

MEDICAL REGISTRATION ORDINANCE (Chapter 161)

ORDER MADE BY THE INQUIRY PANEL OF  
THE MEDICAL COUNCIL OF HONG KONG

DR LAM TAT SHING (REGISTRATION NO.: M13475)

It is hereby notified that after due inquiry held on 30 November 2020, 22 May 2021, 24 May 2021, 4 July 2021, 18 July 2021 and 31 October 2021 in accordance with section 21 of the Medical Registration Ordinance, Chapter 161 of the Laws of Hong Kong, the Inquiry Panel of the Medical Council of Hong Kong ('Inquiry Panel') found Dr LAM Tat Shing (Registration No.: M13475) guilty of the following disciplinary charges:—

*'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:—*

- (a) failed to provide appropriate intraoperative and/or peri-operative management and care to the Patient;*
- (b) left the operating theatre without handing over the responsibility during anaesthesia; and*
- (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.'*

The name of Dr LAM has been included in the General Register from 2 July 2002 to the present. Dr LAM has been included in the Specialist Register under the specialty of Anaesthesiology since 2 September 2009.

Briefly stated, the Secretary of the Medical Council received a letter from the then Deputy Medical Director of Union Hospital ('UH'), on 27 May 2016 complaining against Dr LAM, the Anaesthetist-in-charge for the Patient on 2 March 2016 (the 'Incident'), for *'highly probable professional misconduct during an ankle arthroscopy operation'*.

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 report prepared by Dr LAM); (iii) CCTV footage captured at the Nursing Station of Operating Theatre of UH; and (iv) video demonstration of the anaesthetic machine's alarm system.

There was no dispute that the Patient was admitted to UH at 14:22 hours on 2 March 2016 under the care of one Dr LEUNG for an ankle operation later in the same day. There was also no dispute that the operations eventually carried out were (i) an arthroscopy that involved osteochondral lesions, shaving, microfracture; (ii) Platelet Rich Plasma ('PRP') injection; and (iii) repair of anterior talofibular ligament ('ATFL').

According to the Statement of Agreed Facts, Dr LAM admitted that he left the Operation Theatre thrice during the operations without delegating duty to anyone, namely, (i) for about half a minute during 19:45 to 20:00 hours to get Rocophin; (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'.

There was no dispute that the anaesthesia machine was functioning properly at all material times. And yet, according to Dr LAM, 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'*.

According to Dr LAM's medical report to UH dated 5 April 2016, after his return to Operation Theatre at around 20:16 hours, Dr LAM *'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 anaesthetic 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...’.*

There was however no dispute from reading the data retrieved from the anaesthetic machine after the Incident that SpO<sub>2</sub> reading was ‘*undetectable*’ from 20:01 to 20:25 hours.

According to Dr LAM’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...’* The Patient’s heart did not respond to Atrophine 1.2mg that he gave. He stopped the TCI Propofol at 20:22 hours. 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.

At around 20:28 hours, Dr LAM ‘*ordered 2nd dose of Adrenaline 1:10,000 (1mg in 10 ml)*’ and ‘*performed chest compression around 5 times*’. The Patient had a return of spontaneous circulation at around 20:29 hours. Dr LAM ‘*closely monitored the [P]atient*’ from 20:35 to 20:40 hours. After communicating with Dr LEUNG at around 20:45 hours, ‘*[he] knew that it would take only about another 20 minutes to complete the operation*’. There was no dispute that Dr LAM did not advise Dr LEUNG 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.

The Patient failed to regain consciousness during the reversal of anaesthesia. 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, Dr LAM together with a nurse escorted the Patient from UH to QEH by ambulance.

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.

On 7 July 2016, the Secretary of the Medical Council further received a complaint from the Patient’s father against Dr LAM and Dr LEUNG in respect of the Incident.

Dr LAM admitted the factual particulars of the 3 disciplinary charges against him and indicated through his counsel that he would not be contesting the proceedings.

