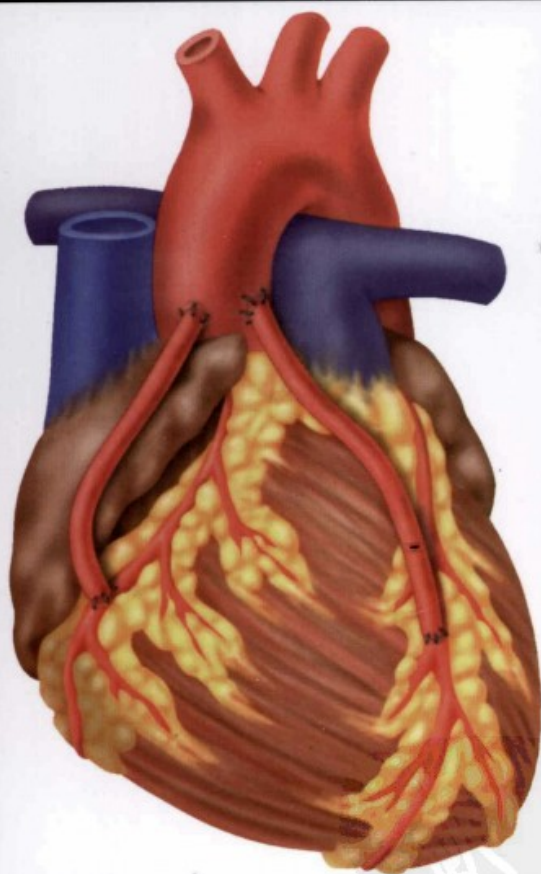


卡普兰心脏麻醉学

KAPLAN'S CARDIAC ANESTHESIA



第 5 版

原 著 Joel A. Kaplan
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敬 告

本书的作者、译者及出版者已尽力使书中的知识符合出版当时国内普遍接受的标准。但医学在不断地发展,随着科学研究的不断探索,各种诊断分析程序和临床治疗方案以及药物使用方法都在不断更新。强烈建议读者在使用本书涉及的诊疗仪器或药物时,认真研读使用说明,尤其对于新的产品更应如此。出版者拒绝对因参照本书任何内容而直接或间接导致的事故与损失负责。

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本着忠实于原著的精神,译者在翻译时尽量不对原著内容做删节。然而由于著者所在国与我国的国情不同,因此一些问题的处理原则与方法,尤其是涉及宗教信仰、民族政策、伦理道德或法律法规时,仅供读者了解,不能作为法律依据。读者在遇到实际问题时应根据国内相关法律法规和医疗标准进行适当处理。

译者序

由世界著名的心脏麻醉学专家、美国心胸血管麻醉杂志主编 Joel A. Kaplan 主持编写的《卡普兰心脏麻醉学》最新版(第5版)译著与读者见面了。

当人民卫生出版社委托我组织国内同行将这部心血管麻醉的巨著译成中文时,我之所以欣然接受,源于对这部教科书情有独钟。20世纪70年代末,我在中国医学科学院北京阜外医院读研究生。时值改革开放之初,能给我们提供的教材只有尚德延教授等阜外医院麻醉科老一代的麻醉医生编写的一些讲义。国内没有任何心血管麻醉方面的参考书。恰巧,Kaplan 教授的《心脏麻醉学》第1版问世,阜外医院图书馆购进一部原著。我们几个研究生师兄弟如获至宝,争相借阅。而图书馆还限制每次只能借一个月。记得我是利用晚上下班后的时间把那本书从头到尾通读了一遍,还认真做了笔记。至今回想起来,我在心脏麻醉的理论方面打下的那点基础还是来自那本教科书。那是我的启蒙书籍。

如今已进入信息时代,各种参考书籍层出不穷。但是《卡普兰心脏麻醉学》经过一次次的再版,仍是心脏麻醉领域里最权威的专业教科书。它似乎已经成为一个品牌,树立在心脏麻醉专业医生的心目中。正如 Kaplan 在序言中所述,保持了其标准参考书之地位。

最新版的《卡普兰心脏麻醉学》是由各专业领域的世界顶级专家编写,确保了信息资料的最权威性和最先进性。每章都尽可能整合麻醉学、心脏病学、心脏外科学和药理学知识,将基础理论和基本临床实践技能呈现给读者。

