

PRESIDENT'S MESSAGE

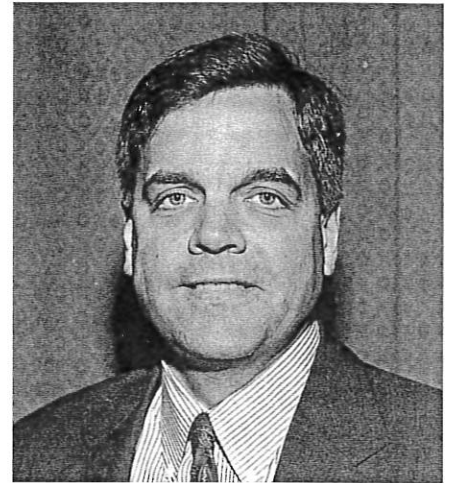
By William J. Greeley, M.D.

The true test of any organization lies in its ability to allocate resources toward the organization's missions and goals. This was no more evident to me than the SPA Winter Meeting held jointly with the American Academy of Pediatrics (AAP) Section on Anesthesiology last February in Phoenix, Arizona. By every measure (quality and content of the program, attendance, feedback, etc.), the meeting was a resounding success.

Tapping into the scientific and clinical expertise of our membership and using some of our organizational capability and financial resources, the important education and research objectives of our Society were met by this meeting. Many thanks to all those members in attendance as well as the Committee on Education for organizing the meeting.

The Committee on Education, chaired by Mark A. Rockoff, M.D., Boston, Massachusetts, has recently completed the program for our second SPA/AAP Winter Meeting to be held February 15-18, 1996 in Tampa, Florida. Preregistration material as well as a call for papers will be mailed soon.

I would like to bring to your attention two issues of ongoing negotiation where SPA has been involved. First, we are in the final stages of negotiations seeking affiliation with the journal, *Anesthesia and Analgesia*, and assuming co-responsibility of the journal's Pediatric Section. It is my expectation that this agreement will reach closure during the summer months. Our contract will be detailed in our next SPA Newsletter as well as at the SPA Business Meeting held during the



William J. Greeley, M.D.

Society's Annual Meeting on October 20, 1995 in Atlanta, Georgia. This agreement

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SPA NINTH ANNUAL MEETING IN ATLANTA

The Ninth Annual Meeting of the Society for Pediatric Anesthesia (SPA) will be held on Friday, October 20, 1995 in the Marquis Ballroom of the Marriott Marquis Hotel in Atlanta, Georgia. The purpose of the meeting is to provide a forum for discussion of current and controversial topics of interest to physicians who provide anesthesia for children.

To encourage registrants to meet the faculty, officers and other members of SPA, a continental breakfast and buffet luncheon are included with the registration fee. In addition, an evening social gathering will be held at The Carter Presidential Center and will include dinner and

an opportunity to tour the Carter Presidential Museum. Arrangements for this special event have been made by SPA with the Department of Anesthesiology of Egleston Children's Hospital and Emory University in Atlanta, Georgia.

The SPA 1995 Annual Meeting program is co-sponsored by the American Society of Anesthesiologists (ASA). ASA is approved by the Accreditation Council for Continuing Medical Education to offer continuing education for physicians.

ASA designates this continuing medical education program for 6 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

Registration with a continental breakfast will begin at 7:00 a.m. SPA President **William J. Greeley, M.D.**, Associate Professor of Anesthesiology and Pediatrics and Chief of the Division of Pediatric Cardiac Anesthesia and Critical Care Medicine at Duke University Medical Center, Durham, North Carolina, will begin the meeting at 8:00 a.m. The morning sessions will be devoted to a discussion of drugs in pediatric practice.

The first session will be moderated by **George A. Gregory, M.D.**, Professor of Anesthesiology and Pediatrics, University of California-San Francisco Medical Center, San Francisco, California, and is

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The Society for Pediatric Anesthesia (SPA) publishes the SPA Newsletter twice a year: the Winter-Spring issue and the Summer-Fall issue. 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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UPDATE OF SUCCINYLCHOLINE LABELING

It is hoped that the last chapter in the succinylcholine controversy has been written. Based on recommendations from the Anesthetic and Life Support Drugs Advisory Committee of the Food and Drug Administration as well as with input from various members of the pediatric anesthesia community, including the Society for Pediatric Anesthesia, the previously issued statement that succinylcholine was contraindicated has been changed to a warning. The warning in a black box on the package insert (see re-

print of the warning below) includes statements regarding:

1. The risk of cardiac arrest from hyperkalemic rhabdomyolysis secondary to succinylcholine and the early signs of this syndrome.
2. A description of the population at risk.
3. Suggested treatment of the syndrome.
4. Circumstances that are appropriate for succinylcholine use in children. □

WARNING

Risk of Cardiac Arrest from Hyperkalemic Rhabdomyolysis

There have been rare reports of acute rhabdomyolysis with hyperkalemia followed by ventricular dysrhythmias, cardiac arrest, and death after the administration of succinylcholine to apparently healthy children who were subsequently found to have undiagnosed skeletal muscle myopathy, most frequently Duchenne's muscular dystrophy.

This syndrome often presents as peaked T-waves and sudden cardiac arrest within minutes after the administration of the drug in healthy appearing children (usually, but not exclusively, males, and most frequently 8 years of age or younger). There have also been reports in adolescents.

Therefore, when a healthy appearing infant or child develops cardiac arrest soon after administration of succinylcholine (not felt to be due to inadequate ventilation, oxygenation or anesthetic overdose), immediate treatment for hyperkalemia should be instituted. This should include administra-

tion of intravenous calcium, bicarbonate and glucose with insulin, with hyperventilation. Due to the abrupt onset of this syndrome, routine resuscitative measures are likely to be unsuccessful. However, extraordinary and prolonged resuscitative efforts have resulted in successful resuscitation in some reported cases. In addition, in the presence of signs of malignant hyperthermia, appropriate treatment should be instituted concurrently.

Since there may be no signs or symptoms to alert the practitioner to which patients are at risk, it is recommended that the use of succinylcholine in children should be reserved for emergency intubation or instances where immediate securing of the airway is necessary, e.g., laryngospasm, difficult airway, full stomach or for intramuscular use when a suitable vein is inaccessible (see PRECAUTIONS: PEDIATRIC USE and DOSAGE AND ADMINISTRATION).

SPA NINTH ANNUAL MEETING IN ATLANTA

(Continued from page 1)

titled "The Pharmacologic Basis of Pediatric Anesthesia Practice." **Mervin Maze, M.D.**, Professor of Anesthesiology, Stanford University Medical Center, Stanford, California, will discuss "Molecular Pharmacology." **Dennis M. Fisher, M.D.**, Professor of Anesthesia and Pediatrics, University of California-San Francisco Medical Center, San Francisco, California, will address the topic "Are Pharmacokinetics Clinically Relevant?"

During the second half of the morning, **Anne Marie Lynn, M.D.**, Associate Professor of Anesthesia and Pediatrics, Children's Hospital and Medical Center, Seattle, Washington, will moderate a session on "Anesthetic Agents and Drug Delivery Systems in Pediatric Anesthesia Practice." Speakers for this session will include **Peter J. Davis, M.D.**, Associate Professor of Anesthesiology, Critical Care and Pediatrics, Children's Hospital, Pittsburgh, Pennsylvania, discussing "Opioids—Clinical Trials and Use in Infants and Children: Lessons Learned"; **Peter S.A. Glass, M.B.**, Associate Professor of Anesthesiology, Duke University Medical Center, Durham, North Carolina, discussing "Total Intravenous Anesthesia"; and **Juergen Schüttler, M.D.**, Professor of Anesthesiology and Intensive Care, Bonn University, Bonn, Germany, discussing "Closed-Loop Intravenous Anesthesia."

