.*
>
> *e. The patient was under close monitoring throughout the procedure.*"

49. It is well known in medicine that "*the commonest thing comes first*". Indeed, Dr LUI and Professor CHEUNG agreed that "*vaso-vagal attack*" in a young man like the Patient, who was previously of good health, would be very rare.

50. In our view, the 1st Defendant's approach in making the diagnosis of "*a resistant vaso-vagal attack leading to cardiac arrest*" was flawed. This was because the 1st Defendant had never reviewed the data in the anaesthesia machine. Moreover, when end-tidal carbon dioxide signal was noted to be high after resuscitation, no blood test was ordered by the 1st Defendant for the Patient. Had these steps been taken, the diagnosis of "*hypoxia*" would be evident to the 1st Defendant as being the underlying cause of the Patient's cardiac arrest.

51. Furthermore, it is the unchallenged evidence of Dr LUI in her expert report dated 30 August 2017 and we accept that:-

> *"37... The patient remained comatose post cardiac arrest... Therapeutic hypothermia (target 33 to 35 degrees Celsius)... should be instituted as quickly as possible regardless of the place of subsequent ICU care he would be offered. Even if therapeutic hypothermia could not be instituted promptly, the patient should be monitored for temperature and not rewarmed. The body temperature of the patient was only recorded on the ~20:30 to 21:05, ranged from 35 to 37.0 degrees Celsius. Which showed that the patient had been warmed instead of cooled. This may contribute to a secondary brain injury*
>
> *38. The baseline BP of this patient was 120/66mmHg as recorded at 15:00 on 2nd March 2016. His BP remained low for a long time (~21:00 – 22:15) until Dopamine infusion was started. His systolic BP was around 85mmHg at 00:30 – 00:43 when he was escorted to QEH. The hypotensive episodes in a post cardiac arrest patient will also contribute to a secondary brain injury. Arterial blood pressure should be started for continuous monitoring, especially when escalating inotrope support. Hypotension should be aggressively treated by increasing Dopamine infusion and adding an extra vasopressor if needed...*
>
> *39. The patient was not paralyzed after intubation. Paralysis facilitates ventilation and controlling CO2 level of the patient much better and avoid further cerebral ischaemia and avoid shivering with increases oxygen consumption.*

40. Patient had 2 episodes of seizures. Seizure significantly increases oxygen consumption in an already injured brain. Status epileptic activities could have been monitored with a bedside EEG monitoring... and not relying on clinical seizure in a non-paralyzed patient.

41. These neuroprotective measures (avoiding hypotension, controlling CO2, therapeutic hypothermia and monitoring of its side effects, seizure prevention, maintaining normal glycaemia etc) are especially important in the immediate period after restoration of circulation, when re-oxygenation and reperfusion injury is at its greatest. This was a young and healthy patient. Neuroprotective strategies should be started aggressively to favor neurological recovery."

52. For these reasons, we are satisfied on the evidence before us that the 1st Defendant had failed to provide appropriate intraoperative and/or peri-operative management and care to the Patient. In failing to do so, the 1st Defendant had in our view by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, we find the 1st Defendant guilty of the disciplinary charge (a) against him.

53. Turning to disciplinary charge (b) against the 1st Defendant, we agree with Dr LUI that it is a duty of anaesthetist to monitor closely the patient and to provide adequate clinical care. In this connection, it was clearly stated in the HKCA Guidelines that:-

> *"2.4 If loss of consciousness or loss of rational verbal communication is likely, an anaesthesiologist must be present throughout the procedure".*

54. There is no doubt in our minds that the provision of management and care for the Patient, who was under sedation, required the continuous presence of the 1st Defendant. This is particularly true because the Patient's respiration under sedation was not monitored by capnography or other form of mechanical respiratory monitoring after his spontaneous respiration was changed from via facemask to via nasal cannula.

55. By leaving OT1 without handing over the responsibility during anaesthesia, the 1st Defendant had in our view by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, we find the 1st Defendant guilty of the disciplinary charge (b) against him.

56. Turning to disciplinary charge (c) against the 1st Defendant, we disagree with counsel for the 1st Defendant that the 1st Defendant had made a clinical decision in an emergency situation which turned out to be bad. Whilst resuscitation following cardiac arrest was done in an emergency situation, the subsequent discussion between the 1st and 2nd Defendants on whether to proceed with the procedures for repair of ATFL and PRP injection was not.