由我和于布为、姚尚龙教授共同邀请了麻醉界全国各地的一些同仁,大家齐心协力,历经数月将本书译出。我们感谢各位译者和审校者的辛苦努力和工作。由于我们知识水平和语言水平的限制,译著中难免有疏漏和错误,恳请广大读者给予批评指教。

岳云

2008年于北京

序

《卡普兰心脏麻醉学》第5版已编撰完成。本书旨在进一步提高心脏病患者心脏手术或非心脏手术的麻醉管理水平。自从1979年第1版发行以来,心脏麻醉领域有了很大的进展,并成为了麻醉领域占主导地位的亚学科。为了保持其标准参考书之地位,本版在编撰时完全重新修订、扩充和全面更新,以反映心血管领域治疗的最新进展和变化。我们邀请了顶尖的心脏病学家和心脏外科医生编写,以求全面覆盖心脏领域的治疗。

今年是第一例成功采用心肺转流的开胸心脏手术五十周年,时由 John H. Gibbon, Jr 医生 1953 年 5 月 6 日在费城的 Jefferson 医院完成。1964~1968 年,这位伟大的先驱是我的外科学教授,那时我是 Jefferson 医院的一名医学生。正是 Gibbon 教授的缘故,我第一次对心脏病患者的围手术期治疗产生了浓厚的兴趣,而且有幸观察了早期的围手术期治疗并参与了一些高级治疗。在第一篇中,我也邀请了本领域的其他专家详尽地回顾了历史,更新了当今治疗信息,并预测了心血管疾病未来的治疗与远景。

本书的内容广泛,囊括了从基础理论到转化医学,再到最危重患者的临床治疗。最后一章强调了心脏麻醉中的治疗质量和培训标准,以及如何减少错误。本书内涵大量的资料和图表,所以本版中增加了几种方式帮助教学,以突出那些最重要的信息。每章的“要点”部分均列在第一页,同时作为本章的内容概要。“框”内的信息都是让读者深刻理解的内容。

正文分为八个部分:(一)心脏麻醉简史与展望;(二)心血管生理学、药理学和分子生物学,包括了最新的心血管分子医学;(三)术前评估,同时对介入心脏病学和电生理实验室技术部分作了增补;(四)麻醉监测,其中包括一个新的章节——如何根据 TEE 进行决断;(五)心脏外科麻醉技术,其中有一新章节是针对终末期心衰的微创手术和治疗;(六)体外循环,也重点强调了器官保护;(七)术后护理,其中有最新的疼痛管理信息;(八)临床其他相关问题与培训。本书的特点是利用最新进展的知识来指导围手术期各种治疗性干预的正确性。

《卡普兰心脏麻醉学》由每个专业领域或相近专业学科的知名专家编撰,确保了信息资料的最权威性和最先进性。每个章节的目的是为读者提供本领域基础的理论知识和基本的临床实践技能。所有章节的整体风格经过精心协调,保持其一致性,充分发挥其临床实用性。每章节的内容都尽可能地整合了麻醉学、心脏病学、心脏外科学和药理学领域的知识,以图呈现给读者一个完整的临床印象。因此,本书对心脏麻醉住院医生、进修医生、主治医师和心脏病学家、心脏外科医生、ICU 医生以及对心脏和/或非心脏手术感兴趣的人都可作为最权威的一本教科书。

许多新的操作方法和新技术已实施在行非心脏手术的心脏病患者,本书的出版将促进其进一步推广和应用。这类非心脏手术的心脏病患者不仅群体更大,由于潜在的的心脏疾患没有得到手术纠正,通常他们的病情更重,风险更大。心脏麻醉医师正在努力应用他们的技能改善这类患者的疾病转归。

第1版《卡普兰心脏麻醉学》的发行巩固了本亚学科的地位,随后一些其他的参考书和一个本专业的学术杂志相继出现。不仅如此,许多心脏麻醉医生也渐渐成长为医学领域的领导者,有的成为系主任,有的成为了大学的校长或副校长。这都反映了心脏麻醉领域的不断成熟,也反映了我们的医生令人称道的行为和为医学所做的杰出贡献。本书再版发行之际,正值麻醉学科日新月异的时代,新药和新方法的应用也层出不穷,这就更加需要新一代杰出的麻醉医师脱颖而出,以服务日渐老龄化社会的更多疾病患者。我也衷心希望《卡普兰心脏麻醉学》能继续为这些未来杰出的临床医生、教育家和研究员做出应有的贡献。

最后,我谨代表所有的编辑向每章节的作者表示诚挚的感谢。在世界各地,正是他们的辛勤努力才使心脏麻醉有了今天的辉煌成就,也正是他们在孜孜不倦教导着年轻同事的麻醉实践。本书正是由于他们的辛勤劳动和专业知识才编写成功!

