Society for Pediatric Anesthesia
NEWSLETTER

Volume 11 Number 3 Summer 1998

President's Message

Mark A. Rockoff, MD

This is my final report as the President of the Society for Pediatric Anesthesia. My two-year term ends at the Annual Meeting in October when elections for new officers will be held. After having served for eight years on the Board of Directors, first as Treasurer, then Secretary, then Vice-President (and Program Director for the Annual and Winter Meetings), it is time to turn the reins over to others. The Society's Bylaws wisely provide for a gradual transition of its Officers, enabling volunteers to begin assisting the Society in its activities and then offering many a chance to assume increasing leadership roles. This is an excellent way to assure the Society stays vibrant and has an ongoing infusion of enthusiastic and knowledgeable leaders. The Society will be in great hands with Dr. Steve Hall, the current Vice President and President-Elect, taking over. SPA members will have an opportunity to vote for other Officer and Director vacancies at the 12th Annual Meeting in Orlando on October 16th, and I encourage you to do so. The election will be held this year during the luncheon (that is included in the cost of registration), instead of at the end of the day, in order to make it as convenient as possible for participation in this process. It is clear to me after these past years that the ability of the Society to assist its members effectively is really a function of the time and energy expended by its many elected officials and other volunteers. Choose your representatives well, because you need (and expect) them to work hard on your behalf.

I think it is appropriate periodically for all organizations to take a look back and assess past accomplishments in order to plan to move ahead in the future. Much has been done by this young Society in its first twelve years. It has grown to be the largest organization in the world representing pediatric anesthesiologists, with greater than 1600 members, plus nearly 2000 additional anesthesiologists-in-training. While the vast majority practice in the USA, members come from nearly 40 countries.

The major focus of the Society, and its greatest expense, is its Annual and Winter Meetings. These provide an excellent opportunity to hear great lectures on new and controversial topics by speakers that are not often in your neighborhood. In addition, there is time to discuss research-in-progress and participate in hands-on workshops at the three-day Winter Meetings which are designed to have a more extensive program and relaxed setting than the one-day Annual Meetings. At all events, however, sharing time and meals with your friends and colleagues from around the country (and the world) has always been a valuable and enjoyable part of the program. I hope you will try to take advantage of these occasions by joining us in Orlando in October and/or Las Vegas in February.

A Glance Inside

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The Society for Pediatric Anesthesia (SPA) publishes the SPA Newsletter *three times a year. The information presented in the* SPA Newsletter *has been obtained by the Editors. Validity of opinions presented, drug dosages, accuracy and completeness of content are not guaranteed by SPA.*

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President's Message

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The Society does many other things in addition to providing educational programs. It produces a high-quality Newsletter three times a year and maintains a Web site with increasing information provided to its membership. It supports research in pediatric anesthesia with grants to the Foundation for Anesthesia Education and Research and awards to young investigators. It works with *Anesthesia & Analgesia*, the official journal of the Society, and with anesthesia and pediatric societies in this country and abroad to represent anesthesiologists who care for children, and most importantly, the best interests of children themselves. Recently, the Society was instrumental in getting pediatric anesthesiology training recognized by the Accreditation Council for Graduate Medical Education as one of the many "official" subspecialties within anesthesia and pediatrics, and the third edition of the Directory for Fellowship Programs in Pediatric Anesthesiology is currently being produced. The fact that this has all been accomplished without an increase in dues since the Society's inception is even more remarkable considering that our budget is nearly four times what it was when I became Treasurer eight years ago.

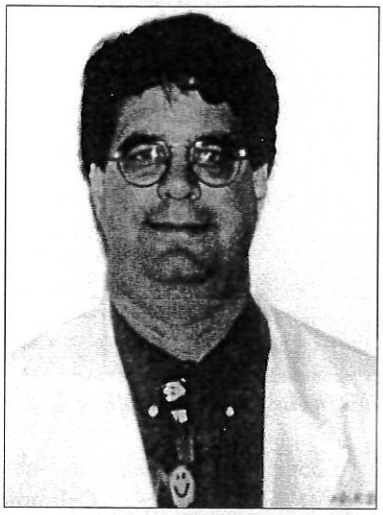
These are a lot of accomplishments for an organization that is just reaching its adolescence. Yet there are many important things we can still do. We are just beginning to explore ways to help many of the Society's members who wish to assist children (and anesthesiologists who care for them) in developing countries around the world. There is a need for increased collaboration among investigators from different locations to work together on multi-institutional research projects to try to answer many of the vexing problems in our subspecialty that none of us are likely to answer alone. We must develop better integration of all the multiple organizations that represent pediatric anesthesiology to be able to speak more effectively and efficiently on behalf of children; cooperation with pediatric anesthesia societies in other countries is important as well, since the world seems to be getting smaller with time and enhanced telecommunications. We need to at least examine, as many societies have already done, whether we wish to establish "guidelines" for some aspects of care within our field, or whether we wish others to do that for us. There are undoubtedly many other projects that are worthwhile exploring, but that is the exciting part about looking forward to the future.

In conclusion, I want to take this opportunity to thank the many people involved with the SPA who have helped me enormously over these recent years. I cannot acknowledge everyone, but you know who you are. I very much appreciate your advice and assistance, and my tenure as President is in large part a reflection of your work. Last, but certainly not least, I also want to thank my colleagues in the Department of Anesthesia at my "home base" at Children's Hospital, Boston. Their support enabled me to devote the necessary time and effort to the SPA, and for this, I am also very grateful.

Mark A. Rockoff, M.D.
President

SPA 1999 Board of Directors Candidates

Treasurer



Francis X. McGowan, Jr., M.D.

Frank McGowan completed residency training in both pediatrics and anesthesiology at Yale University School of Medicine and Yale-New Haven Hospital, where he was also Chief Resident in Anesthesiology and a Research Fellow in Pediatric Cardiology. Following four years as an attending in anesthesiology and critical care medicine at the Children's Hospital of Pittsburgh, Frank accepted his current position at Children's Hospital, Boston, where he is currently an Associate Professor of Anesthesiology (Pediatrics), Co-Director of the Cardiac Anesthesia Service, Director of Research, and a Senior Associate in Anesthesiology. He divides his time between the perioperative management of children with congenital heart disease and laboratory investigations into fundamental mechanisms of myocardial injury and repair. Frank has been a member of the Society for Pediatric Anesthesia since 1989. He has served as a member of the SPA Research Committee, as Associate Editor of the SPA Newsletter (1992-1996), and is currently a member of the Education Committee. Most recently, he was Program Chair for the 1997 and 1998 Winter Meetings of the Society, and is serving as Co-Chair for the 1999 Winter Meeting.