57. Our attention was drawn by Professor CHEUNG's expert report dated 20 September 2019 to an article entitled "*European Resuscitation Council Guidelines for Resuscitation 2015 Section 4. Cardiac arrest in special circumstances*" by Truhlar et. al. in Resuscitation 95 (2015) 148-201. At page 169, the authors of the article had this to say and we accept that on post-resuscitation care following cardiac arrest in healthcare facilities:-

> *"... Depending on the circumstances, patients successfully resuscitated after a very brief period of cardiac arrest, e.g. asystole from excessive vagal simulation may not require anything more than standard post-operative care. All those resuscitated successfully after longer periods of cardiac arrest will require admission to an ICU – unless further active treatment is deemed inappropriate. In most circumstances, anything but immediately life-saving surgery should be abandoned to enable admission to ICU for post-resuscitation care..."*

58. We agree with Dr LUI that even if the 1st Defendant "*believed that the cause was atrophine resistant vaso-vagal attack... why allowing the patient suffer from surgical pain without any anesthetic? Would it create even more vasovagal stimuli and another arrest?*" Moreover, after return of spontaneous circulation, "*patients will have different degrees of reperfusion injury and myocardial stunning. They may develop arrhythmias, cardiac dysfunction and cardiac arrest again*"; and "*[t]he patient would need a further 20-30 min(utes) of tourniquet time which by itself causes reperfusion injury...*"

59. For these reasons, we are satisfied on the evidence before us that the 1st Defendant had failed to advise the 2nd Defendant to discontinue the ankle arthroscopy operation and transfer the Patient to an intensive care unit when the circumstances so warranted. In failing to do so, the 1st Defendant had in our

view by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, we find the 1st Defendant guilty of the disciplinary charge (c) against him.

Amended Charges against the 2nd Defendant (Dr LEUNG Hip Wing)

60. In response to disciplinary charge (a), the 2nd Defendant told us that the Patient had indicated his consent to undergo ATFL repair during a telephone conversation a few days after their consultation on 17 February 2016. We are however unable to find anything to this effect in the 2nd Defendant's medical report to UH after the Incident; and ATFL was not mentioned in the Admission Arrangement Form signed by the 2nd Defendant.

61. The 1st and 2nd Defendants were adamant that when Nurse CHOW read out the name of the Surgical / Invasive Procedure at OT1 during the "*Time Out Procedure*", the 2nd Defendant voiced out that the procedures also included "ATFL". Nurse CHOW disagreed. Again, we are unable to find anything about "ATFL" in the Consent Form signed by the 2nd Defendant and the Patient.

62. When being asked by us, the 2nd Defendant accepted that "ATFL" was a different procedure from "*left ankle arthroscopy + PRP injection*" and separate consent would be required.

63. In this connection, section 2.5 of the Code of Professional Conduct (2016 edition) (the "Code") stipulates that:-

> "*Express and specific consent is required for major treatments, invasive procedures, and any treatment which may have significant risks. Specifically:-*
>
> *(a) Consent for surgical procedures involving general/regional anaesthesia and parenteral sedation must be given in writing;*
>
> *(b) For written consent, a reasonably clear and succinct record of the explanation given should be made in the consent form. The patient, the doctor and the witness (if any) should sign the consent form at the same time. Each signatory must specify his name and the date of signing next to his signature*."

64. It is evident to us from reading the Consent Form for Surgical / Invasive Procedure obtained from UH that the requirements under section 2.5 of the Code had not been complied with.

65. However, the matter does not stop there. The 2nd Defendant was not charged with failure to obtain "*informed consent in writing*". On this ground alone, we find the 2nd Defendant not guilty of the disciplinary charge (a) against him.

66. There is a consensus amongst expert witnesses for the Secretary and the 2nd Defendant that whether to continue or discontinue the repair of ATFL after resuscitation of the Patient should be a joint decision of the 1st and 2nd Defendants.

67. However, solicitor for the 2nd Defendant referred us to the New South Wales Court of Appeal's decision in *Sparks v Hobson* [2018] NSWCA 29 and argued that the 2nd Defendant, being the principal surgeon, was entitled to rely, as he did, on the 1st Defendant "*informing him of any matter of concern*", especially when the 2nd Defendant had worked with the 1st Defendant "*on at least 50 previous occasions without incident*" and he "*therefore had good reason to trust his advice*".

