



Society for Ambulatory Anesthesia

Ambulatory AnesthesiaSM

PRESIDENT'S MESSAGE

A Hero for All Seasons

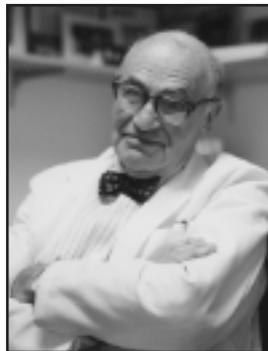
By Kathryn E. McGoldrick, M.D.
SAMBA President

SAMBA's 19th Annual Meeting, held in Seattle, Washington, this past May was expertly orchestrated by Annual Meeting Chair Lucinda L. Everett, M.D., and was an extraordinary success. It also was, for me, a very special event — not because it marked the beginning of my SAMBA presidency but rather because I was delighted to be in the audience when Beverly K. Philip, M.D., became the 2004 recipient of the SAMBA Distinguished Service Award. Beverly and I have been friends for more than 25 years, and we share much more than similar interests and values, important as those are. We have a priceless common bond: We were both trained by Leroy D. Vandam, M.D., at the (then) Peter Bent Brigham Hospital in Boston, Massachusetts.

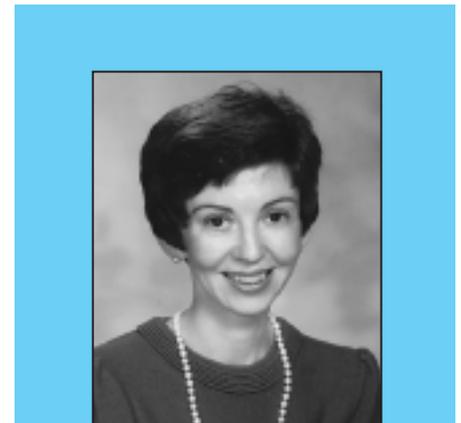
After the award ceremony, Dr. Philip and I spoke briefly to each other about our sense of loss following the recent death of Dr. Vandam at age 90 on April 8, 2004. Beverly and I both remarked how blessed we had been when we were given the privilege of receiving our specialty education from such a remarkable man. "Roy" was a magnificent teacher, and with the passage of time, Beverly and I have come to realize even more profoundly how indebted we are to him. No doubt our careers have been forged by a commitment, whether conscious or subconscious, to partially pay back this debt while enjoying the privilege of assisting in the professional births of new colleagues.

Dr. Vandam firmly believed that few other developments in the history of medicine rivaled the discovery of anesthesia. "In terms of importance, you can put it alongside the germ theory of disease and the cures for yellow fever and plague," he said in an article that appeared in the *Boston Globe* in 2000. "It made surgery possible." Roy, though, was so much more than an outstanding anesthesiologist.

When I was introduced to Dr. Vandam more than three decades ago, I knew instinctively and immediately that I was in the presence of a truly great figure. As a neophyte resident, I was mesmerized (and intimidated) by Roy's wry, withering wit, his formidable intelligence and his panache. I quickly learned that he was an accomplished artist, a graceful, reflective writer, a brilliant scholar and a superb clinician. He was the consummate professional: dynamic, focused and incredibly knowledgeable about all aspects of medicine and medical history. While he would not suffer fools gladly, he was not one to self-aggrandize either. He inspired people, and he had integrity. His friendship, whether professional or personal, was real and meaningful.



Leroy D. Vandam, M.D.



Kathryn E. McGoldrick, M.D.

"The Chief" was unequivocally committed to the highest standards of excellence, and one did not want to disappoint him. Failure to meet Dr. Vandam's expectations could unleash the full force of his personality on the offender, and the ensuing detonation was not an experience to be savored! Perhaps what I admired most about Dr. Vandam, however, was his courage. I was extraordinarily moved when I eventually learned that a rare ocular condition caused Roy to abandon his distinguished surgical career and pursue instead a life in anesthesiology. He nobly and gracefully personified how one can (and must) reinvent oneself when the vicissitudes of life demand it.

In the autobiography that SAMBA's own Bernard V. Wetchler, M.D.,¹ wrote for the *Careers in Anesthesiology* series produced by the Wood

Continued on page 5

Patient Selection Tops List of Current Concerns

With the practice of ambulatory surgery rapidly expanding, and more extensive surgical procedures being performed on an outpatient basis, appropriate patient selection has become even more important to maintain safety and improve outcome.