Patty Davidson, M.D.

Patty Davidson, M.D. has been a pediatric anesthesiologist for 12 years. She went to medical school at the University of Cincinnati College of Medicine. A pediatric residency at the Medical University of South Carolina followed. She returned to Cincinnati for her anesthesia residency and pediatric anesthesia fellowship at Children's Medical Center.

Dr. Davidson has been a fellow of the American Academy of Pediatrics since 1984 and has served on the executive board of the anesthesiology section singe 1992.

She is chair of the membership committee and is working towards a joint membership status for individuals qualifying for membership in both SPA and AAP. She has been a member of the SPA since its inception and has served on the Education Committee.

Dr. Davidson will become president- elect of the Ohio Society of Anesthesiologists and is a delegate to the ASA. Associate Clinical Professor of Anesthesiology at Ohio State, she is in a private practice group of 11 Physicians and seven nurse anesthetists. Children's Anesthesia Associates is the oldest professional corporation in Ohio and is proud to have one of the original five freestanding ACGME accredited pediatric anesthesia fellowships.

We always need to keep an eye to the future of our organizations. Recruiting quality people, mentoring and supporting each other should be our priorities. Providing a forum for developing research and researchers are roles for our specialty organizations. Communicating information about political and economic issues that impact our specialty, we should take an advocacy role for children.

Harry G.G. Kingston, M.B. FRCA, M.B.A.

I obtained my medical training in Johannesburg, South Africa and anesthesia training in Liverpool England. I undertook an ICU fellowship at The Hospital for Sick Children in Toronto. Obtained a MBA degree from the University of Edinburgh. I am a pediatric anesthesiologist and am Professor and Chairman of the Department of Anesthesiology at Oregon Health Sciences University.

I have been a member of SPA since its inception, as well as being a member of AAP. I am very supportive of the activities of the society, am delighted to serve the society in any way in which I can, and as a Department Chairman feel that I can take the message of SPA to another audience.

Continued from page 3

Jerold Lerman, BASc, M.D., FRCPC, FANZCA

Dr. Lerman is currently Professor of Anaesthesia at the University of Toronto and staff anaesthetist at the Hospital for Sick Children. Since joining the staff at Sick Kids, he has been actively involved in research and has held the positions of Director of Research and Anaesthetist-in-Chief. He is currently on the editorial board of the Canadian Journal of Anaesthesia and the editorial advisory board of *Anesthesiology*.

Dr. Lerman has been an active member of SPA since its inception. He served on the Executive Board of SPA from 1990-1994, and has served on several committees including the Nominating Committee and Strategic Long-term Planning Committee. He has provided the PAC discussion group to all members to discuss issues of interest in paediatric anesthesia.

Lynne Maxwell, M.D., FAAP

Lynne Maxwell, MD, FAAP is currently the deputy director of the Division of Pediatric Anesthesia and Critical Care in the Department of Anesthesiology/ Critical Care Medicine at the Johns Hopkins University School of Medicine. Her clinical and research interests include pain and sedation management, regional anesthetic techniques, and ethical issues in pediatric anesthesia practice and hospice care.

Dr. Maxwell has been a member of SPA since its inception and has been on the Education Committee for the past two years. She has been an invited speaker and workshop leader on four occasions.

Mark A. Singleton, M.D.

I completed Residency in Anesthesiology at the University of California at San Francisco and subsequently Fellowship in Pediatric Anesthesia there with several months of clinical experience at the Children's Hospital of Philadelphia. Since then and for the past 13 years I have worked in private practice in San Jose, California where my practice consists of 60-70% pediatric patients. During this time I have also been active on the clinical faculty of Stanford University Medical Center and the Lucille Packard Children's Hospital.

I have been a member of the SPA since its inception and serve on its Governmental Affairs Committee. Within the ASA I am currently a delegate from California and a past member of the Committee on Pediatric Anesthesia and have taken an active part in discussions on the evolution of pediatric anesthesia. As a member of the Bay Area Pediatric Anesthesia Consortium and Board member of the California Society of Anesthesiologists, I am currently involved in the development of public policy for the State regarding the anesthetic care of infants and children.

VOTE

Friday, October 16, 1998

Don't miss the Luncheon Business Meeting at the Society's Annual Meeting in Orlando, Fl.

James Steven, M.D.

I have been a member of the faculty in the Department of Anesthesiology and Critical Care Medicine at The Children's Hospital of Philadelphia since 1987, where I currently serve as the Director of Education and Associate Anesthesiologist-in-Chief. In addition, I am an Associate Professor of Anesthesia and Pediatrics in the University of Pennsylvania School of Medicine.

I completed my undergraduate education at Columbia College followed by medical school at the University of Cincinnati. I came to Philadelphia in 1981 completing my pediatric residency at The Children's Hospital, anesthesiology residency at the Hospital of the University of Pennsylvania, and fellowships in pediatric cardiac anesthesia, pediatric anesthesia, and pediatric critical care medicine at CHOP. My professional interests include; anesthesia for congenital heart patients, neuroprotective mechanisms, graduate medical education, and medical information management.