68. In *Sparks v Hobson*, the trial judge's findings of negligence on the part of the principal surgeon, Dr Gray, in failing to direct termination of the operation was reversed on appeal by the majority of the New South Wales Court of Appeal. Central to the appeal was section 5O of the Civil Liability Act, which provided that *"... a professional... does not incur liability in negligence arising from the provision of a professional service if it is established that the professional acted in a manner that... was widely accepted in Australia by peer professional opinion as competent professional practice*".

69. In giving the leading judgment of the New South Wales Court of Appeal, Basten JA specifically held that:-

> "*94. The responsibility of Dr Gray as the principal surgeon is to be determined on the expert evidence regarding medical practice in Australia. Although the Court was referred to authorities dealing with the role of surgeon, the defence under s. 5O is not established according to a legal standard as such, but rather by widely accepted peer professional opinion. Case-law will not assist in identifying the role of each of the medical practitioners in the operating theatre; that needed to be determined on the facts of the case as they appeared in the evidence...*"

70. In this regard, we noted from reading the Judgment of Basten JA that, "*[t]he deterioration in the [patient's] respiratory function in ICU prior to surgery had necessitated the surgery being brought forward. Respiratory failure could have resulted in death. The decision to bring forward the surgery was to avoid the risk of fatality*". But in the present case, the remaining procedures were elective non-life threatening procedures.

71. In our view, the 2nd Defendant's conduct during the Incident should be judged on the basis of the facts that we have found in the evidence and with reference to expert opinion from his peers.

72. We do not accept the evidence of the 2nd Defendant that he first came to know that the Patient had developed cardiac arrest after the remaining procedures were completed at around 21:15 hours. From where he was standing, we find it implausible for the 2nd Defendant not to notice that external cardiac massages of 5 times were administered at the other end of the Operation Table to resuscitate the Patient. In our view, the fact that the 1st Defendant had twice ordered Adrenaline, a drug commonly used in resuscitation following cardiac arrest, would hardly escape the attention of anyone (except the Patient who was unconscious) present at OT1.

73. In his medical report to UH after the Incident, the 2nd Defendant mentioned that "*[t]he patient returned to spontaneous circulation at around 8:29 pm. Then he was stabilized. After discussion with Dr Lam, we decided to proceed with the surgery*." However, there was no mention of the details of his discussion with the 1st Defendant.

74. The 2nd Defendant was informed vide the attachment to the Notice of Meeting of the Preliminary Investigation Committee ("PIC") of the Medical Council dated 3 May 2018 of the opinion of Dr TSE, the Secretary's expert in Orthopaedics & Traumatology, by his Expert Report dated 1 June 2017 that "*[t]o proceed with an operation after a significant adverse event during anaesthesia ... is questionable*". But still nothing was mentioned in the 2nd Defendant's PIC submission dated 27 June 2018 to the PIC about the details of his discussion with the 1st Defendant.

75. In his Supplemental Expert Report dated 13 October 2018, copy of which was provided by the PIC to the 2nd Defendant for his response, Dr TSE specifically commented that:-

"*3.2 I agreed that the anaesthetist is responsible for the decision on the type of anaesthetic to be used, to monitor and to provide continual anaesthetic care during the operation...*

3.3 However, it is also my opinion that the surgeon is not entirely passive. A responsible surgeon would discuss with the anaesthetist if he has any concern before, during and after any operation to improve on the patient's care..."

76. It was only by his Supplemental Medical Report dated 30 September 2019 that the 2nd Defendant disclosed to the Medical Council for the first time that:-

"*9. I asked Dr Lam what had happened and he replied that it was just a transient problem, likely breathing difficulty with desaturation. I asked if the patient was stabilized yet, particularly his vital signs, including airway, breathing (oxygen saturation) and circulation (blood pressure, heart rate and need of inotropic support), Dr. Lam replied that all the patient's vital signs were stable and there was no need for any inotropic support. I then asked Dr. Lam if I could continue the surgery and he answered yes*."

