The 64th Annual Meeting of Taiwan Society of Anesthesiologists and International Conference

第64屆台灣麻醉醫學會年會暨國際學術研討會

2020 Sep. 19 - Sep. 20

主辦單位：台灣麻醉醫學會　　承辦單位：高雄醫學大學附設中和紀念醫院麻醉部

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"艾伯維"西福銳吸入用液劑Ultane Inhalation Anesthetic Liquid。**適應症**：吸入性全身麻醉劑。**說明**：Sevoflurane適用於成人及兒童病患於進行門診手術與住院手術時之全身麻醉的誘導與維持。**劑量與用法**：1.麻醉前用藥：應依據個案的需要，與麻醉醫師的判斷來選擇麻醉前用藥。2.手術麻醉：使用者應知道麻醉期間自揮發器中釋出之Sevoflurane的濃度。使用特別為Sevoflurane定量的揮發器即可達到此項目的。3.誘導麻醉：應依照患者的年齡與臨床狀況來個案調整劑量。在吸入Sevoflurane後，可給予短效的barbiturate或其他靜脈投予的誘導麻醉劑。Sevoflurane誘導麻醉可在氧氣或氧氣-笑氣混合物下完成。作為誘導麻醉用途，Sevoflurane吸入濃度達8%時，通常可在2分鐘內對成人與兒童產生手術麻醉作用。4.維持麻醉：通常使用濃度為0.5-3%之Sevoflurane，不論併用或不併用笑氣，都可達到手術所需的麻醉程度。5.甦醒:Sevoflurane麻醉後一般來說很快就會甦醒。因此，病人可能需要儘早給予術後止痛。**禁忌症**：Sevoflurane不應用於已知或懷疑在基因上可能透發惡性體溫過高。Sevoflurane不應用於已知對Sevoflurane或其它鹵化吸入性麻醉劑敏感的病患（如有肝毒性病史，通常包括肝臟酵素升高、發燒、白血球增多和/或與使用麻醉劑有關的短暫嗜伊紅血球增加）。**不良事件**：和其他的吸入性麻醉劑一樣，Sevoflurane對心臟呼吸的抑制與劑量高低有關。大部分Sevoflurane不良事件的嚴重度為輕微至中度，且持續時間短。術後期間的噁心與嘔吐（手術與全身麻醉的常見後遺症），可能和吸入性麻醉劑、手術中或術後投予的其他藥物及與病人對手術過程的反應有關。**警語及注意事項**：Sevoflurane有造成呼吸抑制的可能，並可能因麻醉先期之鴉片類用藥或其他會造成呼吸抑制的藥物而增強。需進行呼吸的監控，並視需要進行呼吸輔助。

只有受過全身麻醉操作訓練者才可施用sevoflurane。維持氣道通暢的設備、人工呼吸器、氧氣筒、及循環復甦器必須隨時備用。

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神經肌肉傳導阻滯之後，和常規的麻醉後處置一樣，建議在剛完成手術後期間應監控患者是否發生不良事件，包括神經肌肉傳導阻滯復發。

恢復時監控呼吸功能：
除非神經肌肉傳導阻滯恢復後已可適當自發性呼吸，否則必須強制對患者施行呼吸支持。萬一拔管後神經肌肉傳導阻滯復發的話，應提供適當的呼吸支持。即便神經肌肉傳導阻滯已完全恢復，其他在手術中或手術後所使用的藥物亦可能造成呼吸抑制，而需要呼吸支持。

凝血作用：
對於正在接受抗凝血治療患者，考慮使用sugammadex時，應小心謹慎。

腎功能不全：
不建議對重度腎臟受損患者施用sugammadex，包括那些需要洗腎的患者。

肝功能不全：
肝臟不會代謝、亦不會排除 sugammadex；因此並未專門針對肝病患者進行過相關研究。治療重度肝病患者時應特別注意。

懷孕、哺乳與生育力
懷孕：
目前並無關於sugammadex暴露對懷孕影響的臨床資料。動物研究並無法直接或間接指出對懷孕、胚胎/胎兒發展、分娩或產後發展的有害作用。對孕婦施用sugammadex 時應特別謹慎。

哺乳：
無法得知sugammadex是否會分泌到人類乳汁中，但動物研究結果顯示sugammadex會分泌到乳汁中。一般而言，cyclodextrins的口服吸收量很低，而且預期對哺餵母乳的產婦施用單一劑量時不會對乳兒產生任何影響。

對餵哺母乳的婦女投予 sugammadex 時應謹慎。

生育力：
目前尚未研究過sugammadex對人類生育力的影響。評估生育力的動物研究並未發現任何有害的影響。

不良反應
麻醉氣道併發症：
麻醉氣道併發症包括抗拒氣管內管的反應、咳嗽、輕度抗拒反應、手術期間覺醒反應、 麻醉程序或手術期間咳嗽、或麻醉程序相關患者自主呼吸。

麻醉併發症：
指的是神經肌肉功能恢復的麻醉併發症，包括：發生在麻醉程序或手術時的四肢或身體 動作、或咳嗽；怪相；或氣管內管的吮吸動作。

手術併發症：
手術併發症包括咳嗽、心博過速、心博徐緩、移動、以及心跳速率升高。

藥物過敏反應：
一些患者和志願者有發現過敏反應，包括過敏性休克反應。這些由單獨的皮膚反應到嚴重的全身性反應反應不同(如過敏、過敏性休克)，且發生在未使用過sugammadex的患者。與這些反應有關的症狀包括：潮紅，蕁麻疹，紅斑疹，(嚴重的)低血壓，心動過速，舌頭腫脹，咽頭腫脹，支氣管痙攣及肺 部阻塞。嚴重藥物過敏反應可能致死。

顯著的心搏徐緩：
在上市後研究中，極少數的案例曾被觀察到在施用sugammadex後數分鐘內，發生顯著的心搏徐緩及伴隨有心跳停止的心搏徐緩。

肺病患者：
在上市後資料及一項以曾經出現肺部併發症之患者為研究對象的專一臨床試驗中，發現 可能為相關不良事件的支氣管痙攣。醫師應意識到曾出現過肺部併發症的患者可能會出 現支氣管痙攣。

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理事長的話

台灣麻醉醫學會理事長 **陳坤堡**

各位麻醉專家同道們，大家好。

2020年新冠肺炎肆虐全球，世界各國災情慘重，台灣在政府決策正確、醫界將士用命、醫療水準超高與民眾極力配合的種種因素下，天佑台灣，疫情影響相對較輕，即便如此，我們還是抱著審慎惶恐的心情盡心盡力籌辦此次會議，坤堡謹代表台灣麻醉醫學會與主辦單位，熱情的邀請大家一起參與第64週年的台灣麻醉醫學會年會暨國際學術研討會。

這次年會在南台灣最重要的城市高雄舉行，高雄醫學大學又是歷史悠久的醫學重鎮，在此學術重鎮進行學術與友誼的交流，將會有如高雄的天氣般令人感到心情澎湃洶湧，而且會有滿滿的收穫。

今年大會主題是GO A^{3}HEAD TOGETHER！代表麻醉界都是A的三次方最優秀的領導，除此之外A^{3}是Anesthesia, Analgesia, Airway，HEAD的H是Humanity，E是Education，A是Algorithm，D是Data science。

會議內容除了強化麻醉3大領域之外，也關心人性、人文與教育，更深入探討人工智慧、大數據等未來趨勢，顯示麻醉同道們除了要以病人為中心持續鞏固強化原有的強項之外，更需要在愛與關懷的精神下，擴展視野結合科技與智慧，讓病人得到更好的照護，讓麻醉專業發揮更大的貢獻。

初秋的高雄是美麗的，更是適合交流的季節，讓我們相約在南台灣相見，享受南方人熱情的招待，享受地主高醫團隊細心安排的學術與友誼的交流。

YES, GO A^{3}HEAD TOGETHER！

高雄見！WELCOME！

陳坤堡

Message from the President

President of TSA
Kuen-Bao Chen, MD., PhD.

Kuen-Bao Chen

Hello all anesthesia experts, Covid-19 pneumonia is raging all over the world in 2020. God bless Taiwan. Due to various factors such as good government leadership, the efforts of medical staff, high-quality medical qualities, and strong cooperation of the people, the impact of the epidemic is relatively small in Taiwan. Even so, we still try our best to organize this meeting with caution. Kuen-Bao, on behalf of the Taiwan Society of Anesthesiologists and the organizing committee, invites you to participate in the 64th Anniversary Annual Meeting of the TSA and international academic symposium.

This year's conference theme is GO A^3HEAD TOGETHER! Representing the anesthesiologists are the best leaders. In addition, A^3 is Anesthesia, Analgesia, Airway, H is Humanity, E is Education, A is Algorithm, and D is Data Science.

In addition to the three major areas of anesthesia, the content of the meeting is also involved humanities and education. It will further discuss future trends such as artificial intelligence and data science. In the spirit of love and care, it is necessary to expand our horizon, combine technology and wisdom, so that patients can get better care, and the anesthesia profession can make greater contributions.

Kaohsiung in the early autumn is beautiful, and it is a season suitable for communication. Let's meet in southern Taiwan, enjoy the warm hospitality of southerners, and enjoy the academic and friendship exchanges carefully arranged by the organizers.

YES, GO A^3HEAD TOGETHER!
Meet in Kaohsiung! WELCOME!

大會榮譽會長的話

2020年台灣麻醉醫學會年會榮譽會長 **鍾飲文**

2020年COVID-19疫情爆發肆虐全球，世界各國災情慘重，站在第一線的麻醉醫護人員，在面對此一來勢洶洶卻又陌生之疾病所致，必需即時為病患做手術或緊急氣道插管處置，著實飽受巨大身心壓力！值此艱辛時刻，感謝大家撥冗蒞臨指導本次年會，也感謝台灣麻醉醫學會對高醫的肯定與支持，在睽違二十三年後，再次由本院麻醉部承辦此盛會，讓南台灣高雄燦爛的陽光與在地人的熱情，療癒我們堅守防疫緊繃已久的身心。

成功的外科手術，需要醫護團隊展現高度合作默契與精湛技術方可完美達成目標，在此環環相扣的醫療過程中，麻醉專業給予病患的照顧，從手術前的患者狀況與風險評估開始、手術室所需的各項麻醉治療與生命徵象維持，到恢復室術後觀察與止痛照護，是外科手術中陪伴病患走完此陌生療程，最久也最重要的功臣之一，可謂手術成功的幕後推手。隨著時代的改變與專科醫療的需求，麻醉科醫師之專業擴展到重症加護治療、疼痛處理、呼吸治療等領域，進而扮演著醫療環節中更加關鍵、緊急的重要角色。

高醫附院成立於民國46年，麻醉部的設立至今也逾半世紀。本院兼具醫學中心與大學教學醫院之領導地位，肩負著醫學教育、醫療服務與疾病研究之任務，同時以提供全人照護、培育優秀人才及發展卓越科技為目標。展望未來，如何善用創新科技，並落實於臨床教學、精準醫療與研究發展，以因應醫療和健康產業的變革，亦為本院自許重要之任務與挑戰。相信透過本次世界菁英齊聚切磋之年會，定能拓展本院及與會嘉賓的醫療視野，期能拋磚引玉，與各科醫療團隊為共同提升病患健康生活品質，延長人類平均餘命而努力。

鍾飲文

Message from the Honorary President

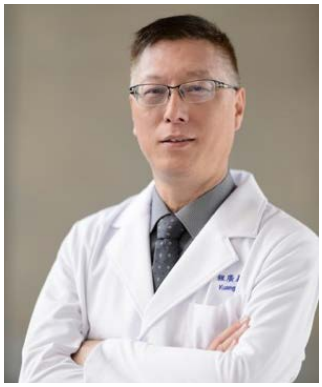
The Honorary President of 2020 TSA Annual Meeting
Inn-Wen Chong, MD., PhD.

The COVID-19 is raging around the world, and all countries have been undergoing horrible and severe disasters. Especially those medical staff on the front line face this threatening but unknown disease, still have to operate immediately or intubate the trachea urgently, and are suffering from tremendous physical and mental stress! At this critical moment, I would like to thank everyone for taking the time to guide this annual conference. I will also appreciate the Taiwan Society of Anesthesiologist for their affirmation and support of Kaohsiung Medical University Chung-Ho Memorial Hospital (KMUH). After 23 years, the Department of Anesthesiology of KMUH once again hosts this grand annual conference.

Let the brilliant sunshine and the enthusiasm of the people here heal our body and mind that have been alert for the COVID-19 for a long time.

Successful operations require medical teamwork with high cooperation, tacit understanding, and superb skills. In this connected medical process, the caring of the patients by the anesthesia physicians are starting up from the assessment of the patient's condition and surgical risk before the operation, and the various anesthesia treatments and vital signs maintenance required in the operating rooms, to the postoperative observation and painless caring in the recovery rooms. The anesthesia physician is the one who accompanies and takes care of the patient the most through the surgical procedure, so of course, he or she deserves the name of the hero behind the successful operation. Regarding the changing and demanding for specialized medical care, the specialties of the anesthesia physicians have to expand to the fields of intensive care, pain management, and respiratory therapy and play a more critical and indispensable role in the medical system.

Kaohsiung Medical University Chung-Ho Memorial Hospital was founded in 1957, and the history of the Department of Anesthesiology has more than half a century. Our hospital (KMUH) plays the role of a leader is not only a medical center but also a university teaching hospital. We shoulder the mission of clinical education, medical services, and disease research. Our ambitious goal is to provide holistic care, cultivate outstanding talents, and develop remarkable technology. Looking to the future, how to take good advantage of innovative technology, and implement it in clinical teaching, precision medicine, and technology research to face the changing in the medical and health industries is also an important task and challenge for our hospital. I believe that the communication of this annual conference will broaden our horizons not only in anesthesia but also in medical vision from the moment we shared here and in the prosperous and fruitful near future. Meanwhile, we expect to be able to start a discussion and work with medical teams in all departments to improve the quality of patients' healthy living and extend the average human remaining life.



大會會長的話

2020年台灣麻醉醫學會年會大會會長 **程廣義**

GO A³HEAD TOGETHER!

愈是艱困情況，愈需有共識以突破現況。麻醉醫療人員本為病人麻醉、為病人減痛，2020年COVID-19疫情爆發，幾乎所有的氣道插管都由麻醉醫師負責，突顯麻醉醫學會應更重視氣道處理的議題。

人工智慧對於醫療與麻醉的衝擊，麻醉人應正面態度面對此巨大的醫療改變，本次年會特別邀請了多位大師級的講者，發表珍貴的研究心得與趨勢報告，希望會員藉此機會吸收人工智慧與大數據的新知。

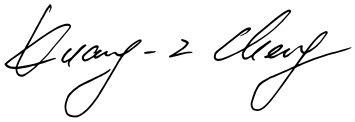
新技術、新知識雖為醫療主流，但強大的學會首要有紮實的訓練基準與訓練模式、落實的執行力，才能為未來的優秀麻醉專科醫師紮下深厚根基。本次年會也提供人文價值、住院醫師教育與專科醫師甄審變革等課程，供各位前輩先進、同儕及年輕學者們，有重新思考的方向。另外，年會也首次嘗試以直播方式討論重要議題，提供平台增加參與及討論，希望能激盪出更多創意與想法。年會第二天，也特別安排二場實作坊：超音波、衛教懶人包實作坊，課程內容極具實用性，相信會員們會有滿滿的收穫。

繼民國86年高醫主辦麻醉年會，歷經23年後很高興再次承辦年會，感謝理事長、理監事們與秘書處的大力支持與信賴，才能解決執行中的重重困難。高醫上下齊心一致、激發創意共同籌備，這是「高醫精神」綿亙的展現，在此我也深深以我們高醫團隊為榮。

全球疫情尚在蔓延之中，台灣雖相對安全，然而，「山川異域，風月同天」，疫情處境相互牽連。在此特別的時刻，邀請大家齊聚高雄，一起分享與學習。高醫，歡迎您。

Message from the Chairman

Chairman of 2020 TSA Annual Meeting
Kuang-I Chen, MD., PhD.



The more difficult the situation, the more consensus is needed to break through. The duty of anesthesia staff members is to provide anesthesia and analgesia to patients. During the COVID-19 pandemic in 2020, anesthesiologists have been and continue to be responsible for almost all tracheal intubations. The Taiwan Society of Anesthesiologists should focus more on airway management issue.

Anesthesia practitioners should positively face the great impact of artificial intelligence on health care and anesthesia. This Annual Meeting will specially invite several master speakers to present the latest and most precious research experience and developing trends. It is hoped that our members can take this opportunity to learn much new knowledge concerning artificial intelligence and big data.

Although new technologies and new knowledge are the mainstream of health care, a strong society must be able to execute training benchmarks and training models to provide a foundation for future anesthesiologists. This Annual Meeting will also provide courses on humanistic value, resident education, and specialist exam reforms for seniors and peers of young scholars to reflect on and reevaluate these issues. In addition, the Annual Meeting will endeavor to discuss important issues via livestreaming for the first time and provide a platform to increase participation and discussion. It is hoped that this may induce more creativity and ideas. On the second day of the Annual Meeting, two workshops will be arranged: ultrasound and health education. I believe that members will learn much from the practical courses.

Twenty-three years on from the 1986 Annual Meeting at Kaohsiung Medical University Hospital, we are very glad to host the Annual Meeting again. We also show special thanks to the chairman, supervisors and the secretary for strong support and trust to solve any difficulties at this time. The spirit of "Kaohsiung Medical University Hospital" continuously depicts all participants as preparing and working together; herein, I am also deeply proud of our team.

Although Taiwan has been relatively safe during this global pandemic, we are still members of the global village, and the pandemic still affects us all. At this special moment, we invite everyone to visit Kaohsiung to share and learn together. Kaohsiung Medical University Hospital welcomes you.

目錄 CONTENTS

003 理事長致詞
005 大會榮譽會長致詞
007 大會會長致詞
010 籌備委員會
011 報到資訊
012 理監事選舉注意事項
014 領票與選舉動線
015 交通與停車指引
017 大會接駁資訊
018 會場平面圖
021 109年9月19日大會議程表
029 A廳演講場次
040 B廳演講場次
048 C廳演講場次
052 D廳演講場次
062 Louisa Coffee論壇摘要
066 Lunch Symposium
023 109年9月20日大會議程表
077 A廳演講場次
080 B廳演講場次
084 C廳演講場次
087 D廳演講場次
090 超音波專題演講與實作坊
097 衛教懶人包專題演講與實作坊
100 Lunch Symposium
101 優秀海報論文最佳八篇名單
103 學術論文目錄
129 贊助廠商名錄

籌備委員會

榮譽會長：鍾飲文

大會會長：程廣義

大會秘書長：許弘德、吳昇樺

大會財務長（學會財務長）：林作舟、曾光毅

學術組及學術論文審查委員：

盧奕丞、孫維仁、劉彥青、賈元一、林眞福、鄭仁坤、褚錦承、林作舟、吳紹群、柳建丞、孫國清、吳昇樺、許弘德、陳柏年

資訊組：高子平

招商組：林佳衡、陳冠宇

總務組：林佳衡、陳冠宇、林庭宇、陳玫君、廖桂林、黃資文、楊惠盈、魏華怡

公關組：謝佳芳、徐雍和、馬兆緯、莊文銘

財務組：曾光毅、沈雅春

場務組：胡品揚、李姿瑩、林庭宇

註冊組：蘇妙佩

選舉組：林佳衡

晚宴組：徐雍和、陳祈安

防疫組：謝俊祺

庶務組：孫國清

視覺設計/紀念品規劃：莊文銘

秘書組：邱舜麗、黃昭芬、林庭宇、孫嘉薇

★特別感謝★

高雄醫學大學附院體系全體醫護同仁全力協助

台灣麻醉醫學會理監事名單

理事長：陳坤堡

常務理事：程廣義、鄒美勇、戴裕庭、簡吉聰

理事：石博元、余黃平、林子玉、林眞福、洪至仁、孫維仁、郭書麟、陳勇安、陳嘉雯、曾稼志、楊承憲、賈元一、劉時凱、謝宜哲、簡志誠、蘇百川

常務監事：廖文進

監事：李宗勳、徐永偉、高銘章、陳貞吟、彭后正、劉鎮鯤

學會秘書處：

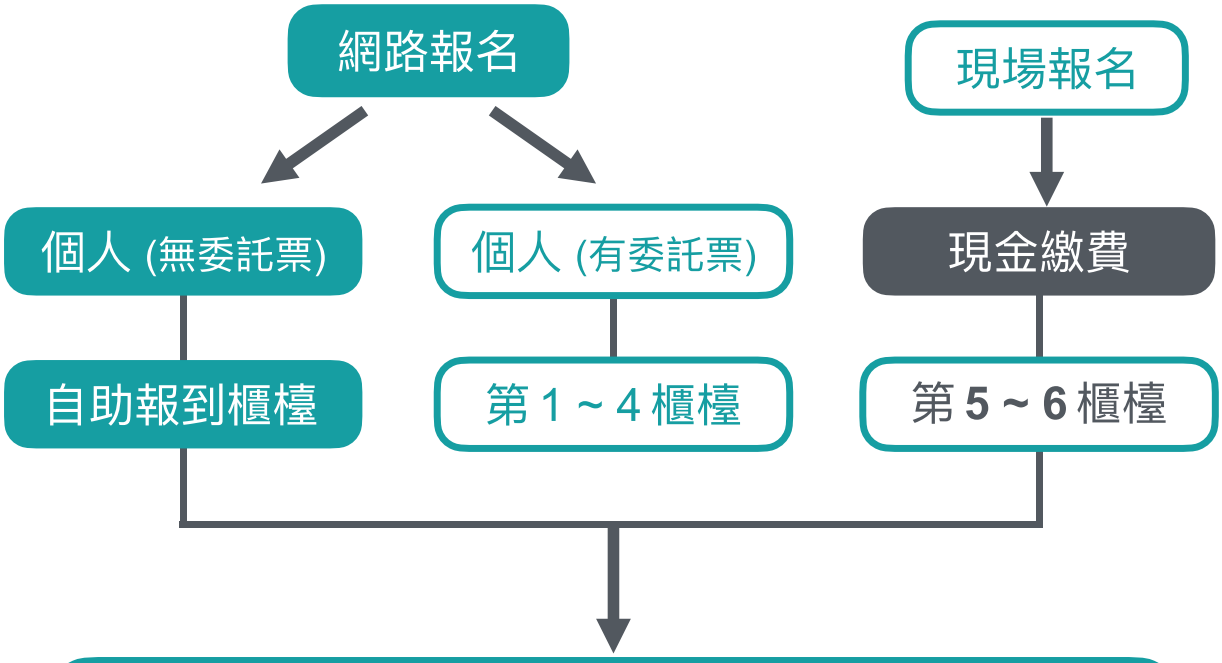
秘書長：吳恩博

副秘書長：張怡、孫國清

學會秘書：吳昀禎、盛慧珊

2020麻醉年會 報到流程

請出示身份證件



領取年會資料:

識別證、收據、餐卷、選舉通知單、

大會提袋、紀念品

請於 1F 會場入口處領取 "體溫ok" 識別貼紙

進入 B2 會場請務必佩戴

識別證、口罩、及體溫ok貼紙

第三十一屆理監事選舉注意事項

請記住個人會員編號並攜帶身份證明

自行領票

請依本人會員編號至領票處憑本人身份證明文件（身份證、駕照或健保卡）領取本人選票。

委託領票

第九條（委託出席及限制）：

人民團體之會員（會員代表）因故不能出席會員（會員代表）大會參加選舉或罷免時，得以書面委託各該團體之其他會員（會員代表）出席，並行使其權利。但一人僅能受一會員（會員代表）之委託。在職業團體，其委託出席人數除法律另有規定外，不得超過親自出席人數之三分之一。會員（會員代表）如有類別之限制者，應委託其同一類別之會員（會員代表）出席。前項委託出席人數及親自出席人數之計算，以簽到簿所列者為準。

會員（會員代表）委託其他會員（會員代表）出席後，如本人親自出席會議，應以書面終止委託並辦理簽到後行使本人之權利。

分區選舉會員代表時，其委託依第一項規定辦理。但職業團體如非以集會方式分區選舉會員代表者不得委託。

1.每位會員僅可接受一位委託人委任。被委託會員必須於9月19日下午四點前至報到櫃臺辦理登記，委託書逾時作廢。

2.需有報到櫃台輸出之委託登記書方可領取選票。若發生重複委託或委託人提出「取消委託」(附件)之書面申請，則委託書皆失效。

3.請受委託人持2.中之委託登記書至領票區領取委託人選票。

選票劃記

1.應親自在指定場所內上劃記選票，並親自投入票匭。

2.圈寫之被選舉人總計不得超出應選名單（理事21人監事7人。也曾採用限制連記法理事票限定劃記10票、監事票劃記3票。）

3.劃記後不得塗改。

4.請使用學會於各圈票處提供之黑筆劃記。

5.不得將選票撕破致不完整或污染致不能辨別。

6.不得在選票上簽名蓋章或捺指模。

7.不得在旁監視、勸誘或干涉其他選舉人或罷免人圈投選舉或罷免票者。

8.不得集體圈寫選舉或罷免票或將已圈寫之票明示他人者。

9.不得劃記過大超出該被選舉人欄外。

10.本次選舉開票採電腦計票作業。

無效票認定

人民團體選舉罷免法第十八條（選票無效之情形）

選舉票或罷免票有左列情事之一者無效：

一、未依第八條及第三十七條之規定辦理者。

二、圈寫（含塗改）之被選舉人總計超出規定應選出名額或連記額數者；或在罷免票上圈「同意罷免」「不同意罷免」二種者。

三、夾寫其他文字或符號者。但被選舉人或被聲請罷免人如有兩人以上同姓名，由選舉人或罷免人在其姓名下註明區別者，不在此限。

四、所圈寫之被選舉人或被聲請罷免人姓名與會員（會員代表）名冊不符者。

五、所圈地位不能辨別為何人或「同意罷免」「不同意罷免」者。

六、圈寫後經塗改者。

七、書寫字跡模糊，致不能辨識者。

八、用鉛筆圈寫者。但採電腦計票作業者，不在此限。

九、在選舉或罷免票上附任何物件，顯有暗號作用者。

十、將選舉票或罷免票污染致不能辨別者。

十一、簽名、蓋章或捺指模者。

十二、將選舉票或罷免票撕破，致不完整者。

十三、不加圈寫，完全空白者。

選票之有效無效認定也有爭議時由會議主席與全體監票員表決之表決結果正反意見同數者該選票應為有效。

當選

第二十五條（當選及候補當選）

人民團體之選舉，其當選及候補當選名次按應選出名額，以得票多寡為序。票數相同時，以抽籤定之，如當選人未在場或雖在場經唱名三次仍不抽籤者，由會議主席或主持人代為抽定。前項當選人得當場或於就任前以書面聲明放棄當選。

第二十六條（同時當選之擇一擔任）

人民團體之會員（會員代表），如一人同時當選為理事與監事或候補理事與候補監事時，由當選人當場擇一擔任，如當選人未在場或在場而未能擇定者，以得票較多之職位為當選；票數相同時，以抽籤定之，如一人同時為正式當選及候補當選時，以正式當選者為準。

台灣麻醉醫學會章程第十五條本會置二十一人，監事七人。選舉時得同時選後補理事三人，後補監事一人。每屆理事監事需新任至少三分之一名額（理事七人，監事三人）。

2020年年會會員大會/投票選舉時程

時間	議程
16:00	委託登記截止
16:40-	結束後進行選舉，由工作人員依序引導會員由A廳移動至B廳領票與進行圈選。
18:20	會員晚宴(接駁至林皇宮三樓樂喜廳)