I have been a member of the SPA since 1989, participating regularly in the Society's educational forums. At present, I serve on the Membership Committee. I envision the SPA as a potent vehicle to promote and disseminate new knowledge in Pediatric Anesthesia, support the educators training future generations of pediatric anesthesiologists, and champion the cause of child healthcare for the benefit of patients and practitioners alike.

http://www.pedsanesthesia.org

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Literature Reviews

Comparison of Cost and Clinical Outcome Between Transcatheter Coil Occlusion and Surgical Closure of isolated Patent Ductus Artenosus. Preito RL, DeCamillo DM Konrad DJ, et.al. *Pediatrics* 101: 1020-1998

Review: Transcatheter coil closure of patent ductus artenosus (PDA) has become an acceptable alternative to surgical closure. There have been other recent studies that have shown hospital costs and complications to be lower with surgical closure compared to the Rashkind occluder. This study retrospectively compares the costs and outcome of a group of otherwise healthy children undergoing either surgical closure of their PDA or a transcatheter technique using Gianturo coils. Patients undergoing coil closure, had the procedure done under local anesthesia and sedation, and were observed for 6-7 hours after completion of the procedure. The median procedural duration was 150 minutes. They had a chest x-ray (CXR) and transthoracic echo performed prior to discharge. Surgical closure was performed under general anesthesia, and patients were recovered in the intensive care unit (ICU). CXR's were routinely performed on arrival to the ICU and the next morning. The median duration for the operation was 165 minutes. Patients were hospitalized for 24 days.

The demographics of each group were similar (mean age 8.8 years, weight 28 4 for the coil occlusion group, 7.3 years, and 32.3 kg for the surgical occlusion group). The outcomes were similar. The institutional costs for coil occlusion was significantly less for coil occlusion ($5273 vs 8509). The biggest difference was the difference in the cost of hospital stay. The authors conclude that transcatheter occlusion of PDA is just as effective and less costly than surgical closure.

Comment: This is an interesting study from the pediatric cardiology group at the Cleveland Clinic. At our institution otherwise healthy patients undergoing uncomplicated surgical closure of PDAs are recovered in a step down unit, which is less expensive than the ICU and are discharged after 24 hours or less, with minimal morbidity.

Reviewer: Rita Agarwal, M.D.
The Children's Hospital
University of Colorado Health Science Center

The Potential Benefits of the Pediatric Nonheartbeating Organ Donor. Koogler T, Costarino AT. *Pediatrics* 101: 1049-l052, 1998.

Review: There continues to be a shortage of adequate organs for children needing organ transplantation. This situation is unlikely to change any time soon as more and more children are listed for transplantation and number of pediatric organs remains insufficient. Alternatives that are being looked at include the use of nonheartbeating organ donors (NHOD). This study sought to examine the potential increase in available organs if NHBD were routinely used. They examined all the admissions to the Pediatric Intensive Care Unit (PICU) from January 1992 to 1996. All deaths were examined and suitability for organ donation was determined by the following criteria: death occurring within 2 hours after withdrawal of life support, absence of severe sepsis, extracranial malignancy, HIV or hepatitis infection. The organ donation rate among children who died of brain death was determined and used to calculate potential organ availability in those meeting NHBD criteria.

During the time period examined there were 6307 admissions and 307 deaths. Of these 31 patients met the authors' NHBD criteria. The authors calculated that if approximately the same percentage of donations occurred for patients that met the NHBD criteria as those who met brain death criteria (~ 60%) they would have had a 42% increase in organ donors at their institution.

The authors go on to provide a very nice discussion of the ethical issues surrounding NHBD including the declaration of death, withdrawal of life support and public perception. Guidelines for defining cardiovascular death were not determined by the Uniform Determination of Death Act, thus necessitating development of guidelines to ensure that the patient is dead before organ recovery occurs. Other problems that need to be addressed include determining the ideal place for withdrawal of life support. The operating room would be ideal to prevent warm ischemia and excessive organ damage, however withdrawing life support in that environment may preclude the family's presence at the time of death. In addition if death does not occur within a reasonable time, the organs will not be recoverable and the patient may have to return to the PICU.

Comment: The issue of NHBD is clearly one that will need to be addressed in more depth for institutions involved in organ transplantation. Currently there are very few guidelines determining how to best proceed with these patients. It is possible that in the future national criteria, policies and procedures will be developed.

Reviewer: Rita Agarwal, M.D.
The Children's Hospital
University of Colorado Health Science Center

Literature Reviews

Resuscitation of Asphyxiated Newborn Infant' With Room Air or Oxygen: An International Controlled Trial: the Resair 2 Study. Suagstad OD, Rootwelt T, Aalen V. *Pediatrics* 102, http://www.pediatrics.org/el.

Review: Birth asphyxia continues to be major clinical problem in newborn infants worldwide, affecting ~ 4 million infants and resulting in significant morbidity or mortality in ~ 2 million infants. Initial resuscitation efforts are traditionally made with 100% oxygen, although there is almost no scientific research to support the use of high oxygen concentrations. The authors conducted both animal studies and a pilot study to investigate the use of room air for initial resuscitation prior to embarking on a multicenter, international, prospective, randomized study.

There were 11 centers from six countries included in the study. Patients were included if at birth they had apnea or gasping with a heart rate <80 beats/minute. They were excluded if they weighed <1000 gms, had lethal anomalies, cyanotic congenital heart defects or a stillbirth (no heart beat). The study was not blinded, and patients were assigned to room air or 100% oxygen resuscitation based on birth date (those born on even dates were resuscitated with room air, those born on odd days were resuscitated with 100% oxygen) There were two trained people at each center that performed all resuscitations, which followed the American Heart Association guidelines. The duration of resuscitation was measured from delivery until the infant had spontaneous respiration with a heartbeat >100 beats/minute. If an infant in the room air group did not respond adequately within 90 seconds, that infant was switched to 100% oxygen and designated a treatment failure. Outcome measures included death within 1 week, presence of hypoxic ischemic encephalopathy (HIE) grade II or III, Apgar at 5 minutes, heart rate at 90 seconds, time to first breath, time to first cry, duration of resuscitation, arterial blood gases and acid base status at 10 and 30 minutes, and abnormal neurologic examination after 4 weeks.

Six hundred, nine infants were enrolled, 288 in the room air group and 321 in the 100% oxygen group. Demographic data was similar for both groups. The main differences noted between groups was that the time to first breath and time to first cry were significantly shorter in the room air group The 1 minute Apgar was less for the group resuscitated with 100% oxygen, and there seemed to be more infants with low 1 and 5 minute apgars in the 100% oxygen group.

The authors show that resuscitation with room air is at least as effective as resuscitation with 100% oxygen, and may even lead to earlier recovery. They discuss some of the reasons for this including the possible reduction in post hypoxic reoxygenation free radicals. They also address some of the pitfalls of the study, such as the use of quasi-randomization and unblinded treatment groups.

