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SCIENCE IS A WAY OF THINKING MUCH MORE THAN IT IS A BODY OF KNOWLEDGE – CARL SAGAN

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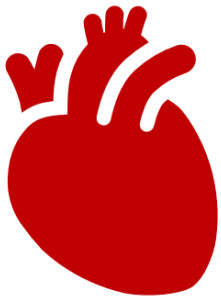
主编导读

记得刚进入高中还是个热爱学习的高中生时，背了大量的成语，有“心”字的便是其中之一。那时没有 google，没有百度，能立刻反应上来的也就十几个。多年后仍喜欢玩这种游戏。闲时也 Google 了一下有”心”字的成语，能常用的竟然有 50 多个，可见“心“在古人心目中位置。

心脏，人体器官中的重中之重，承载着全身转运氧供营养的功能。而麻醉，无论是针对心脏的手术，抑或是对心脏病人的非心脏手术均具有强劲挑战。科学严谨的围手术期管理是手术成功的保证。近年来，心脏超声，作为围手术期血流动力学监测与管理的重要工具，为麻醉医生评估心脏的结构与功能提供了帮助。本期 POCUS 的系列讲座 (2) 对心脏超声在临床中的诊断应用进行了详细讲解。

PBLD 作为协会力推的学术交流活动，旨在针对麻醉的围手术期间管理做深入的讨论， 以期使更多的麻醉医生增加知识， 完善麻醉管理。本期对 Carcinoid Tumor (类癌肿瘤) 在诊断，围手术期管理及并发症和危机处理做了具体细致的问答。

麻醉医生的生活是紧张的，也是丰富多彩的。编辑部在春夏交季祝同行们一帆风顺，心想事成!



心血管麻醉

Perioperative Management of Patients with Heart Failure with Reduced Ejection Fraction (HFrEF)

Wei Dong Gao, MD, Ph.D

Introduction

Heart failure (HF) has presented an enormous economic burden to American society and a formidable challenge to clinicians. Millions of Americans will suffer from HF, with >8 million people >18 years old in 2030 (3.0% of population).[1] The incidence has been estimated to be 1,000,000 new cases per year since 2014.[1] There are three subtypes of HF: 1) HF with reduced ejection fraction (EF), HFrEF; 2) HF with preserved EF, HFpEF; 3) HF with minimally reduced EF, HFmrEF, with prevalence of 46%, 46% and 8%, respectively.[1] As the proportion of older generation continues to grow in American population, the number of HF patients will increase. It becomes inevitable that we, the anesthesiologists, will encounter increasing numbers of HF patients and deliver anesthesia for their various procedures each year. It is of challenge to anesthetize patients with HF. This short review focuses on perioperative care of patients with HFrEF.

Diagnosis of HFrEF

The diagnosis of HFrEF is based on clinical signs and symptoms of HF (Table 1).[2] Presence 2 of the major or 1 major plus 2 minor criteria confer the diagnosis of HF. Framingham diagnosis criteria is very specific in diagnosing HF, but it is less sensitive since many HF patients do not exhibit classic signs and symptoms, especially when they are in treatment or compensated states. Imaging studies, cardiac catheterization, MRI or echocardiography, will confirm the diagnosis of HFrEF by showing EF of < 40%. Biomarker brain-type natriuretic peptide, BNP (>400 pg/ml) and its pre-hormone form, proBNP (> 1000 pg/ml) can substantiate the diagnosis of HFrEF. HF status can be classified into four stages, i.e. New York Heart Association (NYHA) Classification, NYHA I-IV (NYHA I: no symptoms with ordinary physical activity; NYHA II: mild symptoms and slight limitation with ordinary activity; NYHA III: marked limitation with even less ordinary activity; NYHA IV: severe limitations of any activity and symptomatic at rest.

Mechanism of HFrEF

The primary mechanism of HFrEF is due to defects in the process of excitation-contraction coupling (ECC) in the cardiomyocytes. The major causes are myocardial infarction, hypertension, volume/pressure overload of the heart, myocarditis, cardiomyopathy, and altered structural proteins from inherited gene mutations. These triggers cause changes in ECC leading to HFrEF. The membrane channels, especially potassium and sodium-calcium exchanger, have been changed resulting in prolonged action potential and cardiac arrhythmias. Reduced Ca^{2+} availability due to decreased release of Ca^{2+} from the sarcoplasmic reticulum is responsible for the decreased contractility. Myofilament alterations (reduced amount, isoforms, post-translational modifications- phosphorylation /dephosphorylation, oxidation, etc.) not only affect force generation of the cross-bridges but also Ca^{2+} homeostasis to intervene contraction. Last but least, the defective mitochondrial respiration leading to reduced energy production and effective energy utilization also contribute to HFrEF development.

Treatment of HFrEF

Treatment of HFrEF is guideline-directed medical therapy (GDMT) according to its stages.[3] The following are Class I recommendations. For stage A (i.e. NYHA I) patients, supportive therapies such as risk factor reduction, education, and counseling are recommended. If these patients have baseline diseases such as hypertension, diabetes, coronary artery disease, etc., angiotensin-converting enzyme (ACE) inhibitors or angiotensin-receptor blockers (ARBs), sodium glucose transport 2 (SGLT2) inhibitors are used. In stage B (NYHA II), patients continue the above-mentioned therapies. If the EF is less than 30%, implantable cardioverter defibrillator (ICD) is considered. In stage C (NYHA III), additional medicine therapies are added (diuretics for volume overload, mineralocorticoid receptor antagonist (MRA), hydralazine-nitrates for African Americans). In the meantime, these patients should continue therapies for stages A and B if they are not already on these. Patients in stage D (NYHA IV) are suffering from end-stage HF and are treated with either ventricular assist device (VAD) or heart transplantation. If they are not candidates for these, palliative therapies are recommended.

Perioperative care of patients with HFrEF

Perioperative risks for HFrEF patients

It has been consistently shown that patients with HFrEF have high perioperative mortality and morbidity. A recent retrospective analysis of National readmission Data (NRD) identified 142,286 HFrEF patients in 19 moderate to high risk non-cardiac surgeries.[4] This analysis shows that 41.4% had cardiopulmonary complications, 57.1% had non-cardiopulmonary complications. In-hospital mortality was 6.3%, and 30-day readmission rate was 22.9%. Another recent retrospective analysis also showed that HFrEF patients were 75% more likely to have major adverse cardiac and cerebral events (MACCE), 71% more for respiratory failure, and 52% more for acute renal failure after hip fracture surgeries.[5] As compared to patients with CAD, HFrEF patients also have 2-3 times higher mortality and readmission rates.[6, 7]

General issues pertinent to perioperative care

For HFrEF patients, procedures should be canceled if any of the following occurs: acute myocardial infarction, acute decompensated HF, and arrhythmias (VT, or 3rd heart block) causing hypotension or needing urgent medical attention. Preoperative anemia should be treated, which improves EF, renal function, and NYHA class, and decreases hospitalizations and death. Protecting the failing myocardium is a key element in anesthesia management but there is no myocardial protectant identified so far. There are no differences in using intravenous vs inhalational agents in terms of myocardial protection, especially in failing myocardium. Likewise, the benefits of opioids and preconditioning are not evident either. There are also no differences in protection from regional and general anesthesia among HFrEF patients.

HFrEF patients usually are treated with many medicines, which may potentially interact with anesthesia to produce undesirable side effects. Whether to continue or hold these medicines has been debated for some time and there is still no definitive answer. Table 2 shows the current consensus regarding these medicines based on literature review of relevant studies.

Specific issues pertinent to perioperative care

1. Blood pressure (BP) management. Maintaining normal BP is crucial for failing myocardium. However, because the *inverse* relationship between stroke volume and BP in HFrEF, the window for BP maintenance is very small.[8] Thus, simply raising BP may not be beneficial but harmful, without considering the impact on stroke volume. Sometimes, decreasing SVR (vasodilation) is tolerable and beneficial in HFrEF patients.

2. Use of inotropic agents. Because of decreased contractility, inotropic agents are often administered to these patients during anesthesia. At present, there are three classes of positive inotropic agents based on the mechanisms these agents promote contractility: *calcitropes*, *myotropes*, and *mitotropes*.[9] *Calcitropes* increase contractility by increasing the concentration (or availability) of intracellular Ca^{2+}. This class

includes the positive inotropic agents we are all familiar with, such as dobutamine, dopamine, epinephrine, milrinone, cardiac glycosides, etc. While augmenting contractility, these agents promote Ca^{2+} overload and increase mortality, especially with long-term or high-dose use. Although classified as a calcitrope, levosimendan acts by increasing Ca^{2+} affinity of troponin C thus increasing contractility without additional increases in Ca^{2+}. However, several clinical trials have shown no benefits in survival in HFrEF patients after open-heart surgeries.[10-12] Currently, levosimendan is not approved by FDA in US. *Myotropes* are new class inotropic agents that promote cardiac contractility by increasing force generation by the cross-bridges once they are activated, without Ca^{2+}. Thus, they increase the responsiveness of the myofilament proteins to Ca^{2+} and, therefore, they are also called "Ca sensitizers". The advantage of this class inotropes is that they do not increase intracellular Ca^{2+} in the myocytes, avoiding the harmful effects of Ca^{2+} overload (as caused by calcitropes). There is only one drug in this class, which just finished a phase III clinical study.[13] This study enrolled over 8000 adult in- and out-patients with EF ≤35% to receive *omecamtiv mecarbil* in addition to standard HF therapy. The primary outcome was the composite of the first HF event (hospitalization or urgent visit for HF) or death from cardiovascular causes, and the secondary outcome was cardiovascular death and death from any causes. After 36 months, there was an 8% reduction in primary endpoint and there were no differences in secondary outcome. In addition, better results were obtained from patients with EF of < 25%. This is the first of its kind clinical study and more trials are expected to appear in the future. It is hopeful that this drug will be available in the next few years.

Principles of perioperative management

Because of high perioperative mortality and morbidity, HFrEF patients pose enormous challenges to us when they come for procedures and surgeries. Besides, these patients are heterogeneous in disease progression, presentation, end organ damage, and response to management. For these reasons, management HFrEF patients should be individualized based on the principles pertinent to care of these patients.

1. Preoperative preparations. In evaluating these patients, we should understand the etiology and degree of organ damage, and the therapies and medicines these patients are taking. Performing physical examination will know the stages of disease progression. Routine labs are always needed to know the status of coagulation, blood count, and electrolyte balances. These examinations will help us to estimate perioperative risks, to assess the need for optimization, to hold and continue some medicines, and to determine the necessity of pre-medications. They will also help us to decide/prepare medicines, monitors, and other supports. Last but least, devices (i.e. ICDs, pacer makers, and VADs) should be interrogated and checked preoperatively.

2. Intraoperative management. In selecting monitors, the goal is to be able to monitor cardiac function and organ perfusion. ASA standard monitoring is usually adequate for short and low risk procedures. For moderate and high-risk procedures/surgeries, invasive monitoring for BP, CVP, and direct cardiac function are often warranted. During induction, we should avoid myocardial depression and ischemia, and watch for acute decompensation. All known induction drugs can be used with the knowledge that their actions are slowed due to low CO. Likewise, all anesthetics (inhalational and intravenous) can be used for maintenance with the goal of maintaining CO and organ perfusion, protecting the myocardium, avoiding arrhythmias, and supporting energy supply. These goads can be achieved by correcting the causes for de-compensation (volume, electrolytes, etc.), appropriate use of inotropes, and mechanical circulatory support. Balanced anesthesia and pain control are also important elements of intraoperative management.

3. Postoperative care.

For low risk procedures and the patient is in his/her usual state of health, routine postoperative care, including pain management is sufficient. For moderate risk procedures and the patient is stable, continuous monitoring for acute decompensation in PACU is warranted. Patients with high-risk procedures or are

unstable should be cared for in the ICU after surgery, with continued circulatory and respiratory support (inotropes, mechanical ventilation, and mechanical circulatory devices) if necessary. Post-surgery heart failure clinic follow-up is recommended for all HFrEF patients.

Summary

The incidence of HF is on the rise and estimated to affect 3% of the population in less than a decade. Nearly half of HF patients are HFrEF patients. HFrEF is mainly caused by alterations in ECC in the myocytes as a result of injury and adverse remodeling of the heart. Clinical diagnosis of HFrEF is based on Framingham criteria, plus imaging (showing EF <40%) and biomarker studies. Treatment of HFrEF follows GDMT according to stages of HF progression. The number of HFrEF patients coming for procedures is increasing and we face challenges since the perioperative risks for these patients are high. In general, HFrEF patients should be optimized and stabilized before coming for surgery. There are a number of issues that need to be considered, including correcting anemia and holding certain medicines preoperatively, intraoperative BP management and protecting the failing myocardium, and inotropic support. Perioperative management should be tailored to each individual patient; following the principles of management in all three phases: *preoperative preparation*, *intraoperative management*, and *postoperative care*. A meticulous perioperative plan will provide HFrEF patients with safe anesthesia care.

Table 1. Framingham criteria for HF.

Major	Minor
Paroxysmal nocturnal dyspnea	(after r/o other causes)
Neck vein distension (JCD/CVP>16)	Nocturnal cough
Pulmonary edema(rales)	Dyspnea on exertion
Cardiomegaly/S3	Decreased vital capacity > 1/3
Hepatojugular reflex	Pleural effusion
Visceral congestion	Tachycardia
Weight loss > 4.5 kg after 5d treat	Bilateral ankle edema
Circulation time > 25 sec.	

Table 2. Common Medicines Taken by Patients with HFrEF.

Drugs	Action	Recommend	Other considerations
B-blockers	↓myocardial ischemia ↓arrhythmias ↓BP, ↑survival in HF	Continue throughout perioperative period	Acute withdraw→↑M&M For HErEF: initiate long before elective surgery if no acute decom
α_2-agonist	↓sympathetic→↓BP	Continue throughout perioperative period	For clonidine: oral can be replaced by transdermal before surg (3 days)
Ca^{2+} channel blockers	↓BP, anti-arrhythmias, anti-ischemia ↑relaxation/dia. function	Continue throughout perioperative period	Oral can be replaced by IV forms
ACE/ARBs	↓BP, ↑survival in HFrEF, Renal benefits in HF	Well-controlled HTN: hold 24 hr before surgery (long acting), or in the morning of surgery HF or poorly-controlled BP: continue	Re-start drug <48 hr postop. For HF, may hold on morning of surg. Continue drug → intraop hypotension → ↓postop hypertension
Diuretics	↓ blood volume, ↓BP	BP control: hold in the morning of surgery HF/volume-well control: hold in the morning of surgery HF/volume-poorly control: continue	Watch K^+ level (hypokalemia) Give IV diurectic if holding causes volume overload during perioperative period
Digoxin	↓hospitalization, ↓Afib	Continue	Usually no need to check levels
Statins	↓LDL ↓CV risks overall ↓inflammation, ↓A-fib Stabilizing plaques	Continue throughout perioperative period	Start as early as possible in untreated patients during perioperative period.
SGLT2 inhibitors	↓blood glucose ↓HF Mortality + many other beneficial effects	Discontinue for 3 days (4 days for ertugliflozin)	Monitor blood glucose during discontinuation Restart when oral intake possible or risk of ketoacidosis reduced

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Cardiovascular Implantable Electronic Devices: Perioperative Management for Anesthesiologists

Juan Li, MD, and Yong G. Peng, MD, PhD, FASE, FASA

Case Scenario

A 75-year-old male with a medical history of hypertension, hyperlipidemia, and symptomatic bradycardia who had a pacemaker (Boston Scientific) implanted in 2019 was admitted to the hospital for extracorporeal shock wave lithotripsy. The patient's pacemaker had been interrogated 3 months prior to the admission, with the report indicating 36% atrial pacing and 99% ventricular pacing. To avoid any potential interference with the pacemaker, the management team placed and secured a magnet on top of the pacer device near the patient's left shoulder and ensured that there was no direct surgical shock wave current passing the pacemaker. The procedure was uneventful and the patient was discharged home. He was advised to follow up with an electrophysiologist within a month to have the pacemaker evaluated.

Introduction

Implantable cardiac pacemakers or implantable cardioverter-defibrillators are considered cardiac implantable electronic devices (CIEDs) [1]. There are more than 3 million people in the United States who have a pacemaker (PM) and more than 300,000 who have an implantable cardioverter-defibrillator (ICD) inserted with pacing capability [2,3]. These patients are presenting with increasing frequency for surgical and other interventional procedures. As the function of a CIED may be affected by electromagnetic interference (EMI) which threatens the safety and hemodynamic stability of patients during operations [4], it is very important for the anesthesiologist to understand the perioperative management of CIED.

The function of a CIED may be affected by EMI during surgical procedures, primarily as a result of the use of electrocautery. During surgical procedures, monopolar electrocautery is the most common source of electromagnetic interference [5,6]. As a result of the larger interelectrode spacing between the tip electrode and the coil (larger antenna), EMI is also more likely to occur in integrated bipolar leads than in true bipolar leads [1]. EMI is less frequent in true bipolar electrocautery and should be used whenever possible if the CIED's interrogation options are not available. There is also a possibility that EMI-induced CIED malfunctions may be caused by radiation therapy and radiofrequency ablation [7].