77. In support of his claim, the 2nd Defendant also relied on the Supplemental Statement of the 1st Defendant dated 25 November 2020 in which the 1st Defendant disclosed to the Medical Council for the first time that:-

"*4. I confirm that in the conversation between myself with Dr Leung after stabilization of the Patient, to discuss the Patient's condition and to decide whether to continue the operation or not, I did not specifically inform Dr Leung that the Patient had suffered cardiac arrest*.

5. After the Patient was stabilised, I told Dr. Leung the Patient's vital signs including airway, breathing and circulation were normal. I was informed by Dr Leung that the only part of the operation left to be completed was the anterior talofibular ligament repair. Dr. Leung told me this would take about 20 minutes to complete. When Dr. Leung asked if he could continue with the surgery, I confirmed that he could..."

78. It is however pertinent to note that whilst admitting the disciplinary charge (c) against him, the 1st Defendant merely reiterated in his PIC submission dated 2 October 2019 that "*[t]he Patient's condition was stable and his readings were within normal parameters as per paragraph 32. b. of the [Medical] Report [to UH]. As such, [he] diagnosed the Patient to have suffered a transient vaso-vagal attack, such that it would be viable to spend 20 more minutes to finish the operation.*" There was no mention in this PIC submission of the 1st Defendant of what the 2nd Defendant told us in paragraph 9 of his Supplemental Medical Report at all.

79. In our view, the conspicuous absence of these details of discussion in any of the previous medical reports and PIC submissions prior to the 2nd Defendant's Supplemental Medical Report dated 30 September 2019 undermines the credibility of the 2nd Defendant's assertion that he had specifically asked the 1st Defendant about the Patient's "*vital signs, including airway, breathing (oxygen saturation) and circulation (blood pressure, heart rate and need of inotropic support)*".

80. The 2nd Defendant also told us in his Supplemental Medical Report dated 26 November 2020 that:-

> "*13. On the basis of the information which I had been given by Dr Lam regarding the incident and the patient's condition following the incident, I considered the following issues before deciding to proceed with the surgery:*
>
> *(1) The patient was a young healthy patient.*
> *(2) The deterioration in the patient's condition had been transient and a short period of resuscitation had stabilised the patient's condition.*
> *(3) The deterioration was detected promptly and resuscitation was performed immediately so I expected no significant impact on the patient's well being.*
> *(4) Completion of the surgical procedure was not complicated and would not result in major bleeding which might compromise the patient's condition.*
> *(5) The damaged ligament had been identified and dissected and the remaining part of the surgery was to repair it, close the wound and inject the PRP. The majority of the surgical procedure had been completed. I estimated that I would only need a further 15-20 minutes to complete the operation.*

(6) *If the repair had been abandoned, the patient's symptoms would have persisted and he would have required further surgery and anaesthesia to complete the procedure in the future*."

81. It is however the evidence of Professor CHEUNG and we accept that the 2nd Defendant should ask the 1st Defendant "*more about the incident*" and to look at "*the vital signs*" of the Patient himself. When being asked by us, Professor CHEUNG also accepted that "*[i]f [the 2nd Defendant] knows... that SpO2 tracing was not present, with the stated bradycardia for a long time, and also the hypotension... he should not... make the decision to go ahead*."

82. When being cross-examined, Dr YEUNG agreed and we accept that had the 2nd Defendant reviewed all the vital signs of the Patient, including the data retrieved from the anaesthesia machine and the Anaesthetic Record which showed that the Patient's body temperature had fallen to 30.6°C during resuscitation following cardiac arrest at 20:30 hours, he ought to discontinue with repair of the ATFL.

83. Dr YEUNG agreed with Dr TSE and we accept that when a young man like the Patient, who was previously of good health, suddenly developed cardiac arrest in the course of a low risk surgical / invasive procedure like the present and the cause of which was unknown, "*unless continuation of surgery is critical and need to be completed, it should not be done and the wound closed in the quickest manner*".

84. In this connection, Dr TSE and Dr YEUNG both agreed and we accept that repair of ATFL was "*not critical, emergent or life-saving*".

85. For these reasons, by failing to discontinue repair of ATFL after resuscitation following cardiac arrest, the 2nd Defendant had in our view by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, we find the 2nd Defendant guilty of the disciplinary charge (b) against him.