Comment: Despite some design problems, which the authors acknowledge and tried to address, this is an intriguing study that challenges our most cherished views of the basics of resuscitation. It will be interesting to see long-term outcome results in the two groups (the authors are currently conducting follow up investigations in the infants at 18-24 months of age.) Though the current study does not justify changing established resuscitation routines, it does indicate the need for further investigation of these routines.

Reviewer: Rita Agarwal, M.D.
The Children's Hospital
University of Colorado Health Science Center

Anesthesia and Mitochondrial Disease. Wallace JJ, Perndt H, Skinner M. *Paediatric Anaesthesia* 8:249-254, 1998.

Review: Mitochondnal diseases are a diverse group of disorders, which cause encephalopathy and myopathies in patients presenting from early childhood to adulthood There are a variety of symptoms that patients can present with, and though classification of the diseases has been attempted; there is considerable overlap between groups. Some of the presenting symptoms include: developmental delay, weakness, hypotonia, spasticity, ataxia, seizure disorder, cardiomyopathy, conduction abnormalities, central hypoventilation and apnea, renal insufficiency, hepatic insufficiency, lactic acidemia, diabetes, anemia and thrombocytopenia. The authors use a case report of a 4 year old patient with encephalomyopathy, delayed visual maturation, hyperreflexic spasticity and swallowing dysfunction. They outline the anesthetics used on six occasions, and discuss the issues that should be considered when anesthetizing these patients.

Comment: We are frequently asked to anesthetize patients with possible or known mitochondrial disorders for muscle biopsies, MRI's and other procedures. Our metabolic disorder clinic always sends a letter accompanying these patients stating that may be at risk for malignant hyperthermia and that some patients may be prone to lactic acidosis. I found this article very helpful in presenting an overview of the problem with logical suggestions for approaching these patients. They noted that there has been one case report of MH occurring in a patient with a mitochondrial disorder who received succinylcholine, but that there did not seem to be an overall increased risk (they used halothane for induction for all the procedures done on their patient).

Reviewer: Rita Agarwal, M.D.
The Children's Hospital
University of Colorado Health Science Center

Literature Reviews

Residual Gas Transfer at Rest and During Exercise in School-age Survivors of Bronchopulmonary Dysplasia. Sara H Mitchell, W. Gerald Teagie and Amy Robinson. *Am J Resp Crit Care Med* 152.1406-1412, 1998.

Review: This study compared three groups of school-aged children between six and nine years of age:. 1) survivors of BPD, 2) children who were-premature infants without BPD; and 3) a group of age appropriate children without respiratory disease. Pulmonary function was compared at rest (baseline)? exercise and during recovery. Excluded were children who could not cooperate, had a history of lung disease other than BPD, or who had cognitive functional impairment or exercise limitation from non-pulmonary processes. All children underwent the Bruce Protocol treadmill (exercise) test under controlled conditions.

Intrabreath acetylene (C2H2) transfer was used to measure effective pulmonary blood flow because of its high lipid solubility and was corrected for body surface area (BSA). Carbon monoxide (CO) transfer, which is diffusion limited, was used to correlate with lung capillary blood volume. Pulmonary function (FVC, FEV1, FEV1/FVC and FEV2575) and SaO2 were measured as well. Measurements were made at baseline, exercise and during recovery.

2H2 transfer during all three phases of the study was lowest in the survivors of BPD compared with the other groups. Although C2H2 transfer did increase during exercise, this was not as prominent in children with BPD compared with the other two groups. CO transfer did not increase at all in the group with BPD unlike the other two groups where the rise, although minimal, was significant. FEV1 in both survivors of BPD and those born prematurely fell during recovery but did not affect the transfer of the soluble gases.

The study concludes that soluble gas transfer is decreased in patients with BPD both at rest and during exercise. This decrease in soluble gas transfer is most likely due to secondary long-term abnormalities in lung structure or in residual RV dysfunction secondarily affecting cardiac output.

Comments: Several flaws affect this study. Firstly, those with BPO were required to stop medications, which are often required to sustain pulmonary function within the range of normalcy. Secondly, it did not consider a group of asthmatic children requiring medication as a control group, which would have been a similar comparative group with abnormal pulmonary function. In addition, a simple cardiac echo could have shown if the decreased soluble gas uptake was secondarily due to cardiac dysfunction. Although children with a history of BPD have been shown to have right ventricular enlargement, this is not synonymous with poor RV functioning.

Barring the flaws, the article stresses some noteworthy messages; 1) Children with a history of BPD have abnormal pulmonary functions at rest and during stress secondary to chronic disease process. This occurs even in spite of "outgrowing" their BPD. 2) These children have decreased pulmonary function reserve and may not tolerate even minor pulmonary insults. 3) Children who were premature infants without a history of BPD usually have normal pulmonary function and reserve when corrected for body surface area.

Reviewer: Gordon Fine, M.D.
Children's Hospital of Pittsburgh, PA

Successful Surgical Outcome in Children with Sickle Hemoglobinopathies; the Duke University Experience. Adams DM, et al. *J Pediatr Surg.* 33(3):428-32, 1998.

Review: The authors retrospectively analyzed their surgical experience in children with sickle hemoglobinopathies over the past 10 years to determine the efficacy of an aggressive transfusion regimen and skilled perioperative care in their patient population. This consisted of preoperative transfusions in 83% and erythrocytapheresis in 17%. A total of 130 surgical procedures were performed on 92 children. The average hemoglobin at the time of surgery was 11.2 g/dL, and the average percent hemoglobin S was 21%. Relatively few transfusions were required to achieve these endpoints, and the complications resulting from transfusions were minimal. Similarly, the number of perioperative and postoperative events was very low.

Reviewer: Ronald Litman, D.O.
Strong Memorial Hospital/University of Rochester, NY

Postoperative Complications After Tonsillectomy and Adenoidectomy in Children with Down Syndrome. Goldstein NA, et al. *Arch Otolaryngol Head Neck Surg.* 124(2):171-6, 1998.