Electromagnetic interference may cause inhibition of pacing due to (1) ventricular oversensing of EMI; (2) misinterpretation of EMI as tachyarrhythmia, resulting in delivery of inappropriate shocks or anti-tachycardia pacing by an ICD; or (3) direct damage to the CIED, altering its ability to deliver appropriate therapy for ventricular tachycardias or pacing [7]. The risk of EMI causing interference with the CIED is highest if an electrosurgical generator is in operation near the pulse generator or leads of an ICD or PM. Typically, this occurs during surgical procedures performed above the umbilicus. The farther away the CIED is from the electrocautery instrument, the lower the risk that EMI will occur [1]. As ventricular tachycardia (VT) detection and delivery by the ICD takes more

than 5 to 10 seconds, electrical bursts should ideally last less than 5 seconds with sufficient pauses (>5 seconds) between applications in order to prevent inappropriate therapy from occurring [8].

In order to appropriately establish perioperative care, it is necessary to identify the indication for CIED, determine the type of device implanted, and determine its programming status [8]. Usually, this information can be found on the international identification card as well as in the device's documentation. As there are 4 major brands of CIED that are manufactured by different companies (including Medtronic, St. Jude, Boston Scientific, and Biotronik) a thoracic chest X-ray can help to identify the manufacturer of the device if this information is not readily available, as different manufacturers have different asynchronous mode rates (refer to Table 1) [8].

Table 1. CIED Manufacturers and Characteristics

PM companies	Manufacturers	Pacing and defibrillation combine CIEDs	Magnet mode (asynchronous), rate at BOL/ERI (ppm)
Abbott	Formerly St. Jude Medical	Yes	100/85
Biotronik	Biotronik	Yes	90/80
Boston Scientific	Boston Scientific	Yes	100/85
Medtronic	Medtronic	Yes	85/65

Abbreviations: AICD, automatic implantable cardioverter defibrillator; BOL, beginning of life; ERI, elective replacement time; PM, pacemaker.

Pacemakers

Permanent PMs are most commonly implanted in patients with sinus node dysfunction and high-grade or symptomatic atrioventricular (AV) block [9]. Other indications include postmyocardial infarction, neurologically-mediated syncope, neuromuscular disease, long QT syndrome, hypertrophic cardiomyopathy, and heart failure [9]. Based on the implantation indication, it may be possible to estimate the risk of significant bradycardia or asystole. Pacing dependency is significantly higher in patients with high-grade AV block as an indication of permanent pacing. Thus, patients with sick sinus syndrome or atrial fibrillation with a slow ventricular rate are at greater risk of developing asystole due to inappropriate pacing inhibition. As a result, pacing dependency should be assessed [10].

Patients with PMs require yearly evaluations [7]. Pacemakers may exhibit oversensing and be inhibited by EMI. Antitachycardia pacemakers may be inhibited or may falsely detect

arrhythmias when exposed to EMI [8]. In general, when a magnet is applied, PMs convert their pacing function to an asynchronous mode (i.e., AOO or VOO in single-chamber devices and DOO in dual-chamber devices) at a magnet rate. Magnet rates vary depending on battery status and between manufacturers (Table 1) [5]. By closing a magnetic switch, pacemakers cause asynchronous pacing. There are some antitachycardia pacing devices (such as the Medtronic AT500) that do not convert to an asynchronous pacing mode when a magnet is present; however, atrial antitachycardia pacing is suspended [7,8]. A pacing-dependent patient may experience oversensing and inappropriate pacing inhibition as a result of EMI [4,11]. It is preferable to render a PM asynchronous in a patient who is dependent on the PM for most procedures above the umbilicus. When electrocautery is applied below the umbilicus level in PM patients, no reprogramming is required [6].

Automatic Implantable Cardioverter-Defibrillators

The primary purpose of the placement of automatic implantable cardioverter-defibrillators (AICDs) is to prevent sudden cardiac death (SCD) in patients at high risk of life-threatening VT and ventricular fibrillation (VF) [12]. Secondary prevention of SCD is necessary for patients with a history of sustained VT/VF or resuscitated from SCD associated with VT/VF [12,13]. In contrast to PMs, ICDs have a higher risk of EMI due to the fact that the ventricular channel is programmed in a very sensitive manner in order to ensure adequate recognition of ventricular fibrillation with low amplitudes [1].

Patients with ICDs require interrogations every 6 months [7]. When exposed to EMI, the function of an ICD may be inhibited or may incorrectly detect arrhythmias. In the case of an ICD, a magnet placed over an ICD generator will not cause the PM function to operate in an asynchronous mode, despite the fact that it may turn off the ICD's antiarrhythmic functionality (*8*). However, most CIEDs will automatically re-enable arrhythmia detection once the magnetic field is removed. The antibradycardia pacing functions of ICDs are not affected by magnet response [7,8]. Electromagnetic interference can result in inappropriate antitachycardia pacing or defibrillation in ICD patients [14,15], resulting in sudden patient movement, possibly at a critical moment during surgery, or even ventricular arrhythmia [14] that may be fatal in extreme scenarios. Rarely, battery depletion has been reported as a result of repeated and unrecognized shock delivery during surgery [15]. For all procedures involving monopolar electrosurgery or radiofrequency ablation above the umbilicus, it is recommended that ICD detection be deactivated [8]. Battery longevity is also important, and it is recommended that it can last for at least 3 months in order to be able to use the magnet. Since magnets have no effect on pacing in most ICDs and cardiac resynchronization therapy devices, device programming should be used in patients who are pacing dependent or who have an activated sensor (R-function) [5]. Moreover, if the magnet cannot be placed because the operation site is near the CIED generator or if there is a possibility of the magnet shifting due to the patient's position (for example, left lateral or prone), reprogramming may also be the

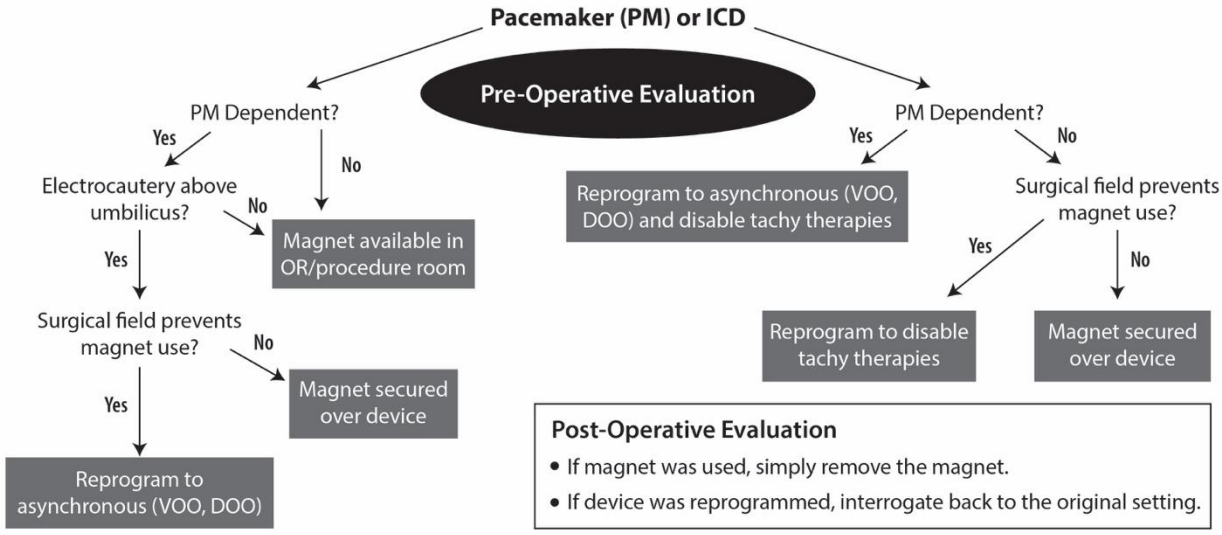
preferred option [4,8]. If the ICD function was temporarily turned off during surgery, it is necessary to place a transcutaneous defibrillation/pacing pad as a precaution [8]. After the magnet is removed, the device typically returns to its original settings. However, if the device was initially programmed for asynchronous pacing or if tachycardia detection and therapy were disabled before surgery, continuous monitoring of the patient is necessary until the device is reprogrammed [5]. Device interrogation should be performed before the patient leaves the monitored environment if any significant events occur during surgery; for example, cardiac arrest, external cardioversion/defibrillation, emergency surgery with EMI exposure above the umbilicus, or cardiac surgery. In all other cases, routine follow-up is sufficient [8].

Conclusion

The initial step to manage CEIDs is to identify whether the patient has a PM or ICD in place. It's recommended that PM patients have had their device interrogated or remotely monitored within the last 12 months, and ICD patients within the last 6 months. If this hasn't been done, preoperative device interrogation is necessary.

In the case of PM patients, the next step is to determine whether they are PM-dependent. If not, a magnet should be available in the operating or procedure rooms. For ICD patients, the next step is to determine whether the patient is dependent on PM. If yes, the device should be reprogrammed to asynchronous (VOO, DOO) mode and tachycardia therapies should be disabled. The exact perioperative management of CIED should be followed with the algorithm below (Figure 1, adapted from the University of Florida's CIEDs management protocol).

Figure 1. Perioperative Evaluation of CIED Algorithm



After the procedure, it's recommended to perform in-person device interrogation or remote monitoring within 1 month. However, in specific situations detailed in Figure 1, the device will require interrogation prior to transferring the patient off a cardiac monitoring unit.

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从体重的角度认知疾病的实质

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人体体重是一个非常常见的检查指标。当病人初入院时，我们测量体重并记录在三测单上，以后根据病情需要进行复测（每日一次或不定期复查）。似乎医护人员特别重视病人体重。但事实上，体重的重要意义远没有得到充分的认识。体重在疾病（特别是重症）治疗方面的参考和指导价值被广泛忽略。

作者总结长期的临床经验，提出一整套“调控机体水平衡”的治疗理念，并以此参加了2020年初同济光谷医院新型冠状病毒感染重症肺炎的救治工作，在提高救治成功率方面发挥了重要作用。光谷医院救治结束后，又经过了两年多的思考，总结出一套以体重为参考，简单快捷认知疾病，并有效救治疗疾病的措施。现介绍如下：

一、关于“干体重”

首先要说明的是：健康人的体重和病人的体重是有本质区别的，不能混淆。

经过长时间的临床实践和思考：发现水潴留是疾病发生、发展的重要原因（内因）。物理的、化学的、生物的等因素构成疾病的外因。如果机体没有发生水潴留，这些致病因素最多引起局部或单个系统的疾病，不可能发展成全身性疾病，更不会发展成重症或危重症。

（一）基本概念

“干体重”是指机体排除多余的水份，也不缺水时的重量。是指细胞、组织、器官没有任何水肿、功能良好时的状况。

（二）重症病人“干体重”评估

1. 粗略估计法：

   40~50公斤病人，体内水潴留4~5公斤

   60~70公斤病人，体内水潴留6~8公斤

   80公斤以上病人，体内水潴留8~10公斤或者更多。

   一般情况下，重症病人水潴留占体重的10%左右，即病人测得的重量减掉10%后，才是干体重。

2. 计算法：

   以病人身高（cm）为基础

   大部分病人：身高（cm）数-110，得出的数值就是体重的公斤数。

   少部分病人： 身高（cm）数-110，得出的公斤数，上浮或下调10%。

   极少部分病人：身高（cm）数-110，得出的公斤数，上浮或下调20%。

   什么时候上浮或下调？主要参考病人身体素质，营养状态，是否参加体力劳动或体育锻炼。医生的临床经验至关重要。

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3. 全血血红蛋白推算法：

目标血红蛋白：指病人发病前检查的血红蛋白值。发病前没检查的，以正常血红蛋白的低值130 克/L 为目标血红蛋白。

病人水潴留=（目标血红蛋白-实测血红蛋白）X 0.1，单位为升。

病人干体重=病人实测体重-病人水潴留（升）

需要说明的是：除非病人有出血或溶血或造血功能障碍，血红蛋白下降多为水潴留所致。长时间的临床实践得出：每潴留水 1 升，血红蛋白下降 10 克/L。0.1 升是使血红蛋白下降 1 克需要的水量。

特殊情况下目标血红蛋白的调整：每输血 400ml，目标血红蛋白上调 10 克/L；每出血 400ml，目标血红蛋白下调 10 克/L。

（三）体重指数

也是判断病人有无水潴留的重要参数。

体重指数的计算公式：体重（公斤）/身高平方（m2）

正常范围在 18.5~23.9（公斤/m2）

体重指数>24（公斤/m2）为超重

体重指数>28（公斤/m2）为肥胖

正常逻辑思维：除非急症，重症病人体重不应该超重，更不应该肥胖。如果出现超重或肥胖提示有水潴留，是不正常现象。

二、水潴留发生的原因以及对机体的影响

（一） 水潴留发生的原因

1. 重要脏器的病变：如肝脏、肾脏、心脏及肺等发生病变，引起水潴留或水排出障碍。
2. 应激反应：外科手术及其他原因均可引起应激反应。应激反应的发生非常常见，是引起水潴留最常见的原因。甚至一个重感冒都可引起应激反应，潴留水份。
3. 激素使用：激素可以引起水潴留。临床上我们在使用激素方面应特别谨慎，尽量减少激素的使用量和时间。
4. 大量输液：临床上，我们有时给病人输入太多液体造成水潴留，给病人造成医源性损伤，应尽量避免这种情况发生。
5. 病人摄入大量水份：在疾病初期，病人食欲差，口味异常，总想摄入重口味或刺激性饮品，以减少难受感，这样造成摄入水份过多而发生水潴留。如果仍不加控制，会进展到中、重度水潴留，演变成重症。
6. 代谢产生内生水：三大营养成分糖、脂肪和蛋白质进入机体后，进行分解代谢，除了给机体提供能量外，每天还生成 300ml 左右的内生水。如果我们在统计进出水量的时候忽略了这一部分，势必造成这部分水份潴留体内。

（二）水潴留对机体的影响

1. 体内水增多，细胞、组织及器官发生水肿，功能受损。
2. 血液被稀释，血红蛋白及白蛋白水平下降。 血红蛋白下降，细胞及组织的氧气供应减少，发生无氧代谢。白蛋白水平下降，组织间隙水肿明显，微循环血流缓慢，酸性代谢产物聚集。

3. 免疫细胞和免疫分子被稀释，机体抵抗力下降，感染增多。
4. 血小板、凝血因子被稀释，可能发生出血或出血倾向。
5. 外科手术吻合口水肿，可发生漏。如肠漏、胆漏和血管吻合口漏等等。
6. 细胞、组织及器官水肿，功能受损，可演变成肾功能受损（或演变成多器官功能障碍），酸碱平衡失调，电解质平衡异常。

三、水潴留分级

根据作者的临床经验，参照水潴留对机体的影响分为：轻度、中度及重度三级。

1. 轻度水潴留：

机体潴留水份 2~3 公斤，细胞、组织及器官轻度水肿，但功能基本正常。

临床表现：精神食欲不好，睡眠欠佳，易疲劳。

化验检查：血红蛋白浓度可能较正常情况下降 10~20 克/L,血钠和血钾可能会低于正常。

2. 中度水潴留：

机体潴留水可达 4~5 公斤，细胞、组织及器官水肿较前加重，功能轻度受损。

临床表现：病人精神食欲极差，烦躁或呈嗜睡状态。可出现面部及四肢水肿形象。全身抵抗力会下降，可能发生感染，甚至发热。

化验检查：血红蛋白浓度可能下降 30 克/L 以上，白蛋白水平或低于正常。电解质平衡可能出现异常。

3. 重度水潴留：

机体潴留水可达 6~10 公斤或者更多，细胞、组织及器官明显水肿，功能明显受损。

临床表现：病人不思饮食，烦躁不安或呈嗜睡状态甚至昏迷不醒。全身明显浮肿，可出现腹水、胸水、心包积液，外科手术病人伤口和创面渗出液明显增多。

化验检查：血红蛋白下降 40~50 克/L 或更多，白蛋白水平降低或低于正常。

如果得不到及时有效处理，病人会并发感染（以肺部感染居多），甚至发展成感染败血症，伴高热；心功能、肺功能、肾功能明显受损，可能发生急性呼吸窘迫综合征（ARDS）；酸碱平衡失调或者出现高钠、高钾；凝血功能异常，并发伤口及手术创面渗血增多或出血；严重者发生消化道大出血，甚至脑出血，直至昏迷或死亡【1,2,3】。

四、以体重为参考的疾病预防和治疗措施

综合上述介绍，疾病的发生、发展实际上是一个机体潴留水份的过程。

随着体内水份的增多，体重便偏离“干体重”，细胞组织及器官便发生水肿，功能受到损害。体内水份增多直接导致体重增加，且含水量多；其次，血红蛋白浓度及白蛋白水平下降。体重、血红蛋白浓度及白蛋白水平反应疾病发生发展的主线、是体内水份增多的直接证据。

由细胞、组织及器官水肿演化出来的问题：如肾功能损害（包括多器官功能衰竭）、感　　染、凝血功能异常、酸碱平衡失调、电解质平衡异常等等，被认为是水潴留引起的结果。

疾病的预防和治疗应该以体重、血红蛋白浓度及白蛋白水平为参考主线，逐步脱除体内多余的水份，恢复机体至“干体重”。同时兼顾处理其他临床上的异常情况。

（一）预防措施

重点在于发现和减少体内水潴留的过程：

1. 培养良好的生活习惯及饮食习惯，切忌多饮多食。
2. 适当进行体育锻炼，增强体质。
3. 定期测量体重，短期内体重明显增加应高度怀疑有水潴留存在。
4. 年老体弱者，适当控制摄入水量，保持每天尿量 1500 毫升左右，颜色呈淡黄色。