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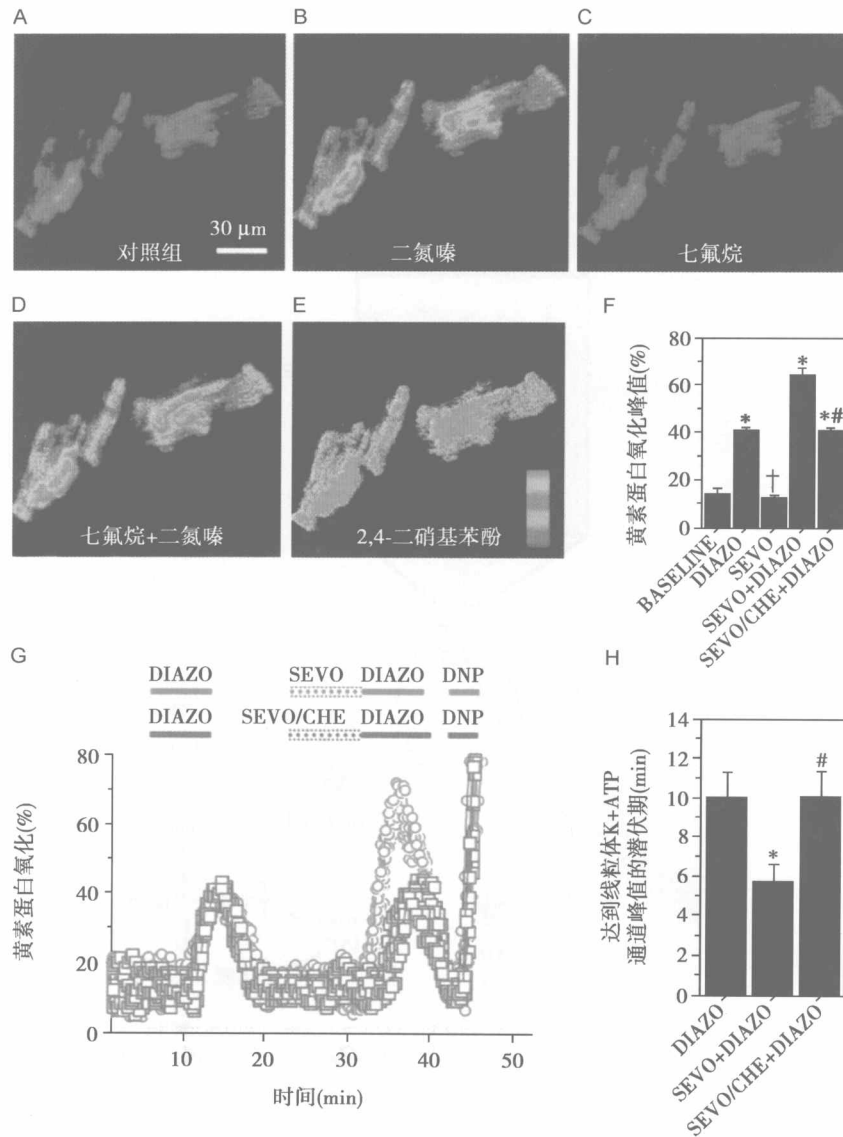
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计量单位换算表

本书为反映其英文原版之风格,并且避免反复换算带来不必要的计算错误,保留了部分英制计量单位。鉴于我国推广使用法定计量单位之要求,现将这些单位与法定计量单位的换算关系列表如下。本表仅供参考。