Following lunch, two additional clinically oriented sessions will be held. The first is titled "Blood Conservation and Substitution" and will be moderated by **Francis X. McGowan, Jr., M.D.**, Assistant Professor of Anesthesiology (Pediatrics), Children's Hospital and Harvard Medical School, Boston, Massachusetts. Topics will include "Hemodilution" by **Sten G.E. Lindahl, M.D.**, Professor of Anesthesiology and Intensive Care, Karolinska Hospital, Stockholm, Sweden; "Hemostatic Adjuncts" by **Aaron L. Zuckerberg, M.D.**, Assistant Professor of Anesthesiology and Pediatrics, Sinai

Hospital and Johns Hopkins University, Baltimore, Maryland; and "Blood Substitution" by **Bruce J. Leone, M.D.**, Assistant Professor of Anesthesiology, Duke University Medical Center, Durham, North Carolina.

The next session titled "Controversies in Pediatric Anesthesia" will be moderated by **Harry G.G. Kingston, M.B.**, Professor and Chair, Department of Anesthesiology, Oregon Health Sciences University, Portland, Oregon. This will be a traditional point/counterpoint discussion. **Charles J. Coté, M.D.**, Professor of Anesthesia, Children's Memorial Hospital, Chicago, Illinois, will argue that "Sedation Should Be Performed by an Anesthesiologist," and **Richard M. Ruddy, M.D.**, Director, Division of Emergency Medicine, Children's Hospital, Cincinnati, Ohio, will speak about "Sedation by Nonanesthesiologists: Another Perspective."

Following a coffee break, the final session of the day will be moderated by Dr. Greeley and is titled "Managed Care: Who Are the Managers?" The discussants for this session will be **Bertram E. Walls, M.D.**, President and Chief Executive Of-

ficer, Century American Insurance Company, Durham, North Carolina, and **Scott D. Augustine, M.D.**, Chief Executive Officer and Chair of the Board, Augustine Medical Inc., Eden Prairie, Minnesota.

A brief business meeting will be held at 5:00 p.m. prior to the SPA reception, which will begin at 7:00 p.m. at The Carter Presidential Center.

Registration fees are \$125 for SPA members and \$225 for non-SPA members (which includes the \$125 registration fee and \$100 immediate SPA membership for qualified individuals). Meeting registration includes admission to the breakfast, lunch and the buffet dinner reception at The Carter Presidential Center, including bus transportation. Tickets for the evening social event for spouses or guests may be purchased in advance at a cost of \$45 per person.

We are especially grateful for the kind help of the anesthesiologists at Egelston Children's Hospital and Emory University in helping to plan this social event. Last year's Annual Meeting was attended by more than 500 participants, and early registration is encouraged since space is limited. □



The Carter Presidential Center will be the site of a buffet reception for SPA members and guests on Friday, October 20 from 7:00-10:00 p.m. Dedicated October 1, 1986, the Center houses the museum of the Jimmy Carter Library featuring exhibits, films and interactive video programs that chronicle his career and presidency.

1995 WINTER MEETING "A SUCCESS"

The "Pediatric Anesthesiology-1995" Winter Meeting, held last February in Phoenix, Arizona, was a huge success. This first joint meeting held in conjunction with the American Academy of Pediatrics Section on Anesthesiology had more than 350 physicians attending the conference.

The three-day meeting covered a wide variety of pediatric anesthesia topics and included didactic lectures, point/counterpoint discussions about controversies in pediatric anesthesia, poster discussions, hands-on workshops and interactive computer questionnaires.

The didactic sessions included the ethical, surgical and anesthetic considerations for patients undergoing heart, heart/lung, liver and kidney organ transplantation. In keeping with the times, the financial realities of medical practice—capitation or "decapitation"—were discussed by people in the financial world as well as by physician leaders in the health care industry.

The controversies in pediatric anesthesia included discussions on old and new inhalational anesthetic agents and sedation guidelines, as well as presentations on how to write papers and helpful suggestions on building academic careers.

The hands-on workshops were extremely well-attended and included sessions on pain services, laryngeal mask airways, cardiopulmonary resuscitation and noncaudal regional anesthesia techniques. As a special feature, Zeev N. Kain, M.D. from Yale University, the 1994 recipient of the Anesthesiology Research Starter Grant [co-sponsored by SPA and the Foundation for Anesthesia Education and Research (FAER)], presented his findings on the role of parental presence during induction of anesthesia [see related article on page 5].

By far one of the most interesting and intriguing parts of the conference was the use of interactive computer questionnaires. This interactive system was used throughout the meeting. The instantaneous results allowed both the audience and the speakers to poll the attendees with regard to anesthesia practice and concepts. □



During the "Pediatric Anesthesiology-1995" Winter Meeting, attendees at the "Noncaudal Regional Anesthetic Techniques" workshop were given the opportunity to experiment with hands-on techniques with instruction from presenters Linda Jo Rice, M.D., left, and Thomas R. Vetter, M.D., right.

1996 SPA WINTER MEETING IN FLORIDA

"Pediatric Anesthesiology-1996," the second annual Winter Meeting co-sponsored by SPA and the American Academy of Pediatrics Section on Anesthesiology, will be held during the Presidents' Day holiday February 15-18, 1996 at the Hyatt Regency Westshore Hotel in Tampa, Florida. This meeting follows the very successful first meeting held this past February in Phoenix, Arizona.

The purpose of the meeting is to provide an in-depth opportunity to discuss issues relevant to anesthesiologists who provide care for children. In addition to many interesting lecture topics, there will also be a number of "hands-on" workshops. Ample time will be devoted to oral and poster presentations in order to encourage discussion about new developments in the field of pediatric anesthesia and to permit investigators the opportunity to present their work-in-progress.

Following the successful use of an

interactive computer questionnaire system at the "Pediatric Anesthesiology-1995," we will once again have a keypad available at each registrant's desk to survey participants' responses confidentially while instantly displaying the results to the audience.

This meeting is also designed to provide registrants the opportunity to gather together with their colleagues in a comfortable environment and to meet with them socially. The meeting dates were chosen to coincide with the Presidents' Day weekend holiday and thereby encourage family participation. Hopefully, the Florida Gulf Coast location should provide a respite from cold winter weather.

Details of the meeting, including a call for abstracts, will soon be available, and additional information can be obtained by contacting: "Pediatric Anesthesiology-1996," P.O. Box 11086, Richmond, Virginia 23230-1086; (804) 282-9780. □

“Preoperative Anxiety in Preschool Children: Parental Presence at Induction of Anesthesia”

By Zeev N. Kain, M.D.

Departments of Anesthesiology
and Pediatrics

Yale University School of Medicine
New Haven, Connecticut

Anesthesiologists often encounter extreme emotional distress in young children undergoing anesthesia and surgery. As an alternative to premedication, behavioral interventions such as parental presence during the induction of anesthesia have been suggested as treatment for preoperative anxiety. Although there is general agreement about the desirability of parents visiting during their child's hospitalization, their presence during invasive medical procedures is controversial. While some investigators believe that such presence will benefit the child, others have suggested that parental presence may make the situation more stressful.

In 1985, a physician reported in the *British Medical Journal* his profound dismay when his request to be present at the induction of general anesthesia in his 3-year old daughter was firmly denied.¹ The physician stated that his daughter awoke from the anesthetic screaming and that later that day, she recalled the experience of being forcefully held down and a mask being placed over her face. This report provoked a widespread debate in the anesthesia community and began a movement to allow parents to be present at induction of anesthesia.