It was evident to the Inquiry Panel 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. In view of the Inquiry Panel, Dr LAM ought to be vigilant in ensuring adequate oxygenation for the Patient at all material times.

The Inquiry Panel found it implausible for Dr LAM to have overlooked the conspicuous absence of SpO<sub>2</sub> reading. In view of the Inquiry Panel, Dr LAM was not reading the displayed figures carefully.

It was also evident to the Inquiry Panel 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 SpO<sub>2</sub> was 0% at 20:26 hours; 38% at 20:27 hours and 0% at 20:28 hours. There was no doubt to the Inquiry Panel that the Patient was suffering from tissue hypoxia at that time. In view of the Inquiry Panel, Dr LAM’s failure to review these important data was inexcusable.

Whilst early diagnosis and prompt treatment of hypoxaemia were crucial, it was equally important in the view of the Inquiry Panel to find out the underlying cause(s) of the condition in

order to prevent further episodes that might cause further damage to vital organs and lead to hypoxic brain damage or death. And yet, Dr LAM advised Dr LEUNG 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.

In the view of the Inquiry Panel, Dr LAM's approach in making the diagnosis of '*a resistant vaso-vagal attack leading to cardiac arrest*' was flawed. This was because Dr LAM 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 Dr LAM for the Patient. Had those steps been taken, the diagnosis of '*hypoxia*' would be evident to Dr LAM as being the underlying cause of the Patient's cardiac arrest.

The Inquiry Panel also agreed with the unchallenged evidence of the Secretary's expert witness in anaesthesiology, Dr LUI, in her expert report 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.'*

For these reasons, the Inquiry Panel was satisfied on the evidence that Dr LAM had failed to provide appropriate intraoperative and/or peri-operative management and care to the Patient. In failing to do so, Dr LAM had in view of the Inquiry Panel by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, Dr LAM was found guilty of the disciplinary charge (a) against him.

There was no doubt that the provision of management and care for the Patient, who was under sedation, required the continuous presence of Dr LAM. This was 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. By leaving the Operation Theatre without handing over the responsibility during anaesthesia, Dr LAM had in view of the Inquiry Panel by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, Dr LAM was found guilty of the disciplinary charge (b) against him.

The Inquiry Panel disagreed with Dr LAM that he 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 Dr LAM and Dr LEUNG on whether to proceed with the procedures for repair of ATFL and PRP injection was not.

The Inquiry Panel also quoted from 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 and agreed with the authors 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 stimulation 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...'*

The Inquiry Panel agreed with Dr LUI, that 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...'

The Inquiry Panel was satisfied on the evidence that Dr LAM had failed to advise Dr LEUNG 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, Dr LAM had in view of the Inquiry Panel by his conduct during the Incident fallen below the standards expected of registered medical practitioners in Hong Kong. Accordingly, Dr LAM was found guilty of the disciplinary charge (c) against him.

The Inquiry Panel was particularly concerned that contrary to the Hong Kong College of Anaesthesiologists' *Guidelines for Safe Sedation for diagnostic and therapeutic procedures* (April 2012), Dr LAM had left the Operation Theatre 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 SpO<sub>2</sub> readings was left unnoticed by Dr LAM for some 23 minutes from 20:01 to 20:24 hours.

The Inquiry Panel had grave doubts whether Dr LAM truly understood the shortcomings that underlay his misdeeds because through his counsel, Dr LAM still made at closing submission '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'.

Taking into consideration the nature and gravity of the disciplinary charges and what was heard and read in the mitigation, the Inquiry Panel ordered that Dr LAM's name be removed from the General Register for a period of 6 months.

Pursuant to the Inquiry Panel's order, Dr LAM's name has been removed from the General Register on 31 December 2021.

The order is published in the *Gazette* in accordance with section 21(5) of the Medical Registration Ordinance. The decision of the Inquiry Panel of the Medical Council is published in the official website of the Medical Council of Hong Kong (<http://www.mchk.org.hk>).

LAU Wan-ye, Joseph Chairman, *The Medical Council of Hong Kong*