2020年台灣麻醉醫學會理監事選票領取流程說明

一樓報到處櫃枱受理以下選票事務

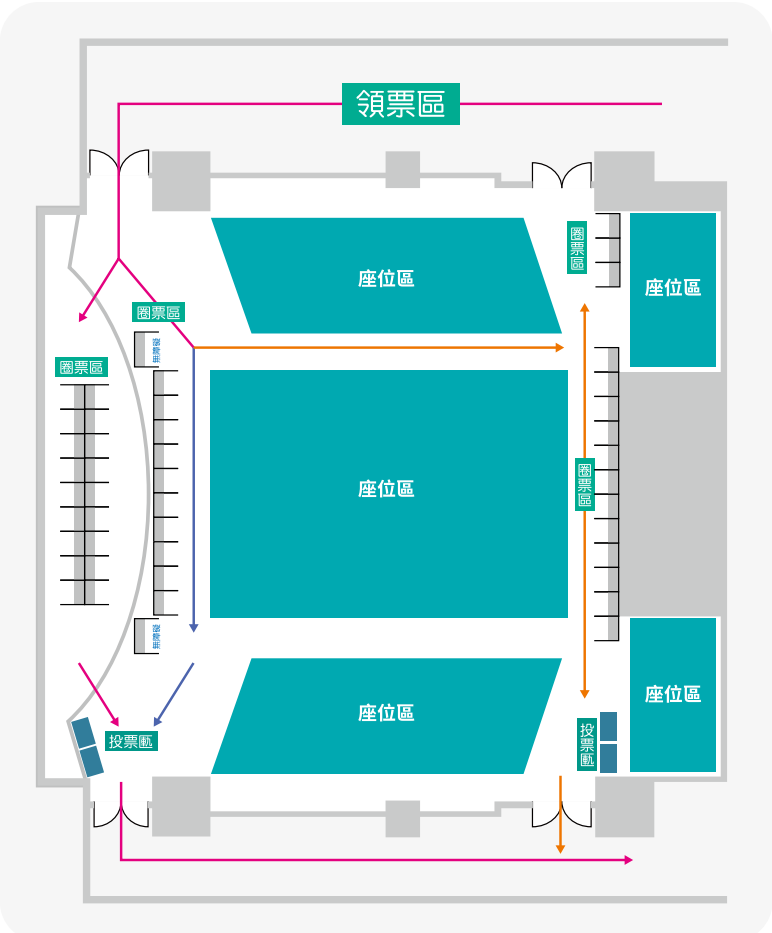
- 本人報到：確認投票資格
- 受委託報到：繳交委託書並確認登錄受託投票資格，於2020年9月19日下午16:00結束，逾時不候

領票作業

會員大會後隨即進行第31屆台灣麻醉醫學會理監事選舉。

- 會員請於A廳等候與排隊，依序由工作人員引導至B廳外五個領票窗口
- 領票時，會員憑身份證件驗證身份，本人投票則領取一張選票；受託委任投票則領取二張選票
- 進入B廳後依工作人員分派至圈票處。圈選投票相關規定請參閱選舉注意事項
- 完成圈票後，將選票投入票匭後離場，請切勿折疊選票

領票與圈票位置圖示



交通與停車指引

交通指引

◆火車高雄站後站出口距本校約兩公里，車程約5分鐘。
◆小港機場轉搭計程車約30分鐘。
◆開車沿中山高速公路南下，
①下「鼎金交流道」於民族路左轉，再於同盟路右轉，即達本校。
②下「九如交流道」沿九如路往火車站方向，於自由路右轉，遇同盟路右轉，即達本校。
◆高鐵車站轉搭計程車至本校約17分鐘，沿大中路於自由路右轉，再於同盟路左轉即達本校。
◆高捷車站轉搭捷運接駁公車，由後驛站出入口2搭乘紅29接駁車，即達本校。

捷運接駁車指引

◆20分鐘一班，週六下午後停駛（僅提供週六上午之捷運接駁服務）
◆捷運搭車處：捷運後驛站二號出口

捷運站開車時間(車程約5分鐘)	抵達高醫
07：46	07：52
08：06	08：12
08：26	08：32
08：46	08：52
09：06	09：12
09：26	09：32
09：46	09：52
10：06	10：12
10：26	10：32
10：46	10：52
11：06	11：12
11：26	11：32
11：46	11：52

停車資訊（本校免費停車，數量有限）

◆自同盟路校門口進入，由門口警衛指示停車位置。（停車位數量約六十輛）

停車資訊（本院停車場）

第二停車場
(附設身心障礙車位)

車位數	315
開放時間	06:00～22:00
收費標準	1.每半小時收費15元(入場未滿30分鐘離場者免費)，入場30分鐘以上未滿1小時，收費30元。每日收費上限300元。 2.之後每半小時加收15元，不足半小時以半小時計算。 3.跨日計算方式：以入場連續時間計算收費。
收費方式	1.本停車場採全自動收費系統。 2.出場前請至自動繳費機繳費後，應於20分鐘內離場，逾時需再補繳費用。
諮詢電話	電話: (07) 312-1101分機5186
位置	自由路經啟川大樓門口進入

•會場（本校國際學術研究大樓）位於自由路校門口前方

週邊停車場資訊

	停車場資訊	收費標準		停車位數	備註
P1	寶盛停車場(十全路) 十全路(原家樂福)	15元/30分鐘 當日最高150元		73	室內 停車場
P2	寶盛停車場(自由路) 自由一路及察哈爾街路口	15元/30分鐘 當日最高250元		35	室外 停車場
P3	和盛萬全街停車場 自由一路及萬全街路口	平日(08:00~20:00) 15元/30分鐘 最高上限250元	優惠時段(20:01~07:59) 5元/30分鐘 最高上限100元	40	室外 停車場
P4	合江緩遠停車場 合江街及緩遠一街路口	15元/30分鐘 當日最高80元		16	室外 停車場
P5	合江歸緩停車場 合江街及歸緩街路口	15元/30分鐘 當日最高80元		16	室外 停車場
P6	合江北平停車場 合江街及北平一街路口	10元/30分鐘 當日最高80元		16	室外 停車場
P7	北平一停車場 北平一街及吉林街路口	10元/30分鐘 12小時最高100元		88	室外 停車場

大會接駁資訊

9月19~20日H2O水京棧、福華飯店至會場（高醫大國際學術研究大樓）

以下由飯店提供免費接駁至會場服務，採預先登記制（額滿為止），check in時須完成預約

出發地點	日期	發車時間	預計到達會場時間
H2O水京棧	9/19週六	8:10	8:25
H2O水京棧	9/19週六	8:30	8:45
福華飯店	9/19週六	8:20	8:35
H2O水京棧	9/20週日	8:10	8:25
福華飯店	9/20週日	8:20	8:35

9月19日會場：高醫大國研大樓→晚宴地點：林皇宮接駁車次

◆17:00開始循環接駁至19:20（或選舉結束），每20分鐘一班
◆發車地點：高雄醫學大學國際學術研究大樓一樓（工作人員指引上車）

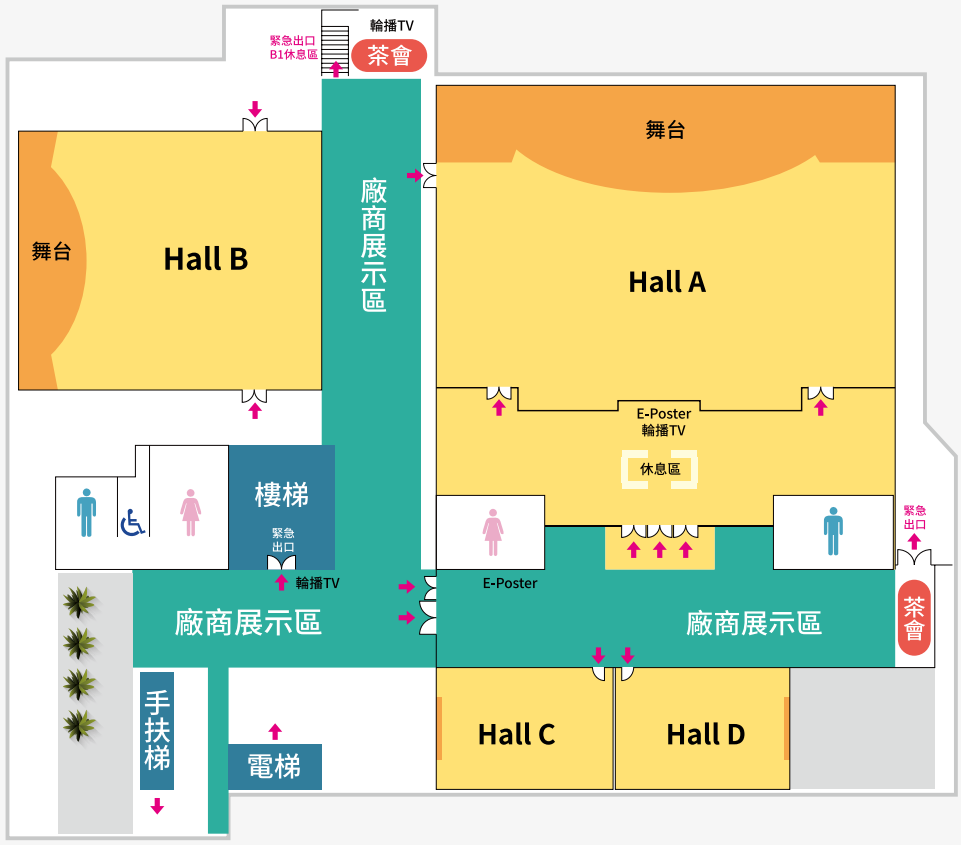
9月19日晚宴地點林皇宮接駁回H2O水京棧、福華飯店

以下由飯店免費提供單點接駁，不需事前登記

林皇宮出發至	發車時間	備註
H2O水京棧	21:00	於林皇宮一樓等候。預計5分鐘到達，每10分鐘大巴士循環接駁，21:30截止
福華飯店	21:10	於林皇宮一樓等候。預計15分鐘到達。單趟二台大巴，額滿爲止

會場平面圖

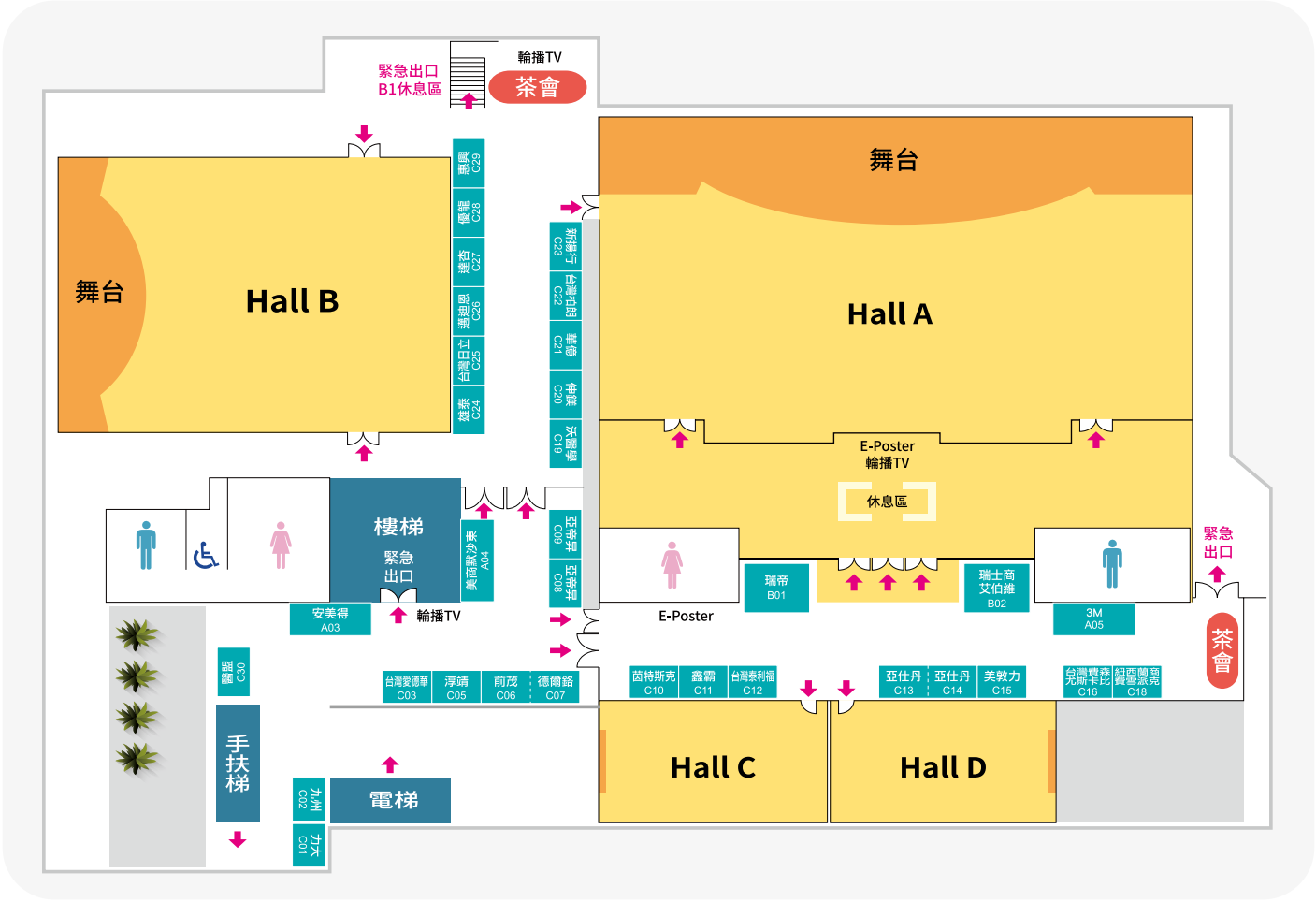

十全一路 Shih-Chuan 1st Rd.
自忠街 Zihjhong St.
側門
第一棟紀念大樓
第二棟紀念大樓
國際學術研究大樓 KMU International Convention Center
高醫國際會議中心
濟世大樓
圖書館
勵學大樓
第一教學大樓
綜合集會場
停車場
地下停車場
史懷哲大道 Schweitzer Boulevard
杜聰明大道 Tsung-Ming Tu Boulevard
操場
醫研大樓
紅29接駁車
側門入口
自由一路 Tzyou 1st Rd.
正門入口
同盟一路 Tongmeng 1st Rd.



國際學術研究大樓B2F國際會議中心平面圖

國際學術研究大樓1F平面圖

可搭乘E02.E03電梯前往IR201.IR202.IR301.IR401教室
E04.E05電梯前往IR332教室



國際學術研究大樓B2F國際會議中心參展廠商平面圖

Sept.19,2020

高雄醫學大學 國際學術研究大樓 B2F 國際會議中心

時間 / 地點	A 廳		
08:30-09:10	**報到**		
09:10-09:50	**翻轉麻醉醫學教育：在麻醉訓練期間及之後，透過新的教育策略改進臨床實務** (視訊)	講者：Neal Cohen	座長：孫維仁 . 程廣義
09:50-10:10	**開幕式**	陳建志董事長 . 吳文正副院長 陳坤堡理事長 . 程廣義大會會長	
10:10-10:30	茶敘		
10:30-11:10	**COVID-19 全球洗禮，帶給臺灣醫衛之反思**	講者：何啟功	座長：陳大樑 . 程毅君
11:10-11:50	**跨領域的智慧醫療**	講者：王偉仲	座長：王志中 . 汪志雄
12:00-13:00	午餐演講會：IR201, IR202, IR301, IR401, IR332, W21, W22 (各場次主題請見大會手冊)		

時間 / 地點	A 廳	B 廳	C 廳	D 廳	一樓 Louisa coffee
	人工智慧與大數據	臨床麻醉發展	氣道處理	CBME 在 COVID-19 後的挑戰與新貌	麻醉資訊系統建置交流論壇
13:10-13:40	**人工智慧 (AI) 運用於疾病風險的預測** 講者：王志中 座長：王明鉅 . 程廣義	**裘馨氏肌失養症 (Duchenne muscular dystrophy) 在圍手術期之考量** (視訊) 講者：Yuan-Chi Lin 座長：廖文進 . 曾稼志	**COVID-19：麻醉醫師的角色與建議** 講者：陳嘉雯 座長：洪至仁 . 洪維德	**Welcome Remarks** 講者：簡志誠 . 陳建宇 13:10-13:35 **成果導向醫學訓練：全球大流行疫情之衝擊** (視訊) 講者：Eric Holmboe 座長：陳坤堡 . 簡維宏	主持人：石博元 . 劉時凱 (本場開放直播問答) 13:10-13:35 **奇美醫院麻醉資訊系統** 講者：王立楷 13:35-13:40 Q & A 13:40-13:55
13:40-14:10	**人工智能在麻醉監視器上的應用與發展** 講者：丁乾坤 座長：戴元基 . 楊承憲	**還在學：胸腔麻醉進展** 講者：鄭雅蓉 座長：黃俊仁 . 王致嫻	**使用 trachway 經鼻道插管之經驗分享** 講者：胡品揚 座長：林作舟 . 吳恩博	13:35-13:55 **COVID-19 疫情後對麻醉訓練典範之轉變** (視訊) 講者：Pedro Tanaka 座長：陳建宇	**誰該為難用的系統負責** 講者：陳權忠 13:55-14:10 **沒有紙，對我很重要** 講者：賴沛妏 14:10-14:15 Q & A
14:10-14:40	**以機器學習預測低血壓** (視訊) 講者：Zhongping Jian 座長：葉春長 . 陳貞吟	**奈米醫學在未來麻醉可能的應用** 講者：余黃平 座長：詹廖明義 . 沈靜慧	**麻醉醫師應知的氣道超音波：老狗學習經驗談** 講者：范守仁 座長：張怡 . 林子玉	13:55-14:10 **COVID-19 疫情後，台灣醫學教育在勝任能力導向醫學教育發展的可能思維與方向** 講者：林育志 座長：葉惠敏 . 林至芃 14:10-14:25 **CBME 在 COVID-19 後跨領域團隊的再省思及精進** 講者：郭書麟 座長：簡志誠 . 張淳昭 14:25-14:40 **座談會** 與談者：所有演講者	14:15-14:25 **住院醫師登錄系統未來規劃** 講者：石博元 14:25-14:40 **綜合 Q & A**
14:40-15:00	茶敘				

Sept.19,2020

高雄醫學大學 國際學術研究大樓 B2F 國際會議中心

時間 / 地點	A 廳	B 廳	C 廳	D 廳	一樓 Louisa coffee
	麻醉相關新趨勢	**疼痛處置論壇**	**優秀海報論文競賽**	**國際麻醉專科醫師甄審變革座談** (視訊)	麻醉護理師角色職責與麻醉專科護理師國考方向論壇
15:00-15:30	**麻醉新趨勢** 講者：陳坤堡 座長：戴裕庭 . 何照明	**經皮肝腫瘤射頻消融術的區域麻醉及疼痛管理** 講者：蘭瑞安 座長：張淳昭 . 彭后正	**由海報論文中評選八篇最佳論文，每篇 7 分鐘報告與 3 分鐘提問。經評審現場評選與公開票選擇優前三名，於會員大會中頒獎。** (各篇摘要請見大會手冊)	美國：Joseph S. Chiang 中國：于布為 日本：Toshiya Koitabashi 座長：何善台 . 徐永偉	主持人：謝宜哲 . 陳勇安 (本場開放直播問答) 第一主題 **麻醉護理師的職掌與醫護分工** 第二主題 **麻醉專科護理師國家考試範疇與資格認定落日條款** 與談人：陳大樑 . 楊惠如
15:30-16:00	**從世界疼痛醫學會台灣分會的成立看台灣疼痛醫學的發展** 講者：蔡玉娟 座長：吳世銓 . 高銘章	**超音波於台大醫院產科麻醉臨床與研究之應用現況** 講者：吳峻宇 座長：李宗勳 . 黃啟祥			
16:00-16:30	**台灣心胸麻醉的機會與挑戰** 講者：邢中熹 座長：鄒美勇 . 褚錦承	**兒童介入治療的麻醉** 講者：勞萱之 座長：蘇百川 . 陳明山		**國際醫療經驗分享** **肯尼亞內羅畢肯雅塔國家醫院的兒科麻醉研修** 講者：Christopher Brasher 座長：余廣亮 . 林至芃	
16:40-18:00	會員大會 (A 廳) 暨選舉 (B 廳)				
18:20	會員晚宴 (接駁至林皇宮)				

為使會議進行順暢，大會保有更動議程之權利

Sept.20,2020

高雄醫學大學 國際學術研究大樓 B2F 國際會議中心

時間 / 地點	A 廳	B 廳	C 廳	D 廳
08:20-08:40	報到			
	重症醫療趨勢	麻醉醫療糾紛面面觀	品管與性別議題	麻醉護理專題
08:40-09:20	**人工智慧在急重症醫療的應用：發展與陷阱** 講者：陳冠甫 座長：吳之芾 . 周毅鵬	08:40-09:10 **急重症醫病溝通之秘** 講者：葉育彰 09:10-09:40 **COVID-19 下的醫師照顧責任** 講者：蔡紫君 09:40-10:10 **麻醉醫療糾紛面面觀** 講者：楊宜樫 座長：簡吉聰 . 劉鎮鯤	**物理性保護屏障可以避免氣溶膠產生操作中造成的汙染** 講者：賴賢勇 座長：儲寧瑋 . 曾光毅	**神經監測甲狀腺手術之麻醉考量** 講者：盧奕丞 座長：楊惠如 . 陳玫君
09:20-10:00	**肝臟移植病人周手術期重症照護** 講者：徐永吉 座長：何始生 . 潘健成		**營造醫療現場的友善性別互動** 講者：柯乃熒 座長：謝佳芳 . 黃妲	**那些年，教科書上沒說的事** 講者：吳紹群 座長：孫國清 . 廖桂林
10:00-10:20	茶敘			

時間 / 地點	A 廳	B 廳
	超音波專題演講	衛教懶人包專題演講
10:20-12:20	10:20-10:50 **不影響膈神經功能的肩部手術後止痛策略** 講者：林至芃 10:50-11:20 **區域麻醉於胸腔手術止痛的應用** 講者：許弘德 座長：溫永銳 . 吳志成 11:20-11:50 **乳房手術的區域麻醉** 講者：陳威宏 11:50-12:20 **區域麻醉於髖關節手術的應用** 講者：王柏凱 座長：林嘉祥 . 程廣義	**用懶人包與世界溝通** 講者：林長揚 主持人：謝佳芳
12:20-13:00	午餐演講會： IR201, 類鴉片藥物使用於疼痛治療：類鴉片藥物使用於疼痛治療之國際觀點綜整　講者：王志中　座長：劉啓舉 . 朱光興	
時間 / 地點	B2：一～四站	一樓 Louisa coffee
	超音波實作坊 (限報名繳費者)	衛教懶人包實作坊 (限報名繳費者)
13:00-15:30	第一站 **UE** **Interscalene, supraclavicular, Axillary** 林至芃 . 周韋翰 第二站 **LE** **Femoral, Adductor canal, Popliteal sciatic** 許弘德 . 徐雍和 第三站 **Trunk** **Classical TAP, Subcostal TAP, PECS block** 陳威宏 . 蘇妙佩 第四站 **Trunk** **Thoracic Paravertebral, Erector spinae, QL block** 蘭瑞安 . 唐宗詠	**用懶人包與世界溝通** 講者：林長揚 主持人：謝佳芳

為使會議進行順暢，大會保有更動議程之權利

Sept.19,2020

Conference Venue: Kaohsiung Medical University International Academic Research Building Hall A-D

Venue	Hall A		
08:30-09:10	**Pre-conference Registration**		
09:10-09:50	**Transforming Medical Education in Anesthesiology: Advancing Clinical Practice through New Educational Initiatives During Training and Beyond** (Virtual)	Speaker： Neal H. Cohen	Moderator： Wei-Zen Sun Kuang-I Cheng
09:50-10:10	**Opening Ceremony**		
10:10-10:30	Coffee Break		
10:30-11:10	**The Global Baptism by COVID-19 Brings Reflections on Healthcare System in Taiwan**	Speaker： Chi-Kung Ho	Moderator： Ta-Liang Chen Yih-Giun Cherng
11:10-11:50	**Medical Data Analytics and Beyond**	Speaker： Weichung Wang	Moderator： Jhi-Joung Wang Chih-Shung Wong
12:00-13:00	Lunch Symposium：IR201, IR301, IR401, IR202, IR332, W21, W22		

Venue	Hall A	Hall B	Hall C	Hall D	Louisa Coffee (1F)
	AI & Big Data	What's New in Clinical Anesthesia	Airway Management	The Evolution of CBME after COVID-19	
13:10-13:40	**Artificial Intelligence in Patients' Risk Prediction** Speaker： Jhi-Joung Wang Moderator： Ming-Jiuh Wang Kuang-I Cheng	**Perioperative Care for Patients in Duchenne Muscular Dystrophy** （Virtual）Speaker： Yuan-Chi Lin Moderator： Wen-Jinn Liaw Chia-Chih Tseng	**COVID-19: The Role and Advice of Anesthesiologists** Speaker： Chia-Wen Chen Moderator： Chih-Jen Hung Wei-Te Hung	**Welcome Remarks** Speaker： Chin-Cheng Chien Chien-Yu Chen 13:10-13:35 **Outcomes-based Medical Education: Impact of a Global Pandemic**（Virtual） Speaker： Dr. Eric S. Holmboe Moderator： Kuen-Bao Chen Wei-Horng Jean	**Development of Electronic Anesthesia System** Host： Po-Yuan Shih Shih-Kai Liu 13:10-13:35 **Electronic Anesthesia System in Chi-Mei Hospital** Speaker：Li-Kai Wang 13:40-13:55 **Q&A**
13:40-14:10	**Application and Development of Artificial Intelligence on Anesthesia Monitors** Speaker： Chien-Kun Ting Moderator： Yuan-Ji Day Chen-Hsien Yang	**New Challenges of Thoracic Anesthesia** Speaker： Ya-Jung Cheng Moderator： Chun-Jen Huang Chih-Hsien Wang	**The Experience of Nasotracheal Tube Advancement into Trachea with Trachway in KMUH** Speaker： Pin-Yang Hu Moderator： Tso-Chou Lin En-Bo Wu	13:35-13:55 **The Paradigm Shift of Anesthesiology Training after the COVID-19** （Virtual） Speaker： Pedro Tanaka Moderator： Chien-Yu Chen	13:35-13:40 **Who is Responsible for Difficult-to-use Anesthesia System?** Speaker： Chiuan-Jung Chen
14:10-14:40	**Machine Learning Based Hypotension Prediction (Virtual)** Speaker： Zhongping Jian Moderator： Chun-Chang Yeh Jen-Yin Chen	**Future Application in Anesthesia: Role of Nanomedicine** Speaker： Huang-Ping Yu Moderator： Mingi Chan-Liao Ching-Hui Shen	**Airway Ultrasound for Anesthesiologists: An Old Dog's Experiences** Speaker： Shou-Zen Fan Moderator： Yi Chang Tzu-Yu Lin	13:55-14:10 **New thoughts about CBME after COVID-19 –Reflection from Taiwan** Speaker： Yu-Chih Lin Moderator: Huei-Ming Yeh Chih-Peng Lin 14:10-14:25 **New thoughts about CBME after COVID-19 – Multidisicinary Awareness & Communication Enhancement** Speaker： Shu-Lin Guo Moderator： Chin-Cheng Chien Chuen-Chau Chang 14:25-14:40 **Discussion** Speaker：All speakers	14:10-14:15 **Q&A** 14:15-14:25 **Future Planning of Resident Login System** Speaker：Po-Yuan Shih 14:25-14:40 **Q&A**
14:40-15:00	Coffee Break				

Sept.19,2020

Conference Venue: Kaohsiung Medical University International Academic Research Building Hall A-D

Venue	Hall A	Hall B	Hall C	Hall D	Louisa Coffee (1F)
	New Trends in Anesthesiology	**Special Issues in Anesthesia**	**Young Scholars' Forum in Anesthesiology**	**International forum: Reforms in Anesthesiology Board Certification**（Virtual）	**The Role of Certified Nurse Anesthetists**
15:00-15:30	**New Trends in Anesthesia** Speaker： Kuen-Bao Chen Moderator： Yu-Ting Tai Chiu-Ming Ho	**Regional Anesthesia and Pain Management for Percutaneous Radiofrequency Ablation of Liver Tumors** Speaker： Jui-An Lin Moderator： Chuen-Chau Chang Hou-Cheng Peng		Panelist： USA：Joseph S. Chiang China：BuWei Yu Japan：Toshiya Koitabashi Moderator： Shung-Tai Ho Yung-Wei Hsu	Host： Yi-Jer Hsieh Yung-An Chen Panelist： Ta-Liang Chen Hui-Ju Tang
15:30-16:00	**The Development of Pain Medicine in Taiwan through the Establishment of WIP Taiwan Section** Speaker： Yu-Chuan Tsai Moderator： Rick Sai-Chuen Wu Ming-Chang Kao	**Current Ultrasound Implication for Practice and Research of Obstetric Anesthesia in NTUH** Speaker： Chun-Yu Wu Moderator： Tzong-Shiun Lee Chi-Hsiang Huang			
16:00-16:30	**Big Challenge of Cardiothoracic Anesthesia in Taiwan** Speaker： Chung-Hsi Hsing Moderator： Mei-Yung Tsou Chin-Chen Chu	**Anesthesia for Pediatric Invasive Interventions** Speaker： Hsuan-Chin Lao Moderator： Bai-Chuan Su Ming-Shan Chen		**Experience Sharing of International Medical Service** **The Paediatric Anaesthesia Fellowship of the University of Nairobi, Kenya** Speaker： Christopher Brasher Moderator： Kwong-Leung Yu Chih-Peng Lin	
16:40-18:00	General Assembly Convenes and Election of TSA				
18:20	Gala Dinner				

Sept.20,2020

Conference Venue: Kaohsiung Medical University International Academic Research Building Hall A-D