Potential benefits from parental presence include minimizing the need for premedication and avoiding the child's screaming and struggling that may result on separation from the parents. Other benefits such as decreasing the child's anxiety during induction and potentially decreasing the long-term behavioral effects of surgery remain controversial. Common objections to parental presence include concern about disruption of the op-

erating room routine, operative sterility, crowded operating rooms and a possible adverse reaction by the parent.

In addition, parental anxiety in the operating suite can result in increased child anxiety, prolonged induction and additional stress on the anesthesiologist, especially in the event of an anesthetic complication. Also, the child's behavioral response may be more negative during a stressful situation when a parent is present than when the parent is absent. Several reports indicate that parental presence during induction may result in disruptive behavior, parents failing to leave the room when requested, and even removal of a child from the operating room by a grandmother during the second stage of anesthesia.^{2,3}

In contrast, Gauderer et al. has reported a four-year experience with 3,086 children operated on in a freestanding ambulatory surgery center.⁴ No parent needed to be escorted from the operating room because of undue anxiety. Two parents, however, developed syncope, with prompt recovery.

Although earlier studies suggested reduced anxiety and increased cooperation if parents were present during induction, more recent reports indicate that parental presence may not always be beneficial.⁵⁻⁷ Bevan et al. in a randomized trial found that parental presence had no effect on the behavior of the child during induction.⁷ However, when parental behavior was introduced as a co-variable, the most upset children at induction were those who were accompanied by extremely “anxious” parents. Children of “calm” parents did not differ in their mood as a result of having a parent accompany them during induction.

Some of the contradictory results can be explained by the methodological complexity of this issue. Some of the previous studies enrolled children who had a previous hospitalization while others enrolled



Zeev N. Kain, M.D.

children who were never hospitalized. Furthermore, anxiety may also be influenced by the type of induction (mask versus intravenous), place of induction (induction room versus the operating room) and the personality and experience of the anesthesiologist. Base-temperament of the child, personality of the parent and the emotional interaction between the child and the parent are important as well.

A more critical question is whether these studies tested anxiety or cooperation during induction of anesthesia. To date, children's responses to the induction of anesthesia have been evaluated with a global rating of the child's distress using a Likert scale of 3 to 7 points. Rarely are measures of agreement among observers reported for these types of scales, and the behaviors rated reflect the results of anxiety such as cooperativeness rather than the direct behavioral markers of an anxious state such as motor activity, irritability or active withdrawal.

In order to obtain a more valid measure of preoperative anxiety, we developed and validated a structured observational scale that is appropriate for children aged 2 to 7 years.⁸ Subjects undergoing anesthesia and surgery were videotaped, and

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1994 SPA/FAER ANESTHESIOLOGY RESEARCH STARTER GRANT AWARD

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21 specific behaviors during induction of anesthesia were defined within five domains of anxiety (activity, emotional expressivity, state of arousal, vocalization and use of adults). This instrument has good to excellent observer reliability and validity against physiological (serum cortisol) and behavioral markers and can be used for a variety of studies (premedication, etc.) in children undergoing surgery.

Recently we completed a randomized controlled trial demonstrating the complexities in assuming that parental presence is equally effective for all children. Multiple physiological, observational and self-reported measures of anxiety were examined in 96 children (and their parents) undergoing outpatient surgery and general anesthesia. Baseline measures, including child's temperament and parental anxiety traits, were also obtained. In addition, we followed the children for six months and observed behavioral changes related to the surgery.

The anxiety levels of the children in the holding area and during induction of anesthesia were similar between the control and treatment groups. Also, the behavioral sequelae two weeks and six months after surgery were similar between the two groups. However, we noted significant correlations between several of the variables (for example, age of child and anxiety). Next, we introduced a linear regression analysis to predict the response to the induction based on parental presence. The outcome measured was serum cortisol, and the variables examined included: age of child, anxiety of mother and baseline personality of child and mother.

We found that parental presence benefited children who are over age 4 years, or have a "calm" baseline personality, or have a mother with a "calm" baseline personality. In contrast, we found that this intervention will increase the anxiety of children under age 4 years.

There are also important legal implications to parental presence during induc-

tion of anesthesia. Lewyn described a lawsuit in which a mother was invited by a nurse to accompany her son into an emergency treatment room.⁹ According to the court, the mother fainted in the treatment room and suffered an injury to the head as a result of the fall. In its verdict, the Illinois Supreme Court stated that a hospital that allows a nonpatient to accompany a patient during treatment does not have a duty to protect the nonpatient from fainting. However, if medical personnel invite the nonpatient to participate in the treatment, then the hospital has a legal responsibility toward the nonpatient.

Survey studies have indicated that most parents prefer to be present during induction of anesthesia regardless of the child's age or previous surgical experience.¹⁰ When present during the induction, an overwhelming number of parents believe that they were of some help to the child and the anesthesiologist. However, more than 90 percent of parents report some degree of anxiety during induction.

In a recent survey study, we examined the attitudes and practice of parental presence among pediatric anesthesiologists in the United States and Great Britain and found a significant difference between the two countries. While a large percentage of the U.S. anesthesiologists agreed that there are benefits to parental presence, only a minority perform this practice routinely. In contrast, most British anaesthetists incorporate parental presence into their routine practice. The reasons for these differences between the United States and Great Britain may include the use of different induction techniques (mask induction in the United States versus intravenous induction in Great Britain), less concern about legal ramifications in Great Britain and a stronger demand for parental presence in Great Britain. A frequent comment by responders from both countries was that the benefit to a child from parental presence varies widely based on the baseline temperament and the interaction of the child/parent pair.

In conclusion, the individual child,

parent and anesthesiologist should be considered whenever the question of parental presence arises.¹¹ Ultimately, as with any other aspect of the induction process, the final decision should rest with the anesthesiologist.

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1995 SPA/FAER GRANT AWARDEE ANNOUNCED

Ronald S. Litman, D.O., University of Rochester, Rochester, New York, is the recipient of the 1995 Anesthesiology Research Starter Grant co-sponsored by SPA and the Foundation for Anesthesia Education and Research (FAER).

Dr. Litman's research is titled "Breathing Patterns During Conscious and Deep Sedation in Children." The principal aim of the investigation is to assess breathing patterns and upper airway obstruction during various types of sedation.

In keeping with the goals of SPA, the Society continues to contribute yearly to

FAER to support this grant, which provides \$25,000 for one year as seed money to start a project related to pediatric anesthesia. A synopsis of the research work by the 1994 SPA/FAER grant recipient, Zeev N. Kain, M.D. of Yale University, New Haven, Connecticut, on parental presence during induction of anesthesia appears elsewhere in this issue [see page 5].

For more information about the Anesthesiology Research Starter Grant program, contact: Alan D. Sessler, M.D., FAER Executive Director, Charlton Building, Mayo Clinic, 200 First Street, S.W., Rochester, Minnesota 55905. □

Pediatric Discussion Group Is Now Online

The Paediatric Anaesthesia Conference (PAC) discussion group has been online with access through the Internet since May 10, 1995.

PAC is available through the Department of Anaesthesia and Research Computing Services, The Hospital for Sick Children, University of Toronto, Toronto, Ontario, Canada.

PAC is open to all individuals with an interest in the free exchange of ideas on issues related to pediatric anesthesia. This forum is dedicated to the improvement of anesthetic care delivered to infants and children worldwide.