Review: The authors retrospectively reviewed their experience with 87 children with Trisorny-21 and compared that with 64 age-matched controls. The time to clear liquid intake and the length of hospitalization was significantly increased for children with Trisomy 21. Twenty-two Downs children (25%) required airway management or observation in the PICU compared with no controls. None of the children in either group required reintubation, continuous positive airway pressure, or tracheotomy. Respiratory complications requiring intervention were 5 times more likely in children with Downs. The authors recommend that children with Down syndrome be admitted to the hospital overnight after undergoing tonsillectomy and adenoidectomy.

Reviewer: Ronald Litman, D.O.
Strong Memorial Hospital/University of Rochester, NY

Literature Reviews

Intramuscular Ketamine for Pediatric Sedation in the Emergency Department - Safety Profile in 1,022 Cases. Green SM, et al. *Ann Emerg Med.* 31(6);688-97, 1998.

Review: The authors assembled a consecutive case series of children aged 15 years or younger who were given ketamine In the emergency departments of a university medical center and an affiliated county hospital over a 9-year period. A protocol for ketamine use (4 mg/kg, intramuscularly) was followed. Ketamine was administered 1,022 times, mainly for laceration repair and fracture reduction. Transient airway complications occurred in 1.4%: airway malalignment (n-7). Iaryngospasm (n=4), apnea (n=2), and respiratory depression (n=1). All were quickly identified and treated without intubation or sequelae. Emesis occurred in 6.7%, without evidence of aspiration. Mild recovery agitation occurred in 17.6%, moderate to severe agitation in 1.6%. No child required hospitalization for complications caused by ketamine. Ketamine produced acceptable sedation in 98% of patients. The median time from injection to emergency department discharge was 110 minutes for children given a single dose of ketamine. The authors conclude that ketamine is highly effective, has a wide margin of safety, does not require intravenous access, and uniquely preserves protective airway reflexes, and may be administered safely by emergency physicians to facilitate pediatric procedures.

Reviewer: Ronald Litman, D.O.
Strong Memorial Hospital/University of Rochester, NY

Colonoscopy Under General Anesthesia in Children. Dillon M. et al. *Pediatrics*, 102:381, 1998.

Review: Gastroenterologists have been hesitant to use general anesthesia during colonoscopy because of the potential for increased complications if the patient is not able to relate severe pain during the procedure. The authors reviewed their experience with general anesthesia for colonoscopy in 112 patients for 136 procedures over a 30-month period. General anesthesia was administered by a pediatric anesthetist, and consisted of propofol and succinylcholine to facilitate endotracheal intubation, followed by maintenance with isoflurane and nitrous oxide. Three patients had significant abdominal pain and tenderness after the procedure, one of whom suffered a perforation of the sigmoid colon (this patient had severe ulcerative colitis). The authors conclude that since the complication rate is not different from adults undergoing sedation, general anesthesia is preferred over conscious sedation because there is less potential for respiratory compromise and is less worrisome for the children.

Reviewer: Ronald Litman, D.O.
Strong Memorial Hospital/University of Rochester, NY

Complications of tonsillectomy and adenoidectomy. Randall DA, et al, *Otolaryngol Head Neck Surg.* 118(1):61 8, 1998.

This is a concise, informative review of (mainly surgical) complications from T&A.

Reviewer: Ronald Litman, D.O.
Strong Memorial Hospital/University of Rochester, NY

Bupivacaine plasma concentrations associated with clinical and electroencephalographic signs of early central nervous system toxicity in infants during awake caudal anaesthesia. (Toxizität und Asubtoxische@ Frühzeichen im Wachzustand bei Säuglingen. Bupivacainplasmaspiegelnach Kaudalanästhesien.) Ch.Breschan, E.Hellstrand, R.Likar, P.-A.Lönniquist, *Anaesthesist* 1998;47:290-294

Review: This paper is published in German with an English abstract by a group of authors from Austria and Sweden. They wanted to study plasma levels of bupivacaine, alpha$_1$-acid glycoproteine, and albumin, and correlate them to EEG changes and clinical appearance of awake, unsedated neonates and infants after caudal epidural bupivacaine with epinephrine 1:200 000. The study was approved by their local ethics committee and parental consent was obtained. Clinical assessment and EEG were performed, then 1.25 cc/kg of 0.25% bupivacaine were injected into the caudal epidural space. 20 minutes later, EEG and clinical assessment were repeated, and blood levels were drawn. EEG was assessed off-line by two neurologists. 7 babies (PCA 36-52 weeks, weight 2.2-4.7 kg) were enrolled. Six of seven babies showed a slowing of their EEG frequency spectrum, all babies showed a decrease in alertness, upper extremity muscle tone, and strength of their cry, after caudal bupivacaine. Clinical and EEG suspicion of CNS toxicity in some patients prompted the authors to abort the study at that time. The authors conclude that for neonates, 3 mg/kg of caudal bupivacaine may be associated with CNS toxicity, and they recommend not to exceed 2 mg/kg of caudal bupivaine for this patient population, or to use spinal anesthesia instead of caudal anesthesia.

Comments: This study generates more questions than answers. The clinical changes described are similar to the changes seen after spinal anesthesia, are they signs of decreased sensory input rather than signs of toxicity? What would be the EEG changes after spinal anesthesia in neonates? How reliable is EEG for detection of CNS toxicity of bupivacaine? What was the sensory/motor level of the caudal block, were the babies whimpering and floppy because of a high level of the neuraxial block?

Interestingly, the paper provides plasma levels for 5 patients: 25 minutes after 3.1 mg/kg of bupivacaine into the caudal epidural space, the bupivacaine plasma concentrations are be-

Literature Reviews

tween 0.56 and 1.62 mg/ml, below the generally accepted Asafe@ level of 2 mg/kg. Alpha$_1$-acid glycoproteine levels are determined at 0.3-0.76 g/l, which is interpreted as a low level, and albumin levels are 25-38 g/l. An increased free fraction of bupivacaine secondary to the low alpha$_1$-acid glycoproteine level is postulated as the explanation of toxicity in spite of the Alow@ bupivacaine levels. Can we calculate a safe dose of bupivacaine if we know the protein levels? What other factors contribute to the appearance of toxicity? Should be determined Afree@ bupivacaine concentrations rather than plasma concentrations when we discuss toxicity?

