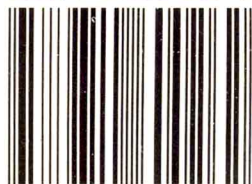


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简明眼科麻醉学

(汉英对照)

BRIEF ANESTHESIOLOGY FOR
OPHTHALMIC SURGERY

(Chinese-English)

王景阳 主编
刘 跃

第二军医大学出版社

内 容 简 介

本书以汉英对照的形式,简明扼要地介绍了与眼科手术麻醉有关的理论和知识,包括眼部解剖学和生理学、眼科手术麻醉用药、方法选择、并发症,以及几种主要眼科手术的麻醉要点等内容。可供眼科、麻醉科的专业人员、医科院校麻醉专业的师生、进修生阅读,对提高专业技术水平和英语能力有较大的帮助,是一本内容较丰富、实用性较强的汉英对照医学读物。

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前 言

麻醉是医学教学课程之一。本书突出眼科麻醉,同时涉及所有手术病人麻醉处理要点。

在新世纪即将到来之际,为培养优秀医学人才,适应我国改革开放的需要,我们编写了这本中英对照《眼科麻醉学》一书,希望它能有助于提高医学生和医务工作者的麻醉水平及英语水平,同时也能对手术医师和护士处理手术病人提供帮助。我们相信,本书将为许多人,特别是有志于麻醉学和眼科学的医务人员服务。希望读者提出宝贵意见。

我们感谢曾给予我们鼓励的同事们,特别是感谢澳大利亚著名麻醉学教授 Jean Allison。她二次为我们修正原稿中的英文错误。此外还要向邹文漪女士和曹金妹女士为本书所作的大量工作表示感谢。

王景阳

刘 跃

1999-08-26

Preface

Anesthesiology is one of the recognized subjects in medical teaching. The book, taking ophthalmic anesthesia as its main focus, also deals with the anesthesia management of all patients to be operated.

Now it's the turn of a new century. In order to cultivate talented medical personnels to meet the needs of our reform and opening-up policy, we published this English-Chinese bilingual monograph, hoping it might be beneficial to medical staffs in improving their knowledge of anesthesia as well as their English proficiency. It should not only be an useful primer for students and staffs of anesthesia, but also an instructive book to physicians, surgeons, nurses and technicians involved in the care of surgical patients.

We believe the book will well serve many people, especially those devote themselves to anesthesiology and ophthalmology. We welcome opinions and comments from readers, whose advice will be greatly valued.

We want to thank those who have encouraged us, especially thank professor Jean Allison, a well-known Australian anesthesiologist, who has twice proofread the English part of the book. We also want to thank Madam Zou Wenyi and Cao Jinmei for their generous work.

Wan Jingyang

Liu Yue

Aug 26, 1999

Shanghai

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序 言

Introduction

由于显微外科器械、缝合材料的改进及手术技巧的提高,现在可以进行精细的眼科手术。这种手术不仅对组织损伤轻微,而且疗效也很高。除小儿或恶性肿瘤广泛转移患者外,眼科手术通常是在有限的局部进行。眼是人们了解世界的窗口,每个人都需要有自己的双眼。因此,手术必须精心细致,以获得最佳疗效。由于眼含有丰富的神经血管,眼球又在不断运动并不停地眨眼,因此,眼科麻醉很重要,也很复杂,可能出现许多异常情况,尤其是眼压的波动。眼科医生非常重视麻醉,他们要求麻醉不但要镇痛完全,而且术中要使眼外肌松弛。因此,眼科手术麻醉的目的包括:保证安全、镇痛彻底、眼外肌充分松弛和保持稳定的眼压。