英制单位(符号)	法定计量单位(符号)	换算关系
埃(Å)	米(m)	$1 \text{Å} = 10^{-10} \text{m}$
盎司(常衡)(oz)	克(g)	$1 \text{oz} = 28.35 \text{g}$
盎司(药衡)(oz)	克(g)	$1 \text{oz} = 31.10 \text{g}$
盎司(美液)(oz)	升(L)	$1 \text{oz} = 0.02957 \text{L}$
盎司(英液)(oz)	升(L)	$1 \text{oz} = 0.02841 \text{L}$
磅(lb)	克(g)	$1 \text{lb} = 453.59 \text{g}$
标准大气压(atm)	帕(Pa)	$1 \text{atm} = 101325 \text{Pa}$
达因(dyn)	牛(N)	$1 \text{dyn} = 10^{-5} \text{N}$
打兰(美液)(dr)	升(L)	$1 \text{dr} = 0.0037 \text{L}$
打兰(英液)(dr)	升(L)	$1 \text{dr} = 0.00355 \text{L}$
当量(Eq)	摩尔(mol)	$1 \text{Eq} = 1 \text{mol}$ (1价离子)
当量(Eq)	摩尔(mol)	$1 \text{Eq} = 0.5 \text{mol}$ (2价离子)
当量(Eq)	摩尔(mol)	$1 \text{Eq} = 1/3 \text{mol}$ (3价离子)
尔格(erg)	焦(J)	$1 \text{erg} = 10^{-7} \text{J}$
辐透(ph)	勒(lx)	$1 \text{ph} = 10^4 \text{lx}$
格令(gr)	克(g)	$1 \text{gr} = 0.064799 \text{g}$
毫米汞柱(mmHg)	帕(Pa)	$1 \text{mmHg} = 133.322 \text{Pa}$
华氏度(°F)	开/摄氏度(K/°C)	$1 \text{°F} = 5/9 \text{K}(\text{°C})^*$
加仑(美)(gal)	升(L)	$1 \text{gal} = 3.785 \text{L}$
加仑(英)(gal)	升(L)	$1 \text{gal} = 4.546 \text{L}$
居里(Ci)	贝可(Bq)	$1 \text{Ci} = 3.7 \times 10^{10} \text{Bq}$
卡(Cal)	焦(J)	$1 \text{Cal} = 4.18 \text{J}$
夸特(qr)	千克(kg)	$1 \text{qr} = 12.70 \text{kg}$
夸脱(美)(qt)	升(L)	$1 \text{qt} = 0.946 \text{L}$
夸脱(英)(qt)	升(L)	$1 \text{qt} = 1.137 \text{L}$
拉德(rad)	戈(Gy)	$1 \text{rad} = 10^{-2} \text{Gy}$
雷姆(rem)	希(Sv)	$1 \text{rem} = 10^{-2} \text{Sv}$
厘米水柱(cmH ₂ O)	帕(Pa)	$1 \text{cmH}_2\text{O} = 98 \text{Pa}$
哩(mi)	米(m)	$1 \text{mi} = 1609 \text{m}$
伦琴(R)	库每千克(C/kg)	$1 \text{R} = 2.58 \times 10^{-4} \text{C/kg}$
码(yd)	米(m)	$1 \text{yd} = 0.914 \text{m}$
品脱(美)(pt)	升(L)	$1 \text{pt} = 0.473 \text{L}$
品脱(英)(pt)	升(L)	$1 \text{pt} = 0.568 \text{L}$
蒲式耳(美)(bu)	升(L)	$1 \text{bu} = 35.24 \text{L}$
蒲式耳(英)(bu)	升(L)	$1 \text{bu} = 36.37 \text{L}$
英尺(ft)	米(m)	$1 \text{ft} = 0.3048 \text{m}$
英寸(in)	米(m)	$1 \text{in} = 0.0254 \text{m}$

* 此为温差度量的换算。对于温度而言可按下式换算:摄氏度 = 5/9(华氏度 - 32)



彩图9-13 在二氮嗪诱导下的黄素蛋白 (DIAZO) 氧化过程中, 七氟烷 (SEVO) 对肌细胞的作用。(A) 基础状态。(B) 100 μm DIAZO。(C) 2MAC 七氟烷。(D) 先 100 μm DIAZO, 后 2MAC 七氟烷, 红色代表被线粒体簇氧化。(E) 100 μm 二硝基苯酚 (DNP)。(F) 黄素蛋白荧光峰值的平均百分数; * $P < 0.0001$, 与基础状态比较或 DIAZO 加七氟烷和 DIAZO 比较; # P 和 DIAZO 比较无显著性差异; + P 和基础状态比较无显著性差异。(G) 肌细胞随时间而改变的荧光强度, 用 DNP 激发荧光的百分数来表示。蓝色方框和红色圆圈表示 8 个不同实验的数值。(H) mitoK⁺-ATP 通道在不同刺激因子作用下的活性的潜伏期。* $P < 0.0001$ (和 DIAZO 比较); # P 和 DIAZO 比较无显著性差异