Venue	Hall A	Hall B	Hall C	Hall D
08:20-08:40	**Registration**			
	Trends in Critical Care Medicine	**Review of Medical Disputes in Anesthesia Practice**	**Quality Control and Gender Issues**	**Special Topics in Nursing Anesthesia**
08:40-09:20	**Application of Artificial Intelligence in Emergent and Critical Care Medicine: Developing Trend and Caveat** Speaker：Kuan-Fu Chen Moderator： Zhi-Fu Wu Yi-Pen Chou	08:40-09:10 **Secrets of Doctor-patient Communication in Acute and Critical Care** Speaker：Yu-Chang Yeh 09:10-09:40 **Legal Responsibilities of Medical Physicians during Covid-19 Pandemic** Speaker：Tzu-Chun Tsai	**Protective Barrier Enclosure Prevent Contamination during Aerosol Generating Procedures** Speaker： Hsien-Yung Lai Moderator： Ning-Wei Cheu Kuang-Yi Tseng	**Neural Monitoring during Thyroid Surgery-anesthesia Perspective** Speaker： I-Cheng Lu Moderator： Hui-Ju Yang Mei-Chun Chen
09:20-10:00	**Perioperative Critical Care Management of the Liver Transplant Patient** Speaker：Yung-Chi Hsu Moderator： Chee-Sang Ho Kin-Shing Poon	09:40-10:10 **Aspects of Anesthesia Medical Disputes** Speaker：Yi-Chien Yang Moderator： Chi-Tsung Chien Chen-Kun Liu	**Create Gender-friendly Interaction in the Medical Workplace** Speaker：Nai-Ying Ko Moderator： Chia-Fang Shieh Ta Huang	**Things I Have Learned from Patients, Not Textbooks** Speaker：Shao-Chun Wu Moderator： Gwo-Ching Sun Kuei-Lin Liao
10:00-10:20	Coffee Break			

Venue	Hall A	Hall B
10:20-12:20	**Ultrasound Workshop-Lecture** 10:20-10:50 **Phrenic Nerve Sparing Postoperative Analgesia for Major Shoulder Surgery** Speaker：Chih-Peng Lin 10:50-11:20 **Application of Regional Anesthesia for Pain Relief in Thoracic Surgery** Speaker：Hung-Te Hsu Moderator：Yeong-Ray Wen , Chih-Cheng Wu 11:20-11:50 **Regional Anesthesia for Breast surgery** Speaker：Wei-Hung Chen 11:50-12:20 **Regional Anesthesia for Hip Surgery** Speaker：Po-Kai Wang Moderator：Chia-Shiang Lin, Kuang-I Cheng	**Graphic Design Training in PowerPoint Presentation Workshop-Lecture** **Communicate with the World with a Lanzenbao** Speaker：Chang-Yang Lin Moderator：Chia-Fang Shieh
12:20-13:00	Opioid in Pain Management: A Global View of Opioid Use in Pain Speaker：Jhi-Joung Wang Moderator：Chi-Chu Liu , Koung-Shing Chu	

Venue	B2：Station 1~4	Louisa Coffee (1F)
13:00-15:30	**Ultrasound Workshop -Handson** Station 1 **UE-Interscalene, Supraclavicular, Axillary** Host: Chih-Peng Lin、Wei-Han Chou Station 2 **LE -Femoral, Adductor canal, Popliteal sciatic** Host: Hung-Te Hsu、Yung-Ho Hsu Station 3 **Trunk- Classical TAP, Subcostal TAP, PECS block** Host: Wei-Hung Chen、Miao-Pei Su Station 4 **Trunk -Thoracic Paravertebral, Erector spinae, QL block** Host: Jui-An Li、Donald Tsung-Yung Tang	**Graphic Design Training in PowerPoint Presentation Workshop-Handson** **Communicate with the World with a Lanzenbao** Speaker：Chang-Yang Lin Moderator：Chia-Fang Shieh

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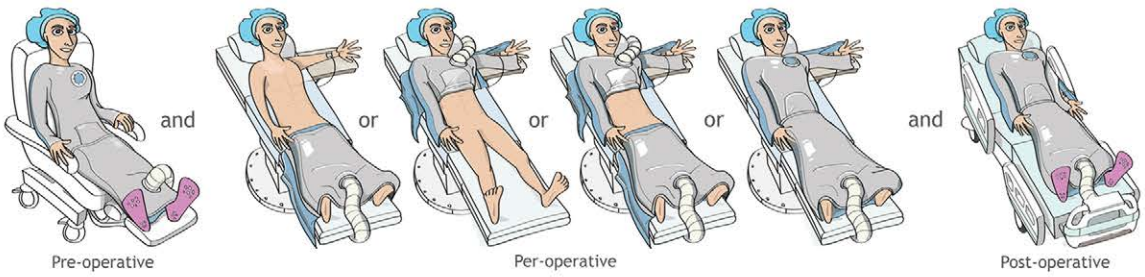

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

演講摘要

2020年9月19日

A廳

2020

翻轉麻醉醫學教育：在麻醉訓練期間及之後，透過新的教育策略改進臨床實務

Transforming Medical Education in Anesthesiology: Advancing Clinical Practice through New Educational Initiatives During Training and Beyond

■Neal H. Cohen

麻醉執行的進步對麻醉訓練計劃產生了重大影響。為了應對不斷增長的知識，執行範圍和所需的臨床技能，培訓計劃必須重新評估課程，並為住院醫師確認新的方式來獲得多樣化的技能和經驗，並驗證完成訓練計畫 是否為過渡到實踐做準備。本講座將概述住院醫師教育和評估中發生的變化。

每個住院醫師計劃面臨的挑戰之一是確保住院醫師完成麻醉照護，重症醫療，疼痛控制和相關臨床活動等各個方面的訓練。在許多計劃中，臨床業務量和經驗多樣性可能無法滿足教育需求。為了應對此挑戰，本講座將描述一些優化臨床經驗的替代方法，包括模擬演練和其他替代方案。遠距醫療作為面對面照護的輔助手段已成為一項基本的教育目標。

儘管這些新舉措令人振奮且為麻醉業務擴展到傳統手術室之外創造機會，但也帶來了另一個挑戰-需要確保住院醫師不僅要接觸麻醉業務的全部領域，而且要紀錄住院醫師獲得必要的能力，以通過訓練過渡到獨立執行麻醉業務。再此討論里程碑(milestones)和"可信賴專業活動" (EPAs) 作為評估工具，透過連續訓練來指導專業發展，發現潛在問題並解決問題。

除了概述傳統的教育要求外，還將討論概述一些其他的教育機會，為住院醫師的未來職業發展做好準備。圍手術期管理的訓練和了解術中管理對品質，預後和照護成本的影響變得越來越重要。

許多計劃同時強調了麻醉照護的行政管理方面。為住院醫師提供發展管理技能的機會，並更好地了解人事管理，資源利用以及決策對成本的影響，為住院醫師提供了寶貴的經驗，使他們未來在從事醫療工作時能夠承擔更廣泛的角色。

最後，演講將討論訓練計劃如何解決影響臨床業務和醫護人員的關鍵問題，包括但不限於專業領域，幸福感，倦怠，過勞和分心，所有這些都會影響醫療人員對病人的照護質量以及工作環境。

Advances in the practice of anesthesia have had major impact on anesthesia training programs. In response to the expanding fund of knowledge, scope of practice and required clinical skills, training programs have had to reassess the curriculum and identify new ways for their residents to gain the diverse skills and experience as well as to validate that the resident completing training is prepared for the transition to practice.

This lecture will provide an overview of some of these changes taking place in resident education and evaluation.

One of the challenges facing every residency program is to ensure that residents gain training in all aspects of anesthesia care, critical care medicine, pain medicine and associated clinical activities. In many programs, the clinical volume and diversity of experience may not support the educational needs. To address this challenge, this session will describe some alternative methods to optimize the clinical

experience, including simulation and other alternative options. Exposure to the potential opportunities in telemedicine as an adjunct to face-to-face care is also becoming an essential educational goal.

While these new initiatives are exciting and create opportunities to expand anesthesia practices outside of the traditional intraoperative environment, they create another challenge -- the need to ensure that residents not only have broad exposure to the full scope of anesthesia practice, but also document that the residents acquire the necessary competencies to advance through their training and transition to independent practice. The discussion will describe the use of milestones and "entrustable professional activities" (EPAs) as evaluation tools to guide professional development through the continuum of training, identify potential deficits and provide opportunities to address them.

In addition to the overview of some of the traditional educational imperatives, the discussion will also outline some of the other educational opportunities to prepare residents for their future careers. Training in perioperative management and understanding the impact of intraoperative management on quality, outcomes and cost of care have become increasingly important. Many programs are also emphasizing some of the important administrative aspects of anesthesia care. Providing residents with the opportunity to develop management skills and a better understanding of personnel management, resource utilization as well as impacts of their decisionmaking on costs of care has provided invaluable experiences to allow the residents to assume broader roles in health care as they embark on their future practices.

Finally, the presentation will discuss ways in which training programs are addressing other critical issues affecting clinical practice and providers, including, but not limited to professionalism, well-being, fatigue, burnout and distractions, all of which impact the quality of care provided to patients as well as the overall environment in which our trainees work.

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COVID-19全球洗禮，帶給臺灣醫衛之反思

The Global Baptism by COVID-19 Brings Reflections on Healthcare System in Taiwan

■何啟功 Chi-Kung Ho

新冠肺炎COVID-19自去年底至今已感染全球近2500萬人，死亡人數達83萬多，受影響國家達187國。

台灣在這波疫情衝擊下，感染人數低於500，死亡人數7人，防疫成果舉世共讚。台灣之成功有幾項重要因素：(一)17年前SARS的試煉，徹底改造台灣防疫體系及架構，包括指揮中心的軟硬體及人員訓練，(二)正常運作長達25年的健保體系並不斷滾動式改進，以及全體醫護人員盡心盡力的投入，(三)公開透明的疫情傳達，獲得民眾的信任，(四)全民配合，個人及社區防疫工作都到位，(五)跨部會全力以赴，中央地方協同一致（志）！

面對未來可能持續1到2年的疫情，寄望於疫苗、藥物及快篩三項重點科技發展成功，在面對不確定性下台灣醫衛必須深自檢討及反思包括國際接軌、經濟發展、防疫生活化等不同面向，共同努力建置新模式，戰勝病毒。

未來的重點在(一)個人防疫常態生活化，(二)利用快篩結合居家隔離、檢疫，縮短隔離時間，減少防疫過度產生的社會負擔，(三)依病情分級分層醫療，減少醫護壓力，保存充分醫療量能，融合防疫及常規醫療，不受影響。

面對未來疫情發展，有不變的防疫基本面，也有隨機而變的防疫措施及模式，期待所有醫護人員、學者專家、全體國民攜手向前，平安度過疫情的衝擊。

The COVID-19 pneumonia has infected nearly 25 million people worldwide and caused with more than 830,000 deaths among 187 countries since the end of last year.

Under the impact of pandemics, the confirmed COVID-19 infections is lower than 500 with 7 death cases in Taiwan. The result of pandemics prevention is universally appreciated. There are several important factors for Taiwan's success: (1) The task from SARS 17 years ago, the complete transformed pandemic prevention system and organization including the software, hardware and personnel training of the command center, (2) The national health insurance system has continuously improved for 25 years. All staff are deeply involved, (3) Open pandemic information gaining the trust of the people, (4) Cooperation of personal and community in epidemic prevention, (5) Inter-ministerial cooperation, coordination between central and local governments.

Since the pandemics may last for two years in the future, it is hoped that three key technologies of vaccines, drugs and rapid screening can be successful. To overcome Taiwan health care system must conduct a self-examination and reflection including international integration, economic development and post-COVID life style.

The future focus is on (1) personal lifestyle for epidemic prevention, (2) rapid screening combined with home and centralized quarantine to shorten the quarantine time and reduce the social burden caused by excessive pandemics prevention, (3) hierarchy of health care, reduce the stress of healthcare providers, preserve sufficient medical capacity, integrate pandemics prevention and keep unaffected medical customs.

In the face of the future pandemic development, there will be unchanged basic prevention, as well as modified managements and models. We look forward to all healthcare providers, scholars, experts and all citizens working together to pass through the impact of COVID-19 pandemics.

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跨領域的智慧醫療

Medical Data Analytics and Beyond

■王偉仲 Weichung Wang

智慧醫療快速發展，也充滿前景可期的想像。但其研發與落地，極需結合跨領域知識與人才。我們將闡述如何透過跨領域的「智慧醫學影像與數據分析平台」，架構人工智慧引擎與智慧醫療流程。結合醫學專業領域知識、機器學習、深度學習、高維度資料分析、高效能計算、影像處理與資訊工程等先進方法，建立創新智慧醫療流程的各種臨床應用。

The rapid development of Artificial Intelligence (AI) introduces a promising new era of "smart medicine and healthcare." Interdisciplinary collaborations play a critical role in its research, development and deployment. We will illustrate our efforts to build an "Medical Data Analytics Platform" to deliver Medical AI Engines and Augmented Intelligence Workflows. The AI Engines include Image Processing, Quantitative Analytics, Deep Learning, Machine Learning, and High Dimensional Data Analysis Toolboxes to analyze medical images and data. By taking these algorithms and software modules as the building blocks, we further create innovative Augmented Intelligence Workflows in various clinical applications to reduce physicians' loading and improve patient outcomes.

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個人經歷 國立臺灣大學數學系副系主任、中華民國數學會秘書長、East Asia Society for Industrial and Applied Mathematics, Secretary、科技部「智慧醫學影像分析與創新醫療流程」計畫總主持人、念慈獎科技部優秀年輕學者國家理論科學研究中心榮譽研究員與中心科學家、國立臺灣大學全校教學優良教師

人工智慧（AI）運用於疾病風險的預測

Artificial Intelligence in Patients' Risk Prediction

■王志中 Jhi-Joung Wang

醫療行為有太多的風險且常無法事先預測，尤其是在要面對高風險病人進行高風險處置時，不只病人擔心、家屬擔心，醫療人員更為擔心。這些擔心都源自於：目前常規醫療並無法對於個別病人就其自身帶有的風險因子，加上醫療所帶來的風險因子，做一個量身訂做的個人化綜合疾病風險預測，這是一個個人化精準醫療疾病風險預測的概念，也是目前醫學上最先進的發展方向。如果我們可以依照每個個人本身所帶有的不同風險因子，再合併醫療行為所帶來的風險作一個統合運算，借以得知病人於醫療過程中可能會發生那些併發症，其概率如何，如死亡、住加護病房、腦中風、心肌梗塞、大出血、休克…等等，並且知道會引發這些併發症的危險因子有那些？這些若能事先知曉、事先防範，將有機會大幅降低醫療療程中的危險性、增加病人安全性、減少醫療人員的壓力、減少醫糾…等。

在近幾年國際上有少數先驅研究證實，應用人工智慧（AI）於醫療大數據庫的運算上（以結構化的數據資料），有機會達到以上的目的，但實際上，在國際上能落地使用於臨床醫療的案例則少之又少，其原因是在這一系列的AI建置流程，需要許多專業醫療人士、資訊工程師、AI工程師的投入及眾多前置作業及單位主管的認同及大力協助，當然也須資金設備的投入。另，在國際上罕見有一家醫院能就醫院內所面臨的諸多疾病風險預測難題，集結各方面的人才，做一個整合性且可互動的AI運算平台建置。

Any medical treatment has potential risks and unpredictable results, especially when providing high-risk interventions to high-risk patients. Currently, personalized disease risk prediction based on the patient's disease risks and treatment risk factors is not available. Disease risk prediction for personalized and precision medicine is an emerging concept and approach. By calculating individual patient's and treatment risk factors to predict probability of complications (such as death, ICU admission, stroke and hemorrhage), the treatment risks, stress in healthcare workers, and medical malpractice can be reduced while patient safety can be strengthened.

A few pioneer studies have shown that using artificial intelligence (AI) to analyze structured healthcare big data might have potential for developing the personalized risk prediction models. However, there is not yet a hospital in the world to develop an integrated, interactive AI platform since AI-based processing system requires great devotion from medical professionals, information technology specialists and AI engineers as well as a tremendous amount of investment and venture capital.

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人工智能在麻醉監視器上的應用與發展

Application and Development of Artificial Intelligence on Anesthesia Monitors

■丁乾坤 Chien-Kun Ting

過去十年來人工智能領域在圖像辨識、自然語言處理以及深度學習上都有重大的突破，在2020年的今天，人工智能或稱機器學習已經在醫學各領域被廣泛應用，身為周手術期照護最重要一環的麻醉科也不例外。隨著時間的演進，AI在麻醉領域也由傳統的專家決策支援系統朝向智能生理監視器，半自動麻醉、閉環麻醉來演進，今天就讓我來利用這個場合來向大家簡介整理這些AI在麻醉監視器上的應用與發展。

Over the past decade, there have been major breakthroughs in the field of artificial intelligence in image recognition, natural language processing, and deep learning. In 2020, artificial intelligence or machine learning has been widely used in various fields of medicine. Anesthesiology, which is the most important part of perioperative care, is no exception. With the evolution of time, AI in the field of anesthesia has also evolved from a traditional expert decision support system to an intelligent Anesthesia monitor, semi-automatic anesthesia and closed-loop anesthesia. Today, let me introduce you the application and development about anesthesia monitors.

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Machine Learning Based Hypotension Prediction

■Zhongping Jian

手術期間和在重症加護病房中，發生低血壓與併發症的發生率增加有關，例如急性腎臟損傷和心肌梗塞，而其風險隨著低血壓持續時間和嚴重度而增加。

提前警告即將發生低血壓，可能有助於採取診斷和治療措施，進而減輕低血壓造成的臨床影響。血液動力學不穩定的前期特徵在於不同生理上細微而復雜的變化，這些變化反映了代償機制的改變，並導致動脈波形中獨特的動態信號，這些信號可用於預測低血壓。

在這裡，我們描述了一種以低血壓預測指數為基礎的機器學習演算法，也就是利用高準確性動脈壓波形記錄來預測低血壓的發生。開發該演算法的目的是透過手術中和重症加護病房患者細微徵兆的觀察而預測低血壓的發生，並在各種獨特的數據中對該演算法進行驗證。

Hypotension during surgery and in the intensive care units are associated with increased rates of complications such as acute kidney injury and myocardial infarction, and the risk of serious complications increases with the duration and depth of hypotension.

Advance warning that hypotension is imminent could facilitate diagnostic and therapeutic measures to lessen the clinical impact of hypotension. The prodromal stage of hemodynamic instability is characterized by subtle and complex changes in different physiologic variables. These changes reflect altered compensatory mechanisms and result in unique dynamic signatures in arterial waveforms that could be used to predict hypotension.

Here we describe a machine learning based algorithm, the Hypotension Prediction Index, to predict hypotension before it occurs using high fidelity arterial pressure waveform recordings. The algorithm was developed to observe subtle signs that could predict the onset of hypotension in surgical and intensive care unit patients, and the performance of the algorithm was validated in various unique data sets.

個人專長 Dr. Jian's research activities focus on developing physiological signal processing and machine learning algorithms for patient monitoring, especially in the field of hemodynamic monitoring.
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麻醉新趨勢

New Trends in Anesthesia

■陳坤堡 Kuen-Bao Chen

2020年是個巨變的一年，新型傳染性疾病新冠肺炎蔓延全球，七月初統計全世界累積確診人數超過千萬人，重症死亡人數超過50萬人，麻醉專業在重症病人的醫療扮演重要的角色，除了個人防護作業以外，麻醉的介入處置對重症病人的幫助與病情的發展非常值得探討。

全世界面對老人化的社會，麻醉的需求日增，因此必須探討未來麻醉市場的變化，其中麻醉醫師人力與麻醉護理師人力的評估攸關病人的麻醉照護品質，台灣麻醉醫學會與麻醉護理學會共同推動麻醉專科護理師的制度，並將納入衛福部管理。

麻醉儀器、衛材與藥物的進展，健保麻醉給付支付點數的增加提升病人的照護品質，重度鎮靜要麻醉醫師執行應未來是醫院醫療品質的重要指標。

檯面上麻醉的領導與年輕世代的麻醉醫師也要思考AI人工智慧與machine learning的發展，及未來Robotic assisted anesthesia如何協助麻醉的進行。

2020 is a year of great changes. The new infectious disease Covid-19 pneumonia spreads all over the world. Anesthesia profession plays an important role in the treatment of critically ill patients.

Faced with an aging society in the world, the demand for anesthesia is increasing. Therefore, it is necessary to discuss the changes in the anesthesia market in the future. Among them, the evaluation of anesthesiologist manpower and anesthesia nurse manpower is related to the quality of anesthesia.

Deep sedation requires an anesthesiologist to perform should be an important indicator of the hospital's medical quality.

The leadership of anesthesia and the younger generation of anesthesiologists should also consider the development of artificial intelligence(AI) and machine learning, and how Robotic assisted anesthesia will assist the anesthesia in the future.

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從世界疼痛醫學會台灣分會的成立看台灣疼痛醫學的發展

The Development of Pain Medicine in Taiwan through the Establishment of WIP Taiwan Section

■蔡玉娟 Yu-Chuan Tsai

世界疼痛醫學會(以下簡稱WIP) 成立於1993年，是一個全球性的組織，旨在推廣21世紀疼痛醫學的最佳實踐。WIP的使命是彙集全球疼痛醫學領域最知名的專家，推動介入性疼痛實踐的推進和標準化。WIP通過贊助和認証疼痛醫師的教育和培訓計畫來履行其使命。經由其教育倡議包括WIP世界大會、區域專題討論會和介入性疼痛實地操作工作坊，WIP幫助促進專家之間就現有技術的有效性和促進治療效果的途徑建立共識。

2001和2014年WIP分別開始實施介入性疼痛治療醫師(FIPP)和介入性疼痛超音波醫師(CIPS)的認證資格考試，至今參予認證的醫師遍及59個國家。2016年WIP委託台大醫學院和台灣疼痛醫學會在台北開始籌備大體操作工作坊及認證考試，作為亞洲區的發展據點。在2019和2020成功舉辦了兩次實地操作工作坊和認證考試。

今年3月內政部核准籌組『世界疼痛醫學會台灣分會』這個新生的學會所肩負的任務除了推動並參予WIP之活動外，也要讓台灣疼痛醫學專家藉由參予國際學會與國際專家交流，進而與之分享與學習，對台灣疼痛醫學的發展將有很大的助益。

The World Institute of Pain was founded in 1993 as a worldwide organization that aims to promote the best practice of pain medicine for the 21st century. WIP's mission is to bring together the most recognized experts in the field of pain medicine throughout the world for the advancement and standardization of interventiona pain practice and the achievement of improved standards of care for pain patients. WIP fulfills its mission through sponsorship and endorsement of educational and training programs for pain physicians. These programs are aimed at facilitating the development of practice guidelines and standards of examining and assessing competency in physicians who specialize in interventional pain practice. Through educational initiatives, including WIP World Congresses, regional symposia, and practical workshops on interventional pain practice, WIP helps promote consensus building among experts on the effectiveness of existing techniques and avenues for advancement of therapeutic performances.

In 2001 and 2014, WIP began to implement the certification exams for fellow interventional pain physicians (FIPP) and certified interventional pain sonologist (CIPS) respectively. Until now, the physicians have participated certification in 59 countries. In 2016, WIP commissioned National Taiwan University, College of Medicine and Taiwan Pain Society to initiate interventional pain symposium, workshop and FIPP/CIPS exams (SWE) in Taipei, where is the development base for WIP in asian region. Two SWEs have been successfully held in 2019 and 2020. The Ministry of the Interior of Taiwan approved the establishment of the official WIP Taiwan Section in March 2020. In addition to promoting and participating in WIP activities, the task of the new-born society is to make pain experts in Taiwan to participate in the international society to interact with international pain experts, which will affect the development of pain medicine in Taiwan with great impact.

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台灣心胸麻醉的機會與挑戰

Big Challenge of Cardiothoracic Anesthesia in Taiwan

■邢中熹 Chung-Hsi Hsing

心胸麻醉醫療是麻醉專業中最具挑戰的領域之一，許多國家都成立心胸麻醉醫學會並建立專科醫師制度，美國Society of Cardiovascular Anesthesiologists與歐洲European Association of Cardiothoracic Anaesthetists並制定心胸麻醉相關準則，提升了全球心胸麻醉的安全與品質。亞洲地區1994年也成立Asia Society of Cardiothoracic Anesthesia (ASCA)，定期舉行國際會議。台灣於2000年成立心胸血管麻醉醫學會至今20年，對國內心胸手術麻醉品質提升有相當大的貢獻。然而心胸麻醉醫師的專業養成與訓練內容，仍需要明確的匡列與規範。近年全球心胸手術進展特別是微創手術如達文西手術、TAVI、MitraClip等等發展快術，人工心臟、VAD、ECMO、PCPS等普及化，麻醉監測系統BIS、Entropy、腦氧、3D TEE等也全面提升，專業麻醉醫師的訓練需求可說非常急迫。最新文獻提到美國麻醉住院醫師訓練僅20例心麻課程是無法達成EPA所要求獨立安全執行的目標，美國許多醫院要求心麻醫師須具備一年的fellow訓練並取得國家心超認證(National Borad of Echocardiography, NBE)。去年台灣麻醉專科醫師考試也開始增列TEE口試項目，緊跟世界潮流。心麻專考試要求須先有心超學分認證。體循、心超、科際溝通可說是心胸麻醉訓練最需加強的領域，台灣心麻學會亦定期辦理相關課程，包含超音波工作坊、ERAS工作坊與跨領域聯合訓練工作坊等，期待為台灣心胸麻醉醫療領域更加提高專業素養。

Cardiothoracic anesthesia is one of the most challenge task in general practice of anesthesia. Certification of cardiothoracic anesthesia is established in many countries. In Taiwan, we initiated the Taiwan Society of Cardiothoracic and Vascular Anesthesia (TSCVA) since 2000, and around 200 physicians got the board of certification. However, the programs for our trainees of board certification still need further improvement. Recently, minimal invasion procedures such as Da Vince cardiac surgery, TAVI, MicraClip as well as artificial heart, VAD, ECMO, PCPS developed rapidly. Anesthesia monitoring including BIS, Entropy, brain oxymetry, 3D TEE et. al. are widely used in daily practice. Advanced programs for anesthesia resident physicians and fellowship doctors are required. We have initiate several essential workshops for trainees. Continue improvement of the educational programs is our task.

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

演講摘要

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裘馨氏肌失養症(Duchenne muscular dystrophy)在圍手術期之考量

Perioperative Care for Patients with Duchenne Muscular Dystrophy

■林淵智 Yuan-Chi Lin

Duchenne muscular dystrophy (裘馨氏肌失養症，簡稱DMD)是一種遺傳性疾病，為所有肌肉萎縮症中較常見的一種，通常只發生在男性，源於X染色體發生異常，通常發病於兒童早期。DMD病人缺乏一種重要的蛋白質失養素(Dystrophin)，Dystrophin存在於骨骼,平滑肌,心肌以及大腦中。它保持肌纖維膜的完整性。一旦缺少這種蛋白質，肌纖維膜會變得無力脆弱，經年累月伸展後終於撕裂，肌細胞就很容易死亡。而在Becker's muscular dystrophy病人， Dystrophin保有部分作用，較易發生於男孩，發生率大約是1:3,500。通常肌肉無力在2至5歲之間出現，隨著心臟和呼吸系統照護品質的改善，預期壽命可達30歲甚至40歲。因控制呼吸與行動的肌肉萎縮，使得大部分的患者會因肺部感染及其合併症而逝世。

Duchenne muscular dystrophy 病人會因近端肌肉萎縮而出現漸進式的對稱性肌肉無力和步態障礙，其症狀包括蹣跚行走(waddling walk)、爬樓梯困難或是典型的Gower maneuver。約有90%的DMD患者的心臟功能會受影響，不過骨骼肌疾病的嚴重程度與心肌受損程度沒有關聯。然而隨著疾病惡化，DMD患者可能會在後期出現擴張型心肌病或是認知障礙。

術前檢查應了解患者日常生活狀態、過去病史以及家族病史。術前心電圖和心臟超音波也可以提供部份幫助。DMD患者要特別注意吸入性肺炎的風險。術後，DMD患者會肺功能下降，且脊柱側彎可能進一步惡化呼吸功能，因此術前肺功能檢查有助於術後評估及照護。而術前血液檢查應包括全血球細胞計數，血清肌酸酶和電解質。

由於DMD患者臨床上可能出現呼吸肌肉無力、代謝異常(高血鉀和體溫過高) 以及心肌病變等併發症，導致患者於麻醉後可能合併嚴重併發症。此外，由於術前焦慮和輕度智力低下，患者的醫囑遵從性有時也會降低。 DMD患者伴有舌頭增大和顳下頜關節僵硬，增加困難氣道風險。

DMD患者禁用Succinylcholine，因為可能有高鉀性心臟驟停、心律不整、橫紋肌溶解以及尿液變黑的風險，。肌紅蛋白尿也可能導致DMD患者腎功能不全和急性腎功能衰竭。心律不整和心跳終止也許不完全與Succinylcholine的使用有關，但往往在Succinylcholine給藥後不久發生。高血鉀會因氣體麻醉藥物引起。關節畸形和攣縮使患者難以在手術台上正常擺位。肥胖和皮下組織增厚也可能造成建立血管通路困難。重大手術後幾乎須使用呼吸器輔助呼吸。

美國FDA禁止在兒科患者中常規使用Succinylcholine，因為術中可能會出現無法解釋的心臟驟停和死亡，然後才發現兒童患有DMD。為DMD患者提供麻醉護理時，我們需要了解，非去極化的肌肉鬆弛劑效力會增加且延長其作用時間。鴉片類藥物應謹慎使用，以免引起呼吸抑制。惡性高熱與DMD之間沒有真正的關聯。揮發性麻醉劑應謹慎使用，因為DMD患者在缺乏酵素酶的情況下使用揮發性麻醉劑可能造成嚴重的橫紋肌溶解。

Duchenne muscular dystrophy (DMD) is an inherited X-linked recessive mutation in the dystrophin gene with onset in early childhood. In DMD, dystrophin in usually absent. In Becker's muscular dystrophy, dystrophin is partially functional. Dystrophin is found in skeletal, smooth, and in cardiac muscles, as well as in the brain. It maintains the integrity muscle membrane. Approximately 1:3,500 boys are affected. Muscle weakness appears gradually between 2 and 5 years of age. With the improvements in cardiac and respiratory care, the life expectancy is in 30s, and some living into their 40s. At end, respiratory failure is the main concern.