With the development of operating microscopic apparatus, suture material and improvement in surgical techniques, ophthalmic surgery can be performed precisely now, with less trauma to the tissues and good results of operative treatment. With the exception of children and patients with malignancies extensively involving surrounding tissues, eye surgery is usually carried out at a limited local area. However eyes are our windows to the world, and one relies so much on one's eyes that operations must be done carefully and precisely to gain the best result. Moreover, eyes are enriched with nerves and blood vessels, blink and move all the time, therefore anesthesia of eye surgery is important and complex

brane. The iris changes the shape of the pupil and makes its diameter vary in size from a pin-tip to the shaft of a pencil. The size of the pupil is regulated by an automatic control system. The iris covers the crystalline lens, an equally remarkable part of the eye. While the cornea has lens-like property of gathering light and focusing them, it is the lens that finally forms the image which is projected through the vitreous body onto the retina at the back of the eye. The lens is flexible and focuses by changing the shape, which is accomplished by a radiating muscular structure called ciliary body. The ciliary body pulls on the suspensory ligament at the edge of the lens and flattens the lens for focusing the distant objects. When the radiating muscle fibers relax, the circular ligament contracts to make the lens thicker and convex for focusing close objects. The inside lining of the eye on which the image is focused is called retina. It receives image from the cornea and lens in front. It is a neurosensory membrane composed of ten layers of tens of thousands of light-sensitive elements or photoreceptors, rods and cones, which convert light impulses into neural impulses. These neural impulses are then carried by the optic nerve to the brain. There are nerve fibers connecting with the photoreceptors of the retina, which join together to form the rather thick optic nerve which goes out from the back of the eyeball along with the artery and veins supplying and draining blood from the retina.

眼球最外层的 5/6 是坚韧的纤维组织,包裹着眼球的绝

在后方。两眼眶外侧壁间的角度约为 90° ，同一眼眶外侧壁和内侧壁间的角度约为 45° 。眼眶的内侧壁几乎与额平面垂直。眶上壁的前上方是额窦、脑膜和大脑半球的额叶。下壁的下方是上额窦。眶下神经和血管在眶下管内，并穿过上颌骨眶缘下 $0.4 \sim 1.0 \text{ cm}$ 处的眶下孔。眶内侧壁前部与鼻腔相邻，中部与筛窦相邻，后部与蝶窦相邻。有些人的这种骨性壁很薄，有可能被注射针头穿通。

The eyeball is well protected, because it is literally located in a cavity in the skull, known as the eye socket or orbit. The eyeball is situated in the anterior part of the orbital cavity closer to the roof than the floor and nearer the lateral than the medial wall on each side. Orbit is irregular pyramid in shape with its base forming the orbital opening. Its axis is directed posteromedially towards the apex. The triangular roof is composed of the orbital plate of the frontal bone and a small portion of the lesser wing of the sphenoid bone posteriorly. The posterior end is the optic foramen which is the orbital opening of the optic canal transmitting the optic nerve, artery, vein and sympathetic nerves from the carotid plexus. The lateral wall is formed by the zygomatic bone and the greater wing of the sphenoid. The sphenoid portion of the lateral wall is separated from the roof by the superior orbital fissure, and from the floor by the inferior orbital fissure. The former carries the lacrimal, frontal, trochlear, oculomotor, nasociliary, abducent nerves and the superior ophthalmic vein; the latter contains the foramen rotundum transmitting the maxillary branch of the trigeminal nerve

第二章 术前访视和术前准备

通常,眼部疾病是局限的,并不危及患者的生命。但当严重影响视力时,患者就急切要求手术并希望有好的疗效。

术前访视的目的是:1. 与患者建立密切联系;2. 获取病史及进行体格检查;3. 提出特殊检查;4. 评估麻醉和手术的危险程度,必要时应延迟或取消手术;5. 制定术前治疗计划;6. 开出麻醉前用药处方及制定麻醉方案。

Chapter 2 Preoperative visit and preparation

Pathological lesions or changes of eye are usually localized and do not threaten patient's life. But the patients with severely impaired vision would be extremely anxious about the intended operation and hope to have good results.

The purposes of the preoperative visit are: 1. to establish rapport with the patients; 2. to obtain medical history and to perform physical examination; 3. to order special investigations; 4. to assess the risk of anesthesia and operation and to postpone or cancel the operation if necessary; 5. to institute preoperative management; 6. to prescribe premedication of anesthesia and to prepare the anesthetics.