PAC is *not* a forum for direct marketing. SPA members are encouraged to sub-

mit any message detailing the risks/benefits of products or services with the understanding that the submission of that message is for general education.

Direct any inquiries concerning the operation of this discussion group to "Jim Tibbals" <tibbs@sickkids.on.ca>, or you may contact the Department of Anaesthesia at The Hospital for Sick Children by telephone at (416) 813-7445 or fax at (416) 813-7543.

To subscribe to PAC, send the following message to:

<majordomo@sickkids.on.ca>;
subscribe pac
end □

Centers of Excellence

SPA is pleased to announce a new program that will facilitate opportunities for its members to visit and observe pediatric anesthesiology departments that have a major commitment to teaching pediatric anesthesia.

These "centers of excellence" are among those listed in the Directory of Pediatric Anesthesia Fellowship Programs 1994-95. Specific arrangements will vary from institution to institution. In general, the visits will be limited to observation, and visiting members will not have direct patient care responsibilities. Visits are intended to last from one day to one week.

Members who are interested in the program should contact: Gary W. Hoormann, Special Services Manager, Society for Pediatric Anesthesia, 520 N. Northwest Highway, Park Ridge, Illinois 60068-2573; (708) 825-5586. Mr. Hoormann will discuss your objectives and present appropriate available institutions. The SPA member will then be put in contact with the institution's pediatric anesthesia liaison. Visits will take place at the convenience of the parties involved. □

PRESIDENT'S MESSAGE

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is in keeping with the research mission of SPA and is an exciting opportunity for our Society to become involved more formally in a major international anesthesia journal.

Secondly, the Health Care Financing Administration (HCFA) last January issued an opportunity for certain subspecialty areas to modify and revise the resource-based relative value codes used as

the basis for reimbursement for Medicaid patients. Through the efforts of Raeford E. Brown, Jr., M.D., Little Rock, Arkansas, and the AAP Section on Anesthesiology, SPA formalized a response to HCFA. We are currently awaiting HCFA's answer with regard to our proposed changes in the current reimbursement system.

On a practical front, our Society membership continues to grow, and we remain

financially solvent.

I look forward to the opportunity of seeing you in Atlanta at the SPA Annual Meeting. In the meantime, if there is anything I can do as your SPA representative to further our organization's improvement, please do not hesitate to contact me or any of the Board members. □

SPA NINTH ANNUAL MEETING PROGRAM

Marriott Marquis Hotel Atlanta, Georgia Friday, October 20, 1995

7:00 a.m. - 4:00 p.m.

REGISTRATION

Marquis Ballroom Foyer

7:00 a.m. - 8:00 a.m.

CONTINENTAL BREAKFAST

Imperial Ballroom Salon B

8:00 a.m. - 8:05 a.m.

Introductory Remarks

William J. Greeley, M.D.,

President

Marquis Ballroom Salons II-III

8:05 a.m. - 9:45 a.m.

Pharmacologic Basis of Pediatric
Anesthesia Practice

Moderator:

George A. Gregory, M.D.

Marquis Ballroom Salons II-III

8:05 a.m.

Molecular Pharmacology

Mervyn Maze, M.D.

8:50 a.m.

Are Pharmacokinetics Clinically
Relevant?

Dennis M. Fisher, M.D.

9:30 a.m.

Questions and Answers

9:45 a.m. - 10:15 a.m.

COFFEE BREAK

10:15 a.m. - 12:00 noon

Anesthetic Agents and Drug Delivery
Systems in Pediatric Anesthesia Practice

Moderator:

Anne Marie Lynn, M.D.

10:15 a.m.

Opioids—Clinical Trials and Use in In-
fants and Children: Lessons Learned

Peter J. Davis, M.D.

10:45 a.m.

Total Intravenous Anesthesia

Peter S.A. Glass, M.B.

11:15 a.m.

Closed Loop Intravenous Anesthesia

Juergen Schüttler, M.D.

11:45 a.m.

Questions and Answers

12:00 noon - 1:30 p.m.

LUNCHEON

Imperial Ballroom Salon B

1:30 p.m. - 2:45 p.m.

Blood Conservation and
Substitution

Moderator:

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

Marquis Ballroom Salons II-III

1:30 p.m.

Hemodilution

Sten G.E. Lindahl, M.D.

1:50 p.m.

Hemostatic Adjuncts

Aaron L. Zuckerberg, M.D.

2:10 p.m.

Blood Substitution

Bruce J. Leone, M.D.

2:30 p.m.

Questions and Answers

2:45 p.m. - 3:30 p.m.

Controversies in Pediatric Anesthesia

Moderator:

Harry G.G. Kingston, M.B.

Marquis Ballroom Salons II-III

2:45 p.m.

Sedation Should Be Performed
by an Anesthesiologist

Charles J. Coté, M.D.

3:00 p.m.

Sedation by Nonanesthesiologists:
Another Perspective

Richard M. Ruddy, M.D.

3:15 p.m.

Questions and Answers

3:30 p.m. - 4:00 p.m.

COFFEE BREAK

4:00 p.m. - 5:00 p.m.

Managed Care: Who Are
the Managers?

Moderator:

William J. Greeley, M.D.

Discussants: Bertram E. Walls,
M.D. and Scott D. Augustine, M.D.

5:00 p.m. - 5:30 p.m.

Business Meeting

7:00 p.m. - 10:00 p.m.

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LITERATURE REVIEWS

The following literature reviews have been selected from recent issues of international journals concerning pediatric and surgical studies that may be of interest to the pediatric anesthesiologist.

Results of extracorporeal membrane oxygenation in neonates with sepsis: The extracorporeal life support organization experience.

Meyer DM, Jessen ME. *J Thorac Cardiovasc Surg* 1995; 109:419-427.

Reviewed by *Stephen Rimar, M.D.*

The use of extracorporeal membrane oxygenation (ECMO) for treatment of respiratory failure caused by sepsis is controversial because of concerns over survival benefit and hemorrhage-related complications. In order to evaluate the impact of sepsis on outcome, these authors reviewed data from 6,853 neonates in the Extracorporeal Life Support Organization Registry. The authors defined two groups: one group consisted of all patients undergoing ECMO who had a primary diagnosis of sepsis; the second group consisted of patients with any other primary diagnosis. A multivariate logistic regression analysis considered 15 variables to compare outcomes between the two groups. There was no difference in survival between the two groups; however, the sepsis group had a higher incidence of complications, including seizures, cerebral infarct or hemorrhage, need for dialysis, hyponatremia, hyperbilirubinemia and dobutamine use. The authors conclude that ECMO should not be withheld from neonates solely on the basis of sepsis, but treatment efforts should focus on limiting the incidence and severity of complications in this population.

Aprotinin in children undergoing correction of congenital heart defects.

Herynkopf F, Lucchese F, Pereira E, Kalil R, Prates P, Nesralla IA. *J Thorac Cardiovasc Surg* 1994; 108:517-521.

Reviewed by *Stephen Rimar, M.D.*

This article reports a randomized double-blind pilot study of 30 children undergoing surgical repair for congenital heart defects. The treatment group received aprotinin 7 mg/kg until the end of

cardiopulmonary bypass, while the placebo group received a corresponding volume of saline. The aprotinin group bled less during the operation and in the first 24 hours. In addition, the postoperative transfusion requirements were significantly less in patients in the aprotinin group than in the placebo group. This study, though performed on a limited number of patients, is important because of its randomized double-blinded nature. The authors demonstrate that aprotinin can reduce the need for blood products in patients undergoing cardiopulmonary bypass.

Nitric oxide and nitrovasodilators: Similarities, differences and potential interactions.