5. 如果发现有水潴留征象，应严格控制进水量，必要时服用小剂量利尿剂脱水。

6. 切勿随便使用抗生素，以避免发生菌群失调。

（二）疾病的救治措施

1. 针对疾病原因的措施：应尽快清除或减少对机体有损害的原因。
2. 保护重要脏器（心、肺、肝、肾、脑等）的功能。外科手术病人应预防或及时处理并发症。

- 维持机体水平衡：
  - 对于轻、中度水潴留：
    可适当控制摄入水量，同时使用利尿剂脱水，每日净脱水 300~500 毫升，争取 7~10 天左右，脱除病人多余的水份。
  - 对于重度水潴留【4,5】：
    如果肾脏功能良好，在严格控制进水量的同时，大剂量使用利尿剂脱水。
    如果肾功能不理想，可选择普通透析或 CRRT 脱水。
  - 脱水进程：前 3~5 天，每天净负 1000 毫升左右，净脱水 3~5 公斤，可使病情稳定下来；后 7~10 天，每天净负 300~500 毫升，再净脱水 3~5 公斤。这样半月左右就可基本脱除病人多余水份，使病人进入良性恢复期。
- 调整血红蛋白浓度在正常或接近正常水平；补充白蛋白维持其水平在 40 克/L 以上（危重病人在 45 克/L 以上）【6】。
- 适当选择抗生素：根据药物敏感试验结果选择合适的抗生素或经验性选择。因细菌感染是由于大量水潴留产生的结果，调整水平衡是救治的决定因素。
- 注意调整好酸碱平衡和电解质平衡。
- 配合营养支持及对症处理。

五、疾病救治过程中的重要问题及参数

1. 关于体重、血红蛋白及白蛋白水平

降低体重是救治的重点。病人必须每天测量体重，可根据体重下降来计算脱水的数量。当病人体重下降 10%左右，也基本进入良性恢复期。

卧床病人不能测体重怎么办？可根据监测血红蛋白浓度来判断。

总结临床经验得出：机体水潴留 1 升，血红蛋白浓度下降 10 克/L；脱水 1 升，血红蛋白浓度可上升 10 克/L。可动态监测血红蛋白浓度来判断机体水潴留情况。 通过脱水，使血红蛋白浓度达正常或接近正常水平，病人就进入康复期。

白蛋白水平的变化，也可间接反应水份是在增多还是减少。输注白蛋白使病人白蛋白水平在 40 克/L 以上（危重者在 45 克/L 以上），对恢复大有益处。

临床实践中：病人体重下降、血红蛋白浓度上升、白蛋白水平上升，提示病情好转；否则，说明病情在恶化，应特别引起注意。

2. 关于中心静脉压（CVP）

CVP 是调整输液的重要指标，控制 CVP 在合适的范围，可以避免输液过多，维持内环境的稳定。

围手术期病人由于麻醉作用，以及重症病人因大量水潴留至微循环淤积，血管床扩张，均可

造成有效循环相对不足，CVP 偏低。这时，可以适当用钙剂和血管活性物质收缩血管床。
重症病人调整 CVP 在 7~9cmH2O 之间，既保证了每日基本输液量，又不至于过量造成水负荷增加。

3. 关于临床主要治疗模式的调整
重症病人最主要的并发症是感染，感染也是引起临床死亡的主要原因。
4. 目前，临床上的主要治疗模式是针对感染的。一旦病人住院，无论有没有感染存在，我们都习惯性选用抗生素来预防和治疗感染。这样会造成抗生素滥用，最终导致机体菌群失调，多重耐药菌株的产生。
我们知道：机体的水潴留是造成感染的主要原因，感染只不过是机体水潴留后产生的结果。因此，我们的主要治疗模式应该作些调整，应由抗感染为主的模式，转化为调整机体水平衡为主的模式。
只要调整好了机体的水平衡，其他问题的处理就变得容易些。

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POCUS 讲座

How Anesthesiologists can Competently Perform Focused Transthoracic Echocardiogram Exams in Everyday Practice

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Point-of-Care Ultrasound (POCUS) is the practice by which a skilled medical professional uses ultrasound as a tool to perform a focused bedside examination to evaluate critically ill patients, inform management options, monitor responses to treatment, or guide a procedure. POCUS is proving pivotal to timely and effective patient care in the perioperative setting. Recently, the ACGME and ABA have identified perioperative POCUS as a core topic for anesthesiology residency training. Diplomates will be expected to obtain the basic knowledge and skill to perform and interpret POCUS images of organs pertinent to anesthesiology practice. A basic understanding of the anatomy and function of several vital organs including the heart, lungs, abdomen, and gastric antrum is required. There is no available societal guidance on scope of practice, recommendations for training, or a minimum number of POCUS exams performed to achieve competence. However, the new ASA POCUS certification course can serve as a solid reference pathway. ASA ad hoc committees have fully established an online training course and ancillary certification requirement. The ASA POCUS certification course lays out basic requirements for residents as well as anesthesiologists who are interested in POCUS education and training. In this synopsis, we will discuss the focused transthoracic echocardiogram (TTE) exam.

Several references and resources are listed below to help us gain the knowledge and skills of the focused TTE exam. TTE can make direct, effective, and timely differential diagnoses of hemodynamic unstable patients. It can determine the etiologies of hemodynamic instability resulting from hypovolemia, myocardial ischemia, congestive heart failure, valvular pathologies, pericardial effusion, or acute pulmonary embolism. To make such diagnoses with confidence and competence, it is essential that the anesthesiologist have the knowledge of cardiac anatomy and TTE modalities pertinent to correct interpretation of TTE images. It is also important for the anesthesiologist to identify normal, abnormal, and ultrasound artifacts. Specific cardiac structures in the thorax and US planes have been illustrated in the 2019 ASE comprehensive TTE performance guideline (Figures 1 and 2). Four acoustic windows are used to assess basic cardiac function: the (1)

parasternal window, (2) apical window, (3) subcostal window, and (4) suprasternal notch window (Figure 3).Four different probe manipulations are used to obtain optimal POCUS images: (1) position, (2) orbit, (3) slide, and (4) tilt (Figures 4 and 5). The word POST can be used as a mnemonic to remember these manipulations. Figure 6 illustrates rotating scan maneuvers of the parasternal long axis (PLAX) view and the parasternal short axis (PSAX) view. In the PLAX view, place the transducer at the left sternal border in the left 3rd-4th intercostal space. Orient the transducer with the probe indicator directed towards the patient's right shoulder. In the PSAX view, rotate the transducer 90 degrees clockwise from the PLAX view. The indicator now points towards the patient's left shoulder. Tilting the transducer from superior to inferior (Figure 7A) allows for assessment of the heart at three different levels: (1) aortic valve short axis view, (2) mitral valve basal view, and (3) LV mid-papillary muscle view (Figures 7B, 7C, and 7D respectively).

Apical 4-chamber view: place the transducer at the patient's apical impulse, usually just inferior and medial to the left nipple (Figure 8A). A more lateral scan may be necessary in some patients. The probe indicator now points towards the patient's left flank at about 3 o'clock. Aiming the probe cephalad will open the LVOT and reveal the aortic valve long axis. This view is called the

apical 5-chamber view. Rotating the probe counterclockwise about 90 degrees, one will see the apical 2-chamber view (Figure 8B). Similarly, aiming the probe cephalad will obtain the apical 3-chamber view. Both apical 5-chamber and 3-chamber views will be the best window through which to assess transaortic valvular gradient. Subcostal 4-chamber view: place the transducer 2-3 cm below the patient's xyphoid process. Direct the transducer towards the patient's left shoulder. The indicator probe should be directed towards the patient's left shoulder at about 3 o'clock (Figure 9). Subcostal inferior vena cava view: from the subcostal 4-chamber view, rotate the transducer 90 degrees counterclockwise. Point the probe indicator towards the patient's head at 12 o'clock (Figure 10). It is important to view IVC leading into RA. Slightly tilting the probe to the patient's right and aiming to the patient's left will reveal the pulsating descending aorta. It is important to assess cardiac function and pathologies through multiple views to come up with an appropriate diagnosis.

In summary: variable cardiac pathologies can lead to hemodynamic instability. TTE findings must relate to clinical scenarios. Practice can improve TTE knowledge and skills. Avoid false information by understanding the limitations of POCUS.

Figure 1. Cardiac Structure in the Thorax.

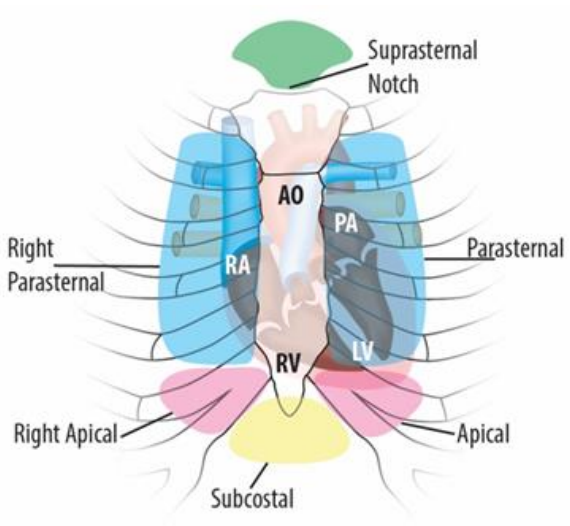


Figure 2. US in Long-Axis Plane and Short-Axis Plane

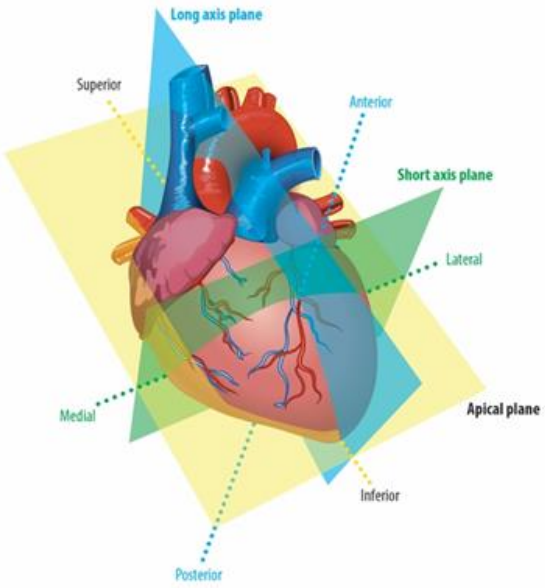
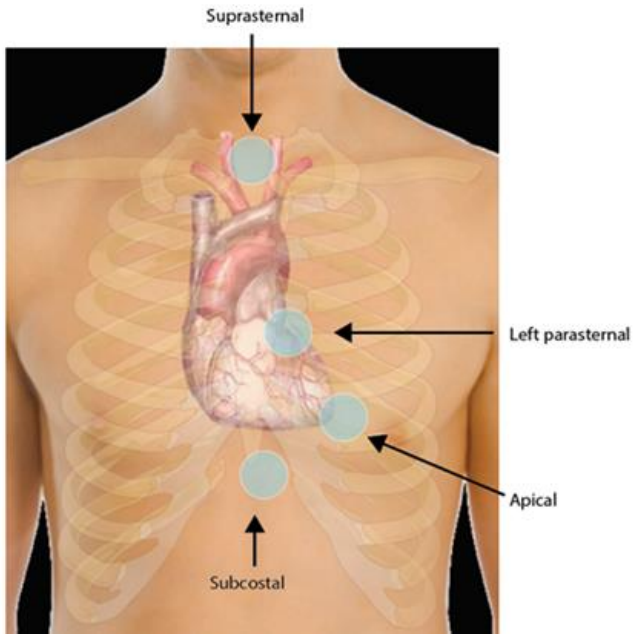


Figure 3. TTE: Four Acoustic Windows



Figures 4 and 5. Four Types of Transducer Maneuvers

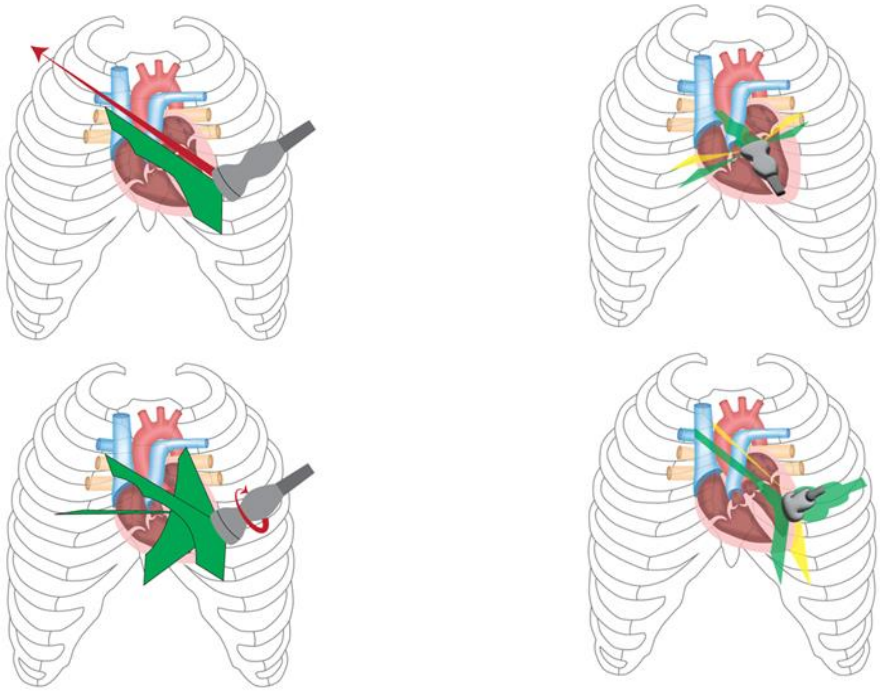


Figure 6. From Parasternal Long Axis to Parasternal Short Axis

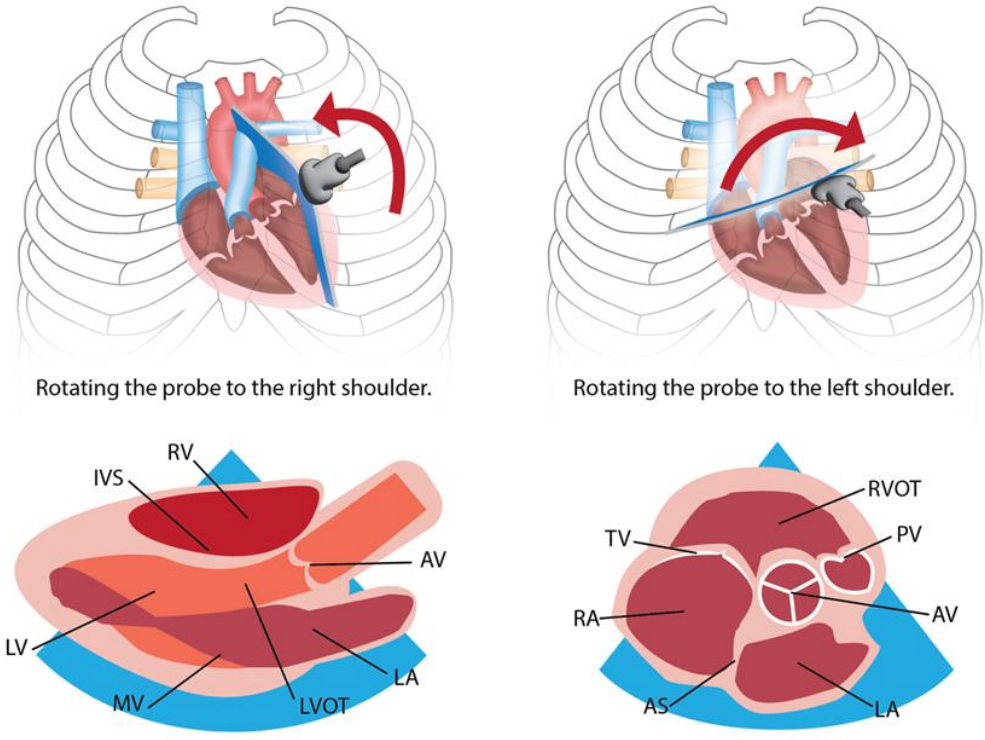


Figure 7. Short Axis from Superior to Inferior View: Standard View

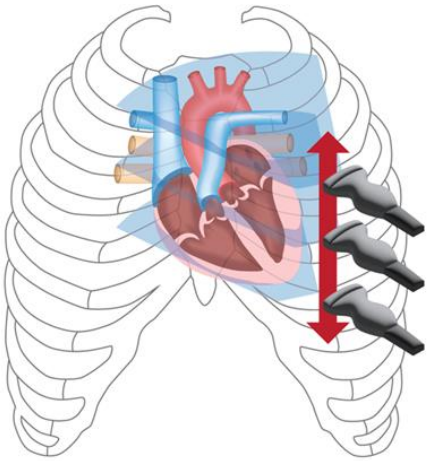
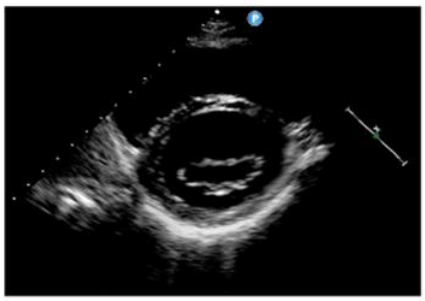