DMD is the most common muscular dystrophy in children. It is exemplified by progressive symmetric

muscle weakness and wasting of proximal muscles with gait disturbance. Presenting symptoms in DMD include a waddling walk and difficulty climbing stairs. The classic Gower maneuver describes using both arms to assist in getting from a sitting to a standing position. The disease affects the heart in ninety-percent of DMD patients. There is no association between the severity of skeletal muscle and the advancement of cardiac muscle involvement. However, dilated cardiomyopathy is seen as the disease evolvements. Cognitive impairment is also often seen in advanced DMD patients.

Preoperative workup should obtain a full history of neuromuscular motor milestones, previous medical as well as surgical procedures' complications, and familial related disorders. Review an EKG and echocardiogram can be helpful. Patients with DMD are at risk of aspiration pneumonitis. Postoperatively, DMD patients are at risk of respiratory reduction. Scoliosis may further compromise respiratory status. Pulmonary function tests can aid in postoperative planning. Blood work should include a complete blood count, serum levels of creatine phosphokinase and electrolytes.

Serious complications in patients with DMD associated with anesthesia have repetitively been reported. The high complication rate is a result of muscle weakness with respiratory insufficiency, metabolic changes i.e. hyperkalemia and hyperthermia, and cardiomyopathy. Patient compliance occasionally is reduced because of anxiety and mild mental retardation. Potential difficult airway can be seen in patients with DMD associated with enlarged tongue and arthrodesis of the temporomandibular joints.

Succinylcholine is contraindicated due to the risk of hyperkalemic cardiac arrest and rhabdomyolysis with dark discoloration of urine. Renal deficiency and acute renal failure can occur as a result of myoglobinuria. Arrhythmias and cardiac arrest have been reported. They are mainly, but not completely, associated with succinylcholine use and most often occur shortly afterward succinylcholine administration. It seems that hyperkalemia can be precipitated by halogenated inhalational anesthetics alone halothane or isoflurane. Joint deformities and contractures make patient positioning difficult on the operating room table. Vascular access can be challenging by obesity and thickening of subcutaneous tissues. Mechanical ventilator support is almost mandatory following major surgery.

The US Food and Drug Administration has issued a warning against the routine use of succinylcholine in pediatric patients because unexplained cardiac arrest and death in children who were subsequently found to have DMD. Providing anesthesia care for patients with DMD, we need to understand that the nondepolarizing muscle relaxants have an increased potency and a prolonged duration of action. Opioids should be used cautiously to avoid respiratory depression. There is no true association between malignant hyperthermia and DMD. The volatile anesthetics should be used cautiously since volatile anesthetic use in the absence of succinylcholine may be associated with severe rhabdomyolysis in patients with DMD.

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還在學：胸腔麻醉進展

New Challeges of Thoracic Anesthesia

■鄭雅蓉 Ya-Jung Cheng

近十年來肺部疾病從診斷、治療與治療目標都發生巨大的改變，麻醉醫師加入的團隊從傳統胸腔外科手術團隊、ERAS團隊，到肺科醫師團隊，在不同團隊中須與外科、影醫部、肺科醫師密切合作，麻醉的目標與所需之精準度日新月異。麻醉團隊的加入能大幅提升相關醫療品質，但也因麻醉目標、工作環境與實際操作的挑戰，進入新的紀元。

胸腔外科手術麻醉的變化：低侵襲性與精準麻醉已成常規。手術上的進展，segmectectomy也日漸增多，但肺部segment的解剖變異很多，麻醉醫師須了解相關的進展。近年來為了精準定位，各類定位也常需麻醉醫師的協助，如CT定位與pheno定位等等。Pheno手術的環境與麻醉目標是不同的，團隊必須充分學習。

肺科麻醉的變化：如在門診、支氣管鏡室也有巨大的進步，可執行各類診斷與治療。因應不同需求，麻醉醫師須增加相關知識、了解麻醉與術式的需求，建立更嚴格的術後照顧常規。

本次將呈現新發展的一些胸腔麻醉方式，都是進行中的發展；在未來十年內，胸腔麻醉仍是最具挑戰性的專科麻醉。

A massive progress has taken place on the diagnosis and treatment on thoracic diseases in recent decade. From thoracotomy to VATS and ERAS, now anesthesiologists are working in many teams including thoracic surgeons, radiologists, and pulmonologists. More challenges for anesthetic team are on group communication, individually precise anesthesia, and team education.

Minimal invasiveness has become gold standard in thoracic operation. Presurgical localization of lung nodules plays the crucial part of precise operation. Therefore, anesthetic planning is affected by different localization and operation such as in Pheno room or CT room.

Multimodal treatment for lung nodules changes the practice of pulmonologists. Bronchoscopy, bronchoscopic EBUS, electromagnetic navigation bronchoscopy, Cone-beam CT, augmented fluoroscopy, transthoracic needle aspiration and even endobronchial cryotherapy brings necessity of brand new anesthetic planning and operation models.

It will be a big jump for management on lung nodules in the coming decade. The challenge on thoracic anesthesia will be far beyond how to provide a perfect operation field.

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奈米醫學在未來麻醉可能的應用

Future Application in Anesthesia: Role of Nanomedicine

■余黃平 Huang-Ping Yu

奈米醫學是奈米科技的醫學應用。奈米微粒的特殊奈米物化特性與在生物醫學運用的潛力獲得廣大奈米醫學研究者的興趣與投入。奈米載體極具有潛力在生醫臨床各領域中運用，如：藥物傳遞，生物感測，以及分子影像等。不過，奈米載體在麻醉醫學領域可能扮演的角色，至今依然未詳細探討。因此這個講題的目的將探討奈米載體於麻醉醫學領域的可能應用以及扮演的角色。

Nanomedicine is the medical application of nanotechnology. Nanomedicine ranges from the medical applications of nanomaterials and biological devices to nanoelectronic biosensors. Different types of injectable nanoparticles, including metallic nanoparticles, polymeric nanocarriers, dendrimers, liposomes, niosomes, and lipid nanoparticles, have been employed to load drugs for organ delivery. Nanoparticles used for organ delivery offer some benefits over conventional formulations, including increased solubility, enhanced stability, improved epithelium permeability and bioavailability, prolonged half-life, tumor targeting, and minimal side effects. In recent years, the concept of using injectable nanocarriers as vehicles for drug delivery has attracted increasing attention. However, the roles of nanocarriers on anesthesia have not yet been explored thoroughly. This topic highlights recent developments using nanomedical approaches for drug targeting to the organs. We principally focus on the nanomedical application in anesthesia.

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經皮肝腫瘤射頻消融術的區域麻醉及疼痛管理

Regional Anesthesia and Pain Management for Percutaneous Radiofrequency Ablation of Liver Tumors

■蘭瑞安 Jui-An Lin

在小型肝腫瘤的消融療法中，經皮肝腫瘤射頻消融術被建議為治療首選且已被廣泛的應用在臨床。近來由於其優異的療效及對於多重共病症的病人具有相對較小的侵入性，治療的標的更擴及到較大或者是多發性肝腫瘤。此外，消融的方式也從腫瘤內熱療進化到腫瘤旁來避免針尖置於腫瘤中熱療時引起腫瘤爆出至正常肝組織的現象。上述這些有關於經皮肝腫瘤射頻消融術在目標以及治療方法上的進化使得病人常常需要同時使用多支且因同軸心調節溫度而較粗的針體來達成消融的目標，而這樣的背景組合對於鎮靜麻醉產生了挑戰。

區域神經阻斷對於經皮肝腫瘤射頻消融術中的穩定以及術後恢復佔有重要角色。了解肝臟以及其相關組織的神經支配以及經皮肝腫瘤射頻消融術可能在術中產生的併發症有助於圍術期的處理。遵從人體工適學並應用無菌姿勢可以使得相對應區域的胸椎旁神經阻斷術變得較容易執行且在超音波導引下具有可視性注射前後指標。難治型肩部牽涉痛雖然不常見但可能發生於經皮肝腫瘤射頻消融術在熱療時所引起的橫膈膜刺激，在麻醉恢復室可能需要膈神經阻斷來提供適當的止痛。在這種情況下，我們建議在上神經幹高度從前斜角肌平面入針的方式同時合併超音波及改良版的雙管壓力設置來避免相關的併發症，包括若在橫膈高度進行膈神經阻斷所產生的不完全止痛，非預期的筋膜外其他頸部神經的阻斷，以及神經受損(針尖引起的機械性創傷、神經束內注射、膈神經所在空間壓力上升所引起的神經失用症等等)的最重要考量。

Percutaneous radiofrequency ablation (PRFA) of liver tumors has gained its popularity since it was recommended as the main ablative treatment for tumors less than 5 cm. Recently, the targets for liver PRFA underwent a transition from smaller toward larger and multiple lesions due to effectiveness and less invasiveness for patients with multiple comorbidities. Moreover, the technique also underwent a transition from intra-tumoral toward no-touch lesioning to prevent popcorn effect. Therefore, multiple co-axial needles at the same time are required to accomplish the missions, which challenges the perioperative management when it is performed under monitored anesthesia care.

Regional blocks are of utmost importance for stable maintenance during the ablative procedure as well as patient recovery. Knowledge of peri-hepatic innervation and adverse events caused by liver PRFA facilitates perioperative management. Abiding by physical ergonomics in the aseptic position, thoracic paravertebral block for corresponding innervation areas can be more easily carried out with visible ultrasound endpoints. Intractable referred shoulder pain following diaphragm irritation, uncommon but may happen, possibly requires phrenic nerve block to achieve adequate pain relief in the postoperative care unit. Under such circumstances, we recommend anterior scalene plane approach at the level of superior trunk with both ultrasound guidance and modified half-the-air setting to avoid potential complications such as incomplete analgesia when blocking it at the diaphragm level, unwanted extra-fascial spread, and, above all, nerve injury secondary to mechanical needle trauma, intra-fascicular injection as well as pressure-induced neuropraxia.

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超音波於台大醫院產科麻醉臨床與研究之應用現況

Current Ultrasound Implication for Practice and Research of Obstetric Anesthesia in NTUH

■吳峻宇 Chun-Yu Wu

常規應用超音波於產科Central neuraxial blocks，可減少嘗試入針次數並提升block成功率。超音波亦可精準定位正確之intervertebral space，有助於提升epidural analgesia之品質。此外，vascular ultrasound與optic nerve sheath measurement，也提供產科麻醉醫師緊急處置之自信。本演講希冀可簡短分享與交流台大醫院，目前應用上述簡易超音波技術對於特殊臨床案例之經驗，以及相關研究之進展。

Implication of ultrasound for central neuraxial blocks of obstetric anesthesia and analgesia is associated with reduced needling attempts as well as the increase of successful rate. Accurate intervertebral space could also be localized by using ultrasound and this is particularly beneficial for specific epidural analgesia planning. Furthermore, vascular ultrasound and optic nerve sheath measurement also provide additional advantages for obstetric anesthesiologist. Accordingly, I would like share experiences of management of challenging patients as well as the current progress of obstetric anesthetic research in National Taiwan University Hospital based on implication of these ultrasound techniques.

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兒童介入治療的麻醉

Anesthesia for Pediatric Invasive Interventions

■勞萱之 Hsuan-Chih Lao

兒童疼痛是一個常見的問題，更是一個被嚴重低估的問題。疾病對於很多重病的兒童而言，能被「治癒」其實是件困難的事；在疾病中身體心理很多的不舒服，其中，疼痛是絕對可以也應該得到完善的處理，而且在疼痛減輕之後對於身心的輕省有著莫大的幫助。

關於兒童疼痛，一直有一些觀念上的迷思。過去不分國內外甚至醫界，皆對兒童疼痛抱持一定程度迷思或誤會，認為「嬰幼兒神經系統未發育成熟，對於疼痛感知較低並且無法確實評估」或「可以被轉移注意力就表示沒有疼痛」等等。而更常見的狀況是更多人認為孩童使用鴉片類的止痛藥是危險又容易成癮，以至於許多孩童的疼痛甚至是開刀後的疼痛都沒有足夠的處理。兒童疼痛處理在設立統一的疼痛評估後，接下來進一步針對醫療中常見到的疼痛訂出作業標準。

在兒童醫院各單位中都會碰到兒童需要接受不同的侵入性處置，選擇適當的止痛及鎮靜方式是對兒童、照顧者及操作人員甚至檢查處置結果都至為重要。非藥物的方式對於侵入性較小的處置(如抽血)有相當不錯的效果。當考慮使用疼痛藥物時，需要更多考量兒童身體因素、操作人員、場地及配備等，事前的計畫和完善的準備至為重要。

良好的兒童疼痛照護應該是包含多專業的團隊整合照護。相關人員在一定的教育下和建立共識後，處理兒童疼痛就能兼顧安全、有效、甚至健康促進的理想。

Children in Pain, who cares?

Numerous evidences of unrecognized pain in children and ignorance even negligence pain possibly due to inadequate assessment or distress underestimation in children, and even improper or insufficient pain management setting is not unusual. Illness in children may not be easy to cure, but pain, it should and can be well-managed to relive totally.

Procedural pain is the most common source of both fear and pain for ill children, so many procedures comprise an increasing volume of pediatric anesthesia practice. Considerations for these pediatric patients are different form adults due to age and maturity. Also, different procedure needs individualized preparation due to various duration, patient's positions, original local equipment, technique of the operator and etc. In this talk, we will share our experience of many pediatric procedures in Mackay Children's Hospital, including our assessment, preparation, and collaboration.

Mostly, Children in pain, We do care!

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COVID-19: 麻醉醫師的角色與建議

COVID-19:The Role and Advice of Anesthesiologists

■陳嘉雯 Chia-Wen Chen

2020年初因全球爆發嚴重特殊傳染性肺炎(COVID-19)，因應COVID-19導致嚴重呼吸窘迫患者之呼吸道處置與插管，台灣麻醉醫學會經由專家會議擬定建議/準則/指引，提供給麻醉醫師及各科醫師在必要情況下有所遵循。

2020, in face of the need for airway management and endotracheal intubation in COVID-19 infected patients with respiratory failure, the Taiwan Association of Anesthesiologists has put together an expert recommendation for all medical professionals.

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使用trachway經鼻道插管之經驗分享

The Experience of Nasotracheal Tube Advancement into Trachea with Trachway in KMUH

■胡品揚 Pin-Yang Hu

經鼻道之氣管內管插管，臨床上通常使用軟式光纖支氣管內視鏡(Fiber-Optic Bronchoscope)或是輔以喉頭鏡(Laryngoscope)使用，高醫麻醉部團隊近年投注心力於研究「影像式通條(trachway)」之插管過程及成效，綜合探討過去團隊致力於經鼻道插管之各項研究成果，期望發展出一套使用影像式通條(trachway)插鼻管之最佳模式。特別用於無法順利取得光纖支氣管內視鏡(Fiber-Optic Bronchoscope)，同時希望避免改使用喉頭鏡(Laryngoscope)插鼻管，可能造成的鼻黏膜損傷之時機。

近年來，高醫麻醉部團隊已累積近百例經鼻道之氣管內管插管案例，詳實記錄應用影像式通條(trachway)插管之過程，常見之狀況為插管時，伴隨著患者鼻頭或鼻翼之壓迫，但並不會造成損傷；而較擔心之因鼻腔受傷引起大流血之狀況亦尚未見到。特別將案例整理，分享高醫麻醉部團隊以影像式通條(trachway)插鼻管之經驗，提供臨床上另一種經鼻道之氣管內管插管之選擇。

Nasotracheal intubation was traditionally performed by direct laryngoscopy or fiber-optic bronchoscopy. In recent years, the Department of Anesthesiology of Kaohsiung Medical University Hospital have devoted to study the procedure and effectiveness of nasotracheal intubation by trachway video stylet. By summarize the numerous published data, we tried to develop the best model for this technique. Our approach is suitable in situation where fiber-optic bronchoscope is not available or when nasal mucosal injury by using direct laryngoscopy method is to be avoided.

Our team accumulated experience of more than hundred cases of nasotracheal intubation by trachway video stylet. We recorded the process with details for each intubation. Brief compression to the nasal ala and apex is commonly encountered during the procedure, but did not result in injury. More serious complication such as massive bleeding related to nasal mucosal injury was not noted. We hereby summarize and share our experience in nasotracheal intubation by trachway video stylet, suggesting this technique could be an alternative method for nasotracheal intubation.

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麻醉醫師應知的氣道超音波：老狗學習經驗談

Airway Ultrasound for Anesthesiologists: An Old Dog's Learning Experiences

■范守仁 Shou-Zen Fan

由於材料科學及微機電的進展，超音波如 Butterfly iq 已不到US$ 2000，未來超音波的操作及判讀，將是每一位麻醉醫師必備的知識，講者將分享氣道超音波的學習經驗：

1.環甲膜的快速辨識，以便正確環甲膜切開術（cricothyrotomy）

2.氣管內插管的正確判斷（Goose sign）

3.利用肋膜滑動徵象 (Lung sliding) 來判斷，內管的位置

4.清醒插管的各種神經阻滯方法

5.胃容量的判斷

As the introduction of CMUT/CMOS-based Butterfly iQ. An inexpensive and portable personal sonoscope will become available in the near future. The speaker will talk about the focused airway ultrasound for our anesthesiologists and sharing his personal learning experiences.

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成果導向醫學訓練：全球大流行疫情之衝擊

Outcomes-based Medical Education: Impact of a Global Pandemic

■Eric S. Holmboe

對從事衛生專業教育的每個人而言，這是個壓力極大的時期。儘管目前美國面臨著巨大的壓力，但美國教育界已體認到維持公眾和社會的需求至關重要。持續見證了許多美國醫學中心的英勇行動。此次疫情突顯了 加速發展成果導向醫學教育的重要性。美國畢業後醫學教育評鑑委員會(ACGME)意識到，由於疫情造成的干擾，傳統基於時間或基於服務量的評量在本學年可能無法達成。因此，ACGME強烈鼓勵每個計劃使用以勝任能力為導向醫學教育(Competence-Based Medical Education, CBME)的核心原則來決定醫師能否晉升和畢業。ACGME體認，可以通過替代形式的教育例如虛擬學習，輪崗換科（例如，加護病房，急診，病房，遠距醫療）或跳過傳統要求的科別。

多年來ACGME一直在鼓勵發展以勝任能力為導向醫學教育(CBME)的原則和活動。這些原則應用於可信賴之臨床決策，以判斷住院醫師或研究醫師 是否已準備好進入職業生涯的下一個階段。「可信賴之臨床決策」側重於住院醫師或研究醫師的盡責性，可信賴性，辨別力和能力。可信賴基於畢業生可以達到病人和教育 成果的四重目標 。四重目標 同時改善患者的照護體驗，人民的健康和醫療人員的工作，同時降低了人均成本。醫師在盡責性，可信賴性，辨別力和能力的展現，支持評估成效。此次會議將概述在新冠肺炎大流行期間在美國推廣的關鍵原則及其對未來評估工作的影響。

This is a time of extraordinary pressure for everyone in health professions education. In spite of the pressures currently being enocuntered in the United States, the U.S. educational community has recognized it is vital to keep the public and society needs front and center. Many acts of courage have and continued to be witnessed at U.S. academic healthcare centers.

The pandemic has only served to highlight the critical importance of accelerating the movement to an outcomes-based medical educational system. The ACGME recognizes that traditional time-based or volume-based measures may not be fully achievable during this academic year as a result of the disruption caused by the pandemic. As a result, the ACGME is strongly encouraging each program to use the core principles of CBME to make informed decisions about advancement and graduation. The ACGME recognizes that educational experiences may be modified or disrupted through alternative forms of education such as virtual learning, deployment to another clinical rotation or activity (e.g., ICU, ED, wards, telemedicine), or by missing a traditionally required rotation.

The ACGME is encouraging programs to build on the CBME-based principles and activities that have grown over the years. These principle should be used to support an entrustment decision-making process that determines whether a resident or fellow is ready to progress to the next stage in his or her professional careerr. "Entrustment decision-making" focuses on the conscientiousness, trustworthiness, discernment, and competence of the resident or fellow. Entrustment is grounded in the patient and educational outcomes that a graduate can deliver on the Quadruple Aim. The Quadruple Aim simultaneously improves patient experience of care, population health, and health-care provider work life, while lowering per capita cost. The demonstration of conscientiousness, trustworthiness and discernment supports confidence in assessment outcomes.

This session will provide an overview of the key principles being promoted in the U.S. during the pandemic and their implications for future work in assessment.

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COVID-19疫情後對麻醉訓練典範之轉變

The Paradigm Shift of Anesthesiology Training after the COVID-19

■Pedro Tanaka

在新冠肺炎大流行的當下麻醉科醫師一直是站在前線，包括氣道、重症加護病房和擔任手術期間的專業醫師。在許多學術麻醉訓練計劃中，受訓人員佔其勞動人力很大一部分。儘管新冠肺炎擾亂了所有畢業後醫學教育課程，但實作學科（包括麻醉醫學）受到的影響最大。

儘管這種流行病付出了許多代價，但我們希望已為麻醉醫學訓練提供了快速進展的途徑。投入在線上學習環境可能會取代普通的投影片報告。系統層級委員的參與和受訓人員的結構完整，可能仍是住院醫師訓練的重點。我們的醫學生正處於這一個大流行病（及下一個大流行病）的獨特領導位置。許多訓練計劃受到新冠肺炎疫情的壓力而做出因應對策，這些對策應作為國家標準和目標的指引，並同時作為麻醉醫學訓練未來的方針。

Anesthesiologists have been on the frontlines of the COVID-19 pandemic as airway, Intensive Care Unit (ICU), and Perioperative Medicine specialists. At most Academic Anesthesiology Programs, trainees account for a significant proportion of their workforce. Although COVID-19 has perturbed Graduate Medical Education (GME) in all specialties, hands-on disciplines (including Anesthesiology) have been affected the most.

It is our hope that this pandemic, despite its many costs, has provided an avenue of rapid growth in Anesthesiology training. Engaging online learning environments may supplant the banal slide presentation. System-level committee participation and the structured wellness of our trainees may remain central foci of residency training. Our trainees are uniquely positioned to lead in this pandemic (and the next). Training programs have responded broadly to the stresses of COVID-19, and these actions should serve as guides for needed national standards and objectives that will guide the future of Anesthesiology training.

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COVID-19疫情後，台灣醫學教育在勝任能力導向醫學教育發展的可能思維與方向

New Thoughts about CBME after COVID-19 - Reflection fromTaiwan

■林育志 Yu-Chih Lin

醫學教育必須回應社會的健康照護需求，才能培育勝任社會醫療專業者工作的醫師。勝任能力導向教育模式是醫學教育的重要發展方向，其教育目標會隨著醫學專業領域知識科技發展及社會需求期待而改變。COVID-19疫情嚴重，對全球各國的醫療體系都產生相當大的衝擊，相對的也帶來新的醫學教育需求。台灣疫情控制良好，醫學教育在學校及臨床上都有很好的措施來維持原有運作，但是國家則面對很大的衝擊。這讓我們看到台灣醫學專業所要回應的社會需求可能與其他國家不盡相同，台灣可能會由這次疫情而在教育方法上得到發展經驗，但也更要注意其他醫學教育主流國家在疫情後，對勝任能力架構與內涵及專業發展歷程碑的轉變，及困難疫情下的教育經驗。因此，台灣需要保持對他國經驗的反思及制度轉變的覺察，並持續探究本土對醫師勝任能力的社會期待。

Medical education responds to social needs and incubate physicians competent of being a medical professional. Competence based medical education (CBME) is an important paradigm change of modern medical education and so educational goals will evolve with the development of medical knowledge, technology and social expectation. The COVID-19 pandemic afflicts healthcare system globally and raises new issues in medical education regarding to social needs. Taiwan were able to maintain the operation of campus and clinical medical education during COVID-19 pandemic while medical education and healthcare system were greatly disturbed in most other countries. This pandemic revealed that the social needs in Taiwan and other countries are not the same. Taiwan has learned valuable lesions of educational strategies from pandemic quarantine. We should also pay attention to changes of frameworks for medical competences and professional milestones from leading countries/area in medical education, as well as experiences in operating of medical education system in facing pandemic. Taiwan could learn through the "alternative experience" from the other countries and should continue to explore the local social needs that would best describe medical competences in Taiwan.

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CBME在COVID-19後跨領域團隊的再省思及精進

New Thoughts about CBME after COVID-19 – Multidisicinary Awareness & Communication Enhancement

■郭書麟 Shu-Lin Guo

這次面對全球性嚴重傳染病疫情，原本習以為的醫療照護模式，也發生的重大改變。醫者也為自身的安全而有防衛心態，不論是與病人的接觸，或是專業的醫療作，甚至與其他不同領域同事的溝通上，其實已經發生的質變。表面上醫療系統可以運作如常，事實上有更嚴重的疫情爆發，系統將馬上失去反應能力而停擺。所以如何針對這三方的需要來打造一個核心系統，保持彼此間的訊息流通無礙，而且保有安全距離，進而保障所有人的安全。若在此基礎上，可以同理心對待，並發揮我們的專業素養，在這各種不同的情境中，因應突發公共衛生事件的處理以及平衡病人照護的品質。養成足夠的專業素養，其所學應能尊重醫療同仁、患者、與家屬，醫療行為符合醫學倫理，避免歧視的行為，如此對於病患才能有更高品質的照顧。

Facing a severe global infectious disease epidemic this time, the medical care model we used to have undergone major changes. Doctors also have a defensive mentality for safety issue. Whether physical contact patients, professional medical work, or even communication with colleagues in other fields, there has actually been a qualitative change. Right now, the medical system can operate as usual. In fact, if a more serious epidemic breaks out, the system will immediately lose its ability to respond and shut down. So how to build a core system for these three parties, keep the flow of information between each other, and keep a safe distance, so as to ensure the safety of everyone. What they learn should be able to respect medical colleagues, patients, and their families, medical behaviors conform to medical ethics, and avoid discriminatory behaviors, so that patients can be treated with higher quality.

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國際麻醉專科醫師甄審變革座談－美國麻醉專科醫師甄審制度簡介

International forum: Reforms in Anesthesiology Board Certification - The Overview and Reforms of Anesthesiology Board Certification in the US

■與談人/Joseph S. Chiang

現代麻醉始於1846年 Dr. Morton 在麻省總院Ether Dome 施行的第一例全身麻醉，81年後的1927年第一個麻醉專科醫師培訓中心才在University of Wisconsin Madison 成立，至今全美共有130多個麻醉駐院醫師培訓中心，培訓和考核的內容日趨完善。

麻醉駐院醫培訓共四年，第一年internship, CA1-CA3期間ABA（American Board of Anesthesiology）對臨床知識的掌握，完成麻醉操作的質和量都有非常詳細的要求，而且不斷更新，近年來增加了很多對儀器應用的考核。目標是四年後能成為能獨當一面完成各種複雜麻醉的醫師同時成爲其他科別醫師的咨詢顧問麻醉證照的考核自1937年9人至今共有了5萬多人取得專業資格，從單純的口試筆試進步到三階段口試筆試儀器操作運用以及模擬器情況應對，證照每十年更新，以求終身學習。

1985年起，ABA增加了次專業培訓和證照考核，包括 critical care, pain management, pediatric anesthesia。

Modern anesthesia began in 1846 when Dr. Morton performed the first general anesthesia at the Massachusetts General Hospital Ether Dome. 81 years later, in 1927, the first training center for anesthesiology resident was established at the University of Wisconsin Madison. So far, there are 130 centers in the United States. The training program and assessment is being fully ready.