What I learn from that paper: Our current practice of not using more than 1.5-2 mg/kg bupivacaine in neonates seems valid. We don=t know at what patient age the higher dose of 2.5 mg/kg becomes Asafe@. Plasma levels are not a sensitive parameter for bupivacaine toxicity in neonates.

Reviewed by: Christian Seefelder, M.D.
Children's Hospital, Boston, MA

Removal of the laryngeal mask airway in children: anaesthetized compared to awake. *Br J Anaesth.* 1996;76: 874-876 Kitching et al

Review: The authors of this study compared two methods of LMA removal in children. The study population was 60 children 1-8 years of age.

Anesthesia was induced with O_2/N_20 + halothane and spontaneous respiration was maintained throughout the cases. In the children randomized to the anaesthetized concentration increased to twice MAC for age. These children had a guedel airway placed after removal of the LMA. The awake group had the LMA removed when they were deemed awake to the anesthesiologist involved with the cases. The authors reported that the groups did not differ in the incidence of laryngospasm, Sp02 measurements < 95% or excess salivation. The awake removal group had significantly more coughing than the deep group.

Comments: It is interesting to note that the children who had LMA=s removed while they were still deeply anesthetized, I wonder how the Adeep@ group would have done if an airway was not placed after removal of the LMA. If a child had a good airway, not requiring an OPA, during a mask induction, why should one be placed upon emergence? Perhaps the deep group would have had fewer episodes of laryngospasm or coughing had nothing been placed in the airway after LMA removal.

Reviewed by: Thomas J Mancuso, M.D.
Children's Hospital, Boston, MA

The dose of propofol for laryngeal mask airway insertion in children: effect of premedication with midazolam. Martlew et al, *Br. J Anaesth* 1996; 308-9

This study examined the dose of propofol necessary to achieve good conditions for LMA placement in children. 110 children were studied. 60 were pre medicated with midazolam (0.5 mg/kg PO), 50 were unpremedicated. Using a protocol, several different doses of propofol were given to children each group and ease of LMA placement was assessed by a blinded observer. If unsatisfactory conditions were encountered, anesthesia was deepened with propofol and/or inhaled agents. The authors reported the doses required for successful insertion in 50% and 90% (ED 50 and ED 90) of the pre medicated and unpremedicated children. In the unpremedicated children, the dose of propofol needed to achieve good conditions (5.4 mg/kg) was nearly twice the customary induction doses used for induction of general anesthesia. Hanallah et al. (Anesthesiology 74:217, 1991) reported 2.5-3.0 mg/kg as the IV induction dose for children 3-12 years old. Overall, the magnitude of the doses needed for LMA placement in either pre medicated (3.6 mg/kg) or unpremedicated (5.4 mg/kg) children is noteworthy.

Comment: LMA placement is a stimulating even in children. I find that in my practice if Propofol is used, the dose is of a magnitude to cause apnea. I find that LMA placement is smoother after inhalation inductions preferably with maintenance of spontaneous respiration.

Reviewed by: Thomas J Mancuso, M.D.
The Children's Hospital, Boston, MA

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Jayant K. Deshpande, MD, Director, Pediatric Critical Care & Anesthesia or Charles Beattie, PhD,MD, Professor & Chairman, Department of Anesthesiology at telephone 615/343-0000; fax: 615/343-2725. Or e-mail inquiries to *jay.deshpande@mcmail.vanderbilt.edu.*

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SPA / FAER Update

Research Deadlines

Research Starter Grant:

Application deadline is July 31.
Awards are intended for anesthesiologists holding a faculty appointment, who are not yet ready to conduct independent research. Starter grants provide seed money to initiate a project that will advance the applicant's training and will allow the applicant to seek future additional support. No significant extramural support should be available, either directly or indirectly, and applicants should not have received previous peer-reviewed funding from any other source.

New Investigator Award:

Application deadline is November 30.
Awards are intended for anesthesiologists on the verge of becoming independent investigators. Although applicants must have an experienced investigator as an adviser, the project should be planned and conducted primarily by the applicant.

Educational Research Grants:

Application deadline is July 31, and November 30.
Grants are intended to support research in anesthesia education, and proposals may include the design and evaluation of specific educational techniques and curricula, development of instruments for the prediction and evaluation of outcomes, or other original and creative investigations which have an impact on the quality of anesthesia education and care.

Clinical Research State Grants and Fellowships are also available.

Application Guidelines are available by contacting Dr. Alan Sessler, Executive Director, FAER, Charlton Building, Mayo Clinic, 200 First Street SW, Rochester, MN 55905 or on the Internet at [http://www.asahq.org/FAER/homepage.html]. For questions call (507) 266-6866.

Breakfast Panels at the ASA

Breakfast Panels will be held Monday through Wednesday, October 19-21, 1998 from 7:30 a.m. to 8:45 a.m. at the Omni Rosen Hotel. Three Breakfast Panels will be held each day. Tickets are $15.00 each, and a continental breakfast will be provided. The 1998 Breakfast Panel schedule is as follows:

Monday, October 19, 1998

Section on Anesthesiology: American Academy of Pediatrics -
"Anesthesia Management of the Severely Injured Child"

American Society of Regional Anesthesia -
"Controversies in Regional Anesthesia and Pain Medicine"

Society of Neurosurgical Anesthesia and Critical Care -
"Management of Intracranial Aneurysms"

Tuesday, October 20, 1998

Society of Cardiovascular Anesthesiologists -
"Stroke After Cardiac Surgery"

American Society of Critical Care Anesthesiologists -
"Perioperative Management of the NeurovTrauma Patient"

Society for Obstetric Anesthesia and Perinatology -
"Hard Learned Lessons in Obstetric Anesthesia"

Wednesday, October 21, 1998

Society for Education in Anesthesia -
"Medical Education for 2000 and Beyond: The View From the Top"

Society for Ambulatory Anesthesia -
"Monitored Anesthesia Care: The New Horizon"

Society for Technology in Anesthesia -
"Information Management: Burn Your Books, Retire Your Secretary, Promote Your O.R. Manager and Kiss Your Slides Goodbye"

There's Still Time!