Figure 7B **7C** **7D**



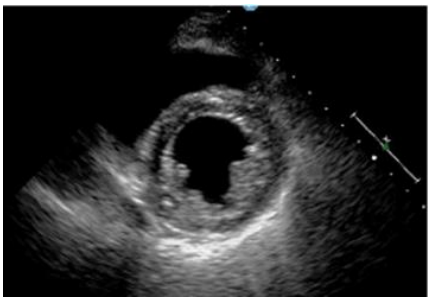
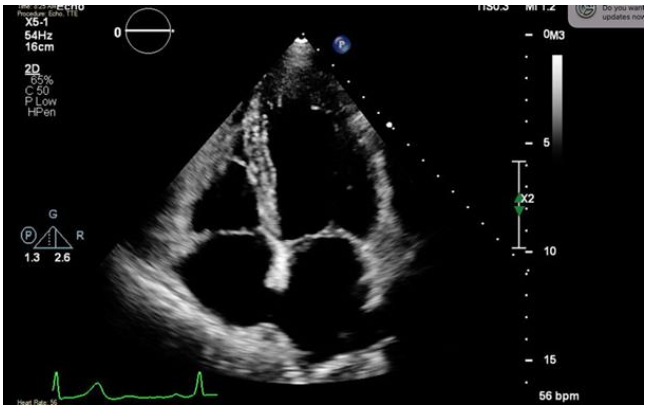
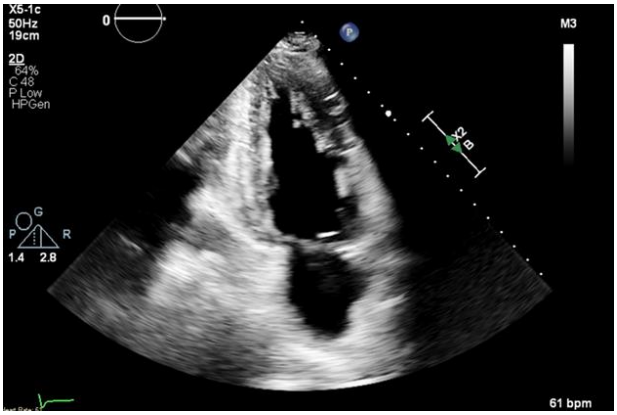


Figure 8 (A and B) Apical 4-Chamber View and 2-Chamber View:



A



B

Figure 9. Subcostal 4-Chamber View:

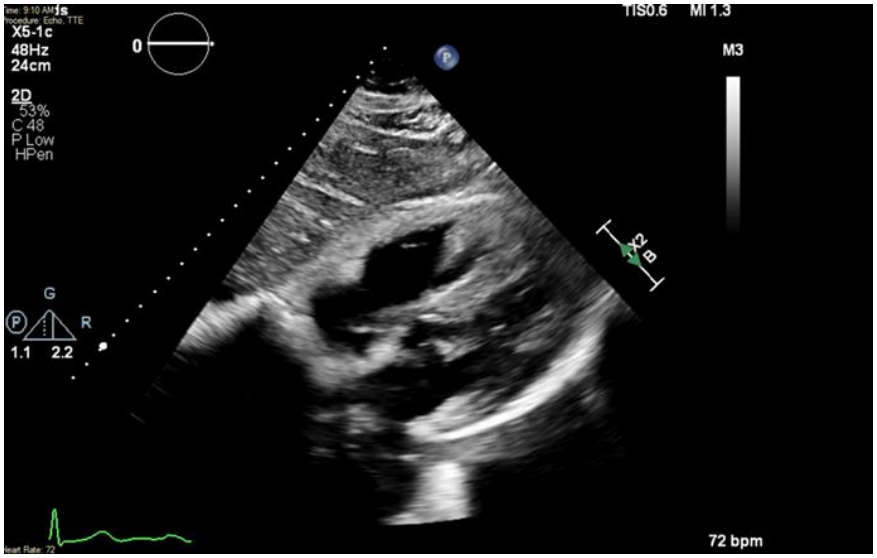
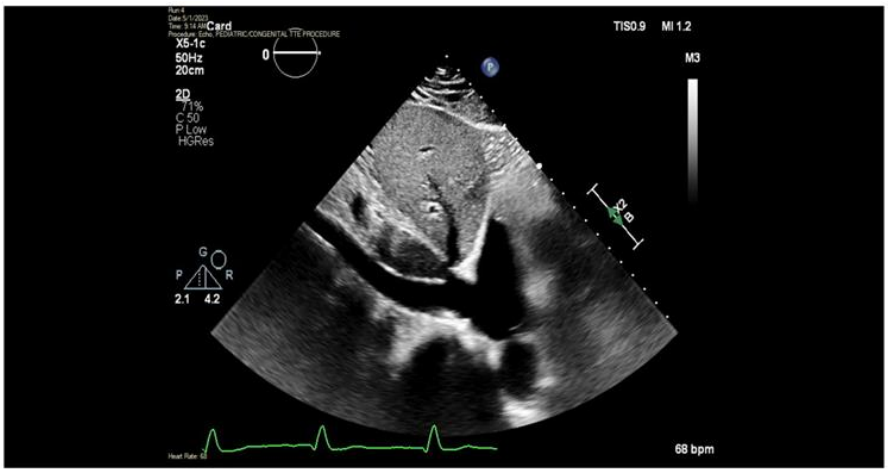


Figure 10. Hepatic Portion of Inferior Vena Cava (IVC):



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Problem-Based Learning Discussion（PBLD）论坛

Vasovagal Syncope or Carcinoid Crisis: anesthetic management of A patient with carcinoid tumor

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Objectives:

After discussing the case, participant will be able to:

1. Define risk factors associated with anesthetic management with carcinoid tumor.
2. Discuss the medical and surgical treatment of carcinoid tumor.
3. Discuss carcinoid crisis presentations, triggering factors, pathophysiology, and management.
4. Discuss differentiation between vasovagal response and carcinoid crisis.
5. Discuss preop anemia diagnosis and treatment, and impact on cancer surgical outcomes.
6. Develop the anesthesia and perioperative management plan for the patient with carcinoid tumor.
7. Discuss pharmacology and applications of vasopressors to treat carcinoid crisis induced hypotension.

Stem Case & Key Questions
A 59-year-old man was scheduled for exploratory laparotomy + IOP liver ultrasound + liver resection. The patient had been diagnosed with a large duodenal well-differentiated NET and received partial liver resection and a Whipple procedure two years ago. Six months after surgery, CT scans show a marginal progression of the disease. He presents with the progression of a metastatic liver lesion. The patient was a candidate for cytoreductive surgery then, but he wanted to hold off surgery until next year. Pt denies pain and states, "took Tylenol a couple of times, and that is it." Pt reports fatigue. denies fever, chills, cough, SOB, nausea, vomiting, diarrhea, and constipation N/V/C/D, abdominal pain, or dysuria.

PMH:
Cholangitis
Endocrine tumor
Hepatitis C - s/p treatment
Hypertensive disorder
Liver metastasis
Malignant carcinoid tumor of the duodenum
Neuroendocrine tumor

PSH:
Whipple 4/22/2020
Gallbladder removal 11/2005

Medication:

Lanreotide 120mg sq q2weeks
Atorvastation 10 mg qd
HCTZ 12.5mg qd
Losartan 50 mg qd
Pantoprazole 40 mg po bid.

Allergy: NKDA

Preop vital:
Weight 92 kg, height 176 cm
BP 136/82, HR 82, SaO_2 97%, T 97.8
Airway: MP I
Lung CTA, Heart: RRR

What is synthesis and metabolism of serotonin?

Tryptophan
⇓
5-hydroxytryptophan
⇓
5-hydroxytryptamine (5-HT)
⇓
5-hydroxyindoleacetaldehyde
⇓
5-hydroxyindoleacetic acid (5-HIAA)

How do you perform pre-op evaluation?

History:
-Signs and symptoms of carcinoid syndrome: severe flushing, diarrhea, abdominal cramping, and life-threatening right-sided heart failure.

-Cardiovascular history (especially right or biventricular heart failure): Reduced exercise tolerance, orthopnea, paroxysmal dyspnea, and peripheral edema.

Medications:
-perioperative use of preventative drugs is essential (Octreotide)
-Side effects of Octreotide: QT prolongation, bradycardia, conduction defects, abdominal cramps, nausea, and vomiting

What is the diagnosis test for carcinoid cancer?

The most common test used to diagnose carcinoid tumors is the 24-hour urinary 5-HIAA assay.

-Normal levels of 5-HIAA are less than 10 mg in a 24-hour urine sample. Levels greater than 25 mg per 24 hours have been considered diagnostic for carcinoid tumor.

Chromogranin A (CgA)

-is a protein found in most neuroendocrine cells and, when detected in plasma, it may be used as a general marker for carcinoid tumors.

Lab result:

CBC:

WBC 7.43 k/uL; RBC 3.09 mil/uL L; Hemoglobin 8.8 g/dL L; Hematocrit 27.9 % L; Mean Cell Volume 90.3 FL; MCH 28.5 pg; MCHC 31.5 g/dL L; RDW 42.1 FL; Platelet Count 162 k/uL; MPV 9.8 FL.

BMP:

Sodium 133 mmol/L; Potassium 4.3 mmol/L; Chloride 97 mmol/L; Total CO2 30 mmol/L; AGAP 6 mmol/L; Glucose Level 130 mg/dL H; BUN 9 mg/dL; Creatinine 0.8 mg/dL; Est. GFR >60 mL/min/1.73m2; Est. GFR (Af-Am) >60 mL/min/1.73m2; Calcium 8.3 mg/dL L; Calcium Corrected 8.7 mg/dL; Phosphorus 2.6 mg/dL; Total Protein 6.1 g/dL L; Albumin 3.5 g/dL; Total Bilirubin 1.2 mg/dL; Alk. Phosphatase 61 U/L; AST 118 U/L H; ALT 210 U/L H; Magnesium Level 2.0 mg/dL; Direct Bilirubin 0.5 mg/dL.

Coagulation panel: PT 12.5, APTT: 38 INR 1.0

Vit B12: 324 (>300 pg/ml)

Tumor marker: Chromogranin A serum: 94 (0-95 ng/ml)

CT scan:

1. Interval significant increase in size of a hepatic metastasis in segment 7 with involvement of the adjacent hepatic capsule and minimal perihepatic fluid. Mild decrease in size of the other hepatic metastasis.

2. Stable postsurgical changes from Whipple's pancreatectomy and right hemicolectomy with no other acute findings within the abdomen and pelvis.

CXR:

Some linear densities are identified within the bibasilar lung fields. No focal consolidation pneumothorax or large pleural effusion is identified.

Impression: No focal consolidation, pneumothorax or significant pleural effusion is identified. Linear densities in the lung bases likely representing bibasilar atelectasis.

What kinds of Lab Tests are needed?

- Chest X-ray (carcinoid lung lesions)
- ECG (right ventricular hypertrophy)
- Electrolytes (the effects of chronic diarrhea)

- liver function tests (very rarely liver failure presents when carcinoid lesions completely infiltrate the liver)
- CBC (vitamin B12 and folate deficiency, anemia)
- Coagulation panel

Why does the patient need a Carcinoid heart disease workup?

- Carcinoid heart disease occurs in patients with metastatic carcinoid and commonly involves the right-sided heart valves. Affected valves become thickened and retracted, causing regurgitation and stenosis.

- European Neuroendocrine Tumor Society guidelines recommend routine echocardiographic screening of all patients with carcinoid syndrome at the time of initial diagnosis and subsequent routine follow-up examinations to identify the development of heart disease.

What kinds of carcinoid heart diseases?

- 97% of the 74 patients with cardiac involvement had tricuspid valve disease, of whom 90% displayed moderate or severe tricuspid regurgitation.

- Pulmonary valve pathology was noted in 88% of patients, of whom 81% had pulmonary regurgitation and 53% had pulmonary stenosis
- only 7% had left sided involvement, in whom the most typical feature was mild to moderate mitral regurgitation

Patient's Cardiac tests results:

- Stress test: EF 56%, normal wall motion
- Echo: EF 55-60%, LV normal function, No significant valvular abnormalities.

Based on obtained results, would you consider any additional interventions?

1. Anemia correction

What are the diagnosis criteria for preop anemia?

Hemoglobin <12 g/dL in adult nonpregnant women, <13 g/dL in adult men according to World Health Organization [WHO] criteria.

Why does preop anemia need correction?

It is the strongest predictor of perioperative transfusion.

Preop anemia is an independent risk factor for perioperative morbidity and mortality, including acute kidney injury and cardiovascular events.

What is the treatment for preop anemia?

Iron supplementation is the treatment of choice for IDA. The choice between oral iron and intravenous (IV) iron should be one of shared patient decision making considering patient

preferences, the degree of anemia, and the timing of surgery.

ESAs are exogenous forms of erythropoietin produced by recombinant DNA technology.

ESAs have increasingly been utilized in the management of preoperative anemia.

The use of ESAs preoperatively in anemic patients undergoing elective surgery was discouraged, because the primary stated risk was thromboembolism.

How preop anemia affect cancer surgery?

A recent study showed that the prevalence of preop anemia was 52.3%-82.6% in patients with CRC.

Patients in the anemia group had higher rates of 30-day complications (34.5 versus 16.6%, $P < 0.01$) including postoperative UTI, pneumonia, unplanned intubation, pulmonary embolism, DVT, CVA, MI, SSI, wound disruption, sepsis, and ARF on multivariate analysis.

The anemic group was also more likely to have a longer LOS in the hospital (7 versus 5 days, $P < 0.01$). The anemic group had a higher rate of one or more 30-day hospital readmissions.

2. Nutritional intervention

What about patient nutritional status?

Universal screening questions: a patient's BMI, weight loss during the previous 3–6 months, and periods of acute disease longer than 5 days during which they found it almost impossible to eat. serum albumin < 35 g/L are reported to have significantly higher rates of postoperative morbidity and mortality.

Why do cancer patients have malnutrition?

The etiology of malnutrition in cancer is a complex integration of physical, psychological, and social factors that influence dietary intake, metabolism and local gastrointestinal function.

How do malnutritional status impact surgical outcomes?

Malnourished patients experience significant postoperative weight loss and have more frequent occurrences of septic shock, increased requirements for postoperative mechanical ventilation, blood transfusions, and operating room return.

Malnourished patients have significantly longer hospital stays than well-nourished patients and take longer to recover gastrointestinal function.

What is your anesthesia plan?

General anesthesia plus thoracic epidural for postop analgesia

- -Thoracic epidural insertion before induction of general anesthesia is a proper technique for any patient undergoing an elective laparotomy.

What are the Benefits/risks of thoracic epidural analgesia?

- Excellent analgesia will reduce the risk of a carcinoid crisis.
- Hypotension may require vasoconstrictors that may lead to an exaggerated response.

Event during thoracic epidural placement

The patient was given 2 mg midazolam as premedication. The patient was positioned in the sitting position. Epidural anesthesia was attempted at the T7-8 interspace by paramedian approach. Before The epidural space was identified, his vital signs changed in the monitor. BP and heart rate were decreased.

time	1105	1110	1115	1120
BP	114/84	66/55	95/81	108/83
HR	93	71	78	77
SaO2	97	98	95	97

What's the problem(s)? How would you manage the situation?

What is the vasovagal response?

in response to a trigger, resulting in vasodilatation and/ or bradycardia and thereby in a fall in arterial BP and global cerebral perfusion.

Vasovagal syncope (VVS) is mediated by emotion or by orthostatic stress. It is usually preceded by prodromal symptoms of autonomic activation (sweating, pallor, nausea).

Vasovagal syncope is by far the most common reflex syncope in young patients, with a peak incidence between 10 and 30 years of age.

Up to 40% of the general population has experienced at least one episode of syncope in their lifetime.

The pathophysiology of vasovagal syncope is characterized by activating this reflex mechanism that provokes bradycardia, vasodilatation, and hypotension.

What is carcinoid crisis (CC)?

Sudden onset of hemodynamic instability (prolonged hypertension or severe hypotension,

unresponsive to standard practices), sometimes accompanied by characteristics of carcinoid syndrome, such as prolonged flushing, wheezing, and hyperthermia.

What is the definition of CC?

There has yet to be an international consensus on the most appropriate definition of CC.

CC is identified as a rapid onset of hemodynamic instability, unresponsive to conventional management, associated with characteristics of CS, such as continuous flushing, tachycardia and arrhythmias, bronchial wheezing, hyperthermia, peripheral cyanosis, severe diarrhea, and central nervous system dysfunction.

CC is identified as severe hypotension with systolic blood pressure (SBP) < 80 mmHg for more than 10 min, accompanied by the presence of flushing, urticaria, ventricular dysrhythmia, bronchospasm, or acidosis.

What factors can trigger CC?

Direct manipulations of tumor mass, the induction of anesthesia, the infusion of radiotracers.

What is the pathogenesis of the Carcinoid Crisis?

An excessive amount of serotonin in the bloodstream

The most implicated compounds are vasoactive peptides, such as serotonin, histamine, bradykinin, tachykinins, and kallikrein.

When tumor manipulation occurs, the stress response triggers the release of catecholamines from the adrenals or sympathetic neurons, contributing to the release of tumor products.

How did serotonin affect body systems?