Anesthesiology residents receive a total four years training program in hospitals. During the first year of internship, American Board of Anesthesiology (ABA) has mastered clinical knowledge during CA1-CA3, and has very detailed requirements for the quality and quantity of anesthesia practice, and has been continuously updated in recent years. A lot of appraisal systems of instrument application has

been added. The goal is to be an anesthesiologist who can perform all kinds of complex anesthesia independently after four years training as well as be a consultant evaluating anesthesia licenses of other doctors. Since 1937, the initial nine to more than 50,000 doctors have obtained professional qualifications that progress from simple oral and written tests to the three-stage oral examination and written examination, the application of the instrument, and the response to the simulation scenarios.

The license is updated every ten years, in order to achieve lifelong learning. Since 1985, ABA has added professional training and certification assessments, including critical care, pain management and pediatric anesthesia.

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國際麻醉專科醫師甄審變革座談－麻醉科醫生的規範化培訓－過去、現狀與未來

International forum: Reforms in Anesthesiology Board Certification - Standardized Training of Anesthesiologists-Past, Present and Future

■與談人/于布爲 Buwei Yu

大陸的規範化培訓始於上世紀九十年代。主要推動人物為劉進教授。做法基本上是參考美國的標準。2011年，大陸政府決定在全國范圍內建立醫師規範化培訓制度，指定中國醫師協會負責與管理。同時指定上海市為全國試點地區。上海隨即成立了住院醫師培訓辦公室，並組織各學科的醫師分會會長擔任規範化培訓專家組組長。期間組織製定了培訓計劃、細則，組織編寫了培訓教材、考試題庫。完成了專家團隊的組建和培訓中心的認定。在此基礎上，上海進行了一年的試運行，測試了培訓計劃的可行性，考試試題的難易度，筆試與面試的實際操作結果。總體堪稱滿意。在此基礎上，全國各地陸續展開規範化培訓的工作。此後國家衛生健康委員在上海召開現場辦公會。由上海匯報了所開展的工作，所取得的經驗及存在的不足。由以北京為主的專家評審隊伍，對上海的工作進行了評審，總體通過了上海的經驗，同時也指出了上海存在的問題，並協調解決了上海與北京、華西等地在培訓內容上和組織方式上所存在的有關問題。在全面鋪開規範化培訓的基礎上，大陸也對培訓的得與失進行了反思。首先是取得的成績：目前大陸每年至少培訓3500名麻醉科醫生，雖然早期有一些人因種種原因而在培訓結束後轉到其它工作崗位（主要是到醫藥公司工作，約佔總量的百分之五到十），但近年來基本都留在大中型城市醫院工作，就業前景良好。目前的結業考試通過率在92%～95%之間。用人單位對規培學員的反映普遍在良好以上。基本上在經過三個月的適應期後，都可以勝任日常工作。目前存在的主要問題是：1、培訓中心的質量還存在較大的差異。2、培訓教師的水平也良莠不齊。3、在全盤接受美國的方案後，不僅學到了美國方案的精華，同時也將一些錯誤的觀念潛移默化地影響了規培學員。這表現在大陸總體安全性的波動上。一些畢業學員養成的不良工作習慣，改正過來非常困難。4、規培內容和教材、題庫的及時更新也是需要解決的問題。未來展望：兩岸秉承共同的文化背景基礎，理應在規培方面進行深度合作。我本人認為：基於中國傳統文化背景的東亞儒家文化圈基礎，我們一定會在麻醉科專科醫生培養方面，取得比歐美國家更好的結果。

Standardized training in Mainland China began in the 1990s. The main promoter is Professor Jin Liu. The training is based on American standards. In 2011, the government decided to establish standardized training of doctors nationwide. The Chinese Medical Doctor Association is appointed to be responsible and manage the training system. Meanwhile, Shanghai was designated as a pilot area. The mainland has reviewed the gains and losses after implement of nationwide training system. At present, at least 3,500 anesthesiologists complete training every year in Mainland China. The current problems are:

1.There are still huge differences in the quality of training centers.
2.The level of training teachers are uneven.
3.After full acceptance of the American system, our trainees learned not only the essence, but also some erroneous concepts. It is very difficult to correct some poor work habits developed during training.
4.The timely update of training content and teaching materials are also problems required to be resolved.

Future prospects: The cross-strait shares a common cultural background. Hence, it should exist a deep cooperation in regulation and training. Since we are involved in the same East Asian Confucian cultural circle, the author advocated that cross-strait will definitely have better results in training of anesthesiologists than the Western countries.

個人專長 液體輸注動力學、臨床麻醉監測、全麻原理、阿片類藥痛覺過敏、圍術期認知功能變化
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個人經歷

國際麻醉專科醫師甄審變革座談－日本麻醉專科醫師甄審制度簡介

International forum: Reforms in Anesthesiology Board Certification - The Overview and Reforms of Anesthesiology Board Certification in Japan

■與談人/小板橋俊哉 Toshiya Koitabashi

Japanese Society of Anesthesiologists (JSA)成立於西元1954年，並於西元1963年開始專科考試制度，是日本所有醫學專科中最早開始專科考試制度的科別。第一屆通過麻醉專科考試的考生共44名，而66年後的今日已有超過 7,000名麻醉專科醫師。

目前日本麻醉專科考生須於考前完成一定數量的臨床麻醉案例，且經過四年訓練方得報考，考試方式包括筆試、口試以及實際演練。而臨床麻醉案例須包括至少10例剖婦產、25 例胸腔麻醉以及 25例腦神經外科麻醉，並於25例心臟外科麻醉中擔任主要或次要麻醉醫師 (包括胸主動脈手術)，以及至少25例小於六歲之小兒麻醉。除臨床經驗外，還必須參加學術會議和繼續教育活動以獲得10個必修積分，並取得 AHA-ACLS或PALS provider status。口試旨在檢查邏輯思維以及與患者和外科醫生的溝通技巧。實際演練則包括一些基礎臨床技術，例如光纖插管、硬膜外或脊椎穿刺、使用模擬器進行中心靜脈導管插入等。

日本麻醉專科考試未來會邁向日本醫學專科委員會之下進行更集中的管理模式。

The Japanese Society of Anesthesiologists (JSA) was founded in 1954. The JSA established the specialty board system in 1963, which was the first such system in the Japanese medical community. The first examination produced 44 board certified specialists, but exceeded 7,000 after 66 years.

Regarding recent board certified anesthesiologist, candidates must pass a written, oral and practical examination in addition to completing the requirements of their four-year training program, which includes a minimum number of clinical case experiences. These include anesthesia experience as primary anesthesiologist for at least 10 cesarean sections, 25 thoracic surgery cases, and 25 neurosurgery cases. Experience as primary or secondary anesthesiologist is required for at least 25 cardiovascular cases (including the thoracic aorta), and at least 25 pediatric cases (<6 years of age). Aside from clinical experience, a total of 10 required credits must be earned by participating in academic meetings and continuing education activities. Current AHA-ACLS or PALS provider status is also required. Oral examination is aimed to check the logical thinking as well as communication skill with patients and surgeons. Practical examination consists of some basic practices such as fiber-optic intubation, epidural or spinal puncture, central venous catheterization using appropriate simulators or so on.

Specialist certification in Japan is transitioning to a more centrally managed model under the Japanese Medical Specialty Board.

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最高學歷 Keio University School of Medicine (1980-1986); Research Fellow (Assistant Professor), Emory University School of Medicine (1999-2000)
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3.Assistant Professor, Ichikawa General Hospital, Tokyo Dental College (1994-2001
4.Associate Professor,Ichikawa General Hospital, Tokyo Dental College (2001-2005)
5.Professor and Chair, Ichikawa General Hospital, Tokyo Dental College (2006-)

肯尼亞內羅畢肯雅塔國家醫院的兒科麻醉研修

The Paediatric Anaesthesia Fellowship of the University of Nairobi, Kenya

■Christopher John Brasher

肯尼亞內羅畢大學的兒科麻醉研究員計劃於2013年啟動。該計劃是非洲大陸僅有的三個正式兒科麻醉訓練計劃之一，由ImPACT非洲和兒科麻醉學透過世界麻醉聯合會資助。該計劃每年訓練兩到三名麻醉醫生，一名肯亞籍，其餘來自撒哈拉以南之非洲國家。訓練為期一年，包括小兒一般外科 (6.5個月)，小兒加護病房 (1個月)，新生兒加護病房 (1個月) 心胸外科手術 (1個月) 以及神經外科和骨科手術 (2個月)。

The Paediatric Anaesthesia Fellowship program at University of Nairobi, Nairobi, Kenya was launched in 2013. One of only three formal paediatric anaesthesia training schemes on the African continent, it is funded by ImPACT Africa and the Society for Pediatric Anesthesia via the World Federation of Societies of Anaesthesiologists. The program trains two to three physician anaesthetists per year, one from Kenya, and the others from other sub-Saharan African countries. The course is one year in duration and includes exposure to Paediatric General Surgery (6 months), PICU (1 month), NICU (1 month) Cardiothoracic Surgery (1 month), and neurosurgery and orthopaedic surgery (2 months).

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(parecoxib for injection) 40 mg / Vial

外科手術後疼痛緩解的新選擇

- 選擇性第二型環氧酶(COX-2) 抑制劑針劑
- 靜脈注射或肌肉注射投與Dynastat 40mg單一劑量之後，第一個顯而易見的止痛作用於7到13分鐘出現，臨床上有意義的止痛效果於23–29分鐘出現
- 投與單一劑量之後，止痛效果持續的時間從6小時到12小時以上(視劑量和臨床疼痛模型而定)
- 40mg的止痛效果與ketorolac 60 mg肌肉注射或ketorolac 30 mg靜脈注射相當

DYNASTAT 處方資訊摘要

衛署藥輸字第024143號　北市衛藥廣字第109070281號

主要成分：每小瓶含parecoxib 40 mg (以parecoxib sodium 42.36 mg的形式呈現)。調配後parecoxib的濃度是20 mg/ml。

劑型：凍晶注射劑，白色至灰白色粉末。

適應症：短期(不宜超過四天)使用於外科手術後疼痛之緩解。

用法用量：建議劑量為40 mg，靜脈注射或肌肉注射，接著視需要每12至24小時可再給予20 mg。如採靜脈注射，可直接迅速地注入靜脈或注入既有的靜脈注射管線中。如採肌肉注射，則需將注射液緩慢地注入肌肉深部。

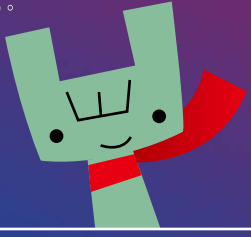
禁忌：對本品有效成分或任何賦形劑過敏(參閱賦形劑清單)。以前發生過任何一種嚴重的藥物過敏反應，尤其是皮膚反應如史蒂文生氏-強生症候群、毒性表皮壞死溶解、多形性紅斑，或已知對磺醯胺(sulfonamide)類藥物過敏的病人(參閱警語及注意事項，不良反應)。活動性之消化性潰瘍或胃腸(GI)出血。使用acetylsalicylic acid或非類固醇抗發炎藥(NSAIDs)，包括第二型環氧酶(cyclooxygenase-2，COX-2)抑制劑等藥物後發生支氣管痙攣、急性鼻炎、鼻瘜肉、血管神經性水腫、蕁麻疹、或其他過敏性(allergic-type)反應的病人。懷孕第三期與授乳期。重度肝功能不全(血清白蛋白<25 g/l或Child-Pugh評分≧10分)。發炎性腸道疾病(inflammatory bowel disease)。充血性心衰竭(NYHA II-IV)。在冠狀動脈繞道手術(CABG)後，術後疼痛之治療(參閱不良反應與藥效學性質)。確定的缺血性心臟病、周邊動脈疾病及/或腦血管疾病。

警語及注意事項：目前並無研究靜脈注射或肌肉注射以外的使用方式，因此不能使用其他的注射方式。因為使用高劑量parecoxib、其他COX-2抑制劑和NSAIDs時發生不良反應的可能性會增加，所以接受parecoxib治療的病人，增加劑量後應再接受檢查。如果療效未增加，應考慮改用其他治療選擇。用Dynastat治療超過三天的臨床經驗很有限。病人若在治療期間，下述任一器官系統功能有惡化現象，應採取適當的措施，並考慮停止parecoxib治療：心血管栓塞事件、冠狀動脈繞道手術(CABG)後、最近發生心肌梗塞的病人、心臟衰竭與水腫、胃腸道、皮膚反應、過敏、液體滯留、水腫與腎臟、高血壓、肝功能不全、使用口服抗凝血劑。NSAIDs與口服抗凝血劑併用會增加出血風險。心血管栓塞事件：NSAIDs藥品會增加發生嚴重心血管栓塞事件之風險，包括心肌梗塞和中風，且可能為致命的。此風險可能發生在使用該類藥品的初期，且使用藥品的時間越長，風險越大。進行冠狀動脈繞道手術之後14天內禁用本藥。

不良反應：使用Dynastat時最為常見的不良反應為噁心。最為嚴重的反應相當少見或罕見，包括心血管事件及過敏。在冠狀動脈繞道手術後，使用Dynastat的病人發生不良反應的風險比較高，例如：心血管/血栓栓塞性事件、深部手術感染與胸骨癒合併發症 (參閱不良反應)。

DYNASTAT 中文仿單 (版本：MOH 20161012-1) 完整 DYNASTAT 資訊請參閱仿單

Reference :
Dynastat 中文仿單MOH 20161012-1



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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

論壇摘要

2020年9月19日

Louisa Coffee(1F)

2020

麻醉資訊系統建置交流論壇

Development of Electronic Anesthesia System

■主持人/石博元 Po-Yuan Shih、劉時凱 Shih-Kai Liu

時間	題目	講者	醫院
1:10-1:35	**奇美醫院麻醉資訊系統**	王立楷醫師	奇美醫院麻醉部
1:35-1:40	Q & A		
1:40-1:55	**誰該爲難用的系統負責?**	陳權忠組長	台大醫院資訊室
1:55-2:10	**沒有紙,對我很重要**	賴沛妏護理長	中國醫大附設醫院麻醉部
2:10-2:15	Q & A		
2:15-2:25	**住院醫師登錄系統未來規劃**	石博元醫師	台大醫院麻醉部
2:25-2:40	綜合Q & A		

奇美醫院麻醉資訊系統

本院麻醉資訊系統的開發方向：小而美、增量開發、便利與效率、符合臨床及評鑑需求、提升麻醉同仁幸福感。

誰該為難用的系統負責？

從醫療資訊開發個案為出發點，期望從中了解醫療與資訊合作的模式，進而開發符合使用者需求之系統。

沒有紙，對我很重要

構思人性化系統，從user端出發，跳脫框架式設計，整合麻醉維期所需要的資訊，連結帳單、品管系統，以達一條 龍的AIMS。

住院醫師登錄系統未來規劃

因應麻醉資訊系統之發展，且兼顧減少住院醫師之登錄負擔，由資訊電子化委員會進行登錄系統改版之規劃。

主持人

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個人經歷 成大醫院麻醉部住院醫師/主治醫師、日本京都府立医科大学附属病院麻酔科、京都宇治曽我産婦人科クリニック進修臨床麻醉、奇美醫院院級優良教師

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麻醉護理師角色職責與麻醉專科護理師國考方向論壇

The Role of Certified Nurse Anesthetists

■主持人/謝宜哲 Yi-Jer Hsieh、陳勇安 Yung-An Chen

第一主題：
麻醉護理師的職掌與醫護分工

第一主題：
麻醉專科護理師國家考試範疇與資格認定落日條款

主持人

謝宜哲 Yi-Jer Hsieh

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

2020年9月19日

Lunch Symposium

2020

人工智能麻醉系統的應用及好處

Application and Benefits of Advanced Artificial Intelligence Anesthesia System

■陳貞吟 Jen-Yin Chen

電子化、自動化和數位化已是先進麻醉輸送系統發展的趨勢，而呼氣末自動控制 (End-tidal Control ; Et Control) 功能更是跨入智能麻醉領域的基石。

主要好處:

1.Et Control可幫助維持病人的呼氣末氣體麻醉藥和氧氣濃度的設置; 無論病人的血液動力學和代謝狀況如何變化，藥物和氧氣的濃度都會自動調整為預設的目標呼氣末濃度。

2.Et Control可幫助減少整個麻醉過程的氣體麻醉藥用量和成本。

3.Et Control一鍵設定的操作方式與手動調整新鮮氣體流量及揮發器的傳統做法相比，更易於使用。

4.Et Control可自動調控新鮮氣體流量和氣體麻醉藥濃度，因此可減少醫護人員的工作量。

End-tidal Control (Et Control) is a gas delivery software option for intellegent anaesthesia delivery systems.

Major benefits:

1.Et Control can help maintain patient's end-tidal agent and oxygen settings. Regardless of changes in patient's haemodynamic and metabolic status, the agent and oxygen levels are automatically adjusted to targeted end-tidal levels.

2.Et Control can help reduce the anaesthetics and costs throughout the case.

3.Et Control is easier to use compared with the conventional practice of using fresh gas flow and vaporizer settings.

4.Et Control is the automation of fresh gas flow and the agent delivery to reduce workload.

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個人經歷 麻醉專科醫師、疼痛專科醫師、營養醫療專科醫師、美國Bastyr University 進修、擔任科學期刊審閱 (Journal reviewer)；受邀於國際醫學相關會議作專題演講

ERAS處置下常規使用氣麻技術的優勢

Advantages of using inhaled anesthetics technique under ERAS protocol

■林子玉 Tzu-Yu Lin

隨著醫療觀念及技術的發展與進步，近年對於手術前評估及術後恢復也在改變過去的習慣，例如近年來推廣的怡樂適 (ERAS)也逐步在麻醉領域中佔有一席之地，然而不同的術式，不同的外科醫師，不同的手術室環境等等，都影響了麻醉醫師的接受及真實的操作！不可否認的，不論我們是否要往這個方向走，執行操作的細節與便利性也成為成功與否的關鍵！雖然氣體麻醉在心臟手術的使用早已成為日常的操作，然而相關藥物的使用，例如鴉片類，肌肉鬆馳劑，麻醉氣體的選擇等，都是影響ERAS執行成效良好與否的重要因素！我們如何將這些藥物及術中的監測整合也是我們討論的重點！我們期待今天的演講可以給大家一點整合性的觀念，希望對於大家在心臟麻醉執行中可以有一些幫忙！

In Cardiac Surgery, a fast-track project to improve outcomes was first initiated bybundling perioperative treatments. Although ERAS is relativelynew to CS, we anticipate that programs can benefit from these recommendations as they develop protocols to decrease unnecessary variation and improve quality, safety, and value for their patients. Cardiac surgery involves a large clinician group working in concert throughout all phases of care. Patient and caregiver education and systemwide engagement (facilitated by specialty champions and nurse coordinators) are necessary to implement best practices. A successful introduction of ERAS protocols is possible, but abroad-based, multi-disciplinary approach is imperative for success.

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個人經歷 台灣麻醉醫學會第三十屆理事、台灣麻醉醫學會第二十九屆理事、台灣心臟胸腔暨血管麻醉醫學會第七屆理事、台灣心臟胸腔暨血管麻醉醫學會第六任理事

有關術中過敏性休克：台中榮總經驗分享

Perioperative Anapylaxis: VGHTC Experience

■沈靜慧 Ching-Hui Shen

手術期間的過敏反應是一種罕見並危及生命的事件，通常無法立即診斷。因為全身麻醉的病人無法主訴症狀，如呼吸困難，皮膚瘙癢，粘膜腫脹和胃腸道不適等，造成診斷上的延遲而影響到後續治療。

目前在澳洲的發生率為1:10,000～1:20,000(Fisher and Baldo, 1993),挪威則為 1:6000(Fasting and Gisvold, 2002)。據美國的retrospective cohort study研究，自1992至2010年共執行1,150,000項麻醉，其中有過敏性反應者:38名，發生率約0.003304%，38人中有15人取消手術，27人住進加護病房照護。

除了吸入麻醉劑，所有手術期間所使用的藥物、用品都可能引起過敏反應。神經肌肉阻斷劑 (60%)，其次是乳膠 (12-16%) 和抗生素 (8%)。這三樣過敏原都是麻醉與手術必定會使用到的項目，肌肉鬆弛劑輔助氣管內管置放並且維持手術進行，乳膠則為廣泛使用醫療相關用品的成分(靜脈留置針/尿管/手術用無菌手套等)，而預防性抗生素亦為目前手術之常規。

過敏性休克來勢洶洶，會在極短的時間造成呼吸道腫脹，通氣困難缺氧；同時合併急遽的血壓下降導致休克，使得手術被迫中斷甚至造成病人的死亡。台中榮總麻醉部過去十年發生大約50個過敏性休克案例，可見過敏性休克盛行率並不如想像中低，一直是個未知數。目前術中過敏性休克的診斷仰賴血液中類胰蛋白酶(tryptase)濃度的測定。英國麻醉醫師協會建議疑似過敏反應的病人，採取檢體的時間為：初步復甦後二小時，及發生後24小時兩個時間點來獲得基線值。當病人情況穩定後，會診過敏科醫師。4-6周後再做皮膚測試，希望找出可能的過敏原。

Keyword: Perioperative anaphylaxis, tryptase, gold nano-hemisphere array biochip, electrochemical impedance spectroscopy measurement

Perioperative anaphylaxis is a rare but life-threatening event, but it sometimes cannot be diagnosed immediately partly because these patients with general anesthetics could not tell the doctors their symptoms such as difficult in breathing, itch, swollen of mucosa and gastrointestinal discomfort etc. Anesthesiologists only can identify the possibility of anaphylaxis according to observing signs such as cardiovascular collapse, increased airway pressure and skin change. Except inhalation anesthetics, all perioperative intravenous anesthetics could cause anaphylaxis. Neuromuscular blocking agents (60%), followed by latex (12-16%) and antibiotics (8%) are the most common agents of perioperative anaphylaxis. In addition to clinical presentation, the elevated blood tryptase concentration could provide a reliable diagnosis of anaphylactic shock. Tryptase can be an indicator of mast cell activation during inflammatory process. Therefore, the British Society of Anesthesiologists recommends that patients with suspected allergic reactions should receive the tryptase tests, respectively at the initial resuscitation, the initial one hour after resuscitation, and the last 24 hours to get the baseline response. When the patients survived from the crisis, the skin test is the gold standard tool to identify the culprit drug and find a safe alternative drug for future exposures 4-6 weeks after perioperative anaphylaxis.

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2020 小兒麻醉-新進展與熱題

What's New in Pediatric Anesthesia in 2020?

■范守仁 Shou-Zen Fan

本次演講有關小兒麻醉將涵蓋

1.麻醉對發展中大腦的最新研究及進展。

2.Miller's Anesthesia 7 8 9 版在小兒麻醉的差異。

3.近期一些有趣的論文回顧。

4.幾個簡單有用的小兒神經阻斷方法。

In this lunchtime talk, the speaker will report some new information about the influences of anesthetics in developing brain. The speaker also talks the changing contents of the new edition of Miller's Anesthesia (2020) in the scope of pediatric anesthesia. Some recent articles related to pediatric anesthesia and some easy and useful regional blocks will be described also.

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ProAQT 在麻醉中之應用

The Application of ProAQT in Anesthesia

■丁乾坤 Chien-Kun Ting

ProAQT 是一種利用動脈脈搏波形分析演算法來連續地測量血壓、心輸出量趨勢、容積反應和其他衍生數據的monitor，可以用來作為麻醉中輔助診斷的工具，近年來，就侵入式血流動力學監測有效性及安全性的爭議越來越激烈，SwanGanz導管技術創傷大，留置時間短，併發症多。因而無創/微創血流動力學監測的發展越來越引起關注，如間接Fick法重複呼吸技術、食道都普勒超音波監測技術、PiCCO技術等。ProAQT微創血流動力學監測技術（動脈脈搏輪廓分析技術 ）也是一種微創方法，與運用SwanGanz導管間歇熱稀釋法比較測定心輸出量及其他血流動力學參數，有不錯的相關性ProAQT微創血流動力學監測技術除了CO外，還能監測SVV。SVV已被認為是對前負荷變化反應敏感的指標，與其他傳統監測指標（HR、MAP、CVP、PAOP）相比能更早期、準確地反映前負荷的變化情況，可以讓臨床醫師進行容量管理時替代中心靜脈壓的角色，該儀器還可監測全身血管阻力（SVR）和全身血管阻力指數（SVRI），指導臨床血管活性藥物的應用。dPmx是動脈壓力曲線上最大的斜率(ΔPmax/Δt)，可以用來評估左心的收縮力情況。CPI通過壓力（MAP）和流量（CO）組合計算而來，反應左心輸出能力，是預測心源性休克院內死亡率的最佳指數。

ProAQT is a monitor that uses arterial pulse contour analysis algorithms to continuously measure blood pressure, cardiac output, volume response and other derived data. It can be used as an auxiliary diagnostic tool during anesthesia. In recent years, invasive hemodynamic monitoring shows controversy in the effectiveness and safety. The Swan-Ganz catheter is traumatic, of short indwelling time, and with more complications. Therefore, the development of non-invasive/minimally invasive hemodynamic monitors have attracted more attention, such as indirect Fick cardiac output measurement, esophageal Doppler ultrasound technology, PiCCO, etc. ProAQT hemodynamic monitoring system (arterial pulse contour analysis technology) is a minimally invasive method to determine cardiac output (CO) and other hemodynamic parameters and shows good correlation to data from Swan-Ganz catheter using intermittent thermodilution method. In addition to CO, ProAQT also monitor stroke volume variation (SVV). SVV has been considered as a sensitive indicator to present the changes in preload. Compared with other traditional monitors (HR, MAP, CVP, PAOP), it can early and more accurate reflect the changes of preload to replace the role of CVP in managing fluid status for clinicians. The instrument can also calculate the systemic vascular resistance (SVR) and systemic vascular resistance index (SVRI) to guide the use of vasoactive drugs. dPmx is the maximum slope (Pmax / t) of the arterial pressure curve, which can be used to evaluate the contractile force of left heart. CPI is calculated by the combination of pressure (MAP) and flow (CO), reflecting the left heart output capacity. It is the best index for predicting the in-hospital mortality of cardiogenic shock.

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手術中最適肌張力處置

The Optimal Muscle Tension Assisted Procedure Service

■呂忠和 Chueng-He Lu

乙醯膽鹼酯酶抑制劑，例如neostigmine，傳統上用於逆轉非去極化機神經肌肉阻斷作用。 但這些藥物具有明顯的臨床局限性，例如間接的逆轉機制，有限且不可預測的功效以及不適宜的自主神經反應。 Sugammadex是一種選擇性肌肉鬆弛劑結合劑，專門用於快速逆轉由rocuronium造成的非去極化神經肌肉阻斷。Rocuronium -sugammadex與神經肌肉監測的結合應用可提供許多的臨床效益，包括快速且可預測地逆轉任何程度的肌肉阻斷，提高手術病人的安全性，減少麻醉恢復時的殘餘肌肉阻斷機率，以及更有效地利用醫療資源。

Acetylcholinesterase inhibitors, such as neostigmine, have traditionally been used for reversal of non-depolarizing neuromuscular blocking agents. However, these drugs have significant limitations, such as indirect mechanisms of reversal, limited and unpredictable efficacy, and undesirable autonomic responses. Sugammadex is a selective relaxant-binding agent specifically developed for rapid reversal of non-depolarizing neuromuscular blockade induced by rocuronium. Rocuronium-sugammadex combined with neuromuscular monitoring provided potential clinical benefits include fast and predictable reversal of any degree of block, increased patient safety, reduced incidence of residual block on recovery, and more efficient use of healthcare resources.