Anderson TJ, Meredith IT, Ganz P, Selwyn AP, Yeung AC. *J Am Coll Cardiol* 1994; 24:555-566.

Reviewed by *Stephen Rimar, M.D.*

This is the most recent concise review of the pharmacology of nitric oxide as it relates to the vascular system. The authors' objectives are to describe the mechanism of action, biologic effects and potential interactions between nitrates and nitric oxide. While this makes for interesting reading, do not look for answers to clinical questions.

Joint position statement: Essential provisions for critical care in health system reform.

Society of Critical Care Medicine, American Association of Critical-Care Nurses. *Crit Care Med* 1994; 22:2017-2019.

Reviewed by *Anne E. Dickison, M.D.*

As a result of the 1994 health system reform debates, the 8,200 members of the Society of Critical Care Medicine (SCCM) and the 78,000 members of the American Association of Critical-Care Nurses (AACN) have united to issue a consensus position statement advocating certain health system reform provisions that would improve the care for the 4 million to 6

million individuals who become critically ill or injured each year in the United States. While endorsing improved access to and coverage for preventive care services, SCCM-AACN emphasize that critical illness and injury cannot be prevented entirely and underscore that the reformed health system should also foster improved access, quality of care and cost-containment for the unfortunates who do need escalated care. It is estimated that 80 percent of all U.S. inhabitants will experience critical care during their lifetime, either as a patient or through a family member or close friend. Addressing universal access and coverage, SCCM-AACN note that health system reform must provide all U.S. citizens, regardless of geographic location, with access to health care providers who most appropriately meet their needs, including critical care practitioners with their specialized knowledge and skills. When critical injury and illness occur despite the best preventive measures, the health system must be prepared to offer quality care. The recommendations in the SCCM-AACN statement are offered to improve the quality of critical care to all U.S. inhabitants at an acceptable cost. Reprints of the complete joint position statement can be obtained from the Society of Critical Care Medicine, 8101 East Kaiser Boulevard, Suite 300, Anaheim, California 92808-2259.

Fatal metabolic acidosis in a pediatric patient receiving an infusion of propofol in the intensive care unit: Is there a relationship?

Strickland RA, Murray MJ. *Crit Care Med* 1995; 23:405-409.

Reviewed by *Anne E. Dickison, M.D.*

In 1992, the *British Medical Journal* cited five case reports of children (4 weeks to 6 years of age) with upper respiratory tract infections who had died with unexplained metabolic acidosis and myocardial failure following propofol infusions

for sedation. Two Norwegian children (14 months and 2 years) with upper respiratory infections also developed profound metabolic acidosis and fatal cardiac rhythm disturbances following propofol infusions for sedation in the intensive care unit. The Mayo Clinic case in this article is reported in order to heighten awareness that there may be an adverse link between propofol and metabolic acidosis in a susceptible subset of children. The patient was an 11-year-old, 44 kg girl who presented with an acute uncal herniation from a right temporal astrocytoma and cerebral edema. After emergent intubation, mechanical hyperventilation and the administration of mannitol and dexamethasone, she was taken to the operating room where anesthesia was induced and maintained with propofol (100 mg bolus followed by an infusion of about 7 mg/kg/hr), vecuronium and isoflurane. A second craniotomy with the same agents was performed about six hours later. Postoperatively, propofol was infused at 166 µg/kg/min (9.9 mg/kg/hr) for the next three days because of persistent cerebral edema and elevated intracranial pressure. At the time of her death from abrupt onset of unexplained metabolic acidosis (pH 6.97, pCO₂ 35, pO₂ 123, BE -21), hyperkalemia and myoglobinuria, she had received propofol (averaging 156 mcg/kg/min) throughout her 38-hour hospitalization. Other observations at the time of her terminal event included a bladder temperature that increased from 36.2 C° at midnight to 38.2 C° six hours later, lipemic serum, increased white blood cell count to 37,500 cells/mm³ with 90 percent granulocytes, tracheal secretions that grew *Hemophilus influenzae*, and a chest X-ray remarkable only for continued left lower lobe atelectasis. Compared with adults, younger children have a higher volume of distribution for propofol, and they more rapidly metabolize propofol. The blood concentrations at which pediatric patients awaken is greater in pediatric patients than it is in adults. Whether or not the increased dose requirements are related to the increased incidence of metabolic acidosis in pediatric patients is an unknown. Though the

intraoperative use of propofol for pediatric patients older than 3 years of age is under review, the U.S. Food and Drug Administration (FDA) has not yet approved propofol for children. A 1992 "Dear Doctor" letter from ICI (Zeneca) Pharmaceuticals Group described 66 adverse events in children, 42 of which were in children younger than 3 years of age and 24 in children older than 3 years of age. The FDA's Anesthetic and Life Support Drugs Advisory Committee concluded in 1992 that propofol had no identifiable link to adverse cardiac events in either adults or children. Until there is more experience with propofol in pediatrics, the authors suggest caution and selectivity in administration practices and encourage further evaluation of the metabolic byproducts for potential toxicity.

Parental upset associated with participation in induction of anaesthesia in children.

Vessey JA, Bogetz MS, Caserza CL, Liu KR, Cassidy MD. *Can J Anaesth* 1994; 41(4):276-280.

Reviewed by *Lawrence H. Feld, M.D.*

This study looked at the magnitude of parental upset associated with participation in the induction of anesthesia of their child. The authors attempt to look at the features of induction most upsetting to parents, the characteristics of parents most likely to become upset and the accuracy of the anesthesiologist's perception of magnitude of parental upset. The study examined parents of 103 children scheduled for elective outpatient surgery requiring general anesthesia. The most upsetting factors for both mother and father in order of significance were: 1) separation from child after induction; 2) watching and feeling the child become so limp; and 3) having the child upset prior to induction. Characteristics of parents most likely to become upset are: 1) the amount of upset between the mother and father; 2) mother of an only child; and 3) mother and father who are health care workers. The anesthesiologist's perception of upset correlated well with maternal, but not paternal self-assessment of upset. The authors con-

clude that selected factors for parental participation are upsetting for parents and that recognizing these factors associated with parental upset may enable O.R. personnel to minimize these negative consequences. This well-done study points out that parental presence should continue not to be a parental right, but should be selective in nature for many of the aforementioned reasons. The study did not address the issue regarding the situation where the anesthetic induction was distressing to the parent, but the parent's presence still provided comfort for the child. It is interesting that the anesthesiologist's perception of parental upset only correlated with maternal self-assessment. The authors state a very important point: "Despite the emotional expense, most parents report that, given the choice, they would choose to participate in their child's anesthetic induction again." It would have also been interesting to hear if the parents thought their presence was beneficial to their child.

Effects of preanesthetic medication on carbon dioxide tension in children with congenital heart disease.

Alswang M, Friesen R, Bangert P. *J Cardiothorac Vasc Anesth* 1994; 8(4):415-419.