Cardiovascular system:

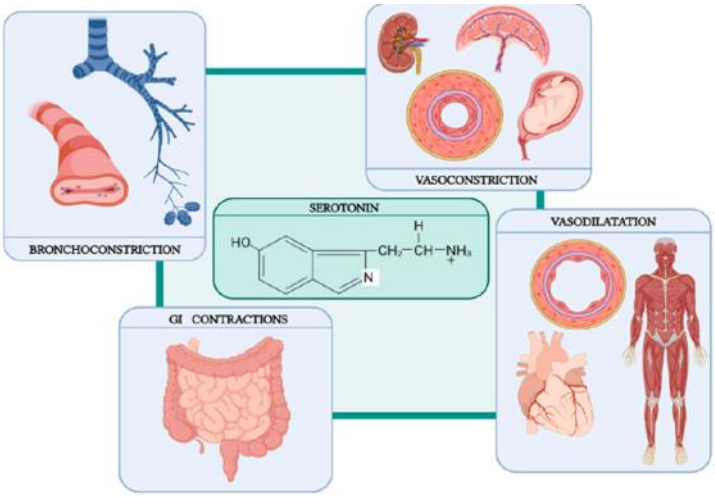
Renal, placental, and umbilical vessels respond with vasoconstriction, whereas coronary vessels and vessels of the skeletal muscle respond with vasodilatation.

Respiratory system:

Direct stimulation of the smooth muscles of the bronchi leads to bronchoconstriction.

GI:

Stimulate the GI tract to increase tone or intense spastic contractions.



What are the risk factors of CC?

The presence of liver metastases, older age, and, for intraoperative crises, anticipated long anesthesia time represent the most significant risk factors associated with the onset of CC,

The pre-incision serotonin level was significantly higher in patients who manifested the crisis. elevated pre-incision serum serotonin levels represent a novel marker for increased risk of CC, as well as the severity of the crisis

How does CC affect the postop outcome?

Patients manifesting CC presented an increased risk of postoperative complications, particularly if the events continued for more than 10 min.

How can you manage Carcinoid Crisis?

Octreotide has historically represented the mainstay of its treatment.

Now that the patient's vital signs are stable, would you proceed with surgery? Why or why not?

How would you proceed with surgery?

Monitoring: ASA standard monitoring, invasive arterial line placement, and functional hemodynamic monitors, a rapid infusion system, fluid warming system, patient warming system.

IV access: reliable large bore accesses, central line.

TEE: trans-esophageal echocardiography may be needed for patients with cardiac dysfunction.

Induction: Smooth and cautious anesthetic induction and tracheal intubation. Midazolam, narcotics, propofol/etomidate, a muscle relaxant.

Maintenance: adequate depth of anesthesia with balanced techniques including inhalational agents (sevoflurane/desflurane/isoflurane) or TIVA, narcotics, muscle relaxant; dexmedetomidine IV low dose bolus or infusion.

Avoid drugs that release histamine or sympathomimetic.

Remember: hypercapnia, hypoxia, hypothermia, and hypotension/hypertension can initiate a carcinoid crisis.

This is the anesthesia techniques in the OR

Intraop management:Monitors: ASA standard monitoring, pre-induction A-line, two large bore IV

Induction: propofol 110 mg, etomidate 12 mg, fentanyl 100 mcg, rocuronium

Hydrocortisone 100mg, famotidine 20 mg, Benadryl 50mg

BP 75- 120/35-50

HR around 75

IV: 1500 ML Plasma-Lyte

Albumin 5% 250ML

Octreotide 2841 mcg, Neo 1100 mcg, vasopressin 45 unit

EBL: 300ml

Urine output: 300 ml

Surgery time: 1233 to 1504, anesthesia time 1135-1534

The patient was extubated in OR and transferred to PACU

Postop:

Vital signs:

BP 108-123/77-85, HR 90

Model Discussion

What are carcinoid tumors or Neuroendocrine Tumors (NETs)?

- Neuroendocrine neoplasms (NENs) are a heterogenic group of tumors originating from the endocrine glands (adrenal glands, pituitary gland, parathyroid glands), endocrine cells within gland tissues (pancreas, thyroid), or dispersed endocrine cells of the digestive and respiratory tracts.
- The neuroendocrine neoplasm (MENs) includes a group of well-differentiated

- neoplasms called neuroendocrine tumors (NETs), and a group of poorly differentiated forms called neuroendocrine cancers (NECs).
- NETs can be found in all locations including GI-NETs(carcinoids)
- Carcinoid tumors are A heterogeneous family of neoplasms with a wide range of symptoms and clinical manifestations that range from incidental findings of a polyp during endoscopy to carcinoid syndrome characterized by severe flushing, diarrhea, abdominal cramping, and life-threatening right-sided heart failure.

How to classify carcinoid tumors?

- The tumors are classified based on the site of origin:
- Foregut carcinoid tumors: originate from the lung, bronchi, and stomach.
- Midgut carcinoids: the small intestine, appendix, and proximal colon.
- Hindgut carcinoids: the distal colon and rectum.

The appendix is the most common site of carcinoid tumors, followed by the rectum, ileum, lungs, bronchi, and stomach.

What is the World Health Organization classifications of carcinoid tumor?

Well differentiated endocrine tumor (proliferation index [PI] less than 2 percent)
well-differentiated endocrine carcinoma (PI greater than 2 percent but less than 15 percent)
poorly differentiated endocrine carcinoma (PI greater than 15 percent)
mixed exocrine-endocrine tumors; and tumor-like lesions

What is the incidence of carcinoid tumors?

6.98 per 100.000
Located in the gastrointestinal tract (67.5%) and the broncho-pulmonary system (25.3%)

What is the survival rate?

The 5-yr survival is 71% for patients with no metastases; 38% for patients with metastases.

What is Carcinoid Syndrome (CS)

The symptoms of carcinoid syndrome include flushing (pale, purplish, or red), diarrhea (watery and explosive), tachycardia or hypotension, bronchospasm, telangiectasia, and right sided heart disease or failure.

What is the prevalence of CS?

19% of patients had carcinoid syndrome.

What are the causes of CS?

These tumor cells produce several hormones, neuropeptides, and neurotransmitters, including serotonin, adrenocorticotropic hormone, histamine, dopamine, substance P, neurotensin, kallikrein,

and prostaglandins.
Serotonin and histamine are significant causative agents in carcinoid syndrome.
Histamine release is thought to be responsible for the bronchospasm seen in some carcinoid patients, and it also may be the cause of flushing

What is the treatment for carcinoid tumors?

Surgery: Surgical resection is associated with low recurrence and reasonable long-term survival rates

Pharmacologic treatment

- two longer-acting somatostatin analogs, octreotide long-acting repeatable (LAR) and prolonged lanreotide release (PR), have become available.
- Cytotoxic chemotherapy has been limited to the treatment of metastatic carcinoid tumors.
- Interferon-alpha has been shown to provide symptom relief in approximately one-third of patients refractory to octreotide treatment.
- The use of radiolabeled somatostatin analogs to specifically target somatostatin receptor-expressing tumor cells.

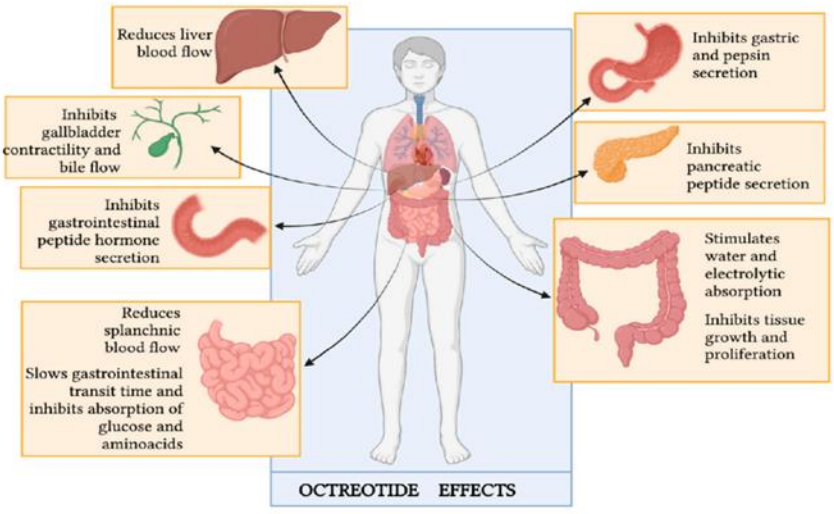
What is octreotide?

Octreotide immediate-release injection is used to decrease the amount of growth hormone (a natural substance) produced by people with acromegaly.

Octreotide long-acting injection is used to control acromegaly, carcinoid tumors, and VIP-omas in people who have been successfully treated with octreotide injection but prefer to receive injections less often.

What is the mechanism of octreotide?

The blockade of hormone releases, such as insulin, glucagon, gastrin, and other gastrointestinal molecules, and the reduction of splanchnic and hepatic blood flow represents the mechanisms underlying the management of CC.



What is the outcome of octreotide?

Octreotide must be available in the operating room during surgery to rapidly manage CC. Patients with metastatic carcinoid tumors who can undergo abdominal surgery safely with an intraoperative octreotide dose.

After the introduction of octreotide, there is a significant global decrease in intraoperative complications such as CC.

How to use octreotide?

Neither outpatient octreotide LAR nor single-dose preoperative bolus octreotide prevents all intraoperative complications.

It had been reported that there was a reduction in CC incidence by continuous infusion of high-dose octreotide during surgery.

For major surgery, perioperative prophylactic treatment with intravenous octreotide, at the starting dose of 50–100 mcg/h (mean dose 100–200 mcg/h), is the standard regimen used by most clinical centers.

Most experts start treatment with intravenous octreotide 12 h before the operation and escalate the dose as necessary until symptom control is achieved.

This infusion continues for at least 48 h after the operation, with dose titration as clinically required.

Other than octreotide to treat hypotension, what about other Vasopressors?

In general, norepinephrine and epinephrine can be hazardous in carcinoid patients.

Norepinephrine has been shown to activate kallikrein in the tumor and can even lead to the synthesis and release of bradykinin, resulting paradoxically in further vasodilatation and worsening hypotension.

Small doses of phenylephrine have been found helpful in some patients

Vasopressin as an alternative vasoconstrictor that may be useful

Avoid drugs that release histamine or sympathomimetic.

What is the controversy about treatment?

Current theory:

We currently believe that an excessive number of hormones in the bloodstream caused a carcinoid crisis.

The most implicated compounds are vasoactive peptides, such as serotonin,

histamine, bradykinin, tachykinins, and kallikrein.
When tumor manipulation occurs, the stress response triggers the release of catecholamines from the adrenals or sympathetic neurons, contributing to the release of tumor products.

Conflicting research results:

Condron, M.E , et al (2018) study showed no evidence of any massive release of the evaluated hormones during CC. Therefore, CC may be an entirely separate pathophysiology.

According to the pharmacodynamic profile of octreotide, this drug acts as a hormone release blocker and not as a hormone receptor blocker, therefore it should not neutralize the effect of circulating vasoactive peptides. It should possibly prevent a worsening in the CC or prevent its occurrence at all. Therefore, the mechanism of octreotide to treat CC is unknown. Another way to show that CC may be an entirely separate pathophysiology.

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Muhammet Ali Aydin, Tushar V Salukhe, Iris Wilke, and Stephan Willems. 26; 2(10): 308–315.

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El Ghouayel M, Hamidi M, Mazis C, Imam Z, Abbad M, Boutall A, Guerrero M, Nfonsam V. Surgical Outcomes in Patients With Preoperative Anemia Undergoing Colectomy for Colon Cancer. J Surg Res. 2022 May;273:218-225

周枫（Feng Zhou）, an artist in the Washington DC area has a broad interest in art, including Chinese brush painting, calligraphy, and watercolor. She painted on location the beautiful Maryland countryside bathed in golden afternoon sunlight. Nature is her inspiration and where she draws energy.

Take me home, Country Roads

-Song by John Denver

Almost heaven, West Virginia
Blue Ridge Mountains, Shenandoah River
Life is old there, older than the trees
Younger than the mountains, growin' like a breeze

All my memories gather 'round her
Miner's lady, stranger to blue water
Dark and dusty, painted on the sky
Misty taste of moonshine, teardrop in my eye

I hear her voice in the mornin' hour, she calls me
The radio reminds me of my home far away
Drivin' down the road, I get a feelin'
That I should've been home yesterday, yesterday

Country roads, take me home
To the place I belong
West Virginia, mountain mama
Take me home, country roads

协会消息

-蒋天宇报道

New CASA member

Wei Chen, MD
Graduate from Shanghai JiaoDong University School of Medicine (8 Year program)
Resident training in Tuft Medical Center
Currently working at Tuft Medical Center
Research interest: applying technologies for a safe and affordable anesthesia.

CASA News

- Dr. **Yonggang Peng** (彭勇刚) establishes fully functioning POCUS rotation at University of Florida.
- 祝贺！麻醉界**王晟教授**、**严敏教授**获选国家卫生健康突出贡献中青年专家！

- **Articles and Books Publishing**


asamonitor.org 3

apsf Anesthesia Patient Safety Foundation — Anesthesia Patient Safety Foundation

International Experience and Outcomes of OR Emergency Manual Implementation

Dylan S. Irvine, BS Jeffrey Huang, MD, FASA

The implementation of the emergency manual (EM) as a perioperative medicine tool has been critical in improving patient safety during anesthesia administration. An EM indexes many resources to provide an anesthesia delivery plan that is synchronous between both the individuals of the anesthesia care team and other OR personnel (*Cureus* 2019;11:e4888; *APSF Newsletter* 2016;31:43-5; *Anesth Analg* 2013;117:1149-61; *Anesth Analg* 2016;123:641-9). The EM does not eliminate the importance of continuous knowledge acquisition, but rather serves as a memory aid during nonroutine critical events in patient care in order to minimize errors and optimize outcomes (*Cureus* 2019;11:e4888; *Anesth Analg* 2013;117:1149-61; *Anesth Analg*

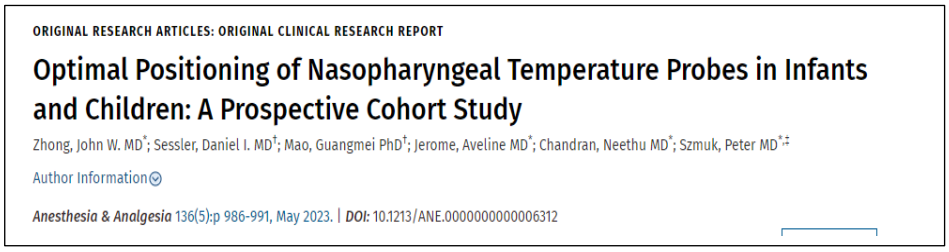
The 2018 Chinese Association of Anesthesiologists Annual Meeting Operating Room Emergency Manuals simulation instructor training workshop.

Dylan S. Irvine, BS
Doctor of Osteopathic Medicine (DO) Candidate, OMS-3, Nova Southeastern University, Dr. Kiran C. Patel College of Osteopathic Medicine, Davie, Florida.

Jeffrey Huang, MD, FASA
APSF Committee on Education and Training, Senior Member of Anesthesiology, and Professor of Oncological Science, Moffitt Cancer Center, University of South Florida, Morsani College of Medicine, Tampa, Florida.