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低血壓預測指數的臨床應用—人工智慧輔助機器學習運算邏輯

Clinical Application of Hypotension Prediction Index – AI Assisted Machine Learning Algorithm

■Thomas W.L. Scheeren

術中低血壓被認為是與術後並發症發展相關的主要促成因素，例如急性腎損傷、心肌及腦部的傷害。由於IOH不僅與圍手術期發病率相關，而且還與圍手術期死亡率（這是僅次於缺血性心臟病和中風後的第三大全球因素）相關，因此應努力降低IOH的發生率和持續時間。因此，POQI（圍手術期質量倡議）的共識建議，對於接受非心臟手術的成年人，有充分的證據支持平均動脈壓應保持在60-70 毫米汞柱以上，以減少術後心肌和腎臟損傷，和死亡。考慮到即使短暫的術中低血壓可能也是有害的，例如麻醉誘導後和手術切開之前—通過預測生命體徵，將我們目前的做法從反應性方法（通過監護患者的實際血液動力學狀態）更改為主動性方法可能會有所幫助，尤其是因為患者經歷低血壓時間越長，則越有可能會對結果產生不利影響。醫療技術的當前進展包括使用基於機器學習的算法，低血壓預測指數(HPI)來分析大型數據集，以提供臨床上有用的信息。這樣的預測分析可以幫助證實這樣的主動方法。

圍手術期使用HPI的可行性研究提供了充分的證據，證明HPI觸發的目標導向治療方法可以減少IOH的發生率和持續時間。這可能是在這個新的十年中的重要研究之一，通過使用創新技術幫助進一步改善圍手術期患者的安全性。

Intraoperative hypotension (IOH) is increasingly recognized as a major contributing factor associated with the development of postoperative complications in terms of renal, myocardial and possibly, cerebral injury. As IOH is not only associated with perioperative morbidity but with perioperative mortality as well—which is the 3rd greatest global contributor to deaths after ischemic heart disease and stroke —efforts should be made to reduce both the incidence and duration of IOH. Hence, consensus by POQI (Perioperative Quality Initiative) advises that for adults undergoing non-cardiac surgery, there is substantial evidence supporting that mean arterial pressure (MAP) should be kept above 60–70 mmHg in order to reduce postoperative myocardial and renal injury, and death. Given that even brief periods of IOH may be harmful—e.g. after induction of anesthesia and before surgical incision —it may be beneficial to change our current practice from a reactive approach (by monitoring the patient`s actual hemodynamic status) to a proactive approach, by predicting vital signs , especially since (cumulatively) the longer a patients "spends" in IOH, the more likely it is that this will adversely affect outcome . The current advances in medical technology include the use of machine-learning based algorithms, HPI (Hypotension Prediction Index) to analyze large datasets in order to provide clinically useful information. Such predictive analytics may help in substantiating such a proactive approach.

Feasibility studies on the use of HPI in the perioperative setting provides substantial evidence that a HPI-triggered goal-directed therapy approach may reduce the incidence and duration of IOH, which is a well-recognized factor that is associated with the development of postoperative morbidity and mortality. It may just be one of the very first studies in this new decade that helps improving perioperative patient safety further by using innovative technology such as the commercially available Hypotension Prediction Index.

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COVID-19下台大醫院呼吸道處置的改變

COVID-19 Changes in the Respiratory Tract Treatment at National Taiwan University Hospital

■劉治民 Chih-Min Liu

1.台大醫院呼吸道處置的主要項目

2.因應COVID-19呼吸道處置的改變

3.COVID-19麻醉部協助全院呼吸道處置項目

4.討論

1.Major items of respiratory tract treatment in National Taiwan University Hospital

2.In response to changes in COVID-19 respiratory treatment

3.COVID-19 Anesthesia Department assists the whole hospital with respiratory treatment

4.Discussion

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腦血氧監測：是什麼？怎麼做？

Cerebral Oximetry: WHY & HOW

■張詒婷 Alison Yi-Ting Chang

腦血氧監測(Cerebral Oximetry Monitor)的出現，對我而言是補完了心臟手術麻醉監測的最後一塊拼圖，多少回答了臨床醫師內心關於血壓，關於組織灌流，關於在Cardiopulmonary bypass時到底病人發生的什麼事的疑惑。

從監測的理由，可依循的標準，教你如何第一次處理腦血氧就上手，讓你不再無所適從。

Cerebral Oximetry can help anesthesiologist finding answer that hasn't been clarified and understanding hemodynamics from different perspective.

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2020

人工智慧在急重症醫療的應用：發展與陷阱

Application of Artificial Intelligence in Emergent and Critical Care Medicine: Developing Trend and Caveat

■陳冠甫 Kuan-Fu Chen

在急重症醫療之中，臨床預測模型廣泛使用來為病人的疾病診斷、預後、以及治療效果做應用。預測模型的建立遠在機器學習及深度學習盛行之前便是一門學問。隨著近年來各式各樣的工具問市，機器學習及深度學習成為不再令人望而生畏的建模方法。然而，許多藏在細節裡的魔鬼，並不會因為這些工具問市而現出原形。第一線臨床醫療人員面對數以千計新問市的預測模型，往往沒有足夠的知識評估運用的可行性。

在這短短半小時的分享裡，主講人將從資料前處理、遺失值處理、研究設計、特徵挑選、各式機器模型挑選、過度配適、時間序列設置、到深度學習層次設定等等的細節，配合身為急重症醫師的臨床資料，給聽眾做一次性的醍醐灌頂式的分享，希望不論是有意在未來從事人工智慧相關研究，或是希冀了解相關預測模型的評讀，都有基本的收獲。

Clinical prediction models have been widely utilized for disease diagnoses, prognoses, and effectiveness of treatment in emergent and critical care medicine. The development of clinical prediction models has been specialized before the availability of machine learning and deep learning. With lots of friendly tools developed for these purposes, machine learning and deep learning have become more possible for researchers. However, the devils in the details would not disappear because of these tools. Front-line health care providers often do not have sufficient knowledge to appraise these models.

In this half an hour talk, the speakers will describe the detail of data preprocessing, missing data management, study design, feature selection, model selections, overfitting, time-series setting, to setting of the deep learning model. We hope the audience could obtain enough knowledge no matter they would like to participate in artificial intelligence research or to deploy the models to their clinical work.

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肝臟移植病人周手術期重症照護

Perioperative Critical Care Management of the Liver Transplant Patient

■徐永吉 Yung-Chi Hsu

活體肝移植是器官供體嚴重短缺時代患者的寶貴選擇，然而肝臟移植手術對於麻醉科醫師和外科醫生以及病人來說都是一項重要而富有挑戰性的手術。在肝臟移植周手術期的壓力會增加，所有減少代謝壓力反應的策略都可減少醫療併發症。

肝臟移植受贈者的血管和膽道併發症發生率高，必須警惕這些併發症的早期症狀和體徵。多學科醫療與重症醫療在術後系統性管理的架構下，合作為肝臟移植周手術期重症監護提供最佳照護品質。

術後加速康復是很有價值的步驟，這些病人應該像其他手術病人一樣進行管理，並盡一切努力加快他們的康復，儘量減少住院的時間。

Living donor liver transplantation is a valuable option for patients in the era of significant organ donor shortage. However Liver transplantation surgery is a major and challenging procedure for both anesthesiologists and surgeons, and for the patient. Perioperative stress is increased during liver transplantation surgery, and all measures implemented to reduce the metabolic stress response could potentially reduce medical complications.

Live donor transplant recipients have higher rates of vascular and biliary complications and it is important to be vigilant for early signs and symptoms of these complications. Multidisciplinary medical care with critical care medicine collaborating provides optimal timing for liver transplantation and perioperative intensive care under system-based considerations for postoperative management.

Enhanced recovery after surgery protocols may be valuable. These patients should be managed like other elective surgical patients, and every effort should be made to expedite their recovery and minimize their time in hospital.

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

演講摘要

2020年9月20日

B廳

2020

急重症醫病溝通之秘

Secrets of Doctor-patient Communication in Acute and Critical Care

■葉育彰 Yu-Chang Yeh

不良的醫病溝通是醫療糾紛和病人抱怨最常見的原因之一，醫病溝通的成功關鍵是建立互相信任互相合作的醫病關係。

用一顆真誠的心並掌握關鍵技巧，可輕易地讓醫病溝通事半功倍。

AIDET技巧

Acknowledge 問候、體貼、感受

Introdcue 自我介紹、團隊介紹

Duration 預期時間

Explanation 解說細節

Thank you 感謝合作

RESPECT model

R 融洽，E 同理心，S支持，P 夥伴，E 解說，C 尊重文化和信仰，T 信任

Poor doctor-patient communication is the commonnest cause of legal action and complaints. The key of successful doctor-patient communication is to build a physician-patient relationship with trust and collaboration. With a sincere heart and the fundamental skills, it will be easy to half the work and twice the effect for doctor-patient communicatio.

AIDET skills

Acknowledge

Introdcue

Duration

Explanation

Thank you

RESPECT model

Rapport, Empathy, Support, Partnership, Explanation, Culture Competence, Trust

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COVID-19下的醫師照顧責任

Legal Responsibilities of Medical Physicians During Covid-19 Pandemic

■蔡紫君 Tzu-Chun Tsai

在世紀疫情COVID-19大流行中，人類與醫療系統面臨前所未有的挑戰。在這場戰役中，除了優秀的防疫中心擔任總指揮，全民與政府的配合，更重要的是醫師與相關醫事人員這群最前線的戰士。

我國在境外防疫上的料敵機先與口罩供給上的超前部署，讓臺灣在鄰近世紀疫情起源卻能交出前半套漂亮的防疫成績，然而臺灣沒有引發境內群聚感染，反而讓我們在防疫的後半套方面留下空白。就臺灣能完全學習反思，甚至汲取各國相關教訓與經驗的，快篩研發與測試、疫苗研製與試驗、醫院處理量能的管理，尤其是法律方面的配套與修正，都是我們為下一波災難或新興感染，亟需要研擬與部署的目標。

尤其是醫師的權益保護與責任歸責、感染控制、報告義務、遠距醫療、風險評估、勞動管理、例行與特殊防疫業務區分規劃、健保支付與特別獎勵等等，都是我們利用COVID-19大流行來檢視自建保開辦以來醫療體系改革運作成敗的重要評估項目。面對COVID-19流行的未知性、急迫性與大規模等特色，在有限資源與政府高度管制的情況下，又可能對醫事人員在醫療事故發生時的法律責任帶來如何的影響，在本次的報告中，我們將從救治義務、告知後同意與注意義務等方面進行討論。

In the century pandemic COVID-19 infection, human beings and all medical systems face unprecedented challenges. In this battle, in addition to the epidemic prevention center serving as the chief commander, the cooperation of the whole people and the government, and, latest but not least, the most important roles and the front-line fighters, physicians and related medical personnel.

Our country's successful strategy and regulation about anti-epidemic preventions and deployment of masks have provided Taiwan a safe environment in the initial pandemic stage free of community infection. However, Taiwan even free of community cluster infection must face next challenge as one member of the whole world including the research and development of vaccines and quick viral diagnostic kits, the participation of clinical trials, the regulation of medical system capacity.

In particular, the right protection, accountibility, and liability physicians, risk assessment, infection control, labor management, health insurance payment and national special rewards, etc. We should use this COVID-19 pandemic characterized by unknowing, urgency, and large-scale to examine the legal responses of physicians under limited resource and professional regulation by government.

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麻醉醫療糾紛面面觀

Aspects of Anesthesia Medical Disputes

■楊宜樫 Yi-Chien Yang

介紹司法實務上解決醫療糾紛常見途徑之利弊，例如調解、民事及刑事訴訟。另以麻醉科涉訟案件實例評析訴訟中應注意事項。

Introduce the pros and cons of commo-n ways to resolve medical disputes in judicial practice, such as mediation, civ-il action and criminal suit proceeding-s. In addition, trying to give legal advic-e to doctors based on the case analays-is of the anesthesiology department.

個人專長 醫療糾紛訴訟及勞資爭議
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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

演講摘要

2020年9月20日

C廳

2020

物理性保護屏障可以避免氣溶膠產生操作中造成的汙染

Protective Barrier Enclosure Prevent Contamination During Aerosol Generating Procedures

■賴賢勇 Hsien-Yung Lai

所有內視鏡檢查都是氣溶膠產生操作（AGP），並且可能污染操作室內的環境表面1。根據歐洲胃腸內視鏡學會（ESGE）指南2，在所有操作過程中均應穿戴個人防護設備（PPE），防護內容則根據患者的風險分級而不同。若無足夠的個人防護裝備，所有非緊急內鏡檢查都應推遲。我們設計了一種名為「氣溶膠盒」的塑料屏蔽裝置，以阻隔氣溶膠並在氣道處置過程中保護臨床醫師。該盒由聚丙烯酸或聚碳酸酯製成，是一種簡單，低成本，易於消毒的透明立方體。它覆蓋了患者的頭頸部，並且前面板有兩個孔，可讓臨床醫的手臂伸入進行操作3。

All endoscopies are aerosol-generating procedures (AGPs), and the surrounding surfaces in the procedure room can potentially become contaminated1. According to the European Society of Gastrointestinal Endoscopy (ESGE) guideline2, personal protective equipment (PPE) is to be worn for all procedures, and the components vary according to patient's risk stratification. Without adequate PPE, all non-emergent endoscopies should be postponed.

We have designed a plastic shield device named "Aerosol Box" to contain aerosolization and protect clinicians during airway procedures. The box is a simple, low-cost, easy to disinfect transparent cube made of polyacrylic or polycarbonate. It covers the patient's head and neck, and the front panel has two holes to allow clinicians to insert their arms to perform the procedure3.

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營造醫療現場的友善性別互動

Create Gender-friendly Interaction in the Medical Workplace

■柯乃熒 Nai-Ying Ko

主要增進醫療環境對於性別平等議題之認知，將性別意識融入醫療環境並教育如何因應職場之性騷擾及暴力，營造更多元、親切、友善的醫療職場環境。而性別友善的醫療包含醫療制度、醫療政策、醫療資源、醫療環境等都具備性別主流化觀點與內涵。

The purposes are increasing understanding about gender equality, bringing gender awareness into medical profession, educating how to respond tosexual harassment and violence in the workplace, so as to create a more friendly and diverse medical workplace. Gender-friendly medical care includes medical system, medical policies, medical resources, medical environment, etc., which all have perspectives of gender mainstreaming.

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

演講摘要

2020年9月20日

D廳

2020

神經監測甲狀腺手術之麻醉考量

Neural Monitoring during Thyroid Surgery-anesthesia Perspective

■盧奕丞 I-Cheng Lu

近十多年來，神經監測甲狀腺和副甲狀腺手術越來越普及。神經監測手術團隊合作，導入改良的麻醉技術形式。其中最重要的兩個麻醉考慮分別是肌電圖氣管內管的準確位置和肌肉鬆弛劑的適當使用。另外需要注意以下議題：(1) 術前氣道評估和術前準備；(2) 麻醉處置，包括影像插管系統，肌肉鬆弛劑和環糊精 (sugammadex)之搭配；(3) 術後合併症處理，例如疼痛和術後噁心嘔吐。

In recent decades intraoperative neural monitoring (IONM) during thyroid and parathyroid surgery has obtained more and more popularity. New modality of anesthetic technique was also developed to incorporate into surgical teamwork. The most two important anesthetic considerations are precise position of the EMG tube and optimal use of neuromuscular blocking agents (NMBAs). Special focus is paid to following issues: (I) preoperative airway evaluation and pre-op preparation; (II) anesthetic managements including advanced intubation tools, NMBAs and sugammadex; and (III) post-op adverse events such as pain and postoperative nausea vomiting.

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那些年，教科書上沒說的事

Things I Have Learned from Patients, Not Textbooks

■吳紹群 Shao-Chun Wu

1.緣起：何謂平衡麻醉?

2.麻醉是門藝術也是科學

3.麻醉的監測是安全保障的第一步

4.標靶麻醉是真的嗎?

5.好的麻醉是從術前,術中到術後的追劇行動

1.Preface:Balanced Anesthesia

2.Anesthesia: Art and Science

3.Monitoring: Key to Safety

4.Target-controlled or Totally-confused infusion?

5."Binge Watch" makes excellence

個人專長 中重度鎮靜、資料庫探勘與分析、敗血症與重症
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個人經歷 教育部定助理教授、一般醫學教育教師、高雄長庚講師/助理教授、高雄長庚住院醫師/備任級主治醫師、海軍馬公造船廠醫務所少尉醫官

2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

2020年9月20日

超音波專題演講與實作坊

2020

不影響膈神經功能的肩部手術後止痛策略

Phrenic Nerve Sparing Postoperative Analgesia for Major Shoulder Surgery

■林至芃 Chih-Peng Lin

良好的肩部手術後止痛，對於術後的恢復與復健影像甚鉅，傳統上重大肩部手術的麻醉與止痛是以肌間溝臂叢神經阻斷來進行，局部麻醉藥物的注射標的為頸5至頸7神經根周圍，這樣的阻斷方式無可避免地會造成膈神經的阻斷進而影響橫膈膜的功能，造成病患手術後的呼吸功能減損。隨著超音波導引區域麻醉的進步，近年以後各種更精緻更準確的神經阻斷區域麻醉，例如併用superior trunk及axillary nerve block等。在本演講中除相關文獻及最近各國相關臨床試驗結果的分享外，並將介紹於超音波影像上如何精確辨別phrenic nerve、superior trunk、axillary nerve，suprascapular nerve及cervical nerve roots及如何以超音波進行橫膈膜及呼吸功能之評估，做簡短介紹並作為後續的超音波工作坊的前置準備。

Effective postoperative analgesia after major shoulder surgery is paramount for patient comfort and facilitating rehabilitation program. Interscalene brachial plexus block has been adopted as standard of practice for major shoulder surgery for long time but inevitably will result in phrenic nerve blockade and diaphragm dysfunction after surgery that might further impair patient's recovery.

With the advancement of ultrasound guided regional anesthesia technique, new strategy for shoulder surgery analgesia has been developed, for example combined superior trunk and axillary nerve block may avoid unwanted phrenic nerve block. In this talk, we will summarize recent clinical trial result for these new analgesia strategy. We will also be demonstrating how to identify critical neural structures including phrenic nerve,superior trunk, axillary nerve,suprascapular nerve and cervical nerve roots. If time permitted, we will also be introducing how to perform ultrasound evaluation of diaphragm function as a preparation step for ultrasound workshop in the afternoon.

個人專長 進階癌痛處置、神經痛與鴉片類藥物耐受性之機轉、超音波導引區域麻醉止痛與導管置入、進階影像導引疼痛介入性治療及神經調控處置

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區域麻醉於胸腔手術止痛的應用

Application of Regional Anesthesia for Pain Relief in Thoracic Surgery

■許弘德 Hung-Te Hsu

胸腔外科手術後的疼痛通常十分嚴重，因為後外側開胸是最痛的手術切口之一。因此，如果手術後疼痛控制不當，患者在術後可能會因為疼痛而引起呼吸系統並發症，例如缺氧、肺塌陷和肺部感染。此外，不當的疼痛控制會導致開胸術後疼痛綜合症，這種綜合症可能很嚴重且難以處理並且會持續很多年。胸腔鏡手術 (VATS) 在目前是胸腔手術的主流。儘管與傳統開胸手術相比，VATS有著較少的肺部損傷和急性術後疼痛，但中度至重度的術後疼痛仍然可能存在，多達30%至50%的患者會經歷持續性疼痛。 而且在少數VATS患者中，由於手術因素，可能會在術中轉換為傳統開胸手術。

因此對於胸腔手術來說，選擇合適的術後疼痛控制技術十分重要。傳統上，硬膜外止痛 (EA) 已成為傳統開胸手術的金標準。另一個選擇是使用胸椎旁阻滯 (TPVB)。近年來，將肌筋膜平面阻滯術用於開放式腹胸手術的術後止痛也越來越受到大家的關注。豎脊肌平面阻滯 (ESPB) 就是這屬於這種止痛方式的新興技術。目前的研究表明，ESPB用於成人胸腔手術後，創傷後和慢性神經性胸痛可以作為一種簡單，安全的替代止痛技術。此外，超音波導引技術的介入也將提高胸廓局部神經阻滯術的成功率並降低併發症的發生率。

The pain after thoracic surgery is usually very severe, because the posterior lateral thoracotomy is one of the most painful surgical incisions. Therefore, if the pain is not properly controlled after the operation, the patient may cause respiratory complications such as hypoxia, actelectasis and lung infection. In addition,inadquate pain control can lead to post-thoracotomy pain syndrome, which can be serious, incapacitating, and may last for many years. Video-assisted thoracoscopic surgery (VATS) is currently the main stream of thoracic surgery. Although VATS has less lung damage and acute postoperative pain compared with traditional thoracotomy, moderate to severe postoperative pain may still exist, and as many as 30% to 50% of patients will experience persistent pain . Moreover, in a small number of VATS patients, due to surgical factors, it may be converted to traditional thoracotomy during the operation.

Therefore, for thoracic surgery, it is very important to choose appropriate postoperative pain control techniques. Traditionally, epidural analgesia (EA) has become the gold standard for traditional thoracotomy. Another option is to use thoracic paravertebral block (TPVB). In recent years, the use of myofascial plane block for postoperative pain relief in open abdominal thoracic surgery has also attracted increasing attention. The erector spinal muscle plane block (ESPB) is an emerging technique that belongs to this type of pain relief. Current research shows that ESPB can be used as a simple and safe alternative pain relief technique for post-traumatic and chronic neuropathic chest pain after thoracic surgery in adults. In addition, the intervention of ultrasonic guide technology will also increase the success rate of thoracic local nerve block and reduce the incidence of complications.

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乳房手術的區域麻醉

Regional Anesthesia for Breast Surgery

■陳威宏 Wei-Hung Chen

乳房手術是開刀房內最常遇見的術式之一，近年來發展出各種的區域麻醉與止痛方法用以減少術後的急性疼痛與後續衍伸而出的慢性疼痛。這類術式伴隨著比想像中還嚴重的疼痛程度，沒做好疼痛控制往往會導致嗎啡類用藥增加或是術後恢復不良的狀況，且這群病人有極高比率須長期依賴嗎啡類止痛用藥。因此麻醉醫師確有必要提供更佳的術中術後止痛模式，不僅減緩急性術後疼痛，更有可能帶來長遠的好處。

胸椎脊柱旁神經阻斷術是針對乳房手術最標準的止痛方法，它可以帶來極佳的術中與術後止痛效果，有效的降低嗎啡使用量和術後噁心嘔吐的發生率。因此胸椎脊柱旁神經阻斷能讓病患有更好的術後恢復。雖然有很好的效果，但此阻斷術有較高的技術門檻與可能伴隨的嚴重併發症，因此發展出有效且較為簡單的替代方案是有必要的。

隨著超音波技術的演進，不少新型的筋膜間神經阻斷術如PECS1-2/TTP/PIFB/ESP/SPB也被拿來應用在乳房手術，不僅較為安全便利同時也提供不亞於胸椎脊柱旁神經阻斷術的成效。我們將於這堂演講呈現相關文獻與義大醫院這三年來所累積之臨床經驗分享。

Surgeries of the breast are among the most common operative procedures, and numerous options exist for perioperative anesthesia and analgesia that can affect acute perioperative pain, persistent pain. The procedure is associated with moderate-to-severe acute postoperative pain; failure to provide adequate acute pain control is associated with increased opioid requirements, poor quality of recovery, and

chronic postsurgical pain. Indeed, the risks of chronic post-surgical pain and long-term opioid dependence after breast cancer surgery are 29% and 11%, respectively. Consequently, anesthesiologists are well-positioned to provide safe and reliable perioperative interventions that optimize acute pain control and enhance long-term outcomes.

Thoracic paravertebral block has been described as the gold standard analgesic modality for breast cancer surgery. The benefits of paravertebral block have been well established, including reduced postoperative pain, decreased opioid requirements, and lower risks of postoperative nausea and vomiting. Paravertebral block also enhances quality of recovery and seems to protect against chronic postsurgical pain. However, paravertebral block is considered an invasive block requiring advanced skill and deep needling in close vicinity to the pleura, neuraxis, and intercostal neurovascular bundles such that the risks of pneumothorax, neuraxial spread, and systemic toxicity persist. These concerns seem to prompt the quest for paravertebral block alternatives.

With the advent of ultrasound, newer inter-fascial plane blocks such as PECS1-2 block / Serratus plane block / Erector spinae block (ESP) / Transversus thoracis plane (TTP) block / Pectointercostal fascial block (PIFB) have been reported for perioperative analgesia in breast surgeries. It provides much easier approach with non-inferior post-operative analgesic effect.

In this section, we will discuss the innervation of the breast tissue and new evidence of the interfascial plance block. We will also show how we cooperate with the breast surgeon to deveolop our own strategy of regional anesthesia implemented for oncological breast surgery in E-DA hospital through 2017-2020.

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區域麻醉於髖關節手術的應用

Regional Anesthesia for Hip Surgery

■王柏凱 Po-Kai Wang

在髖關節手術中，區域神經阻滯術在術後疼痛處置上帶來好處。 然而，在髖關節手術中有多種區域神經阻滯術可供使用選擇，而且沒有一種絕對顯示出優越性。 腰叢神經阻滯術，股神經阻滯術和fascia iliaca阻滯術等是在已發表文獻中常被研究的方法。 其他方式，例如選擇性閉孔和/或股外側皮神經阻滯術，腰方肌神經阻滯術，囊周圍神經群 (PENG) 阻滯術和局部浸潤止痛，都還需要進一步的研究探討。 因此針對髖關節手術，各種區域神經阻滯術的選擇，需要個體化考量。

In hip surgery, regional anesthesia/analgesia offered benefits in postoperative pain management. However, there were a wide range of regional analgesic options, and none had definitely shown to be superior. Lumbar plexus block, femoral nerve block, and fascia iliaca block are the common blocks to be studied in published literature. Other techniques, such as selective obturator and/or lateral femoral cutaneous nerve blocks, quadratus lumborum block, Pericapsular nerve group (PENG) blockand local infiltration analgesia, require rigorous studies. So, regional anesthesia/analgesia may be tailored to the individual patient.

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第一站 UE
Interscalence, Supraclavicular, Axillary

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第二站 LE
Femoral, Adductor canal, Popliteal sciatic

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第三站 Trunk
Classical TAP, Subcostal TAP, PECS Block

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第四站 Trunk
Thoracic, Paravertebral, Erector Spinae, QL Block

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This lecture will share with you the techniques of getting started with the lanzenbao, and help you ransform your knowledge into a lanzenbao with a flat design style that is simple and easy to understand.

Looking forward to seeing you!

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[適應症] 在加護病房治療期間初接受插管及人工呼吸器照護病人之鎮靜作用。非插管病人接受手術或其他程序前及/或手術或程序進行中之鎮靜作用。無論上述何種情況，靜脈輸注投與 Precedex 的時間，皆不得超過 24 小時。

[用法用量] 依據個別病人狀況與所需的臨床效果決定 Precedex 的劑量。加護病房內鎮靜作用：通常成人以 0.5~1 mcg/kg 的初劑量輸注超過 10 分鐘以上做為初始給藥，接著以 0.2 至 0.7 mcg/kg/hr 的維持劑量輸注。手術鎮靜作用：通常成人以 0.5~1 mcg/kg 的初劑量輸注超過 10 分鐘以上做為初始給藥，而後在 0.2 至 1 mcg/kg/hr 的維持劑量範圍內調整以達到所需的臨床效果。

[警語與注意事項] 監控：使用 Precedex 治療時，須持續監控病人狀況。心搏徐緩與竇性心跳停止：曾發生於具高迷走緊張性的年輕健康受試者，或發生於採用不同給藥方式的情況下，如快速靜脈注射或單次大量注射。低血壓與心搏徐緩：可能需要更小心使用且需要醫療介入，用於血量過低、糖尿病或慢性高血壓與老年病人身上可能更為顯著。用於嚴重的心臟阻斷或嚴重心室功能不全的病人時，須謹慎為之。與其他血管擴張劑或降低心跳節律的藥物同時使用：由於具有藥物效力學上的加成效應，須謹慎使用。暫時性高血壓：主要發生於輸注初劑量時。可考慮降低初劑量的輸注速率。

[不良反應] 低血壓、心搏徐緩與口乾。

完整處方資訊請詳閱仿單

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2020 TSA ANNUAL MEETING

台灣麻醉醫學會年會

暨國際學術研討會

2020年9月20日

Lunch Symposium

2020

類鴉片藥物使用於疼痛治療之國際觀點綜整

Opioid in Pain Management: A Global View of Opioid Use in Pain

■王志中 Jhi-Joung Wang

近十年來，在國際多國陸續發生了opioid crisis，其中以美國最為嚴重，而其他如加拿大、英國、澳洲、德國及歐洲許多opioid使用量較大的國家也受到了很大的衝擊。至於opioid crisis發生的原因、各國的處置、新指引的制定及新文獻的發表等內容熱絡精彩，因此，我們特別收集了這些國際上的最新資訊，並依我國最新的全民健保資料庫綜整了我國醫師在各類類鴉片藥品的處方情形，以了解我國到底有沒有opioid crisis及國內各科別醫師的處方情形。這些國內外相關資訊內容非常豐富，我們將於會議中和大家分享。

Over the past decade, the opioid crisis has become a major issue in many countries around the world, especially in the US. It also affects countries such as Canada, the United Kingdom, Australia, Germany, and many European countries where opioid use is high. There have been lots of information on the cause of the opioid crisis, how each country deals with it, new guidelines, and new publications. We will share the latest international updates and the results of our study on opioid prescriptions in Taiwan based on the latest National Health Insurance Research Database to understand whether Taiwan is affected by the opioid crisis in the Conference.