Reviewed by *Brian J. Gronert, M.D.*

These authors studied 44 children randomly assigned to receive either intramuscular morphine 0.2 mg/kg and scopolamine 0.01 mg/kg, or oral midazolam 0.75 mg/kg, one hour before anesthetic induction. Changes from before anesthetic premedication were observed in digital pulse oximetry (SpO₂), respiratory rate (RR), transcutaneous PtcCO₂ and end-tidal PCO₂ (PetCO₂) until anesthetic induction. Both premedication regimens caused significant sedation. Following morphine/scopolamine, PtcCO₂ increased from 36 ± 4 (mean ± SD) to 43 ± 6 mmHg (p < 0.01), PetCO₂ increased from 35 ± 3 to 40 ± 5 mmHg (p < 0.01), SpO₂ decreased from 93 ± 2 percent to 91 ± 4 percent (p < 0.01), and RR decreased from 30 ± 10 to 24 ± 7 breaths/minute (p < 0.01). After midazolam, PtcCO₂ increased from 35 ± 4 to 40 ± 6 mmHg (p < 0.01), PetCO₂

increased from 34 ± 5 to 39 ± 3 mmHg ($p < 0.01$), SpO_2 decreased from 93 ± 6 percent to 90 ± 7 percent ($p < 0.01$) and RR decreased from 33 ± 13 to 30 ± 13 breaths/minute ($p < 0.01$). Clinically significant increases in $PtcCO_2$ (>45 mmHg) occurred in nine patients, including five with pulmonary hypertension. Clinically significant decreases in SpO_2 (<90 percent in acyanotic patients or decreases of >5 absolute percent in cyanotic patients) occurred in eight patients, including six with pulmonary hypertension. No adverse effects were reported in the children with clinically significant increases in $PtcCO_2$ or decreases in SpO_2 . It should be noted that this study was conducted in Denver, Colorado at a high altitude.

Trade-off between airway resistance and optical resolution in pediatric rigid bronchoscopy.

Marzo SJ, Hotaling AJ. *Ann Otol Rhinol Laryngol* 1995; 104:282-287.

Reviewed by **Howard B. Gutstein, M.D.**

This article presents a fairly nice review of the mechanics and optics of pediatric bronchoscopes and a nice study of peak airway pressures related to bronchoscope and telescope sizes. The authors propose appropriate size endoscopic telescopes for use with different sizes of bronchoscopes. They also show that optical forceps and side-channel forceps used during bronchial foreign-body removal cause little change in airway resistance. Hazards and technical difficulties with pediatric rigid bronchoscopy are also discussed.

Problems in postoperative management after anterior cricoid split.

Tavin EE, et al. *Arch Otolaryngol Head Neck Surg* 1994; 120:823-826.

Reviewed by **Howard B. Gutstein, M.D.**

This article will be of interest mainly to those who function in the intensive care setting. As expected, most common management problems included those related to the surgical procedure or pre-existing medical conditions such as bronchopulmonary dysplasia in pre-existing tracheostomy. Interestingly, the

management of postoperative sedation in these patients was viewed to be a large problem. They correctly identify benzodiazepine withdrawal as being a particular problem with midazolam infusion that they used for postoperative sedation. They also acknowledge the problem of the tolerance to midazolam infusions. The authors correctly stress the importance of not relying on paralysis in this setting.

The use of oral transmucosal fentanyl citrate for painful procedures in children.

Schechter NL, Weisman SJ, Rosenblum M, Bernstein B, Conard PL. *Pediatrics* 1995; 95(3):335-339.

Reviewed by **Mehernoor F. Watcha, M.D.**

Forty-eight children scheduled to undergo bone marrow aspiration or lumbar puncture were randomized to receive either oral transmucosal fentanyl citrate (OTFC) $15-20 \mu\text{g}/\text{kg}$, or a placebo 30 minutes prior to the procedure. Significantly lower pain scores were recorded by parents, nurses and patients in the OTFC group with median pain scores reduced to tolerable levels. However, vomiting and itching were more common. The authors concluded that OTFC is safe and effective for relieving pain of pediatric procedures but is associated with increased emesis, which may limit its clinical usefulness. In the same issue, there is a commentary by Myron Yaster, M.D. on pain relief [*Pediatrics* 1995; 95(3):427-428] in which he states that the fentanyl oralet is the first potent analgesic specifically manufactured for and tested in children.

Cost per anomaly: What does a diaphragmatic hernia cost?

Metkus AP, Esserman L, Sola A, Harrison M, Adzick MS. *J Pediatr Surg* 1995; 30(2):226-230.

Reviewed by **Lawrence H. Feld, M.D.**

The authors sought to determine the cost of initial hospitalization for an infant with congenital diaphragmatic hernia (CDH). They analyzed hospital bills and professional fees from all 35 cases of infants who underwent postnatal CDH repair at their institution between Decem-

ber, 1990 and December, 1993. The cost averaged \$137,000/patient. ECMO dramatically increased the cost. The cost per survivor was \$98,000/patient in the non-ECMO group and \$305,000/patient in the ECMO group. The authors limited their study to direct medical costs incurred during the initial hospitalization and converted hospital charges and professional fees into 1993 dollars. The authors studied all 35 patients with the diagnosis of CDH in the aforementioned study time period. ECMO was required for 40 percent of the study group. Of note, the professional fees accounted for an average of 23 percent of the total cost: 20 percent for non-ECMO patients and 26 percent for ECMO patients. The average surgeon's, anesthesiologist's and neonatologist's fee per patient was \$6,000, \$1,300 and \$22,000, respectively. Although studies may suggest that ECMO improves survival rates among selected CDH patients, any increase in survival rate is accompanied by a substantial increase in cost. ECMO more than doubled the cost per patient compared with the non-ECMO group. On a per survivor basis, ECMO more than tripled the cost! The authors state that the financial aspects of caring for neonates with potentially lethal congenital anomalies will come under close scrutiny as cost containment becomes a reality. In addition, as new therapies are introduced, it is inevitable that cost comparisons between standard therapies and new therapies will be used to affect future resource allocation. This study is a very interesting one despite its limitations (i.e., follow-up of both groups, ultimate cost per patient years later, etc.). The study brings up issues that we are just starting to deal with in our profession and in tertiary care settings and thus makes this paper worth reading.

In-hospital mortality for surgical repair of congenital heart defects: Preliminary observations of variation by hospital caseload.

Jenkins KJ, Newburger JW, Lock JE, et al. *Pediatrics* 1995; 95:323-330.

Reviewed by **Mehernoor F. Watcha, M.D.**

A total of 2,833 cases of pediatric congenital heart surgery were identified at 37 centers. Mortality figures were lower in centers performing more than 300 cases per year. Independent risk factors included procedure complexity, cardiopulmonary bypass, young age at surgery and transfer from another acute care hospital. This study was limited by the absence of clinical detail in discharge abstract data bases. However, these findings suggest that directing children to centers with high volume may substantially reduce overall mortality. In short, the more experience you have, the better the outcome.

Latex hypersensitivity in children: Clinical presentation and detection of latex-specific immunoglobulin E.

Kwittken PL, Sweinberg SK, Campbell DE, Pawlowski NA. *Pediatrics* 1995; 95(5):693-699.

Reviewed by *Mehernoor F. Watcha, M.D.*

This retrospective review of 35 patients with latex allergy seen at a major tertiary care children's hospital demonstrated that the majority of patients had life-threatening reactions. Contrary to previous reports, 40 percent had primary diagnoses outside of previously recognized high-risk groups, and 60 percent had reactions outside of the operating room setting. Systemic exposure to latex through an intravenous catheter may precipitate major reactions in spite of steroid and antihistamine premedication. This report confirms a clinical impression of an increased incidence of latex hypersensitivity in children. However, the circumstances of life-threatening reactions appear to be broader than previously reported. A summary of the recommendations of the task force on allergic reactions to latex of the American Academy of Allergy Asthma and Immunology was included in the article.

Cytotoxic drug-induced pulmonary disease in infants and children.

Fauroux B, Meyer-Milsztain A, Boccon-Gibod L, Leverger G, Clément A, Biour M, Tournier G. *Pediatr Pulmonol* 1994; 18:347-355.