86. Turning to the amended disciplinary charge (c) against the 2nd Defendant, we acknowledge that there are differences in opinion between Dr TSE and Dr YEUNG on whether the 2nd Defendant was under a duty to advise the Patient of the alternative option for ankle arthroscopic procedures using local anaesthesia with intra-articular infiltration. We also accept that either the opinion of Dr TSE or Dr YEUNG was representative of a reasonable body of medical opinion.

87. Differences in opinion and practice exist, and will always exist, in the medical practice. It is not for us to prefer one reasonable body of medical opinion and practice to another. Put in another way, we cannot find the 2nd Defendant guilty of the amended disciplinary charge (c) against him merely because there is, according to Dr TSE, a body of medical opinion and practice which would take a different view.

88. Accordingly, we find the 2nd Defendant not guilty of the amended disciplinary charge (c) against him.

Sentencing

89. We bear in mind that the primary purpose of a disciplinary order is not to punish the Defendants but to protect the public from persons who are unfit to practise medicine and to maintain public confidence in the medical profession by upholding its high standards and good reputation.

1st Defendant (Dr LAM Tat Shing)

90. The 1st Defendant has a clear disciplinary record.

91. In line with our published policy, we shall give the 1st Defendant credit in sentencing for his admission and not contesting the disciplinary proceedings against him.

92. We appreciate that the 1st Defendant had tremendous support from his colleagues and patients.

93. We are particularly concerned that contrary to the HKCA Guidelines, the 1st Defendant had left OT1 thrice without handing over the responsibility during anaesthesia to other qualified person, especially when the Patient's respiration under sedation was not by capnography or other form of mechanical respiratory monitoring. This was aggravated by the indisputable fact that the conspicuous absence of SpO2 readings was left unnoticed by the 1st Defendant for some 23 minutes from 20:01 to 20:24 hours.

94. We appreciate that the 1st Defendant is prepared to accept full responsibility for his misdeeds. However, through his counsel, the 1st Defendant still made "*the point that in emergency situations that call for the exercise of judgment, choices made can be looked at very differently when later viewed calmly and collectively and in retrospect*". We have grave doubts whether the 1st Defendant truly understands the shortcomings that underlay his misdeeds.

95. Taking into consideration the nature and gravity of the disciplinary charges for which we find the 1st Defendant guilty and what we have heard and read in mitigation, we shall make a global order in respect of the disciplinary charges (a), (b) and (c) that the name of the 1st Defendant be removed from the General Register for a period of 6 months. We wish to emphasize that but for his admission of guilt, the 1st Defendant would surely be facing a longer period of removal from the General Register.

96. We have seriously considered whether the removal order should be suspended but we find it inappropriate to do so for the reasons mentioned above and in particular, his lack of insight.

2nd Defendant (Dr LEUNG Hip Wing)

97. The 2nd Defendant has a clear disciplinary record.

98. We wish to emphasize that it is not an aggravating factor with regard to sentence that the 2nd Defendant had offered in the course of this Inquiry an account that was found by us to be untrue.

99. However, in sentencing the 2nd Defendant, we need to bear in mind whether he has demonstrated sufficient insight in the sense that he is able to stand back and accept, with hindsight, what he did was wrong and will take steps to prevent a reoccurrence in the future.

100. In the course of mitigation, solicitor for the 2nd Defendant referred us to a letter dated 30 November 2020 in which the 2nd Defendant said:-

> "*7. Following the complaint and upon considering the expert's reports and discussing these with my colleagues, I accept that I should have made further inquiries of Dr. Lam and not proceeded with the operation*".

101. Regrettably, the 2nd Defendant still refused to accept up to this morning that his decision to continue repair of ATFL after resuscitation of the Patient following cardiac arrest was not only wrong but was also made without proper assessment of the Patient's medical condition.

102. We have grave doubts whether the 2nd Defendant is genuinely remorseful and truly understands the shortcomings that underlay his misdeeds.

103. Taking into consideration the nature and gravity of the disciplinary charge for which we find the 2nd Defendant guilty and what we have heard and read in mitigation, we shall make an order in respect of the disciplinary charge (b) that the name of the 2nd Defendant be removed from the General Register for a period of 2 months.

104. We have seriously considered whether the removal order should be suspended but we find it inappropriate to do so for the reasons mentioned above and in particular his lack of remorse and insight.

Prof. LAU Wan-yee, Joseph, SBS
Chairperson of the Inquiry Panel
The Medical Council of Hong Kong