個人專長 AI大資料運算、AI新醫材研發、智慧型機器人研發
最高學歷 國防醫學院醫學系醫學士、國防醫學院醫學科學研究所博士
現　　職 奇美醫學中心教學副院長、奇美醫學中心醫研部主任、交通大學合聘教授
個人經歷 奇美醫學中心麻醉部主任、臺灣麻醉醫學會理事長、臺灣疼痛醫學會理事長、獲頒教育部部定教授資格

優秀海報論文最佳八篇名單

A003

移植異體粒線體可有效提升肺動脈高壓動物之右心室輸出功能和改善肺動脈重塑反應

林眞福、許志新、方詩元、阮俊能

高雄義大醫院麻醉部、台南成大醫院內科部、台南成大醫院麻醉部、台南成大醫院心血管外科

A005

微核糖核酸29a參與調節發炎性疼痛經由抑制干擾α/ß受器之後抑制ISG 15及後續激發MAP訊息

陳昱州、郭紀麟、楊偉尚、陳貞吟、譚炳恆

台南奇美醫學中心麻醉部

A010

單一肌肉注射多巴胺耐米載體可在神經病理性疼痛大白鼠產生一持續性的止痛作用

Yaswanth Kuthati、Srikrishna Tummala、Prabhakar Busa、汪志雄

國泰醫療財團法人國泰綜合醫院

B017

Dexmedetomidine合併目標導引輸液治療對於顱內手術患者之神經保護療效之雙盲隨機分組研究

吳峻宇、陳賓信、李承擇、鄭孝良、李宗勳、張雅雯

台灣大學醫學院附設醫院麻醉部

B019

非心臟手術後麻醉病人於恢復室內發生低體溫之發生率調查及其風險因子分析

施美裡、陳敏慧、郭佩芳、陳慈姍、鄒芊柔、蘇子桓、林眞福

高雄義大醫院麻醉部、高雄義大醫院醫學研究部

B044

以深度機器學習來預測髖關節手術術後併發症之機會

李育諭、王志中、劉忠峰、郭紀麟、褚錦承

奇美醫療財團法人奇美醫院麻醉部、奇美醫療財團法人奇美醫院人工智慧運算中心

B068

台灣慢性非癌症疼痛病人長期使用鴉片類藥物之性荷爾蒙與性別差異

林作舟、何善台

三軍總醫院麻醉部、高雄醫學大學附設中和紀念醫院麻醉部

C014

半身麻醉可能造成硬腦膜下出血

曾士玲、黃健中

馬偕紀念醫院麻醉部、馬偕醫學院醫學系、馬偕學校財團法人馬偕醫護管理專科學校

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台灣麻醉醫學會年會

暨 國 際 學 術 研 討 會

學術論文目錄

A.基礎研究

B.臨床研究

C.病例報告

2020

A.基礎研究

稿件編號	論文題目
A001	**Combined human umbilical cord-derived stem cell and hyperbaric oxygen therapy exert neuroprotection in acute intracerebral hemorrhage** **在急性顱內出血合併使用人類臍帶幹細胞與高壓氧治療具神經保護效果** Hung-Chieh Chen, Ting-Yu Ke, Chia-Yu Hsieh, Chien-Hui Yang, Kuan-Hung Chen 陳弘杰、柯亭伃、謝佳妤、楊千慧、陳冠宏 Kaohsiung Chang Gung Memorial Hospital, Anesthesiology Department 高雄長庚紀念醫院麻醉部
A002	**Carnosic acid ameliorates acute respiratory distress syndrome by inhibiting neutrophilic oxidative stress** **鼠尾草酸抑制嗜中性白血球造成的氧化壓力來改善急性呼吸窘迫症候群** Yung-Fong Tsai, Tsong-Long Hwang 蔡永豐、黃聰龍 Department of Anesthesiology, Chang Gung Memorial Hospital, Taoyuan, Taiwan; Graduate Institute of Natural Products, College of Medicine, Chang Gung University, Taoyuan, Taiwan; Graduate Institute of Clinical Medical Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan 林口長庚醫院麻醉部、長庚大學天然藥物研究所、長庚大學臨床醫學研究所
A003	**Transplantation of viable mitochondria improves right ventricular performance and pulmonary artery remodeling in rats with pulmonary arterial hypertension** **移植異體粒線體可有效提升肺動脈高壓動物之右心室輸出功能和改善肺動脈重塑反應** Chen-Fuh Lam, Chih-Hsin Hsu, Shih-Yuan Fang, Jun-Neng Roan 林眞福、許志新、方詩元、阮俊能 Department of Anesthesiology, E-Da Hospital, Kaohsiung, Taiwan; Department of Internal Medicine, National Cheng Kung University Hospital and College of Medicine, Tainan, Taiwan; Department of Anesthesiology, National Cheng Kung University Hospital and College of Medicine, Tainan, Taiwan; Division of Cardiovascular Surgery, Department of Surgery, National Cheng Kung University Hospital and College of Medicine, Tainan, Taiwan 高雄義大醫院麻醉部、台南成大醫院內科部、台南成大醫院麻醉部、台南成大醫院心血管外科
A004	**Molecular target agent sorafenib modulates neutrophil activity primarily through p38 kinase contributing to anti-tumor effects** **標靶藥物sorafenib經由影響p38 kinase來調節嗜中性白血球活性並影響其抗腫瘤效果** Chun-Yu Chen, Yung-Fong Tsai 陳俊宇、蔡永豐 Department of Anesthesiology, Chang Gung Memorial Hospital, Taoyuan 333, Taiwan 林口長庚紀念醫院麻醉部
A005	**MicroRNA-29a participates in the regulation of complete Freund's adjuvant-induced inflammatory pain through activation of ISG15 and subsquent inhibition of MAPK signaling by inhibiting the expression** **微核糖核酸29a參與調節發炎性疼痛經由抑制干擾素α/β受器之後抑制ISG 15 及後續激發MAP訊息** Yu-Chou Chen, Chi-Lin Kuo, Wei-Shang Yang, Jen-Yin Chen, Ping-Heng Tan 陳昱州、郭紀麟、楊偉尚、陳貞吟、譚炳恆 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan 台南奇美醫學中心麻醉部

A006	**Hyperthermia induced Controlled Local Anesthesia Administration in Sprague Dawley Rat Using Gelatin coated Iron gold Alloy Nano particles** **明膠包覆的鐵金合金納米溫控局部麻醉藥-大鼠的動物實驗** Chien-Kun Ting, Ren-Jei Chung, Cihun-Siyong Alex Gong 丁乾坤、鍾仁傑、龔存雄 Department of anesthesiology, Taipei Veterans General Hospital; Department of Chemical Engineering and Biotechnology, National Taipei University of Technology; Department of Electrical Engineering, School of Electrical andComputer Engineering, College of Engineering, Chang Gung University, Taoyuan, 33302, Taiwan, Republic of China 臺北榮總麻醉部、臺北科技大學化學工程與生物科技系、長庚大學電機系
A007	**Effect of garlic oil and its active principle - diallyl sulfide on neuropathic-pain-rat model** **大蒜精油活性成分二烯丙基硫化物對神經病變痛大鼠的可能治療機制** Chih-Ping Yang, Yuli Cheng, Pei-Chun Huang, Man-Chin Tsai, Chun-Chang Yeh, Chih-Shung Wong 楊志平、鄭玉莉、黃培淳、蔡嫚今、葉春長、汪志雄 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Division of Anesthesiology, National Defense Medical Center, Taipei, Taiwan; Department of Anesthesiology, Cathay General Hospital, Taipei, Taiwan 奇美醫院麻醉部、國防醫學院麻醉學科、國泰綜合醫院麻醉部
A008	**HBO therapy attenuated motor neuron apoptosis and gastrocnemius muscle atrophy post-burn** **高壓氧減輕燒傷後之運動神經元凋亡及肌肉萎縮** Yi-Chen Huang, Sheng-Hua Wu 黃苡眞 、吳昇樺 School of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan; Department of Anesthesiology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan; Department of Anesthesiology, Kaohsiung Municipal Ta-Tung Hospital, Taiwan 高雄醫學大學醫學院醫學院醫學系、高雄醫學大學附設中和紀念醫院麻醉部、高雄市立大同醫院(委託財團法人私立高雄醫學大學附設中和紀念醫院經營)麻醉科
A009	**Aqueous extract of Arctium lappa L. root (Burdock) enhances chondrogenesis in human bone marrow-derived mesenchymal stem cells** **牛蒡根萃取(牛蒡) 能增強人類骨髓間質幹細胞的軟骨生成** King-Chuen Wu, Hung-Kai Weng, Yun-Shang Hsu, Pin-Jia Huang, Yang-Kao Wang 吳憬全、翁閎楷、徐雲裳、黃品嘉、王仰高 Department of Anesthesiology, Chang Gung Memorial Hospital, Chiayi County, Taiwan 嘉義長庚醫院麻醉科
A010	**A single intra-muscular dose of mesoporous polydopamine nanoparticles demonstrates sustained analgesia in a rat model of neuropathic pain** **單一肌肉注射多巴胺耐米載體可在神經病理性疼痛大白鼠產生一持續性的止痛作用** Yaswanth Kuthati, Srikrishna Tummala, Prabhakar Busa, Chih-Shung Wong Yaswanth Kuthati、Srikrishna Tummala、Prabhakar Busa、汪志雄 Department of Anesthesiology, Cathy General Hospital, Taipei, Taiwan.*Corresponding author; Department of Chemistry, National Dong Hwa University, Hualien, Taiwan; Department of Life Sciences, National Dong Hwa University, Hualien, Taiwan 國泰綜合醫院麻醉科、國立東華大學化學系、國立東華大學生命科學系

B.臨床研究

稿件編號	論文題目
B001	**Discrepant end-tidal concentrations of sevoflurane at the same A-Line Autoregressive Index level during induction of general anaesthesia: An observational study** **全身麻醉時，以不同吸入麻藥濃度誘導，在相同A-Line Autoregressive Index下，吐氣末端濃度之差異** Che-Hao Hsu, Shung-Tai Ho, Tso-Chou Lin 許哲豪、何善台、林作舟 Department of Anesthesiology, Tungs' Taichung Metro-Harbor Hospital, Taichung, Taiwan; Department of Anesthesiology, Kaohsiung Medical University Chung-Ho Memorial Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan; Department of Anesthesiology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan 童綜合醫療社團法人童綜合醫院麻醉部、高雄醫學大學附設中和紀念醫院麻醉部、三軍總醫院麻醉部
B002	**Compare the effects of Sugammadex and Neostigmine/Glycopyrrolate on patient's heart rate, mean arterial pressure, post-operative vomiting(POV), and post-operative urinary retention(POUR).** **神經肌肉阻斷逆轉劑Sugammadex或Neostigmine/Glycopyrrolate對手術病人術後心跳、血壓、術後嘔吐、術後尿滯留與術後合併症相關因素之探討** Hsiao-Cheng Chang, Min-Jia Lee, Sing-Ong Lee, Shu-Lin Guo, Chih-Shung Wong 張筱妊、李銘家、李欣恩、郭書麟、汪志雄 Department of Anesthesiology, Cathy General Hospital, Taipei, Taiwan 國泰醫療財團法人國泰綜合醫院麻醉科
B003	**Ultrasound-guided techniques for identification of cricothyroid membrane: A meta-analysis** **使用超音波來辨識環甲膜：統合分析** Kuo-Chuan Hung, I-Wen Chen, Chien-Ming Lin 洪國全、陳怡雯、林建明 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系
B004	**To assess the length of stay in post-anesthesia care unit between elective and emergency surgery patients: a pilot study** **評估急診手術與常規手術是否影響病患滯留恢復室的時間** Kuo-Chuan Hung 洪國全 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系

B005	**Association of body mass index and the accuracy of surgical pleth index to predict postoperative major pain** **肥胖可能影響SPI指數預測術後疼痛的準確度** Kuo-Chuan Hung, I-Wen Chen, Chien-Ming Lin 洪國全、陳怡雯、林建明 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系
B006	**Negative-pressure pulmonary edema after sugammadex: A 2 year retrospective study** **給予sugammadex與術後肺水腫的相關性：2年的回顧性研究** Kuo-Chuan Hung, Chia-Li Kao 洪國全、高嘉麗 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan; Department of Anesthesiology, E-Da Hospital, Kaohsiung, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系、義大醫院麻醉部
B007	**To reduce post-incision surgical stress by adopting pre-incision surgical pleth index: a pilot study** **藉由調整劃刀前的SPI指數來減少下刀後的手術刺激** Kuo-Chuan Hung, I-Wen Chen 洪國全、陳怡雯 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系
B008	**Incidence of severe epistaxis after nasotracheal intubation: a meta-analysis** **經鼻插管後鼻腔出血的風險: 整合分析** Kuo-Chuan Hung 洪國全 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系
B009	**Efficacy and safety of remimazolam for procedural sedation: A meta-analysis of randomized controlled trials** **探討remimazolam對於鏡檢鎮靜的功效及安全性的隨機對照試驗之統合分析** Bo-Jyun Jhuang, Bo-Han Yeh, Pei-Jyun Lai, Yen-Ta Huang 莊伯均、葉柏涵、賴佩君、黃彥達 Department of Anesthesiology, Hualien Tzu Chi Hospital, Hualien, Taiwan; Department of Anesthesiology, Linkou Chang-Gung Memorial Hospital, Taoyuan, Taiwan; Division of neurology, Department of Pediatrics, Hualien Tzu Chi Hospital, Hualien, Taiwan; Division of Evidence Based Medicine, Department of Surgery, Hualien Tzu Chi Hospital, Hualien, Taiwan 花蓮慈濟醫院麻醉科、林口長庚紀念醫院麻醉科、花蓮慈濟醫院小兒神經科、花蓮慈濟醫院實驗外科

B010	**Impact of Sellick maneuver on intubation outcomes: A systematic review and meta-analysis** **使用Sellick maneuver對插管的影響：統合分析** Kuo-Chuan Hung, Min-Hsien Chiang 洪國全、江敏嫻 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan; Department of Anesthesiology, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University and College of Medicine, Kaohsiung, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系、高雄長庚麻醉部
B011	**Postoperative Delirium in Older Surgical Adults -- A pilot study** **老年人手術後譫妄與認知功能異常－前導研究** Man-Ling Wang, Yueh-Jung Po, Ruo-Ching Chi, Wei-Ling Chang, Hui-Min Kao, Hsuan-Tzu Tsai 王曼玲、柏悅蓉、祈若晴、張瑋玲、高慧敏、蔡亘茲 Department of Anesthesiology, National Taiwan University Hospital 國立臺灣大學醫學院附設醫院麻醉部
B012	**Develop a questionnaire for research of painless labor depends on exploratory factor analysis by SPSS** **利用SPSS系統因素分析與因素轉軸研發與印證針對減痛分娩問項之問卷** Ying-Jen Chang, Kuo-Chuan Hung, Yi-Chen Chen, Chung-Han Ho, Wan-Jung Cheng, Chia-Hung Yu, Chin-Chen Chu, Ping-Hsun Feng 張穎眞、洪國全、陳怡蓁、何宗翰、鄭琬蓉、游嘉鴻、褚錦承、馮炳勳 Department of Anesthesiology, Chi Mei Medical Center; Department of Medical Research, Chi Mei Medical Center; Department of Anesthesiology, Chi Mei Medical Center, Liouying 奇美醫療財團法人奇美醫院麻醉部, 奇美醫療財團法人奇美醫院醫學研究部, 奇美醫療財團法人柳營奇美醫院麻醉科
B013	**Is the use of Trachway intubating stylet better for patients with neck immobilization? A meta-analysis** **影像式插管相較於其他插管工具，是否在頸部固定的患者上佔有優勢？** I-Wen Chen, Kuo-Chuan Hung, Chien-Ming Lin 陳怡雯、洪國全、林建明 Chi-Mei Medical Center 奇美醫院
B014	**Use of laryngeal handshake in the identification of cricothyroid membrane: A pilot meta-analysis** **使用laryngeal handshake的技巧來辨識環甲膜：統合分析** Kuo-Chuan Hung 洪國全 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系

B015	**The Outcome After Hospitalization for Kidney Diseases with Primary Care from Nephrologists or General Physicians: a Nationwide Population-Based Study** **腎臟專科醫師對於腎臟疾病住院病人預後的影響： 台灣健保資料庫分析** Chien-Wun Wang, Ying-Hsuan Tai, Yih-Giun Cherng, Chien-Chang Liao 王芊雯、戴英軒、程毅君、廖建彰 Department of Anesthesiology, Shuang Ho Hospital, Taipei Medical University, New Taipei City, Taiwan; Department of Anesthesiology, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan; Department of Anesthesiology, Taipei Medical University Hospital, Taipei, Taiwan; Anesthesiology and Health Policy Research Center, Taipei Medical University Hospital, Taipei, Taiwan; School of Chinese Medicine, College of Chinese Medicine, China Medical University, Taichung, Taiwan 衛生福利部雙和醫院麻醉科、台北醫學大學醫學院醫學系麻醉學科、台北醫學大學附設醫院麻醉科、台北醫學大學附設醫院麻醉醫學暨衛生政策研究中心、中國醫藥大學中醫學院中醫學系
B016	**A comparison of adverse respiratory events with sevoflurane or desflurane in ambulatory surgery: a systemic review and meta-analysis of randomized controlled trials** **系統性的評估和分析吸入性麻醉藥物sevoflurane和desflurane在呼吸道不良反應的比較** Kai-Lieh Lin, Min-Hsien Chiang, Yan-Yuen Poon, Shao-Chun Wu 林愷烈、江敏嫻、潘恩源、吳紹群 Department of Anaesthesiology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan, No.123, Ta-Pei Rd., Niao-Song Dist., Kaohsiung City, Taiwan 高雄長庚紀念醫院麻醉科
B017	**Neuroprotective effects of intraoperative dexmedetomidine infusion combined with a goal-directed fluid therapy for patients undergoing cranial surgery: a double-blinded randomized controlled trial** **Dexmedetomidine合併目標導引輸液治療對於顱內手術患者之神經保護療效之雙盲隨機分組研究** Chun-Yu Wu, Pin-Hsin Chen, Chen-Tse Lee, Hsiao-Liang Cheng, Tzong-Shiun Li, Ya-Wen Chang, Yu-Chang Yeh 吳峻宇、陳賓信、李承擇、鄭孝良、李宗勳、張雅雯、葉育彰 National Taiwan University Hospital 台灣大學醫學院附設醫院麻醉部
B018	**Clinical Experience of Nalbuphine Sebacate (Sebacoyl Dinalbuphine Ester) Extended-release Analgesic for Post-operative Pain Management: A Preliminary Study** **Nalbuphine Sebacate (Sebacoyl Dinalbuphine Ester)長效型鎮痛劑於術後疼痛治療上之臨床經驗初步報告** John On-Nin Wong, Thomas Dou-Moo Tan, Mou-Tsai Chao, Chung-Hung Yeh 黃安年、陳多慕、周謀材、葉重宏 Departments of Pain Management and Palliative Medicine; Department of Anesthesiology; Departments of Obstetrics and Gynecology; Department of Colorectal Surgery; St. Martin de Porres Hospital, Chia-yi City, Taiwan, ROC 天主教聖馬爾定醫院疼痛科暨緩和醫學科/麻醉科/婦產科/大腸直腸外科

B019	**Incidence and risk factors associated with hypothermia on admission to postanesthesia care unit after non-cardiac surgery - a retrospective cohort of 4,250 patients** **非心臟手術後麻醉病人於恢復室內發生低體溫之發生率調查及其風險因子分析** Mei-Li Shi, Min-Hui Chen, Pei-Fang Kuo, Tzu-Shan Chen, Chien-Jou Tsou, Tzu-Huan Su, Chen-Fuh Lam 施美裡、陳敏慧、郭佩芳、陳慈姍、鄒芊柔、蘇子桓、林眞福 Department of Anesthesiology, E-Da Hospital, Kaohsiung, Taiwan; Department of Medical Research, E-Da Hospital, Kaohsiung, Taiwan 高雄義大醫院麻醉部、高雄義大醫院醫學研究部
B020	**A nationwide survey of intraoperative management for one-lung ventilation in Taiwan: time to accountable for diversity in protective lung ventilation** **單肺通氣術中處置的全國性調查** Chuan-Yi Kuo, Ying-Tung Liu, Tzu-Shan Chen, Ming-Cheng Wu, Chen-Fuh Lam 郭權毅、劉映彤、陳慈姍、吳明政、林眞福 E-Da Hospital 義大醫院
B021	**Practical strategies to reduce facial pressure injury due to prolonged prone positioning during posterior lumbar spinal surgery** **應用整合式術中照護策略以降低腰椎手術趴臥時所造成的臉部壓力損傷** Hsin-Ying Su, Chien-Jou Tsou, Chen-Fuh Lam 蘇欣瑩、鄒芊柔、林眞福 Department of Anesthesiology, E-Da Hospital, Kaohsiung, Taiwan; Postanesthesia care unit, Department of Anesthesiology, E-Da Hospital, Kaohsiung, Taiwan 高雄義大醫院麻醉部、高雄義大醫院恢復室
B022	**Artificial Intelligence prediction of successful tracheal extubation in the operating room immediately after lung resection surgery** **人工智慧預測切肺手術術後手術室內拔管的成功率** Chun-Ying Lu, Ying-Jen Chang, Chung-feng Liu, Yu-Shan Ma, Jen-Yin Chen, Jhi-Joung Wang, Wei-Cheng Liu 盧雋穎、張穎眞、劉忠峰、馬于珊、陳貞吟、王志中、劉韋呈 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Center for big medical data and artificial Intelligence computing, Department of Medical Research, Chi Mei Medical Center 奇美醫學中心麻醉部、奇美醫學中心醫療大數據庫暨人工智慧運算中心
B023	**Sevoflurane versus desflurane on early postoperative vomiting after general anesthesia: a systemic review and meta-analysis.** **探討sevoflurane及desflurane 針對全麻病人術後發生早期噁心嘔吐之系統性回顧及統合性分析** Tzu-Tao Wang, Kai-Lieh Lin, Min-Hsien Chiang, Hsiao-Feng Lu 王子濤、林愷烈、江敏嫻、鹿曉楓 Department of Anesthesiology, Kaohsiung Chang Gung Memorial Hospital 高雄長庚紀念醫院麻醉科系

B024	**The clinical application of preoperative self-anticipated pain score and the correlation with surgical pain after elective surgery - a prospective observational study** **術前自我預測疼痛程度與術後手術疼痛之關係與其運用** Wei-Shu Chang, Mao-Ju Chen, Yi-Ting Shie, Tsz-Shan Chen, Shu-Jing Chang, Chen-Fu Lam 張維書、陳茂珠、謝宜庭、陳慈姍、張淑菁、林眞福 E-Da Hospital, Kaohsiung, Taiwan, Department of Anesthesiology; Department of Medical Research, E-Da Hospital, Kaohsiung, Taiwan 義大醫療財團法人義大醫院麻醉部、高雄義大醫院醫學研究部
B025	**Sugammadex for neural monitoring of recurrent laryngeal nerve during thyroid surgery** **倍帝恩用於甲狀腺手術中的喉返神經監測** Pi-Ying Chang, Hsiu-Ya Chen, Jung-Yen Hu, Yu-Chun Chen, Pi-Yang Ho, Sheng-Hua Wu, I-Cheng Lu 張碧瑩、陳秀雅、胡鎔嬿、陳宇春、胡品揚、吳昇樺、盧奕丞 Department of Anesthesiology, Kaohsiung Municipal Ta-Tung Hospital; Department of Anesthesiology, Kaohsiung Medical University Hospital; Department of Anesthesiology, Kaohsiung Municipal Siaogang Hospital 高雄市立大同醫院麻醉科、高雄醫學大學附設醫院、高雄市立小港醫院麻醉科
B027	**A simple, innovative and effective custom-made heat insulation pouch for intraoperative maintenance of fluid warming** **一項創新、簡易且有效的自製輸液保溫袋系統應用於術中輸液溫度的維持以減少圍術期體溫流失** Yun-Chi Chang, Chien-Jou Tsou, Min-Hui Chen, Chen-Fuh Lam 張芸綦、鄒芊柔、陳敏慧、林眞福 Department of Anesthesiology,E-DA hospital,Kaohsiung,Taiwan 高雄義大醫院麻醉部
B028	**Postoperative Adverse Outcomes in Patients with Chronic Kidney Disease** **慢性腎臟病病人術後併發症研究** Chao-Shun Lin, Ming-Hui Hsieh, Chien-Chang Liao, Chuen-Chau Chang 林朝順、謝明惠、廖建彰、張淳昭 Department of Anesthesiology, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan; Department of Anesthesiology, Taipei Medical University Hospital, Taipei, Taiwan 台北醫學大學醫學院醫學系麻醉學科、台北醫學大學附設醫院麻醉科
B029	**The use of atropine or glycopyrronium is not associated with a higher incidence of postoperative urinary retention** **使用阿托品或格比平並不會影響手術後尿瀦留之發生率** Man-Ling Wang, Hsiao-Hsuan Pu, Ruo-Ching Chi 王曼玲、卜筱萱、祈若晴 Department of Anesthesiology, National Taiwan University Hospital 國立臺灣大學醫學院附設醫院麻醉部

B030	**Postoperative Opioid Consumption of Transversus Abdominis Plan (TAP) Block Versus Port-Site Local Infiltration in Laparoscopic Surgery: a Meta-Analysis** **Transversus Abdominis Plan (TAP) Block與腹腔鏡切口局部麻醉在腹腔鏡手術24小時後的鴉片類使用量：系統性分析** Pei-Chen Liao, Jossen Foo, Chun-Jen Huang 廖珮辰、符若萱、黃俊仁 Department of Anesthesiology, Wan Fang Hospital, Taipei Medical University. 臺北醫學大學－北醫、萬芳醫院－麻醉科
B031	**Fire safety study on high-flow nasal oxygen in shared-airway surgeries with diathermy and laser: simulation based on a physical model** **以生理模型模擬不插管電燒及雷射氣道手術中使用高流量經鼻氧氣之著火安全性研究** Man-Yun Chang, Rui-Hung Chen, Shi-Pin Lin, Chien-Kun Ting, Mei-Yung Tsou, Fu-wei Su 張嫚芸、陳瑞宏、林世斌、丁乾坤、鄒美勇、蘇府蔚 Department of anaesthesiology, Taipei Veterans General Hospital, Taipei city, Taiwan 台北榮民總醫院麻醉部
B033	**SuperLivERAS: Enhanced recovery after surgery for liver transplantation** **極度肝造: 加速肝臟移植術後恢復改善計畫** Chueng-He Lu, Meei-Shyuan Lee, Teng-Wei Chen, Chun-Chang Yeh 呂忠和、李美璇、陳登偉、葉春長 Department of Anesthesiology, National Defense Medical Center and Tri-Service General Hospital, Taipei, Taiwan; School of Public Health, National Defense Medical Center, Taipei, Taiwan; Division of General Surgery, National Defense Medical Center and Tri-Service General Hospital, Taipei, Taiwan 三軍總醫院麻醉部、國防醫學院公衛學系、三軍總醫院外科部一般外科
B034	**Prevalence, risk profiles and perioperative outcomes of frailty in a general surgical population in Taiwan - a prospective observational cohort study in 785 patients** **以前瞻式世代研究方法分析台灣手術病人族群之衰弱症盛行率、風險因子和其圍術期併發症發生率** Chih-Chun Lu, Ching-Ying Wang, Moa-Chu Chen, Tzu-Shan Chen, Shih-Chieh Chung, Chen-Fuh Lam 盧芝君、王晶瑩、陳茂珠、陳慈姍、鐘士傑、林眞福 Department of Anesthesiology, E-Da Hospital, Kaohsiung; Executive Master Program, Department of Healthcare Administration, I-Shou University, Kaohsiung, Taiwan; Department of Medical Research, E-Da Hospital and E-Da Cancer Hospital, Kaohsiung, Taiwan 高雄義大醫院麻醉部、高雄義守大學醫務管理學系碩士在職專班、高雄義大醫院臨床醫學研究部