22 critical events and attracting 130,00 views. A series of OB emergency manage ment online lectures featuring 15 speaker

Dr. **Jeffrey Huang** published International experience and outcomes of OR emergency manual implementation in Anesthesia Patient Safety Foundation


ORIGINAL RESEARCH ARTICLES: ORIGINAL CLINICAL RESEARCH REPORT

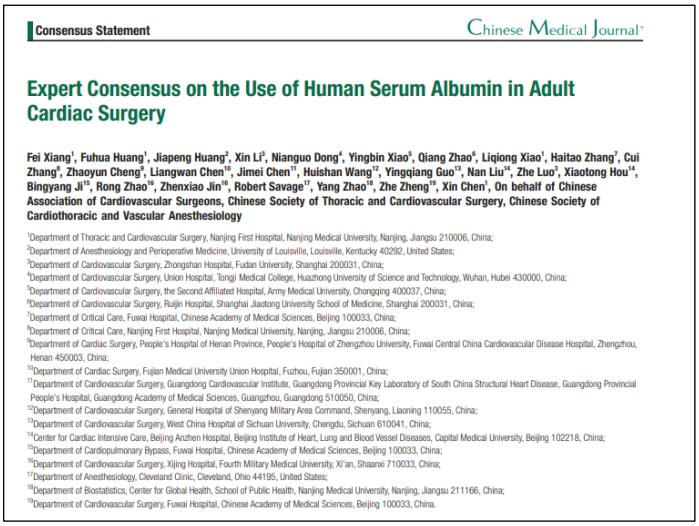
Optimal Positioning of Nasopharyngeal Temperature Probes in Infants and Children: A Prospective Cohort Study

Zhong, John W. MD*; Sessler, Daniel I. MD†; Mao, Guangmei PhD†; Jerome, Aveline MD*; Chandran, Neethu MD*; Szmuk, Peter MD*,‡

Author Information

Anesthesia & Analgesia 136(5):p 986-991, May 2023. | DOI: 10.1213/ANE.0000000000006312

Dr. John Zhong published Optimal positioning of nasopharyngeal temperature probes in infants and children: A prospective cohort study in Anesthesia & Analgesia



Consensus Statement Chinese Medical Journal

Expert Consensus on the Use of Human Serum Albumin in Adult Cardiac Surgery

Fei Xiang[1], Fuhua Huang[1], Jiapeng Huang[2], Xin Li[3], Nianguo Dong[4], Yingbin Xiao[5], Qiang Zhao[6], Liqiong Xiao[1], Haitao Zhang[7], Cui Zhang[8], Zhaoyun Cheng[9], Liangwan Chen[10], Jimei Chen[11], Huishan Wang[12], Yingqiang Guo[13], Nan Liu[14], Zhe Luo[3], Xiaotong Hou[14], Bingyang Ji[15], Rong Zhao[16], Zhenxiao Jin[16], Robert Savage[17], Yang Zhao[18], Zhe Zheng[19], Xin Chen[1], On behalf of Chinese Association of Cardiovascular Surgeons, Chinese Society of Thoracic and Cardiovascular Surgery, Chinese Society of Cardiothoracic and Vascular Anesthesiology

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[4]Department of Cardiovascular Surgery, Union Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei 430000, China;
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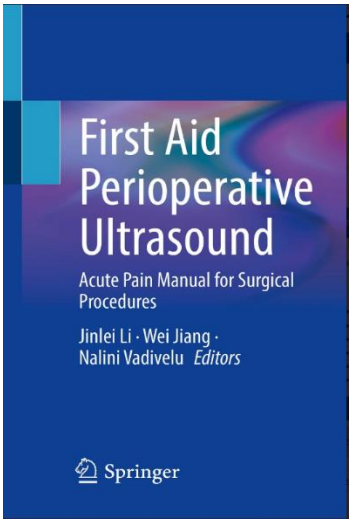
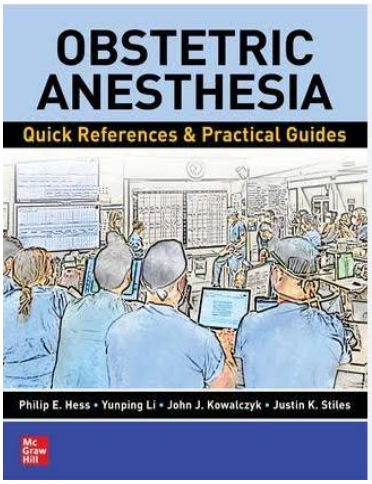
[15]Department of Cardiopulmonary Bypass, Fuwai Hospital, Chinese Academy of Medical Sciences, Beijing 100033, China;
[16]Department of Cardiovascular Surgery, Xijing Hospital, Fourth Military Medical University, Xi'an, Shaanxi 710033, China;
[17]Department of Anesthesiology, Cleveland Clinic, Cleveland, Ohio 44195, United States;
[18]Department of Biostatistics, Center for Global Health, School of Public Health, Nanjing Medical University, Nanjing, Jiangsu 211166, China;
[19]Department of Cardiovascular Surgery, Fuwai Hospital, Chinese Academy of Medical Sciences, Beijing 100033, China.

Dr. **Jiapeng Huang** published Expert consensus on the use of human serum albumin in adult cardiac surgery in Chinese Medical Journal



Dr. Jinlei Li(李金蕾)

First Aid Perioperative Ultrasound-
Jinlei Li, Wei Jiang
Nalini Vadivelu



Dr. Yunping Li (李韵平)

Obstetric Anesthesia:
Quick References & Practical Guides
Philip E. Hess, Yunping Li, John J. Kowalczyk, Justin K. Stiles

- **Meeting Report**

Member's participation in the activities in 2023 Annual Meeting of the Society of Cardiovascular Anesthesiologist

Dr. Yonggang Peng (彭勇刚)

- **Moderator** for Fellow and Resident Poster Session
- **Poster presentation** with residents

1) Unexpected Severe Aortic Valve Regurgitation Post Routine Mitral Valve Replacement
2) Under Pressure – Management Of Cardiac Tamponade In The Perioperative Period
3) Contralateral side tension pneumothorax after thoracoscopic surgery wit pleurodesis

Dr. Jiapeng Huang (黄家鹏)

Moderator:

Moderating Session: Heart Failure – Contemporary Approaches To Diagnosis And Treatment
Session: Heart Failure – Contemporary Approaches to Diagnosis and Treatment

Moderating Session: 3D TEE Workshop
Session: 3D TEE Workshop

Moderating Session: Abdominal And Thoracic Organ Transplantation: Things To Consider, Know Or Ignore
Session: Abdominal and Thoracic Organ Transplantation: Things to Consider, Know or Ignore

Moderating Session: Managing Right Heart Failure-From Volume To Mechanical Support
Session: Managing Right Heart Failure-From Volume to Mechanical Support

Speaker:

Program Wrap Up
Session: 3D TEE Workshop

Submitting Author:

Electrocardiographic Parameters Are Associated with Inflammatory Markers and Quality of Life Metrics in Long-Term Post COVID-19 Patients
Session: Scientific Poster Session 2

Pulmonary Function Tests, Inflammation and Quality-of-Life Measures in Long Term Post COVID-19 Patients
Session: Scientific Poster Session 3

Anesthesia News

-曲歌整理

MARCH 2, 2023 ASA NEWS RELEASE

Foundation for Anesthesia Education and Research Establishes Endowed NAM Fellowship

The Foundation for Anesthesia Education and Research (FAER)announced it has established an endowed National Academy of Medicine (NAM) fellowship to provide early-career anesthesiology scholars with the opportunity to experience and participate in committee, workshop, and roundtable activities of NAM and the National Academy of Sciences (NAS). Starting in 2024, each FAER NAM Fellowship will be awarded for a two-year period. Candidates will be drawn from the field of anesthesiology and must have completed their post-graduate work two to ten years prior and shown an interest in and focus on research, policy, and scholarship in the specialty.

March 29, 2023 ASA NEWS RELEASE

FDA's approval of over-the-counter naloxone will save lives

The U.S. Food and Drug Administration has granted approval for Naloxone to be sold over the counter. Naloxone, often sold as a nasal spray, is a safe and easily administered medication that swiftly reverses the effects of an opioid overdose. Previously, it was kept behind the pharmacy counter and could be obtained with or without a prescription. Due to the stigma surrounding opioid use, many individuals may hesitate to ask a pharmacist for it. The ASA (American Society of Anesthesiologists) encourages the public to familiarize themselves with the common signs of an overdose and take the first step in becoming immediate responders. Making Naloxone more widely available in our communities will promote equal access to this essential treatment.

APRIL 4, 2023, ANESTHESIOLOGY NEWS

Computerized Facial Recognition of Difficult Airways Feasible

In a recent study, researchers determined the feasibility of the novel system, which uses feature extraction from facial images to predict difficult intubation. Segal and co-investigators used deep convoluted neural networks to compare the performance of automatic computerized identification of difficult airways with that of traditional bedside tests. The results show a strong improvement in sensitivity at the cost of only a small decrease in specificity, and the team is building up a smart phone app to guide anesthesia providers to get pictures of patient's faces.

May 02, 2023 NEWS RELEASE

Georgia Governor Signs Law Protecting Patients from Medical Title Misappropriation

Senate Bill 197 has been signed into law by Georgia Governor Brian P. Kemp, with the aim of protecting patients from misleading medical titles. Starting from July 1, 2023, the law prohibits non-physicians from utilizing medical and medical specialty titles, such as "anesthesiologist," that have the potential to confuse patients. This action has been commended by the American Society of Anesthesiologists (ASA) and the Georgia Society of Anesthesiologists (GSA) for its commitment to ensuring patient safety and maintaining transparency in healthcare titles. The law specifically prohibits the use of deceptive terms or false representations pertaining to practitioners' professions, skills, training, expertise, degrees, board certification, licensure, or medical field. Moreover, the law mandates that healthcare practitioner advertisements must disclose the practitioner's name and only indicate the type of license they possess. Additionally, the law addresses the misleading use of the title "doctor" by non-physicians in clinical settings. It requires advanced practice registered nurses and physician assistants holding doctorate degrees to clearly state that they are not medical doctors or physicians. The GSA emphasizes the importance of informing patients about practitioners' training, as it enables them to make well-informed decisions regarding their healthcare.

编辑部小记

我和 CASA 编辑部的同伴们

陆晓薇

正在犹豫中，如果不是锡清的一句话，“如果没干过，怎么知道自己干不了呢？”，我接下了主编的工作。之前也在 CASA 编辑部呆过，知道自己的半斤八两，禁不住前主编苗宁医生的攒叨，话出口便没了什么退路。

说起编辑部不能不提苗宁前主编。她能干，泼泼辣辣一心扑在杂志上。两年前她接手主编时摸爬滚打学到的那些本事一股脑的都教给了我。和苗宁是同一工作单位，办公室中间隔堵墙，中间的门如果开着都不用大声说话就可以听得到，所以很多经验都是这么传声出来的：怎么写目录页，怎么做封面，怎么搞字体，甚至有时晚上也要骚扰她一下…。因为没头绪怎么去组稿，于是开始时上网去狗了一下如何做个好主编，如何去拿到稿件（可笑不?），虽然是纸上谈兵，但也得到了一个点--催稿，应和了苗宁主编的一句话：你脸皮要厚一点，催的要勤一些，可我还是做不到。闲来曾经看过一本书，《从前的优雅》，作者李舒描写了一段三十年代的出版人苏青：“如果穿越回去， 我一定要像苏青请教一个终极问题：如何催稿。我的前同事双红，人称“催稿婆“，她的催稿方式是天天催，日日催，用红包的形式提醒截稿日期，使人叹服。比起苏青，双红就是小巫见大巫。跟周佛海的太太杨淑慧约稿，苏青知道她贵人多忘事，于是再三劝说，每日催促，终于在创刊号上约出一篇重磅《我与佛海》。跟《古今》社长朱朴的续弦梁文若约稿，苏青索性边吃边催，弄得人家不好意思，居然”在朴园午餐，餐毕草此”，简直立等可取“。想起来， 陶青医生也是我催稿催得厉害的一位。 但我们的刊物半学术半社交。写学术文章是很严肃的事情，总要有个把月到一年才能出来，自然不可以如此催稿。我心存感激总认为能把自己的辛勤劳动交与编辑部是一份不可多得的信任， 我自好好珍惜。

宇燕是编辑部的资深编辑。做过很多年。我总听人家讲叫她宇燕大姐，我想她不一定比我大，但是感觉比我成熟。做为有着丰富经验的为多个在美中文杂志做编辑工作的宇燕大姐做事认真快捷，有时文章送过去，标点符号，错字空格，慧眼几下就跳出来了。虽然目前有软件可以帮助，但是文章的顺通程序还真是要有功底的。尤其宇燕大姐的敬业我也是很佩服。刚开始就是因为应用软件的事情联系了很多次，我的疑问是一股脑的，回答也是一股脑的。磕磕绊绊，第一期就算出来了，真少不了她隔空的热心帮助。

张珊是我命中逃不脱的人，我医学院毕业后同事中最先认识的人中，她就是其中之一。我那时应付毕业后的新生活，新工作，交男朋友，玩命的准备出国考试，真正能记得的事就是大家一起开个会交个班，好像还和她一起学过支气管镜（有没有呢？），剩下的就在之后的记忆中淡薄了。后来大家就都出了国。直到在美国有一天我医学院的同学打电话是问我你认识张珊吗？哈，记忆又回来了。是啊，当然。电话打过去，那时她在 Washington University。但从此依旧交集不多，电话号码不通了，也就断了信。再一次看到有个叫张珊名字的就是微信建立起来以后的事。因为微信刷的少，有一搭没一搭的也没在意。叫张珊的在中国也是海

了去了吧，没多想。只是后来苗宁主编拉我进编辑小队才又看到了张珊的名字。好不了人家在编辑部已经很资深了。 一句问语：你是以前 xx 医院的陆晓薇么？从中国到美国辗辗转转三十年，虽然离开中国后未谋面，但冥冥之中却总是有根线牵着，也许哪一天，就见到了呢。

杨钊应该是现在的医院里的骨干中坚力量了，想着他也是忙家里的事，工作的事，我们都经历过这一段，恨不得把 24 小时切切开来成为 48 小时。也巧，刚与他在编辑部有联系的时候，他说以前见过我， 是在大华府地区曾经举办过的面试辅导课上，我自己不知道怎么稀里糊涂的也报了个名去辅导人家，自己还没有半桶水。现在想来好可笑。学员我都不记得了，但是学员可能还记得我这是一件幸事。和杨钊的联系除了编辑部的关系，也还有他的工作单位是我们的近邻。时时会有他们单位的人想半退休到我们这里，我们也会向他打探一下，内情还是很重要啊 。

金蕾是电话里聊得多的人。因为她是下一届的主席，所以有些杂志大方向的事情还是要和她商讨一下。她的建议很中肯，也有不少的好主意。我的提案她都能给予支持，所以我也是有什么都尽量地说。从应该找谁来组稿到栏目的选择，都细细论过。第一次在 2022 年 ASA 会议上见到她就如同照片上一样，总是笑眯眯的，但能力是真强。书是一本一本的出，活是一样一样的干，还做了很多杂志上的兼职和会议的主持。我有时总在想，我们是生活在同一片天下面吗？

天宇和曲歌都是新人，彭勇刚主席力推来帮助编辑部，也是他们自己愿意为编辑部做些贡献，是今后的主力。名字都很大气。应该也是有着很好的未来。 曲歌的名字让我第一次读到就觉得是一个长脖子的女孩，可能老想着曲项向天歌吧(玩笑话)。其实是一个看着很安静的小女孩。曾经我自己做住院医的时候手忙脚乱的，虽然算起来，二十多年过去了，现在住院医生活的压力却是有增无减。不想给他们额外过多的压力，但他们倒是有求必应的。

杂志的发表真少不了编辑部的伙伴们，当然也有更多投稿支持的同业者。在某一个时段某一个情境，遇到了这么多朋友， 是一件幸事。希望我们能够在麻醉的这个专业有更多的投入，也有更多丰富的生活。

医生生活

因着爱

2023 年 3 月海地义医日记

黄黎光医生编辑

（参与人员：刘欣，Jeri 毛，于丰，汪玲， 陈朱莉，赵敏，何成师，刘霞，吕刚，吕杰克，许安娜）

2023 年 3 月 20 日，星期一，Fort Lauderdale， 阴天小雨。

今天我们一团 12 人将到海地去！我们是“使海地人微笑 Make Men Smile” 中的医疗志愿者。我们来自美国的东南西北各方，大部分人并不相识，因着爱，去义医。

“使海地人微笑”是徐思海医生 6 年前建立的一个非盈利医疗志愿者组织，每年到海地为海地人提供免费医疗服务，着重于为丝虫淋巴性睾丸鞘膜积液 （Filarial lymphatic hydrocele）患者提供根除术。今年我们的团队分为两组：家庭内科组和外科组。内科组有经历丰富的何成师医生，擅长急诊医疗的刘霞医生，内科的赵敏医生，家庭全科的于丰医生和 Jeri 毛医生，疼痛科陈朱莉医生，血液科的吕刚医生，准备上医学院的华人二代许安娜，以及聪明能干的高中生吕杰克。外科组 5 人队伍则以刘欣为主刀， 于丰医生和毛医生为外科助手，汪玲和黄黎光为麻醉医生。虽然徐思海医生因家父病重回国探亲，不能亲自参加我们这次义医，但是他准备大部分义医的需用品，远程调节，是我们队伍的关键。

飞机从 Fort Lauderdale 直飞海地角。海地角是海地第二大城市，与我们合作的新希望医院离机场大概 2 小时的车程。到了机场才发现，到海地还需要新冠疫苗证明！美国都全开放了，去海地这么一个落后的国家还要疫苗证明！有一位医生没带着疫苗证明，差点不能上飞机！这也给我们一个功课：到其它国家，要事先熟悉这个国家的相关入关规定。

飞经加勒比海上空，湛蓝的海水，脚下的朵朵白云，让人享受。快到海地角了，下面层层高山中散布着星星点点的小农房。海地啊，我们来了。为了你的医治，我们来了。

海地是西半球最贫穷、最危险的地方。去年 17 名美国传教士被绑架当人质、被索取高额赏金的事常常发生。首都太子港几乎被黑帮控制。我们到海地去需要冒极大的风险。

到了。这个机场一天就一班飞机，从 Fort Lauderdale 来回的 Spirit 航班。为了避免出关时的麻烦，我们一律都没有托运行李，每人自带一个小行李包。一出机场，新希望医院的院长就已经在等候了。我们上了两辆车，直奔新希望医院而去。

两眼所见，和去年没有两样，都是垃圾满地，人群拥挤，空气污染，车流喇叭声、摩托车的啵啵声和人们的喊叫声混在一起。海地啊海地，这么多年来，这么多国家的人们来帮助你，这么多的资源倾泻给你，你怎么还这样贫穷呢？绝大部分海地人没有医疗保险，看病都是自费。看一次病，也许就要几个月甚至半年的收入。至少一半海地人平均每日消费少于 1 美元， 80%的人消费少于 2 美元，他们大都付不起医疗费用。很多人有病无医，任凭自生自死。

午餐后我们就把手术室、三个诊室和门诊分流布置好。徐医生寄来的手术用品，和其他医生分别寄来的药品，都全部收到了。太好了，明天我们就可以开工啦！

黄昏的斜阳是那么美丽。我们一队人在保安的保护下，爬上了医院背后的小山坡。看红日西下，炊烟袅袅，牛哞羊叫， 好一幅乡村平和的景色。

晚上凉风徐徐，我们坐在阳台上聊天。哇，真是藏龙卧虎呀！这个团队的人每人都身怀绝技，不比一般！他们的故事，等我有空，再徐徐道来。

2023 年 3 月 21 日，星期二，新希望医院，晴

有话说，一日之计在于晨。天还没亮，我们都起来到宿舍上的楼顶去了。不一会，彩云满天，一轮红日喷薄而出。我们舒张身骨，手拉手，拥抱太阳，深深地吸气，顿时觉得神清气爽。田野里一层薄薄的雾，公鸡啼鸣，牛羊悠闲地吃草，啊，那感觉真好。