在术前访视时,麻醉医生应向患者说明麻醉的体验和意义,以取得患者的信任和合作。术前访视对接受局麻的老年患者更为重要。通过交谈或图解,鼓励患者树立信心,配合手术。对可做可不做的手术要讲清理由,并征得患者对手术治疗的肯定答复。比如,一只眼患白内障,另一只眼视力正常,这就不手术的绝对适应证,除非另一只眼视力也有明显下降。又

如,视网膜手术的方法有多种,最好说明将采取哪种手术方式。对于眼部原发或继发性恶性肿瘤,须作全眼球摘除(眼球剝出术)或只摘除晶状体、虹膜、玻璃体(眼球内容剝出术)的患者,更要向患者本人和家属作说明,以免引起术后的任何误会。

虽然眼疾比较局限,患者全身状况良好,但眼是最重要的感觉器官,它不断地把大量信息送至大脑,使人们得以看清距离、观赏美丽的色彩,认出我们至爱人的身影和情感。据称,形成人们知识的基础信息,90%是来自视觉。因此,人们都惧怕失明。

During the preoperative visit, the anesthesiologist should explain to the patients about anesthesia and gain their confidence and cooperation. Preoperative visit is especially important for the aged patients to be operated under local anesthesia. Through explaining the operation by means of language or drawing, the patients are encouraged to have confidence and to be cooperative during the operation. For the operation of borderline cases, the reason why the operation should be done or not should be explained, and a definite answer from the patients about surgical treatment should be obtained. For example, patient with one eye cataract but normal vision with the other is not an absolute indication of lens operation unless the other one has greatly lowered visual power too. There are many kinds of retina operation, it is better to explain what operation will be intended to do. Total removal of an eyeball (enucleation) or just scooping out lens, iris and vitreous (evisceration of the

have ECG and chest X-ray performed. History of the patient should be reviewed in details. Medical conditions should be particularly noticed, because some eye diseases, as a matter of fact, are ocular manifestations of general medical diseases, such as myasthenia gravis, Marfan's syndrome, Halletman-Strieff's syndrome, hyperthyroidism, diabetes, hypertension and so on. Attention should also be paid to the disorders of central nervous system, respiratory system, cardiovascular system and coagulopathy. If there is chronic respiratory infection, smoking should be forbidden. Antibiotics, bronchospasmolytics, expectorants and postural drainage might be used to control infection, reduce sputum and improve pulmonary function preoperatively and lessen pulmonary complications, cough and those factors which might cause increased intraocular pressure and impair vision of operated eyes.

要控制高血压患者的血压,控制糖尿病患者的空腹血糖 $<8.9\text{ mmol/L}$,同时纠正电解质紊乱。前列腺增生的老年患者术后易引起排尿困难,继而引起眼内压上升,故也应在术前予以治疗。冠心病、冠状动脉供血不足、心律失常或心衰患者也应妥善治疗。对将要手术的患者应重新评价其曾经用过和正在用的药物的治疗效果和反应,以确定术前是否要继续使用或停用。常用的利尿药、 β -受体阻滞药、胰岛素、皮质激素类药、降压药、降糖药及强心药等,与术中使用药物可能产生相互作用,应加以注意。如氯噻嗪、乙酰唑胺可使钾释放,加强去极化肌松剂的作用;胍乙啶可阻断交感神经活动;长期使用利血平可耗竭儿茶酚胺,在麻醉期,这些药物的影响可引起血压

fluence on the general physiological state (blood sugar and plasma catecholamine) and less nausea and vomiting postoperatively, but there might be toxic reaction, incomplete analgesia, or impossible cooperation in apprehensive patients. Under general anesthesia, patients remain unconscious and motionless. IOP may be reduced to a certain level and operating time is not limited, but cough, breath-holding and struggling must be avoided during induction of anesthesia and endotracheal intubation, as IOP may be raised abruptly. General anesthesia may also cause changes in patient's physiological function. Nausea, vomiting and pulmonary complications may occur postoperatively.

If only analgesia and fixed eyeball are required during operation, either local or general anesthesia can be used. Therefore, the key to selection of anesthesia depends on other factors, such as patient's age, general condition, requirement of operation, duration of operative procedure, skill of the anesthesiologist, equipment and the emotional state of the patient and so forth. Anesthesia chosen must cope with existing disease and condition of the patient. Although general anesthesia is the better choice, yet in the older children with strong will, under appropriate premedication, simple extraocular operation can be done smoothly under local anesthesia as well. More than 50% of aged patients have chronic medical diseases, hence local anesthesia is usually the better choice. In seriously ill patients, if local anesthesia can satisfy the needs of operation, it should be used in-