12TH ANNUAL MEETING

OF THE

SOCIETY FOR PEDIATRIC ANESTHESIA

Society for Pediatric Anesthesia

education • research • patient care

Friday, October 16, 1998

Omni Rosen
Orlando, Florida

Lynn D. Martin, M.D.
Program Chair

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of The Society for Education in Anesthesia and the Society for Pediatric Anesthesia. The Society for Education in Anesthesia is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

SPA 12th Annual Meeting Program
Orlando, Florida

Morning Session

7:00 - 7:45am	Registration and Continental Breakfast
7:45 - 8:00am	Introductory Comments and Welcome Drs. Mark A. Rockoff and Lynn D. Martin
8:00 - 10:00am	**Scientific Advances in Pediatric Resuscitation** Moderator: Alvin Hackel, M.D.
8:00am	*Advances in Pediatric Cardiopulmonary Resuscitation* Donald H. Shaffner, M.D.
8:50am	*Frontiers in Cerebral Resuscitation: Lessons Learned from Human Head Injury* Patrick M. Kochanek, M.D.
9:40am	*Questions and Discussion*
10:00 - 10:30am	Coffee Break / Exhibit Viewing
10:30 - Noon	**Clinical Update of Pediatric Resuscitation** Moderator: Randall C. Wetzell, M.B., B.S.
10:30am	*Pediatric Resuscitation, The European Perspective* David A. Zideman, M.B., B.S.
11:05am	*Outcomes of Pediatric Perioperative Resuscitation* Jeremy M. Geiduschek, M.D.
11:40am	*Questions and Discussion*
12:00 - 1:30pm	Luncheon & SPA Business Meeting / Election of Officers

Afternoon Session

1:30 - 3:00pm	**Office Based Anesthesia - The Next Frontier for Pediatric Anesthesia** Moderator: Mark A. Helfaer, M.D.
1:30pm	*Office Based Anesthesia - A Dentist's Perspective* Stephen Wilson, D.M.D., M.A., Ph.D.
1:55pm	*Office Based Anesthesia - An Anesthesiologist's View* Richard A. Berkowitz, M.D.
2:20pm	*Outcomes of Office Based Anesthesia - A Historical Review* Charles J. Coté, M.D.
2:30pm	*Questions and Discussion*
3:00 - 3:30pm	Coffee Break / Exhibit Viewing
3:30 - 5:00pm	**Contemporary Management Issues -** Moderator: Karen S. Bender, M.D.
3:30pm	*Perioperative Anxiety - the Patient, Parents, and Anesthesiologis* Zeev N. Kain, M.D.
4:00pm	*Medicine on the Final Frontier: A Microgravity Environment* M. Rhea Seddon, M.D.
7:00 - 10:00pm	**Reception: EPCOT's American Adventure Pavilion**

SPA Buffet Reception at EPCOT's American Adventure Pavilion

Members should plan on making their participation complete at the Society for Pediatric Anesthesia 12th Annual Meeting by attending the highly popular SPA Annual Meeting Buffet Reception. The reception will be held from 7:00 - 10:00 pm at EPCOT's American Pavilion. The cost of this event is included in the SPA Annual Meeting Registration fee. Tickets for spouses or guests may be purchased in advance at the cost of $50.00 per person. Please check the appropriate box on the registration form and include the proper remittance with your registration fee. Shuttle buses will provide roundtrip transportation from the Omni Rosen, Orlando, Florida.

SPA's Buffet Receptions held in the past have been heavily attended. This year's promises to be even better. Early registration for this event is strongly encouraged.

SPA 1998 Annual Meeting
Registration Form

October 16, 1998, Omni Rosen Hotel, Orlando, Florida

PLEASE PRINT OR TYPE INFORMATION

Name _____ Degree _____

Address (Checks Preference): ( ) Home ( ) Business

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City / State / Zip _____

Phone ( ) _____ Fax ( ) _____

Email _____

Hospital Affiliation _____

Business Telephone ( ) _____

( ) I plan to attend the SPA Buffet Reception

* ( ) I plan to bring a guest with me to the Buffet Reception

Registration Fees: Registration fee includes meeting syllabus, continental breakfast, luncheon, breaks and buffet reception.

	Thru Sept. 18	After Sept. 18	
SPA Members, includes Resident Members[1]	$175	$200	$ _____
Non SPA Members[2] (U.S. or Canada) (includes $100 immediate SPA membership).	$275	$300	$ _____
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*Extra Buffet Reception Tickets	$50	$60	$ _____
[1, 2, 3] To subscribe to Anesthesia & Analgesia (includes membership in IARS)	$110		$ _____
Optional Airmail Journal Delivery Overseas	$167		$ _____
Optional Airmail Journal Delivery Canada	$75		$ _____
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Full refund less $50 administrative fee through August 17, 1998; 50% refund August 18-Sept. 18, 1998; No refunds after Sept. 18, 1998. Refunds determined by date written cancellation is received.

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Welcome to all New Members

Acquah, Rosemund M., MD, New York, NY
Arenas, Alma, MD, Mexico City, Mexico
Bergam, Miro, MD, Brooklyn, NY
Cheung, S.L.W., MBBS. FANZCA, Brisbane, Queensland, Australia
Choi, James Y., MD, Iowa City, IA
Collins, Steven V., MD, Jacksonville, FL
De Vicente, Jesus C., MD, Madrid, Spain
Galinkin, Jeffrey L., MD, Philadelphia, PA
Georges, Linda S., MD, Chapel Hill, NC
Henry, Desmond Bryan, MD, Littleton, CO
Holzman, Robert S., MD, Wellesley, MA
Keneally, John P., MBBS, FANZCA, Sydney, NSW, Australia
Kim, John I., MD, Atlanta, GA
Koh, Jeffrey L., MD, Little Rock, AR
Liu, Christine M., MD, San Antonio, TX
Lux, Melanie P., MD, Houston, TX
Mancera, Gabriel, MD, Mexico City, Mexico
Mendel, Howard G., MD, Cherry Hill, NJ
Morillo-Delerme, Jacquelyn W., MD, Pittsburgh, PA
Nebbia, Stephan Patrick, MD, Mt. Pleasant, SC
Newton, Ann, MBBS, FRANZCA, Brisbane, Queensland, Australia
Rovner, Michelle Sher, MD, Cherry Hill, NJ
Sheplock, George J., MD, Carmel, IN
Sonyika, Askia, MD, Trabuco Canyon, CA
Sullivan, Kevin Joseph, MD, Jacksonville, FL
Tait, Alan R., PhD, Ann Arbor, MI
Varghese, Elsa, MD, Manipal, Karnataka, India
Venable, Claudia Y., MD, Hilton Head, SC
Vu, Dien , M.D., Gulfport, FL
Wagner, Jr., Ronald G., MD, Chicago, IL