B035	**Prevalence, risk profiles and perioperative outcomes of sarcopenia in a general surgical population in Taiwan - a prospective observational cohort study in 785 patients** **以前瞻式世代研究方法分析台灣手術病人族群之肌少症盛行率、風險因子和其圍術期併發症發生率** Ching-Ying Wang, Chih-Chun Lu, Tzu-Shan Chen, Shih-Chieh Chung, Chen-Fuh Lam 王晶瑩、盧芝君、陳慈姍、鐘士傑、林眞福 Department of Anesthesiology, E-Da Hospital, Kaohsiung; Executive Master Program, Department of Healthcare Administration, I-Shou University, Kaohsiung, Taiwan; Department of Medical Research, E-Da Hospital and E-Da Cancer Hospital, Kaohsiung, Taiwan 高雄義大醫院麻醉部、高雄義守大學醫務管理學系碩士在職專班、高雄義大醫院臨床醫學研究部
B036	**Postoperative drip-infusion of remifentanil reduces postoperative pain - a retrospective observative study** **術後滴注remifentanil可減緩術後疼痛-回溯觀察性研究** Zhi-Fu Wu, Meei-Shyuan Lee, Yi-Hsuan Huang 吳之芾、李美璇、黃貽暄 Department of Anesthesiology, Chi Mei Medical Center; Department of Anesthesiology, Tri-Service General Hospital and National Defense Medical Center; Department of Anesthesiology, Kaohsiung Medical University Chung Ho Memorial Hospital, Kaohsiung Medical University; School of Public Health, National Defense Medical Center 奇美醫療財團法人奇美醫院麻醉部、三軍總醫院麻醉部、高雄醫學大學附設中和紀念醫院麻醉部、國防醫學院公共衛生研究所
B037	**Fluid restriction will not decrease urine output during living donor liver transplantation** **活體肝移植術中輸液限制並未影響排尿量** Yi-Ying Chiang, Yi-husan Huang, Han-Jung Cho, Long-Bin Jeng, Horng-Ren Yang, Te-Hung Chen, Chi- Kwan Boris Fung, Chi-Jui Hsu, Kuen-Bao Chen, Kin-Shing Poon 江易穎、黃以萱、卓涵蓉、鄭隆賓、楊宏仁、陳德鴻、馮熾焜、許耆睿、陳坤堡、潘健成 Department of Anesthesiology; Department of Surgery, Organ Transplantation Center, China Medical University Hospital, China Medical University, Taichung, Taiwan 中國醫藥大學附設醫院麻醉部、中國醫藥大學附設醫院外科部、中國醫藥大學器官移植中心
B038	**ASA physical status or surgical risk according to surgical type: is it available to predict the unexpected ICU transferal?** **麻醉風險分類與手術形式風險指標是否可預測病人非預期轉入加護病房** Yu-Chen Huang, Yung-Lin Hsieh, Nien-Hsun Wu, Ming-Chang Kao 黃于眞、謝咏霖、吳念勳、高銘章 Department of Anesthesiology, Taipei Tzu Chi Hospital 臺北慈濟醫院麻醉部

B039	**The correlation between minimally invasive and non-invasive pulse contour analysis systems for hemodynamic measurements in supine and prone positioning during general anesthesia** **比較兩種侵入性及非侵入性脈搏波形分析系統在全身麻醉後平躺及趴臥姿勢時對血循動力學參數量測的相關性** Chia-Yi Wang, Wei Chou, Tzu-Shan Chen, Yuan-Chi Chang, Chen-Fuh Lam 汪家儀、周葳、陳慈姍、張芸綦、林眞福 Department of Anesthesiology, E-Da Hospital, Kaohsiung; Department of Medical Research, E-Da Hospital and E-Da Cancer Hospital, Kaohsiung, Taiwan 高雄義大醫院麻醉部、高雄義大醫院臨床醫學研究部
B040	**Incidence of Adult Oro-pharyngeal Injuries after General Anesthesia: A Review of Performance Outcome Data using an Anesthetic Information Management System (AIMS)** **全身麻醉後成人口咽部損傷的發生率：麻醉訊息管理系統(AIMS)績效數據回顧** Cheng-Wei Hsu, Yen-Ru Lee, Hsin-Yi Tsai, Chuen-Chau Chang, Alan Hsi-Wen Liao 許程維、李燕如、蔡欣怡、張淳昭、廖璽文 Department of Anesthesiology, School of Medicine, Taipei Medical University, Taipei; Department of Anesthesiology, Taipei Medical University Hospital, Taipei 臺北醫學大學醫學系麻醉學科、臺北醫學大學附設醫院麻醉科
B041	**Ultrasound and Palpation Determined Vertebral Level at the Intercristal Line among Asian Parturients in Lateral Position** **超音波和觸診定位在側臥姿勢之亞洲產婦的脊椎高度比較** Jen-Hao Liu, Ping-Yan Hsiung, Ya-wen Chang, Hui-Min Kao, Hsuan-Tzu Tsai, Chih-Fan Chen, Chun-Yu Wu 劉人豪、熊秉炎、張雅雯、高慧敏、蔡亘茲、陳之凡、吳峻宇 Department of Anesthesiology, National Taiwan University Hospital, Taipei, Taiwan; Department of Anesthesiology, National Taiwan University Hospital Hsin-Chu Branch, Hsinchu, Taiwan 國立台灣大學醫學院附設醫院麻醉部、國立台灣大學醫學院附設醫院新竹分院麻醉部
B042	**Using Quality Control Methods to Reduce Medical Adhesives Related Skin Injuries** **以品管手法改善固定氣管內管之醫療黏膠相關皮膚損傷** Jin-Duo Li, Shih-Chieh Chen, Yu-Hsin Pan, Han-Yu Lin, Ming-Chang Kao, Yu-Ru, Li 李謹多、陳世捷、潘宥心、林涵宇、高銘章、李育如 Department of Anesthesiology, Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, New Taipei City, Taiwan 佛教慈濟醫療財團法人台北慈濟醫院麻醉部
B043	**Comparison of the Efficacy of Supraglottic Airway Devices in Low-Risk Adult Patients: A Network Meta-analysis and Systematic Review** **以系統性回顧以及網絡統合分析比較各種喉上通氣裝置在低風險成人病患使用上的效能** Chih-Jun Lai, Yi-Chun Yeh, Yu-Kang Tu, Ya-Jung Cheng, Chih-Min Liu, Shou-Zen Fan 賴芝潤、葉怡君、杜裕康、鄭雅蓉、劉治民、范守仁 Department of Anesthesiology, National Taiwan University Hospital; Institute of Epidemiology and Preventive Medicine, National Taiwan University; Department of Medical Research, National Taiwan University Hospital; Department of Dentistry, National Taiwan University Hospital and School of Dentistry, National Taiwan University; Department of Anesthesiology, National Taiwan University Cancer Center; Department of Anesthesiology, College of Medicine, National Taiwan University 臺大醫院麻醉部、台灣大學流行病學與預防醫學研究所、臺大醫院醫學研究部、台大醫院牙科部、台大癌症醫院、台大醫學院麻醉學科

B044	**Deep machine learning algorithm to predict operative outcomes for hip repair surgery** **以深度機器學習來預測髖關節手術術後併發症之機會** Yu-Yu Li, Jhi-Joung Wang, Chung-Feng Liu, Chi-Lin Kuo, Chin-Chen Chu 李育諭、王志中、劉忠峰、郭紀麟、褚錦承 Department of anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; AI center, Chi Mei Medical Center, Tainan, Taiwan 奇美醫療財團法人奇美醫院麻醉部、奇美醫療財團法人奇美醫院人工智慧運算中心
B045	**Investigation of the Common Carotid Artery Diameters by B-Mode Ultrasound and Image Processing** **B型超音波和圖像處理對於頸動脈直徑的研究** Yu-Chien Wu, Hsiu-Jung Lin, Li-Ren Yeh 吳昱杰、林秀蓉、葉力仁 Department of Anesthesiology, E-Da Cancer Hospital 義大醫療財團法人義大醫院麻醉部
B046	**Implementation of A Quality Improvement Programme to Increase Corrections of Electronic Medical Billing by Nurse Anesthetist** **藉由品管改善手法以提升麻醉護理師電子化計價的正確率** Hung-Wen Wang, Su-Mei Chen, Yu-Yao Lee, Kuo-Hsin Chu, Shao-Chun Wu 王宏文、陳素梅、李友瑤、祝國馨、吳紹群 Department of Anesthesiology,Kaohsiung Chang Gung Memorial Hospital 長庚醫療財團法人高雄長庚紀念醫院麻醉部
B047	**The Feasibility Study of ECG Classification by Deep Learning in Anesthetic Monitor** **利用麻醉監測器進行心電圖分類深度學習的可行性** Hui-Ching Yu, Hsiu-Jung Lin, Li-Ren Yeh 尤慧靜、林秀容、葉力仁 E-DA Cancer Hospital 義大醫療財團法人義大癌治療醫院
B048	**Which formula can predict the endo size better in children (1 to 7 years old)?** **預測小兒(一到七歲)的氣管內管管徑，何種公式較佳？** Shao San, Yi-Ying Chiang 楊家純、江易穎 Department of Anesthesiology, China Medical University Hospital 中國醫藥大學附設醫院麻醉部
B049	**Perioperative Dexmedetomidine Reduces the Duration of Mechanical Ventilation and Hospital Length of Stay in Patients Undergoing Early Extubation after Minimally Invasive Cardiac Surgery** **微創心臟手術中使用Dexmedetomidine能縮短快速拔管病人之呼吸器時間與住院天數** Tsung-Hua Yang, Cheng-Wei Lu, Tzu-Yu Lin 楊宗樺、陸正威、林子玉 Department of Anesthesiology, Far Eastern Memorial Hospital 亞東紀念醫院麻醉部
B050	**Opioid Sparing Anesthesia in Non-intubated VATS** **非插管式內視鏡開胸手術中的鴉片類藥物保留麻醉** Hui-Hsuan Ke, Wei-Nung Teng, Mei-Yung Tsou, Chien-Kun Ting 柯惠瑄、鄧惟濃、鄒美勇、丁乾坤 Taipei Veterans General Hospital 臺北榮民總醫院麻醉部

B051	**A Pilot Study-The safety of using EpiFaithTMSyringe to Aid the Needle Localization in the Thoracic Epidural Anesthesia Procedures?** **EpiFaith 注射器在胸硬膜外穿刺的初步研究** Rui-Hong Chen, Chien-Kun Ting, Mei-Yung Tsou 陳瑞宏、丁乾坤、鄒美勇 Department of Anesthesiology, Taipei Veterans General Hospital 臺北榮民總醫院麻醉部
B052	**Risk assessment of dementia after gynecological surgery: Analysis of 17-year data from the National Health Insurance Research Database in Taiwan** **女性婦科手術後發生失智症的風險評估：以17年的全民健保資料庫分析** Yi-Chun Chen, Wei-Zen Sun, Tzu-Yun Liu 陳怡君、孫維仁、林子玉 Department of Anesthesiology, Far Eastern Memorial Hospital, New Taipei city, Taiwan; Department of Anesthesiology, National Taiwan University Hospital, Taipei, Taiwan; Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University 亞東紀念醫院麻醉部、臺大醫院麻醉部、台大生醫電資所
B053	**Photoplethysmography and Wavelet-based spectral analysis show strong early phase parasympathetic inhibition followed by sympathetic withdrawal during general anesthesia induction with propofol** **光體積描記法和基於小波的光譜分析顯示，在異丙酚全麻誘導過程中，強烈的早期副交感神經抑製作用隨後爲交感神經退縮** Hsin-Yi Wang, Chen Lin, Men-Tzung Lo, Mei-Yung Tsou, Chien-Kun Ting 王馨苡、林澂、羅孟宗、鄒美勇、丁乾坤 Department of Anesthesiology, Taipei Veterans General Hospital; Department of Biomedical Sciences and Engineering, National Central University 臺北榮民總醫院麻醉部、國立中央大學生醫科學及工程學系
B054	**Retrospective review of dental complications during peri-anesthetic period in the Chung Shan medical university hospital** **回溯性分析麻醉圍術期相關牙齒合併症** Yueh-Tsen Chen, Wei-Te Hung 陳岳岑、洪維德 Department of Anesthesiology, Chung Shan Medical University Hospital, Chung Shan Medical University, Taichung city, Taiwan 中山醫學大學附設醫院麻醉部
B055	**Preoperative administration of extended release dinalbuphine sebacate for post-laparoscopic cholecystectomy pain management: an observational study** **術前長效dinalbuphine sebacate對腹腔鏡膽囊手術後止痛之觀察性研究** Sing-Ong Lee, Li-Ping Huang, Chih-Shung Wong 李欣恩、黃麗萍、汪志雄 Cathay General Hospital 國泰醫療財團法人國泰綜合醫院

B056	**Desflurane is non-inferior to sevoflurane in the occurrence of adverse respiratory events in pediatric anesthesia using a laryngeal mask airway: A systematic review and meta-analysis of randomized controlled trials** **Desflurane相比Sevoflurane不會增加呼吸道併發症於使用喉頭罩呼吸道之小兒麻醉: 後設分析研究** Po-Jui Huang, Wen-Yi Lai, Yi-No Kang, Yu-Ting Tai, Chun-Jen Huang 黃柏睿、賴文儀、康以諾、戴裕庭、黃俊仁 Department of Anesthesiology, Wan Fang Hospital, Taipei Medical University 臺北醫學大學－北醫、萬芳醫院－麻醉科
B057	**Different oxygen delivery method and atelectasis in CT-guided hepatic tumour radiofrequency ablation anesthesia** **肝腫瘤射頻燒灼麻醉使用不同給氧方式對於肺塌陷之影響** Chung-Chih Shih, Fu-Yi Lin 石崇志、林芙儀 National Taiwan University Cancer Center, Taipei, Taiwan; National Taiwan University Hospital, Taipei, Taiwan 國立臺灣大學醫學院附設癌醫中心醫院麻醉科、國立臺灣大學醫學院附設醫院麻醉科
B058	**Identification of novel risk factors of postoperative vomiting in surgical trauma patients by re-visit of previously ignored factors** **回顧圍術期麻醉處置以分析術後嘔吐之危險因子** Ting-Yu Ke, Chia-Yu Hsieh, Shao-Chun Wu, Yan-Yuen Poon, Min-Hsien Chiang 柯亭伃、謝佳妤、吳紹群、潘恩源、江敏嫻 Department of Anesthesiology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan 高雄長庚紀念醫院麻醉科
B059	**Using Auricular Acupressure for Prevention of Post Anesthesia Nausea and Vomiting** **使用耳豆針降低麻醉後眩暈及噁心率** Feng-Ju Hsu, Jian-Hua Chen, Chi-HaoTeng, Chien-Ching Lee, Chia-ChunChung, Chia-Ming Chen, Cheng-Shih Chen, Edmund Cheung So 許鳳如、陳建樺、曾紀浩、李建青、莊佳君、陳家銘、陳正時、蘇翔 Department of Anesthesia, An Nan Hospital, China Medical University, Tainan, Taiwan 台南市立安南醫院－委託中國醫藥大學興建經營麻醉科
B060	**Patient Audit after Patient B's Surgery was Postponed or Cancelled inside the Operating Theater–A Two-Years Follow up in a Medical School Hospital** **回溯性審視麻醉圍術期手術取消原因** Ting-Hsun Lin, Wei-Te Hung 林廷勳、洪維德 Department of Anesthesia, Chung Shan Medical University Hospital 中山醫學大學附設醫院麻醉部
B061	**Investigation on the Effects of Implementation of Clinical Ladder System on Anesthesia Nursing Staff** **麻醉護理師專業能力進階制度推行之成效探討** I-Ling Tsai, Shu-Ching Chang, Mei-Chu Sung, Hsien-Yi Lin 蔡依玲、張淑菁、宋美珠、林嫻憶 Department of Anesthesiology, E-Da Hospital 義大醫療財團法人義大醫院麻醉部

B062	**Assessing Real-World Data on Quality of Anesthesia in patients receiving laparoscopic cholecystectomy under sevoflurane-based general anesthesia** **整合分析施行膽囊腹腔鏡手術圍術期間各項因子及麻醉處置對術後噁心嘔吐影響** Chia-Yu Hsieh, Ting-Yu Ke, Shao-Chun Wu, Yan-Yuen Poon, Min-Hsien Chiang 謝佳妤、柯亭伃、吳紹群、潘恩源、江敏嫻 Department of Anesthesiology, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan 高雄長庚紀念醫院麻醉科
B063	**Adjunctive Dexmedetomidine Infusion in Open Living Donor Hepatectomy: A Way to Enhance Postoperative Analgesia and Recovery** **活體肝臟捐贈手術中添加Dexmedetomidine輸注對於術後止痛與恢復之影響。** Zhi-Fu Wu, Hou-Chuan Lai, Teng-Wei Chen, Wei-Cheng Tseng 吳之芾、賴厚全、陳登偉、曾偉誠 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan, ROC; Department of Anesthesiology, Tri-Service General Hospital and National Defense Medical Center, Taipei, Taiwan, ROC; Division of General Surgery, Department of Surgery, Tri-Service General Hospital and National Defense Medical Center, Taipei, Taiwan, ROC 奇美醫學中心麻醉部、三軍總醫院麻醉部、三軍總醫院外科部一般外科
B064	**Improve the accuracy rate of anesthesia nurses using standard drug labels** **提升麻醉護理師使用麻醉藥物標準標籤之正確率** Li-Han Lin, Bing-Xin Liu, Shu-Ching Chang, Hsin-Ying Su 林立涵、劉秉鑫、張淑菁、蘇欣瑩 E-DA Hospital 義大醫療財團法人義大醫院
B065	**In-Hospital Sleep Disturbances after Elective Surgery: An Observational Study in 878 Patients** **接受常規手術後病人在住院期間發生睡眠障礙的風險因子分析** Yi-Ting Hsieh, Pei-Jung Tsai, Shu-Ching Chang, Wan-Ling Hsu, Chen-Fuh Lam, Tzu-Shan Chen 謝宜庭、蔡佩容、張淑菁、許菀齡、林眞福、陳慈珊 Department of Anesthesiology, E-Da Hospital and E-Da Cancer Hospital, Kaohsiung, Taiwan; Department of Nursing, E-Da Hospital, Kaohsiung, Taiwan 高雄義大醫院及義大癌治療醫院麻醉部、 高雄義大醫院護理部
B066	**The use of Parker Flex-tip tubes for tracheal intubation: A meta-analysis of randomized controlled trials** **使用Parker Flex-tip tubes進行插管的預後: 統合分析** Kuo-Chuan Hung 洪國全 Department of Anesthesiology, Chi Mei medical center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫院麻醉部、嘉南藥理大學保健營養系

B067	**A Randomized, Active-Controlled, Parallel-Group clinical Study for Assessment of Efficacy and Safety of FKScope® practice the nasotracheal intubation in Patients Scheduled for oro-maxillofacial surgery Under General Anesthesia** **FKScope在接受口腔顏面手術病患之經鼻插管之安全性及效能之平行設計隨機對照試驗** Jia-He Shih, Yu-Chi Huang Shu-Yu Ou, Chih-Chi Tsai, Yuan-Yi Chia 石佳禾、黃鈺琪、歐書妤、蔡致琪、賈元一 Department of Anesthesiology, VGHKS 高雄榮民總醫院麻醉部
B068	**Sex hormones and gender difference among patients receiving long-term opioids for chronic noncancer pain in Taiwan** **台灣慢性非癌症疼痛病人長期使用鴉片類藥物之性荷爾蒙與性別差異** Tso-Chou Lin, Shung-Tai Ho 林作舟、何善台 Department of Anesthesiology, Tri-Service General Hospital, National Defense Medical Center, Taipei; Department of Anesthesiology, Kaohsiung Medical University Chung-Ho Memorial Hospital, Kaohsiung Medical University, Kaohsiung 三軍總醫院麻醉部、高雄醫學大學附設中和紀念醫院麻醉部
B069	**An investigation of influential factors of postoperative pain resolution after surgery for renal cell carcinoma** **腎臟細胞癌手術後疼痛緩解之影響因素研究** Chi-Yuan Lin, Mei-Yung Tsou, Kuang-Yi Chang 林祺淵、鄒美勇、張光宜 Department of Anesthesiology, Taipei Veterans General Hospital 台北榮民總醫院麻醉部

C.病例報告

稿件編號	論文題目
C001	**Low Concentration Epidural Anesthesia Combined with Transversus Abdominis Plane Block for a High-Risk Colostomy Operation** **神經阻斷合併硬膜外麻醉於高風險腸造廔病患** Tzu-Chun Wang, Chia-Shinag Huang 王資竣、黃家祥 Taitung MacKay memorial hospital 台東馬偕紀念醫院
C002	**Recent comfort treatments in 7 demonstration centers of dental care for special needs in Taiwan** **台灣七家特殊需求者牙科醫療服務示範中心之舒適化治療近況** Kuo-Tung Fan, Mao-Shuan Huang, Tai-Sen Huang, Peng-Fei Tsai 范國棟、黃茂栓、黃大森、蔡鵬飛 Taipei Medical University-Shuang Ho Hospital, Ministry of Health and Welfare, Taiwan, ROC; Abc Dental Group; Tsai Dental Clinic 雙和醫院、Abc牙醫聯盟、蔡牙醫診所
C003	**Anesthetic management of a pediatric patient with Rett syndrome by using Midazolam and Desflurane** **雷特氏症兒童患者的麻醉處置：使用Midazolam和Desflurane之個案報告** Huai-Wei Wen, Chia-Chih Tseng 温淮緯、曾稼志 Department of Anethesiology, National Cheng Kung University Hospital, Tainan, Taiwan 國立成功大學醫學院附設醫院麻醉部
C004	**A modified face-to-face technique for orotracheal intubation by using Trachway intubating stylet: may be a feasible technique in the airborne isolation rooms** **使用面對面的方式以Trachway來進行插管** Kuo-Chuan Hung, Cheng-Yuan Lin 洪國全、林呈遠 Department of Anesthesiology, Chi Mei Medical Center, Tainan, Taiwan; Department of Health and Nutrition, Chia Nan University of Pharmacy and Science, Tainan, Taiwan 奇美醫學中心麻醉部、嘉南藥理大學保健營養系
C005	**Anesthesia for anti-NMDA receptor encephalitis: combination of midazolam and dexmedetomidine** **利用咪達唑侖與右美托咪啶對抗NMDA受體腦炎患者進行麻醉照護** Chia-Yu Lin, Kuang-I Cheng, Ming-Sung Yeh, Guan-Yu Chen 林佳瑀、程廣義、葉銘嵩、陳冠宇 Department of Anesthesiology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan 高雄醫學大學附設中和紀念醫院麻醉部

C006	**Old tricks for new dogs: Novel use of Modified Jackson Rees breathing circuit in Pulmonary Alveolar Proteinosis undergoing right side whole lung lavage–A Case report.** **教新狗老把戲：傑克遜·里斯呼吸管在肺泡蛋白沉著症接受右側全肺灌洗的中的新用途-病例報告** Pin-Ju Chen, Kuo-Ching Lu, Jossen Foo, Wen-Yi Lai, Yu-Ting Tai, Yu-Chi Chiu 陳品汝、呂國慶、符若萱、賴文儀、戴裕庭、邱郁祺 Department of Anesthesiology, Wan Fang Hospital, Taipei Medical University 臺北市立萬芳醫院-委託財團法人臺北醫學大學辦理麻醉科
C007	**A Case Of Pediatric Blunt Tracheobronchial Injury** **鈍性創傷造成兒童氣管支氣管損害之一例個案報告** Huai-Tzu Hung, Cheng-Hsi Chang 洪懷慈、張正熹 Department of Anesthesiology, Shin-Kong Wu Ho-Su Memorial Hospital 新光吳火獅紀念醫院麻醉科
C008	**Successful management of a severe lower airway obstruction, confirmed by fiberoptic bronchoscopy prior to combined spinal epidural(CSE) anesthesia.** **成功以纖維支氣管鏡評估下嚴重呼吸道阻塞後施行合併硬膜內外麻醉完成腹部手術** Shao-Chi Hung, Shih-Kai Liu, Kuen-Bao Chen 洪少奇、劉時凱、陳坤堡 Department of Anesthesia, China Medical University Hospital 中國醫藥大學附設醫院麻醉部
C009	**The anesthetic considerations of Brugada syndrome in Cesarean section delivery – a Case report** **布魯蓋達氏症候群與剖腹產－個案報告** Wen-Yi Lai, An-Chih Hsu 賴文儀、許安智 Department of Anesthesiology, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan 台北市立萬芳醫院麻醉科
C010	**Ocular venous air embolism during vitrectomy: A rare but fatal complication** **玻璃體切除術併發症：眼部靜脈氣體栓塞** Chia-Ying Huang, Hsiao-Jung Chien, Jia-Horung Hung, Cheng-Yuan Hsu 黃佳瑩、簡筱蓉、洪嘉鴻、徐正源 Department of Anesthesiology, National Cheng Kung University Hospital, Tainan, Taiwan; Department of Ophthalmology, National Cheng Kung University Hospital, Tainan, Taiwan; Master of Business Administration, Leipzig Graduate School of Management, Saxony, Germany 成功大學醫學院附設醫院麻醉部、成功大學醫學院附設醫院眼科部、萊比錫管理研究生院工商管理碩士
C011	**Difficult endotracheal tube advancement with the Trachway stylet in a patient with undiagnosed Forestier's disease** **未明確診斷Forestier’s症困難插管時使用影像輔助插管** Tzu-Lin Wang, Chun-Dao Chen 王梓菻、陳俊道 E-DA DACHANG Hospital 義大大昌醫院

C012	**Unanticipated difficult intubation owing to multiple exophytic pharyngeal papillomata.** **上呼吸道咽乳突狀瘤所導致之非預期性困難插管** Chi-Lin Kuo, Jen-Yin Chen, Ming-Chung Lin, Yao-Tsung Lin, Kuo-Chuan Hung, Chun-Ning Ho 郭紀麟、陳貞吟、林明忠、林耀聰、洪國全、何淳寧 Department of Anesthesiology, Chi-Mei Medical Center, Tainan City, Taiwan 台南奇美醫學中心麻醉科
C013	**Case report: anesthetic management of a patient with coronary artery fistula** **病例報告：冠狀動脈瘻管手術麻醉** Yi-Ting Lin, Cheng-Hsi Chang 林宜霆、張正熹 Department of Anesthesiology, Shin Kong Wu Ho-Su Memorial Hospital 新光吳火獅醫院麻醉科
C014	**Suspected spinal anesthesia related subdural hemorrhage** **半身麻醉可能造成硬腦膜下出血** Shih-Ling Tzeng, Chien-Chung Huang 曾士玲、黃健中 Department of Anesthesiology, MacKay Memorial Hospital, Taipei, Taiwan; Department of Medicine, Mackay Medical College, New Taipei City, Taiwan; Nursing and Management, Mackay Junior College of Medicine, New Taipei City, Taiwan 馬偕紀念醫院麻醉部、馬偕醫學院醫學系、馬偕學校財團法人馬偕醫護管理專科學校
C015	**Refractory Pulmonary embolism in a pediatric patient with Klippel-Trenaunay Syndrome** **兒童靜脈畸形骨肥大綜合症病人合併嚴重肺栓塞** Chih-Yu Lo, Kuen-Bao Chen, Chuan-Hsiu Chiu 羅植友、陳坤堡、邱全秀 China Medical University Hospital, Department of Anesthesiology 中國醫藥大學附設醫院麻醉部
C016	**Management of Coronary Dissection and Cardiac Arrest During Spine Surgery with emergent ECMO and CABG: A Case Report** **脊椎手術中心跳停止和冠狀動脈剝離以及後續之緊急葉克膜與冠狀動脈繞道手術介入** Yu-Ting Kuo, Ching-Huei Ou 郭伃婷、歐慶輝 Department of Anesthesia, Cheng Hsin General Hospital 振興醫療財團法人振興醫院
C017	**A rare complication after hepatectomy-postoperative hepatic failure** **切肝手術後之罕見併發症－肝衰竭** Shang-Hung Wu, Kate Hsiurong Liao, Kuen-Bao Chen 吳尚鴻、廖秀蓉、陳坤堡 Department of Anesthesiology, China Medical University Hospital, Taichung; Department of Anesthesiology, Medical college of the China Medical University, Taichung 中國醫藥大學附設醫院麻醉部、中國醫藥大學醫學院醫學系學士班麻醉學科

C018	**Living donor liver transplantation in a patient with severe mitral regurgitation** **嚴重二尖瓣逆流患者接受活體肝移植之成功案例報告** Guan-Yi Li, Guan-Da Lu, Yi-Jer Hsieh 李冠儀、盧冠達、謝宜哲 Department of Anesthesiology, Changhua Christian Hospital 彰化基督教醫院麻醉部
C019	**The Possible Mechanism of Arterial Catheter Fracture: A Case Report** **動脈導管斷裂之可能機轉：案例報告** Po-Yang Chen, Chun-Kuan Lu, Kuang-I Cheng, Miao-Pei Su 陳柏仰、呂俊寬、程廣義、蘇妙佩 Department of Anesthesiology, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan; Department of Orthopedics, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan 高雄醫學大學附設中和紀念醫院麻醉部、高雄醫學大學附設中和紀念醫院骨科部
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C021	**Neuromuscular monitoring not always reliable in patient with neuropathic pain: a case report** **對於神經病變疼痛的病患，術中神經肌肉監測可能失準** Pei-Yu Hsu, Yi-Ying Chiang 徐珮瑜、江易穎 Department of Anesthesiology, China Medical University Hospital 中國醫藥大學附設醫院麻醉部
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C024	**A case: Bilateral single shot with erector spinae plane block for pectus excavatum surgery in a 5 year-old pediatric patient** **漏斗胸矯正手術之五歲幼童接受雙側單次豎脊肌平面神經阻斷注射之病例討論** Yung-Lin Hsieh, Cay-Huyen Chen, Ming-Chang Kao 謝咏霖、陳介絢、高銘章 Department of Anesthesilogy, Taipei Tzu Chi Hospital 台北慈濟醫院麻醉部
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