医院通过电台广播、电视等媒体方式，把我们来义诊的消息传遍四方。而经过 6 年的努力， “使海地人微笑” 为海地人提供免费医疗的事，在海地角已经广为人知。所以方圆几十里的病人都会来看病。今天将有 10 台手术，有很多门诊病人。

早饭后我们兵分两队，外科队在二楼手术室，家庭/内科队在一楼。麻醉医生汪玲快手快脚地做好术前准备后，就去看术前病人了。今天的手术病人昨晚已经住院，进行腹部清洗了。很多海地人没有干净的用水，也许很久都不能洗一次澡，不少人的洗澡就是在水沟里洗一洗。这些水沟也是牛羊喝水排泄的地方，不用说很不卫生。为了减少术后刀口的感染，这些病人都得提前到医院洗澡。

我们有两个手术室，准确地说，是一个手术室，加上一个走廊改装的手术区。刘欣医生将主刀，毛医生和于医生将成为他的助手。另一台手术室由海地泌尿外科医生 Julius 和 Accilus 主刀。这两位医生经过几年与“使海地人微笑”合作，现在已经成为了我们海地分队的主要成员。

汪玲医生是第一次参加义医，第一次在这么简陋的条件下提供麻醉服务。可她干得很是出色。海地人对麻醉药的耐受力比较高，麻醉药用量要比美国病人大一些。在美国我们做腰麻，很少有用到 15 毫克的 Bupivacaine 的。但是在海地，15 毫克的剂量可能还不够。他们很少发生腰麻后的低血压问题。有两位病人麻醉平面不够高，还需要加很多静脉麻醉药让病人减少痛苦，保证手术的顺利进行。不管是年轻病人还是老年病人，高血压是个非常普遍的现象，基本每个人都有。 一个 85 岁的病人，可能患有脊柱强直症，连腰都不能弯，花了不少时间才打好腰麻。在美国很少见到这种情况。

刘欣医生的刀功是真功夫。用毛医生的话说，那叫一个艺术！

毛医生是第二次来海地义医。在国内她是眼科医生，在美国是家庭科医生。今天上台做助手。她一点也没觉得大材小用，反而高高兴兴地配合刘欣医生做睾丸鞘膜积液根除手术。

楼下的病人密密麻麻的挤满了大厅。医院有 5 个诊室，其中 3 个可以给我们用。经过初步的摸索，我们大概把这 3 个诊室稍微分工，赵敏主要负责内科和儿科，何医生主管内科，刘霞医生主管内科和一些需要小手术的病人，陈医生则主管疼痛的诊治。这医院从来就没有过疼痛门诊。今天因为慢性疼痛而就诊的病人真多！

赵敏医生是一位内科医生，可是今天却成了儿科医生。大部分孩子都送到她那里去了。所有的儿科病人都没有称体重，所以在用药的时候，都是根据大概的体重来给处方。大约是 8 岁以上用 1/2–成人量， 3-8 岁用 1/3 成人量。

大约有 20 位高血压病人就诊。有一个病人的血压已经高出了血压计所能测量的范围。何医生用老办法，摸着脉搏，按下血压计，等脉搏消失时就是收缩压了。这个病人的收缩压 260 以上。另一位病人收

缩压 230，舒张压 190。舒张压这么高，我都没有听说过。这些病人以前都没有被确诊为高血压，也没有药可服。幸好我们带来了不少抗高血压药，就给他们每人 2 个月的用量。
糖尿病的病人也不少，他们都不知道自己患有这个疾病。我们赠送的血糖仪可排上大用处了。我们带去的药有很多很昂贵的治疗糖尿病药，是一个机构免费赠送给我们的，正好派上大用途。

有一个 78 岁的女性患有巨大的腹水，何医生做了腹腔液体抽取，抽排了 10 升的腹水。抽出来的腹水是淡黄色，清澈，看起来不像是恶性。我们还和医院的检验室密切合作，他们很愿意破例地为这位病人做一些细胞学化学方面的检查。后来我们发现医院里还有 CT 扫描 。如果我们早知道的话，也许我们可以让病人做一个 CT。

刘霞医生为一个女病人脸上一个囊肿引流，这个病人的肿块已经 5 年，为她引流后脸上的肿块消失了，面貌改善很多，病人非常高兴。

于丰医生本来安排在手术室当助手，可是楼下太忙，需要帮助，她二话不说，就来门诊了。有一位病人左手腕有个很大的肿块，影响到手的活动。病人强烈要求把这个肿块切除。于是在简陋的诊室里，在一张检查床上，她做了肿块切除术。切开后发现是一个脂肪瘤，脂肪把手的肌腱都包围着。为了不损伤肌腱，她很仔细地把脂肪瘤一点一点地清理出来，肌腱组织都保持完好。因为手术刀不够锋利，并且缝合的针线也不合适，手术花了将近一个小时。这个脂肪瘤被取出以后，病人非常高兴。

陈医生为三位病人做了针灸，并且为好几位病人做了局部神经封闭注射。病人的疼痛得到缓解，都非常高兴。她并且为当地医院训练了三位医生助理。

吕刚医生是血液病医生，今天成为门诊分流的主管。连我们的大学生安娜和高中生杰克，都成了有力助手。

在医疗资源贫乏的情况下，有些病即使诊断出来了，也无法医治。这是令人伤感的事。有一个病人有嵌闭性腹股沟疝气，我们的三位外科医生都不熟悉做这样的手术，我们就让这位病人到其他医院尽快去就医。有一个病人可能是晚期的乳房癌，已经转移到腋下淋巴结。有一个病人左眼长了一个很大的肿块，使得眼睛完全失明。有一位支气管哮喘的病人，双肺哮鸣音。 因为没有抗哮喘药物，所以我们只能给他开处方。能医治的，我们医治；不能医治的，我们给与安慰和建议。

今天大概有 80 个病人。主要的疾病有皮肤囊肿，皮肤肿瘤，慢性疼痛，高血压，糖尿病，甲状腺肿瘤等。胃炎胃酸反流特别多，基本上每个病人都有。我们需要找到一些通用的常用药，以最小的成本，给更多的病人提供医治。

晚饭后大家坐在阳台上聊天。相互介绍后，大有相见恨晚之感。我一边享受着三月的凉风，看着身旁的朋友们，听他们的故事，一边感恩。感恩神的大爱，使得我们能因为爱，走到一起。感恩我的队友，

他们都是身怀绝技、藏龙卧虎之才，一天忙碌下来，没有一个人抱怨，没有一个人傲慢，如同一个个谦卑的仆人。他们心胸开阔，性格爽朗，说到好笑处，就像孩子般无拘无束地开怀大笑。和这样

的伙伴一起，哪怕再累，工作时间再长，也都是享受。

朱莉和于丰都是基督徒，当众人互道晚安散去后，我们三人手拉手，一起感谢我们的主耶稣，一起为团队的每一个人献上感恩祷告。我抬眼看天，深远的穹苍上无数闪闪的星星，我就想，主啊，我们算什么，竟被你选择，成为祝福海地人的渠道？人算什么，你竟然这样眷顾他？

2023 年 3 月 21 日，星期三， 新希望医院，晴

早上 7 点日出。我和何医生最先到楼顶，不久其他医生也上来看日出了。乡村的凉风徐徐，刘欣的小无人机倏地升空。不一会，太阳金光四射。当无人机对着我们往回飞时，汪玲突然叫起来 “Jumping Jack， Jumping Jack!”并且跳跃起来。这很具有感染性。我们大家都跳起来，一边跳，一边喊着“Jumping Jack”。连院长也跟着我们一起跳。多么喜乐的团队精神！

查房时昨天的病人基本都没有大问题，一个病人局部比较疼痛，重新包扎后疼痛改善。没有麻醉相关的问题 。

这里和美国不同，术中病人都没有用镇静药，也没有 propofol 来催眠，所以病人都比较紧张，血压也就更高了。为了减轻病人的紧张感，汪玲用手机给病人放音乐。手术室开着空调，打完腰麻后病人比较冷，汪玲就去找床单毛巾给他们盖上。这些小小的动作，都表现出一个优秀麻醉医生的品质。

海地资源短缺，什么都得省着用。电刀用完后清洗一下，接着用。Bovie 的粘贴，也要用好几次。连消毒毛巾都得省着。第一台手术时，护士打开一个消毒包，内有四条消毒毛巾。刘欣医生以为都给这个病人用的，想都没想，拿起铺上了，结果护士的眼睛睁得像牛眼那么大，又把一条毛巾拿了回去。手术结束后，护士还让翻译告诉刘医生说只能用两条手术巾。我们都学着节约，不能像在美国那样大手大脚的浪费。

所有手术病人术前都做过筛选和会阴部超声检查。今天第一个病人的诊断是双侧睾丸鞘膜积液。病人顺利地做了腰麻后，刘欣检查时发现这个病人还合并有右侧的腹股沟疝气。他还不熟悉做疝气的修补，

于是问隔壁的 Julius 医生 ，他们是否愿意做这个手术。回答是否定的。因为昨天他们为一位双侧睾丸鞘膜积液做根除术中，才发现病人也合并有腹股沟疝气，不得已，硬着头皮做修补，大汗淋漓，手术做了 4 个多小时才结束。为了安全起见，刘欣把这个手术取消了。后来我们和院长联系，明天找一位当地的普外医生，一起做这个病人的手术。看来不能全信别人的诊断，尤其是在海地。
今天门诊改善了登记和预诊分流的程序，场面有序多了。

刘霞医生为一位病人做了手指的 I&D，并提供了抗菌素。该病人在劳动中伤了手指，手指已经肿胀严重，后来感染。在这里做门诊手术很不容易。剪刀很钝，连手术刀也经过多次使用和清洗，变得像锯子一样。幸亏她带来一个手提的 Cautery，使得一些门诊手术方便了许多。

一个 65 岁的病人：血压高于 240，有头痛的症状。这是高血压急症。何医生马上让病人口服 20 毫克的 felodipine ， 和 25 毫克的 HCTZ，，在走廊休息一个小时以后再量血压，他的收缩压降到 190，舒张压有 90 左右。给了他一个月份量的药。

产后心衰的病人：这个病人一个月前生产，产后就出现了下肢水肿和呼吸困难的症状。在当地的医院做了胸部的 X 光，发现两心室两心房都扩大。她开始服用一些药，症状已经得到缓解。何医生在这些药的基础上让她服用 Steglatro，这个药正好我们这次也带来了，非常昂贵，对心衰治疗效果也非常好。何医生并且告诉她以后不要再生小孩了，再怀孕可能会死掉。

何医生还为三个病人做了超声波的检查。一个病人有比较大的乳房肿块，检查以后发现这个肿块是多个囊肿。这些肿块在两年前就已经开始有了，并没有症状，也没有很快增大。这些囊肿的边缘都比较明显，所以我们认为基本上是良性的。病人现在还在哺乳期，孩子才六个月。我们建议她停止哺乳后再到附近的医院做超声检查，如果可能的话可能需要手术切除 。

有几位病人的乳房超声波都是不好的，有钙化，有积液。我们不能排除恶性肿瘤的可能性，只能建议她们去看外科和活检。

一位 20 出头的女病人乳房有一个小肿块。超声检查以后发现这个肿块可能是乳房纤维瘤，边缘很清楚，内部有一些结构，不像是囊肿，也不像是恶性肿瘤。所以我们就让她安心回家。病人也很高兴。

一个病人有甲状腺的肿块。这些肿块在右边比较明显，左边也有一些，边缘质地也不一样，我们怀疑是不是甲状腺癌。我们建议她尽快就医。

医院里面虽然有两个超声波的仪器，但是平时很少用。这两个仪器就放在另一栋大楼里，上面都布满了灰尘。我们团队的到来，使得这两部仪器重见天日。

今天来了两位年轻人， 年纪大概二十多岁，是孪生兄弟。病人步态不稳，语言不清，好像有智障的样子。扶着他的是哥哥。赵医生建议病人需要看神经科。哥哥说他们已

经看过了，需要做 MRI。可是他没有钱。弟弟得的是癫痫，从八岁开始就反覆发作。他俩从小一起玩一起长大，一直到八岁为止。吃药也没用。弟弟的情况越来越差。听说我们来义医，哥俩抱着一线希望。哥哥深情地看着弟弟说， “I want him back”。这真令人泪下。

每个病人都有胃痛，包括小孩子，可能是胃酸反流和胃炎。估计人群中螺旋菌感染的不少。刘霞医生给 amoxicillin，开医嘱 omeprazole 和 clarithromycin ，三药治疗。不过以后可能很快又重复感染，因为一个家庭和一个社区，会反反覆覆地重复交叉感染。可能 H. Pylori 在海地是流行病，需要整体治疗。这个病可能与海地人的饮食很辣有关。

今天的病人年龄最小 3 个月，最大 88 岁。毛毛医生已经很久没接触小病人了，今天和几位小病人合影。

高血压的病人不少，糖尿病的病人也不少，最高可测出的血糖是 535， 还有一位病人的血糖高出血糖机的限度，无法测量它的真正数字。刘霞医生就给了他 3 个月的药， glipizide 10 mg, Janumet 100-1000 mg，建议他低糖饮食，多运动，或喝水。病人没有任何症状。建议病人在一个月后到当地医院复查。由于缺医少药，病人的疾病到很重都不知道，也没有药可服。我们要想办法取得一些比较便宜的药，为病情严重的病人提供比较长期的治疗。否则，这么严重的高血压不治疗，说不定哪天突然脑出血心梗呢。这些严重糖尿病的患者不治疗，也面临这很严重的风险。

这些天我们看到不止 10 个病人有甲状腺肿大。我们需要有普外的医生加入我们的团队，为他们提供诊疗。

有一位病人右臂受伤一个多月，看过医生，被打上石膏。今天来看疼痛科，说是右肩膀脱臼， 让陈医生给他复位。可是陈医生怎么都觉得这不像是脱臼，就建议他去做一个 X 光，这需要 20 美元。可是病人没有钱，很为难，想拿点止痛药就算了。陈医生说，如果你没有这笔钱，我为你支付，你也要去做 X 光检查。这事给院长知道了，就免了这个病人的费用。X 光结果发现是肱骨和锁骨骨折。幸亏没有轻信别人的诊断，否则复位时会加重骨折。陈医生就告诉他需要手术，否则以后将会长期疼痛，右臂无法运动。病人一下子就哭出来了，因为他没有钱做手术。陈医生暂时给他减轻疼痛，就给他打了肩部封闭， 并且给了他一些止痛药。

这里的治疗缺乏规范化，病人连一些基本的医疗常识也没有，翻译也不专业，连病历档案都是乱七八糟。有感于此，刘霞医生建议回去后做病人常见病的治疗规范化和病人教育的材料。

今天手术病人 9 人，门诊病人 63 人。

今天手术结束得早，晚饭前我们在保安的陪同下到医院门前散步。又走到自然中，每个人都兴高采烈。有一棵树看上去可攀爬，于是毛毛童心大发，居然像猴子那样轻易地爬上去。爬上去容易，下来就不是那么容易了。于是有爬树的美女，自然有甘当梯子的绅士。

不远处有一个小山包，大部分人三下两下就蹭上去了，但对于朱莉来说，这不是一件容易的事。原来陈医生年初感染了新冠，并发心衰，现在还在恢复期。她老早就报名参加我们的义医，即使从西部到海地有时差，加上心衰恢复中，她也没有取消这次行程。可要走上这个小山包还真吃力。于是何医生拉着她的手，陪着她，半步半步往上走。“你不要走那么快，一次就半步地，就这样走。”何医生如此说。看到这，我们的心都被感动了。

今天的晚霞真美呀！从山顶放眼看去，田野空旷，耶稣光倾泻，令人心旷神怡。要跳舞的心都有了。毛毛突然让刘欣充当洪常青，于是有了样板戏的双人芭蕾剧照。

晚饭后，又是快乐的时刻。毛毛精湛的舞蹈，赢得了阵阵掌声。“一起跳舞吧”， 毛毛邀请着。“我们都自带游泳圈，就免了吧。”刘霞医生突然冒出这么一句来，于是又是一场大笑。看来即使不会游泳，咱们腰上的脂肪圈，也让咱们浮起来，不怕被淹了。

当然，刘欣不甘落后，硬是把我们一帮人笑得前俯后仰，肚皮都痛了。

2023 年 3 月 23 日，星期四，新希望医院，晴

早上，我们迎接太阳，我们迎接光！每一天的恩典，都是新的。

早餐时毛毛和汪玲提议今晚我们一起唱歌，就唱“奇异恩典”。这可是基督教的赞美诗耶。这两位佛教徒看见三位基督徒晚上手拉手地祷告，过去三天的工作都很平稳，深深感到祷告的力量。大爱，是穿越一切信仰、一切障碍的。我们也是因为心中的大爱，才走到一起来。