Reviewed by *Brian J. Gronert, M.D.*

This study retrospectively reviewed (10-year period) 15 children (eight girls and seven boys) who presented with drug-induced pulmonary disease (DIPD). The underlying malignant disease in 14 was leukemia. Mean age at presentation was 9 years (range 1-17 years). Three typical patterns emerged from this study. First was acute hypersensitivity lung disease caused by methotrexate (in six patients) or aziathioprine (one patient). Chest radiography showed an alveolar-interstitial infiltrate. Lung function tests showed a restrictive pattern and the outcome was always favorable with drug withdrawal. Secondly, a chronic pneumonitis/fibrosis was seen in six patients who received a variable association of cyclophosphamide (three patients), bleomycin (two patients), BCNU (two patients) and melphan (one patient). Lung function tests showed a restrictive pattern and, despite corticosteroid treatment in four children, one died (bleomycin) and two had functional lung impairment. Thirdly, noncardiogenic pulmonary edema occurred in two patients with leukemia treated with recombinant interleukin 2. Echocardiogram was normal. Complete rapid recovery was seen after stopping interleukin 2. Bronchoalveolar lavage was an essential diagnostic tool in these to determine the cause of lung injury and proper treatment.

Effects of air pollution on the upper respiratory tracts of children.

Koltai PJ. *Otolaryngol Head Neck Surg* 1994; 111(1):9-11.

Reviewed by *Howard B. Gutstein, M.D.*

This brief article nicely categorizes the types of both outdoor and indoor pollution that could possibly affect the respiratory tracts of children. Outdoor pollutants include sulphur dioxide, nitrogen dioxide and ozone. Major indoor pollutants are hydrogen dioxide, formaldehyde and toxic byproducts of wood-burning stoves and passive smoke. Interestingly, in people with pre-existing asthma, increased sulphur dioxide concentrations can induce wheezing and decreased lung volumes.

This may be of concern to those practicing in heavily populated or polluted areas.

Three-dimensional magnetic resonance imaging evaluation of pediatric tracheal bronchial tree.

Donnelly KJ, et al. *Laryngoscope* 1994; 104:1425-1430.

Reviewed by *Howard B. Gutstein, M.D.*

Three-dimensional MRI can be a valuable technique for evaluating the pediatric airway, since obstruction can be caused by both intrinsic and extrinsic lesions. While intrinsic causes are generally easily diagnosed by bronchoscopy, it is much more difficult to correctly diagnose extrinsic lesions in this fashion. Other known invasive methods such as barium swallow, airway fluoroscopy, angiography, tracheobronchography and CT with contrast have been used to attempt to define external vascular structures that may be compressing the tracheal bronchial tree. However, risks are associated with contrast material and ionizing radiation. Three-dimensional reconstructions of MRI slices are useful because reconstructions can be created and studied in various orientations, intrinsic contrast is generated between the airway lumen and the bronchial wall, and excellent visualization of surrounding vascular structures are possible. Some very elegant pictures of common diagnoses are presented in the article. The interesting point here is that you will still have to sedate or anesthetize these children for the MRI scan prior to making the definitive diagnoses of the cause of airway compromise! For those interested in newer MRI-based imaging modalities, there is an excellent, readable review article in the March, 1995 issue of the journal, *The Neuroscientist* [**The nuclear magnetic resonance revolution in basic and clinical neuroscience.** Prichard JW. *The Neuroscientist* 1995; 1(2):84-94].

Cuffed endotracheal tubes in pediatric intensive care.

Deakers TW, Reynolds G, Stretton M, Newth CJ. *J Pediatr* 1994; 125:57-62.

Reviewed by *Mehernoor F. Watcha, M.D.*

In a prospective study of 282 consecutive tracheal intubations in a pediatric intensive care unit, the incidence of postextubation stridor was compared in patients who received a cuffed or uncuffed endotracheal tube. There were no significant differences in the overall incidence of stridor, even after controlling for patient age, duration of intubation, trauma, leak around the endotracheal tube before extubation and the pediatric risk of mortality score. Early concerns regarding the use of cuffed endotracheal tubes in children originated from studies demonstrating impaired tracheal mucosal blood flow, laryngeal edema and tracheal stenosis, and the belief that the narrow subglottic region of the child's trachea provides an adequate seal around an appropriately sized tracheal tube. The concerns regarding cuffed tubes in children were based on data from high-pressure, low-volume tubes, whereas the current cuffed tubes are low-pressure, high-volume cuffed tracheal tubes. While a leak around a tracheal tube in a normal anesthetized child is usually of little consequence, patients in the ICU often have a decreased pulmonary compliance, and a leak around the tracheal tube hampers assisted ventilation.

Spinal anesthesia for primary repair of gastroschisis: A new and safe technique for selected patients.

Vane DW, Abajian JC, Hong AR. *J Pediatr Surg* 1994; 29(9):1234-1235.

Reviewed by **Lawrence H. Feld, M.D.**

The authors describe the successful use of spinal anesthesia for four infants undergoing gastroschisis repair. The gestational ages were 39, 33, 36 and 36 weeks, respectively. All underwent primary closure of the defect. All four infants came to the O.R. on room air, breathing spontaneously and fluid resuscitated. Spinal anesthesia with tetracaine 0.6 mg/kg given anywhere from L2-3 to L4-5 was the only agent used. The operative times were 45, 25, 30 and 25 minutes, respectively (mean 31.25 minutes). The duration of anesthesia was 170-230 minutes (mean 205 minutes). All infants were returned to the

neonatal ICU on room air breathing spontaneously. None was intubated except for one patient, who was subsequently given I.V. morphine in the ICU and subsequently developed respiratory depression. Nowhere in this study was the size of the defect described. One assumes that these defects were relatively small since they could be closed primarily. The authors suggest that a significant advantage of spinal anesthesia over general anesthesia is the ability for the abdominal wall to be maximally relaxed while the infant can breathe spontaneously. They suggest that this allows the surgeon to better assess the child's ability to breathe spontaneously after the defect is closed.

Laryngeal involvement in epidermolysis bullosa.

Lyos AT, et al. *Ann Otol Rhinol Laryngol* 1994; 103:542-546.

Reviewed by **Howard B. Gutstein, M.D.**

This article reviews one small series of patients with epidermolysis bullosa (EB) and airway involvement at Texas Children's Hospital. This group recommends early tracheostomy in patients with evidence of laryngeal involvement because of the potential for rapid progression of airway compromise. Unfortunately, once this occurs, decannulation is usually ill-advised due to the chronic nature of the disease. The authors recommend early and aggressive consideration of tracheostomy in these patients in an attempt to reduce the already-high frequency of sudden death in children with EB.

Age and the onset of desaturation in apnoeic children.

Patel R, Lenczyk M, Hannallah R, McGill W. *Can J Anaesth* 1994; 41:771-774.

Reviewed by **Lawrence H. Feld, M.D.**

This study was undertaken to determine the time until the onset of desaturation (defined SpO₂ less than or equal to 90) following preoxygenation in apnoeic infants, children and adolescents. Fifty ASA I patients aged 2 days to 18 years were included in the study and divided into five groups according to age (group 1: 0-6

months; group 2: 7-23 months; group 3: 2-5 years; group 4: 6-10 years; group 5: 11-18 years). The study's findings show that desaturation started earlier in infants than in 2- to 5-year-old children. Children became desaturated faster than adolescents. The authors concluded that the time to onset of desaturation following pre-oxygenation with mask ventilation increases with age in healthy apnoeic children. Is this a new finding or is this common knowledge that was felt in need of a formalized study? I think the latter is probably true. This study was nicely done, but did the study need to be done at all?