New Resident Members

Anitescu, Magdalena, MD, Iowa City, IA
Armstrong, Trevor, MD, Aberdeen, UK
Beck, Howard J., MD, Iowa City, IA
Binder, Michael, MD, Williamsville, NY
Brzezinski, Marek, MD, Chicago, IL
Carter, Todd E., MD, San Antonio, TX
Clavo, Anthony T., MD, Seattle, WA
Collins, Adam B., MD, San Francisco, CA
Crook, Jr., James L., MD, San Francisco, CA
Cunningham, Lori A., MD, San Francisco, CA
Dhar, Padmani, MD, Lexington, KY
Di Quinzio, Claudio, MD, FRCP(C), Vancouver, BC, Canada
Donald, David A., MD, Sacramento, CA
Duque, Katrina S., MD, Oak Park, IL
Espinosa, Victor H., MD, Chicago, IL
Fleischmann, Michelle D., MD, Milwaukee, WI
Gillespie, Sarah E., MD, Augusta, GA
Goodrich, Andrew W., DO, Canton, MI
Gupta, Dhanesh K., MD, San Francisco, CA
Guruswami, Bhanwmathi, MD, Hillsborough, CA
Gutt, Frederick, MD, New York, NY
Handa, Ajay, MD, Houston, TX
Hargraves, Sharon D., MD, Saint Louis, MO
Hite, Brian W., MD, San Francisco, CA
Horowitz, Mark H., MD, Vicksburg, MS
Hutlzsch, Stefanie, MD, Boston, MA
Ilfeld, Brian M., MD, San Francisco, CA
Joshi, Meeta Y., MD, Bloomfield, NJ
Knoff, Jon, MD, Wichita, KS
Kolpe, Usha, MD, North Riverside, IL
Kong, Anna Wan Sum, MD, Arlington Heights, IL
Kreimeier, Uwe, MD, Munich, Germany
Lauder, Patricio, MD, Davis, CA
Lee, Thomas T., MD, San Francisco, CA
Lo, Stephen H.R., MD, San Francisco, CA
Lundell, John C., MD, Winston Salem, NC
Moon, Andrew, MD, San Francisco, CA
Moy, Stephen D., MD, San Francisco, CA
Nagele, Peter, MD, Vienna, Austria
Natarajan, Rajamanickam, MD, Coram, NY
Niemann, Claus U., MD, San Francisco, CA
Oravitz, Todd M., MD, Pittsburgh, PA
Paez, David E., MD, Alameda, CA
Pandit, Jaideep J., MD, Ann Arbor, MI
Patil, Vishal V., MD, Belfast, United Kingdom
Patrick, Scott S., MD, Pacifica, CA
Poblador, Nancy J., MD, Hingham, MA
Rahbar, Maryam, MD, Missouri City, TX
Schoepf, Miriam U., MD, Chicago, IL
Schure, Annette Y., MD, Boston, MA
Seshachar, Abhaya, MD, Wickliffe, OH
Shanaa, Maen, MD, Lexington, KY
Shimabkuro, David W., MD, San Francisco, CA
Tanhui, Eduardo S., MD, Houston, TX
Thompson, Matthew D., MD, Rochester, MN
Tonkovic-Capin, Mislav, MD, Greenfield, WI
Torres, Barry J., MD, San Francisco, CA
Tretiak, Sean H., MD, San Francisco, CA
Tseng, James W., MD, San Francisco, CA
Wang, Hong, MD, PhD, Novi, MI
Wilkinson, Jeffrey D., MD, San Francisco, CA
Wong, Sophia, MD, Toronto, ON, Canada
Woo, Winston H., MD, San Francisco, CA
Yepes, Julian, MD, Saint Louis, MO

Pediatric Anesthesiology

February 18-21, 1999

The Desert Inn
Las Vegas, Nevada

Abstract Submission Deadline
December 1, 1998

A joint meeting sponsored by the
Society for Pediatric Anesthesia and
the American Academy of Pediatrics -
Section on Anesthesiology

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of The Society for Education in Anesthesia and the Society for Pediatric Anesthesia. The Society for Education in Anesthesia is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Continuing Medical Education Needs Assessment

The Society asks that you give consideration to topics you would like to have addressed in future educational offerings.

1. What topics would you like to see addressed at future annual/winter meetings?

   1. _____ 4. _____
   2. _____ 5. _____
   3. _____ 6. _____

2. Do you like workshops at the winter meeting?

   Very Much - - - Not at All
   1 2 3 4 5

3. If you like workshops, which topic would you like to see included:

   1. _____ 4. _____
   2. _____ 5. _____
   3. _____ 6. _____

4. a. Would you be interested in separate workshops during the year?

   Very Much - - - Not at All
   1 2 3 4 5

   b. Would you like the meeting to be co-sponsored with another organization (i.e., critical care, neurology, etc.)?

   Very Much - - - Not at All
   1 2 3 4 5

5. Additional comments and suggestions: _____

_____

_____

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Membership Application

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The Society for Pediatric Anesthesia (SPA) was founded in 1987 to promote quality perioperative care for infants and children. Membership in SPA has grown steadily to more than 4000 members. Membership consists of community-based and academic physicians who have an interest in pediatric anesthesia, as well as resident and affiliate members. The goals of SPA include:

1. To advance the practice of pediatric anesthesia through new knowledge
2. To provide educational programs on clinical, scientific, and political issues that are important to pediatric anesthesia practice
3. To promote scientific research in pediatric anesthesia and related disciplines
4. To provide a forum for exchange of ideas and knowledge among practitioners of pediatric anesthesia
5. To support the goals of the American Society of Anesthesiologists and the American Academy of Pediatrics