昨天海地分队的一个病人术后局部血肿，需要切开引流。没有麻醉方面的问题。病人术后都给一个星期的口服抗菌素和一些止痛片，但是病人通常都不服用止痛片。有中度的疼痛都忍着，想把这些止痛片省下来以后应急用。海地病人对疼痛的忍受力是令人惊讶和动容的。

今天有三位病人睾丸鞘膜积液合并腹股沟疝气，当地的普外医生参与修补。

第一个病人是昨天取消手术的病人。这位病人术前被误诊，手术开始后，这位普外医生说没有疝气。于是把切口缝合，开始睾丸鞘膜积液切除了。刘欣和毛毛再检查，的确有腹股沟疝气。这样又不得不把缝线打开。这个手术 3.5 小时，一番折腾。不过最后手术平安，皆大欢喜。睾丸鞘膜积液常合并有腹股沟疝气。以后的义医需要普外医生的参与。

汪玲医生为这个病人做麻醉。通常腰麻维持时间 2 小时左右。因为预先知道这个手术时间比较长，她就在麻药中加一点肾上腺素和芬太尼。手术结束时病人还没有觉得疼痛！麻醉干得漂亮！

一天下来，刘欣医生也够累的。当最后一台手术完成后，他已经连续站手术台快八个小时了。在等队友的时候，一靠沙发，就倒头睡着了。他认真负责的工作态度，获得了队友免费的按摩服务。

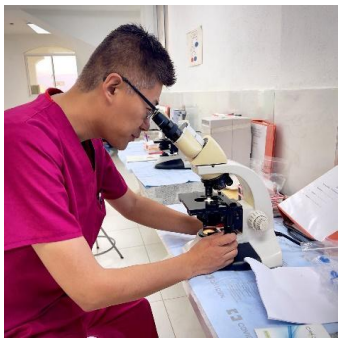
在海地为病人手术做麻醉，最头疼的一件事是病人的高血压。通常他们都不知道自己有严重的高血压，即使知道了，也没有钱买药。术中没有镇静药，加上语言不通，通常病人都比较紧张，血压也跟着飙升。昨天一个手术病人的血压太高，不得不推迟手术。

病人能得到免费手术的机会来之不易。病人多，每次义医只能为 40-50 位病人手术，错过了这次机会，也许下一次就轮不到他了。所以我们不到万不得已，不轻易取消手术。对于严重的高血压，我们可以静脉注射 labetalol，hydralazine。但是快速降压，可能导致中风或心梗,增高了麻醉的风险。最后一个病人术前检查发现收缩压 190，舒张压 80，没有服药。进到手术室后测量血压，居然无法测出收缩压，而舒张压已经高达 130， 这说明这个病人的血压已经超过了血压计可测量的极限。手术被延迟到明天。

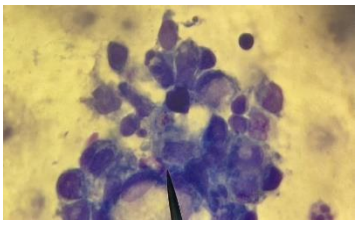
今早术前检查时有两个病人血压很高， 220/ 130。我就向何医生请教。因为他有 20 多年 Hospitalist 的经验，经常处理麻醉前高血压的病人。他让病人口服 felodipine 15 毫克，加上 HCTZ 50 毫克。一小时后血压降到 180 左右，后来病人术中的血压很稳定。本来早上测的血压有 170，到了手术室，就超过 200 了。这两种药合并使用，起效快，药效有 24 小时，这就为提高麻醉的安全性起到重要作用。这两种药都不贵，我们也都带来了，正好用得上。这是这次义医最有收获的成果之一。何医生立大功了！

何医生的超声又发挥作用了！一个病人腹部鼓胀，腹部静脉曲张，骨瘦如柴，显现恶病质，看上去是晚期肿瘤病人的样子。超声波显示腹水。做腹部穿刺，却只有少量血性腹液。我们把腹液带到检验室去化验。

医院有一栋正在修建的大楼，楼下是影像检查，比如 X 光，CT 扫描，超声波。第二层是检验科。昨晚我们散步回来，发现有检验科，就进去和技术员交谈。他们的设备比较简单，有两台莱卡的显微镜。真是麻雀虽小五脏俱全。



吕刚是血液病医生，正好发挥大作用。他让技术员把腹水样片染色，在显微镜下发现很多恶性细胞。我用手机居然还能拍到了图像！这也是这次义医的大收获之一。这医院以前都没有如此高效诊断过。当然，检验科的程序和技术员操作有待规范化。我们的病理医生会在这方面发挥重要的作用。



这位恶性腹水的病人已经到了晚期。何医生对她丈夫说，如果不治疗，病人最多只能活 2 个月。如果治疗，病人有可能多活 6 个月到 1 年。丈夫说不治了，没钱。所幸的是病人现在没有疼痛。只希望她安详地离去。后来我又遇到这位病人，看上去很悲哀，因为没有药可以治疗她。

今天于丰医生和刘霞医生一起做了七个门诊手术。俩人互补长短，是很好的搭配。一个手术是脸部比较大的脂肪瘤，已经长了 6 年，严重影响这位女病人的外观形象，病人坚持要做这个手术。因为脸部血管丰富，术中有明显的出血。但是两人完美的合作，加上刘霞医生带来的 cautery，及时把血止住。手术做得很成功，术后病人非常高兴，还合影纪念。

有两位病人的 keloid 比较严重，都是扎耳垂形成的。一个女孩的双侧耳垂 keloid 超过 3 公分，我们给她做完手术后，面貌有很大的改观。病人很高兴。病人和他妈妈从来没有上过学，在签字的时候，只是在手术同意书上画了一个十字架。 这就是他们的签字了。于丰医生说：“我觉得能来这里做义医太有意义了。”

今天门诊病人 45 人， 今天主要是慢性疼痛和创伤后遗症。皮肤的囊肿和脂肪瘤也有好几个病人，hydrocele 的病人有 4 位，需要当地医生复查 。

在疼痛科，陈医生给一个偏头疼和一个腰痛的病人用针灸治疗，并且做了一些神经阻滞 。有空的时候，她就给这里的护士学生和医生助理学生上课。看到他们如饥似渴的样子，陈医生心里有感动，愿意帮助医院建立疼痛科，并且远程教学。愿神祝福她。

晚饭后快乐时光来了。没有乐器，何医生就吹起了口琴。他真是全才！我们找到歌词后一起唱奇异恩典。我们 12 人信仰不同，却能如此和谐愉快地一起工作，没有任何抱怨攀比，没有任何负面的情绪，这真是难得。一曲歌唱完，意犹未尽，又唱“you raise me up”。我们都没有经过正规声学训练，也没有诗班的经历，高音、中音和低音却配合恰当。尽管没有其它乐器的伴奏，但我们唱出了心中的歌。

天已经很晚了。抬头看天，却见穹苍高远，群星闪烁。何医生说，“来，我教你们看星星！看那，那是织女星，那是牛郎星……”

“哪个是牛郎星?”

“你看，那三个星连在一起的，便是牛郎星了。他用扁担一边挑着一个孩子……”

哇！几位医生纷纷拿起手机，要拍下此时此刻的牛郎织女星。他们也许想到在家里的亲人孩子吧？

我耳中却响起赞美诗“你真伟大”：主阿！我神，我每逢举目观看，你手所造，一切奇妙大工，看見星宿，又听到隆隆雷声，你的大能遍满了宇宙中……。

（下期继续..）

黄黎光医生摄于海地

黄黎光医生， 不仅是一位麻醉医生， 更是一位热心于公益，帮助他人的人。我们听说她， 继而又了解她是在新冠流行期间。 现在她更是活跃在了对海地人民的帮助中。 她所记录的在海地的援医经历，使我们从另一个角度了解了当地人民的生活，他们疾病中的痛苦，以及治疗中对每一个医生的挑战。 感谢簧黎光医生！-主编注

王海明医师回忆录（续一）

2. 爱情花儿多芬芳　青春之歌多悠扬

入北医后，为搞明白如何读好大学，我请教了众多学长和教授们：注意学习方法，学好英语。先读教科书；二读专著；三读综述；无论搞科研还是做临床均要循序渐进，日久功成。

一日，在生理楼，我问汤健教授怎样从大学收获最大。他沉思片刻，抬头面对我说：“ 争取解决好个人问题！ ” 您要我搞对象？ ” 我惊奇地问 。汤教授认真地回答：“ 正是！ 因为毕业后, 你不知去哪里，若到一小单位，或一小城，你可选择的机会很小。极可能难寻到你理想之人！ 我所闻师生们此类故事多了！ ”

我读初中时，母亲曾对我说：好孩子，你要集中精力读书。万不可误入歧途。 将来，只要你学有所成，你将会得到一切你应有的!

这方面，汤健教授是我第二启蒙者！ 我将永远怀念我慈爱的母亲；永远感谢汤健教授的诚挚教导!

我要寻找未来的伴侣! 这是一项工程。计划好，认真落实。大一，二，三医学生可能是最佳时期。找好伴侣，心就踏实了。紧接着就要准备报考研究生和面对毕业了。

我当时在北大医院（北医第一附属医院）学习，住草岚子胡同（向北是西什库，向南是府右街，在中南海附近）。恰巧口腔医学 79 级（每年只有一个班）进城来了（北医老口腔医院就在北大医院旁，再往北几步是北京四中，四中向东北斜对着北大医院门诊部）。

我很快观察到了北医口腔医学系学生张丽：人美，加一分；爱学习加一分；英语原来是快班的加一分；身体健康加一分；交谈后，知她爱爷爷、父母、弟弟、妹妹 — 善良，加一分；大学毕业后要继续攻读硕士、博士和留学去。志同道合，天赐良缘！ 我邀她一起去散步，向南走出草岚子胡同左转，向北京图书馆、北海公园、北京美术馆方向走，她轻轻地伴着我，我滔滔不停地说着：从幼儿园到高中毕业 ，每年我均是全年级第一名，无论老师是男女、青年或高龄没有一个不喜爱我。为什么？因为我是好助教。我帮老师发考卷，还要争取第一个交卷，交卷时还要大声告诉老师：我会得一百分。声音要高到让全班同学都听到。得了一百分，就可先到教室外去唱歌了，或去找体育老师打乒乓球了。我还帮老师收同学的作业本，抱一摞去老师办公室，先请老师给我的作业打分（应该是满分 100 ）。然后，我与老师一起给我的同学批改作业并给分（用红笔，只有老师和我这助教才可用红墨水笔给打分）。有的同学课前预习，课堂上注意听讲，课后还复习，可一考试仍超不过我。课前我既不预习，课后也不复习，只是上课集中精力-旁若无人 - 目不转睛地听讲，老师讲的全部录入了我大脑中，理解了，也就记牢了。每当各科数学、物理、化学等考试时，我将老师曾教过的一一写在答卷上，自然是满分！ 回答问题也是如此，只要老师教过，我就能答对！ 不仅在学校成绩好，一次语文老师对学生摸底，请同学们将课外书全部列出。据老师讲，我是全年级读课外书最多的。那时，一天一夜我可快阅一本长篇小说：《敌后武工队》、《水浒传》、《悲惨世界》、《简爱》、《安娜卡列尼娜》、《钢铁是怎样炼成的》、《童年》、《我的大学》..... 通过读书，我了解外在世界：地理、历史、文化、风俗... 我的词汇量猛增，一般语文作业就太容易了。

我的同学们以为我是天才。其实诀窍就是二点：1）集中精力-旁若无人-目不转睛地听讲；2） 我记忆力好。

初中期末考试，我的成绩：数学-100；物理- 100；化学- 100；语文- 99 。我去语文老师办公室查我自己的考卷：单词、填空、造句、语法、等均无错！我问刘老师：老师好。我刚查了考卷，前 60 分是满分，作文怎么被扣了一分 ？ 您不是在班上说过：要将王海明同学的作文送省出版社出版范文集吗？刘老师上推一下眼镜说：“ 海明，你要学会谦虚。”

进入北医前后，读了几本难忘的书：，《第二次握手》、旅居美国於黎华的《又见棕榈 又见棕榈》（杨振宁教授曾为此书作序，写的是台湾留美学生的故事 ）、旅居瑞士赵淑侠的《我们的歌》（写的是台湾赴欧洲留学生的故事）、《光荣与梦想》（写的是美国近代社会变迁）、《穷人和富人》（美国七十年代畅销小说）、英文小说：《 The Final Diagnosis 》by Arthur Hailey … ”

进入北医三年了，我的英语进步很大，我刚打好了三页英文病历。” 丽问：哪里有英文打字机？我说：“ 普外科就有一台很老的，仍可用啊！”丽说：你能教我学打字吗？我说：当然可以！ 但要周末没有其他人时才可去。大学毕业后，我要读硕士、博士。再去美国留学 5 - 8 年。学成归来，我要努力工作，搞好科研，带好教学，不断地提高临床技术，积累经验，我要争取做学科领头人！你愿意与我携手同行，比翼齐飞吗 ？ ” 张丽说：“ 愿意 ”！ 她拉紧了我的手。“ 呼…嗥 … ”爱情碰撞放电了！ Sparkling 电花四射，幸福之花！ ）！Love Sparkling （爱情之花绽放，啊，多么绚丽）！在北京城的中心，那初冬的傍晚，仿佛天空突然昼亮了；鞭炮齐鸣；彩色焰火照耀着天空；赞歌响彻云霄；历史掀开新的一页；我们沉浸在爱的海洋；游向远方……

次日，我和丽就一起午饭，傍晚邻座一起上自习了。草岚子胡同北医学生宿舍并不很大。只有三座楼：每座楼只有二层；南楼和中楼住医学系学生，中楼二层有两间住有研究生（多是 40 岁左右文革前毕业的老大学生，是我们的老师）；北楼全住口腔专业的同学：77 级、78 级、79 级（男生住一楼，女生住二楼）。南楼一层有一间大教室，面朝南，出大教室向右转：左侧有里外两间是系办公室；右侧有一可容 20 余人的小教室。

我在城外医学院本部，因办讲座《试述佛洛依德及其学说》已成名人。进城后，我又组织了一个医学心理学习研究小组。前后成员有：王海明 （ 78 - 医学 1 班，组长）， 姜晓宇 （78 - 医学 5 班），王英（78 - 药学），张京安（ 77 - 医学 1 班），田莉芳 （77 - 医学 2 班）， 乔晓溪（77 - 医学 2 班）。我们每周六聚在一起研读《心理学》，曾请北医医学心理老师和北师大心理系教授来讲课。在北医医学心理教研室的资助下，到北京师范学院，取来一套美国人发明的心理测试考题。到北京市肿瘤所（今日：北医肿瘤医院，对 60 名患者测试了内外向性格。还到医院对门，一个大机关，（针对性别、年龄 ）匹配测试了 60 人作为对照。然后分析和统计学处理，企盼能有所新发现。田莉芳主要负责统计学处理。（北医医学系，第一学期，必修高等数学，田莉芳成绩最好）。我负责执笔成文。可惜，统计处理结果是无显著差异。我仍认真撰写成文。认为：虽无显著差异，但应报道我们的工作，以益后人。后来发表了论文，小组成员因毕业也各奔东西了。那毕竟是我们的第一篇论文。尽管选题是否严谨、测试群体样本是否足够大、统计学方法是否合理、均值得进一步商榷，可我们的科研热情应获鼓励！

医学心理学研习小组，起初每周六占用唯一的小教室。后来，系领导将系办钥匙交给了我。小组活动进了系办公室。

那时有香港大学医学院医学生来北医访问，赵大尧学长（77 - 医学 5 班，北医学生中的第一名人）邀请了我和张丽一起去交流 （那时已感觉到了一点点名人的优待）。留学生宿舍楼里，每间只住二人：一位留学生和一位中国学生。活动厅里有大彩电。餐厅里有西餐。每位留学生每月免费得 120 元人民币（中国政府发放），而农村考入北医的、最穷的中国学生每月最多发给 21 元人民币。当然，教科书是全免费；学费全免。

北医为了让那些已是中年，尚未提升教授的老师们速成英语口语。特请中央人民广播电台国际播音主持李丹老师来授课。每周两个傍晚，每次二 小时。李丹幼年读北京外语学校，后去美国留学。他中等身材，举止言谈儒雅。每次他一进小自习室 （最多可容二十余人），就仿佛他是在美国 生活，对全班不说一个中文字。无固定教材。他总是带《 Newsweek 》、《 Time》，手提一台双喇叭三洋收录机。他系统地用英语介绍、解释时事、新闻、历史、风俗、名人轶事.....。他的眼睛明亮、温馨，还时常幽默！此口语班，原来本只面对即将出国的教师们和研究生们。我和张丽挤进去了。一年多过来，英语听力骤增。李丹老师说：标准的美国英语口音在中西部密希根附近。

不久，张丽的辅导员，徐涛（口 - 77 留校生）笑着请我去他办公室（也是他的宿舍）坐坐。我欣然而至。他问：听闻你近来与张丽同学接触较多？ 我答：是。他又问：你们在恋爱？ 我答：正是！ 他说：我不反对你们恋爱，但不要影响了学习。我笑着说：我们恋爱是志同道合，互相鼓励，帮助。好比两只火箭绑在一起，噌！ 会飞的更高更远！ 他连连笑说：那好！那样好！我问：还有事儿吗？ 徐涛仍在笑，忙说：没事，没事了。我走出房间想：领导批准了， 好。

后来，在国内，每当亲朋告知我：孩子考上大学了！如何读才好？ 我多回答：两件事 ，努力学英语（怎么刻苦学均不会过分）； 好好认真恋爱!

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