Cardiovascular, renal and endocrine actions of dopamine in neonates and children.

Seri I. *J Pediatr* 1995; 126:333-344.

Reviewed by **Mehernoor F. Watcha, M.D.**

This is a detailed review of the cardiovascular, renal and endocrine effects of dopamine and the clinical implications of the neonatal and pediatric patient population.

Sedation protocols—Why so many variations? (editorial).

Coté CJ. *Pediatrics* 1994; 94(3):281-283.

Reviewed by **Mehernoor F. Watcha, M.D.**

This editorial raises concerns about attempts to reduce the published guidelines for sedation of children by constructing specialty-specific monitoring guidelines. It also defines conscious sedation in more detail.

Age-related basement membrane thickening of the vocal cords in sudden infant death syndrome (SIDS).

Shatz A, et al. *Laryngoscope* 1994; 104:865-868.

Reviewed by **Howard B. Gutstein, M.D.**

SIDS is defined as "the sudden death of an infant and child which is unexpected by history, in which a thorough post-mortem exam fails to demonstrate an adequate cause of death." The only autopsy findings currently supporting the diagnosis of SIDS are petechiae in the pleura, epicardium and thymus. These petechiae point to asphyxia as the cause of death

because a marked increase in intrathoracic negative pressure leading to these petechiae may imply the occurrence of airway obstruction necessitating vigorous respiratory efforts. One probable site of such an obstruction would be the larynx, which led the present authors to the ingenious study that has demonstrated pronounced basement membrane thickening of the vocal cords in SIDS patients. In fact, the thickness of the basement membrane of the vocal cords of SIDS victims was 30 to 100 times greater than that in age-matched controls dying from other causes. Although there is no evidence of inflammation along with the basement membrane thickening, thickening without inflammation has been seen in a number of other pathologic processes usually associated with chronic immunologic disease.

Postoperative sore throat in children and the laryngeal mask airway.

Splinter WM, Smallman B, Rhine EJ, Komocar L. *Can J Anaesth* 1994; 41(11):1081-1083.

Reviewed by *Lawrence H. Feld, M.D.*

This is an interesting study comparing the incidence of sore throat after use of the laryngeal mask airway (LMA) versus the uncuffed endotracheal tube (OETT). This was a randomized, single-blinded study of 112 patients aged 3-12 years undergoing minor peripheral surgery. The LMA or uncuffed OETT was placed after induction of anesthesia. The LMA was removed after airway reflexes returned. The OETT was removed prior to the return of airway reflexes. Of note, the leak around the endotracheal tube was between 5-30 cm H₂O, and there was no active humidification used. Parents were contacted on postoperative day 1 and were asked if their child complained of a sore throat and, if so, whether it was mild, moderate or severe. The incidence of sore throat in the LMA group was 13 percent compared to 5 percent in the ETT group. This difference was not statistically significant. All reported sore throats were rated as "mild" in both groups. The authors conclude that sore throat after minor

pediatric surgery is uncommon and unaffected by the choice of an LMA or ETT and is mild in intensity. It is interesting that the overall incidence of sore throat in adults with the use of the LMA is 7-13 percent, which is similar to the above study's incidence of sore throat in children. It is surprising that the incidence of sore throat seen with the use of the LMA versus ETT is similar.

Morphine-6-glucuronide concentrations and opioid-related side effects: A survey in cancer patients.

Tiseo P, Thaler H, Lapin J, Inturrisi C, Portenoy R, Foley K. *Pain* 1995; 61:47-54. Reviewed by *David E. Cohen, M.D.*

The relationship of plasma morphine and morphine-6-glucuronide concentrations were examined in 109 adult cancer patients. Myoclonus and cognitive impairment was not related to either variable. Age, elevated bilirubin or LDH were correlated with the presence of cognitive impairment. Elevated morphine-6-glucuronide concentrations were associated with respiratory depression in a small group of patients with renal impairment.

Comparison of a rigid laryngoscope with the ultrathin fiberoptic laryngoscope for tracheal intubation in infants.

Roth AG, Wheeler M, Stevenson GW, Hall S. *Can J Anaesth* 1994; 41(11):1069-1073.

Reviewed by *Lawrence H. Feld, M.D.*

The authors state that the purpose of this study was to document the safety and efficacy of intubation using an ultrathin fiberoptic laryngoscope. In this prospective study, 40 infants less than 24 months of age scheduled for elective surgery were randomly divided into two equal groups; 20 infants were intubated using standard rigid laryngoscopy, and 20 other infants were intubated with the use of the ultrathin laryngoscope (size 1.8 mm OD) Olympus LFP. Time to successful intubation was recorded as well as HR, BP, EtCO₂ and SpO₂. The intubation times using rigid laryngoscopy were less than those using fiberoptic laryngoscopy (13.6 ± 0.9 sec

versus 22.8 ± 1.7 sec.) p < 0.01. SpO₂ and EtCO₂ readings were not different between the study groups. BP and HR increased equally in both groups. There was no difference in the incidence of airway trauma between groups. The authors conclude that the ultrathin fiberoptic laryngoscope is a safe and effective method for tracheal intubation in infants and may be used routinely in order to maintain fiberoptic airway skills in infants.

Home management of sickle-cell-related pain in children and adolescents: National history and impact on school attendance.

Shapiro B, Dinges D, Orne E, Bauer N, Reilly L, Whitehouse W, Ohene-Frempong K, Orne M. *Pain* 1995; 61:139-144.

Reviewed by *David E. Cohen, M.D.*

Home diaries were used to follow 18 children with sickle cell disease pain. Pain was reported 30 percent of the time. Ninety percent of the time, pain was managed at home; 21 percent of possible school days were missed (2.7 days average); 50 percent of absenteeism was due to sickle cell pain. Significant sleep disturbances were noted (43 percent of time on days in pain). There were few differences in the children hospitalized with pain and those treated at home.

The prevalence of phantom sensation and pain in pediatric amputees.

Krane E, Heller L. *J Pain Symptom Manage* 1995; 10(1):21-29.

Reviewed by *David E. Cohen, M.D.*

Twenty-four children who had undergone amputations at two tertiary care hospitals completed questionnaires about phantom limb pain and sensation (response rate was 57 percent from the possible study candidates). The incidence of phantom sensation was 100 percent. Phantom pain was almost always present when cancer was the reason for the amputation. Beginning soon after surgery, the severity decreased in a majority of patients over time. A trend suggested that the existence of pain prior to amputation predicted the development of phantom pain. □



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INTRODUCING NEW SPA LOGO, CORPORATE SEAL

At the SPA 1994 Annual Meeting in San Francisco, California, the Society announced it was seeking designs from the membership for a new logo for use on SPA letterhead, brochures, pamphlets, etc., and a formal corporate seal for use on official publications and documents.

Numerous entries were submitted by members as well as their spouses and children, making it no easy job for the Board of Directors to decide on the designs that best exemplified the organization.

After much deliberation, the Board has selected the following two designs to be the new SPA logo and corporate seal.

Logo

The "rainbow" design for the new SPA logo was submitted by Ms. Evelyn Berde, Brookline, Massachusetts. The logo features a childlike drawing of children of all ages, shapes and sizes, plus a mother and father, side-by-side and hand-in-hand in front of a rainbow, a universal symbol of hope and happiness. The primary objectives of the Society (education, research and patient care) are listed beneath the children while the name of the organization runs overhead.



Corporate Seal

The design for the SPA corporate seal was submitted anonymously and was selected for its simplicity and clarity. The new seal features the Society's acronym surrounded by its name and its objectives: education, research and patient care. □