According to **Zeev Friedman, M.D.**, Toronto, Ontario, Canada, there appears to be a significant disparity in patient selection for ambulatory surgery. Interestingly, patients with cardiac disease, considered at high risk for elective surgery according to the American College of Cardiology/American Hospital Association (ACC/AHA) guidelines, were considered fit to undergo ambulatory anesthesia. In contrast, patients considered appropriate were determined to be unfit to undergo ambulatory anesthesia. It is important to note that the

ACC/AHA guidelines do not differentiate between outpatient and inpatient surgical procedures. Development of practice guidelines should facilitate clinical practice and improve patient safety. There is very little data available, however, for development of evidence-based guidelines for patient selection. Such guidelines also must consider not only the severity of the patient's disease and the type of surgical procedure but also the type of facility (i.e., physician's office, stand-alone outpatient surgical center or a hospital-based outpatient center).

Another interesting area of late is the use of regional anesthesia, particularly continuous nerve blocks. Although single-shot regional anesthesia techniques allow early recovery and discharge home, pain can be severe after the block has "worn off,"

With the practice of ambulatory surgery rapidly expanding and more extensive surgical procedures being performed on an outpatient basis, appropriate patient selection has become even more important to maintain safety and improve outcome.



Girish P. Joshi, M.D.

making pain control more difficult after discharge. Therefore continuous nerve blocks are ideal for pain management after ambulatory surgical procedures with moderate to severe postoperative pain. **James B. Mayfield, M.D.**, Atlanta, Georgia, summarizes the clinical and economic advantages of regional anesthesiology techniques based on a presentation at

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SAMBA

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Peripheral Regional Anesthesia: New Insights Into Clinical and Economic Advantages

James B. Mayfield, M.D.
Vice-Chair of Anesthesiology and
Perioperative Medicine
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Augusta, Georgia

The Sunday morning session on May 2 at the SAMBA 2004 Annual Meeting in Seattle, Washington, centered on the economic and clinical advantages of regional anesthesiology techniques for ambulatory surgical procedures. **Brian A. Williams, M.D.**, Pittsburgh, Pennsylvania, presented data on the economic issues of ambulatory regional anesthesiology practice. His group has been identifying economic indicators that are of potential benefit to the operating room manager and outpatient regional anesthesiologist. Among those indicators were time management; nursing interventions such as nausea, vomiting and pain management; postanesthesia care unit bypass rates; and success in same-day discharge. Comparing regional anesthesia to general anesthesia using these economic indicators provides insight into the relationships between anesthetic technique, recovery and outcome.

Economics Tied to Procedure Type

Dr. Williams noted that economic advantages of regional anesthesia tended to be associated with procedure type. For ambulatory anterior cruciate ligament repair, for example, the use of spinal anesthesia with femoral nerve block can have significant "economic" benefits over general anesthesia. The benefits of regional anesthesia, however, may not be significant in less invasive knee surgeries. Therefore a comprehensive shift from routine general anesthesia to routine regional anesthesia, adjusted for surgical complexity, is associated with significant economic benefits to hospital resource utilization.

Professional Fees, Third-Party Payments

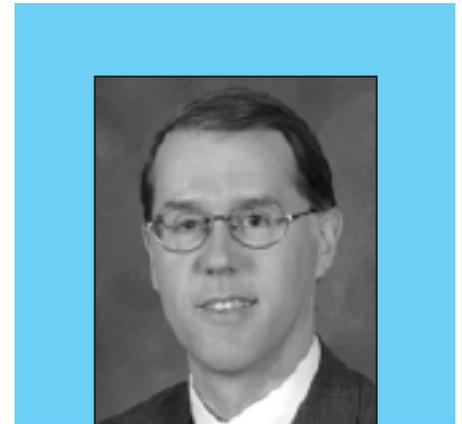
Professional fees and third-party payments for regional anesthesiology was another important topic. Reimbursement for nerve blocks will help determine whether the technique will be sustainable by a department or group practice. Significant geographical variation exists among the different third-party payers. For Medicare-based third-party payments, payments for single-injection blocks range from \$50 to \$80 and may or may not have allowances for continuous techniques. Local Medicare carriers with allowances for continuous nerve blocks, however, commonly pay twice the value of the single-injection nerve blocks.

Anesthesiologists are encouraged to take an active role in negotiations with third-party payers when contracts are to be initiated or renewed.

In many institutions, regional blocks are performed primarily for postoperative pain management, not as the sole anesthetic for the procedure. Most patients prefer some form of heavy sedation/general anesthesia while in the operating room, and, therefore, the case is billed under the term "general anesthesia." The nerve block is billed separately for postoperative pain management.

Contract Negotiation

Anesthesiologists are encouraged to take an active role in negotiations with third-party payers when contracts are to be initiated or renewed. Dr. Williams suggested some key points to consider when negotiating contracts: 1) do not agree to nerve



James B. Mayfield, M.D.

block payments being less than payments for other anesthesia charge modifiers, 2) ensure that all nerve blocks are uncoupled from the "anesthesia global fee" and 3) ensure that continuous nerve blocks generate a premium payment when compared with single-injection peripheral nerve blocks (typically double).

Thus regional anesthesia for outpatient surgery, while being beneficial to the patient, can be financially feasible to the hospital and the anesthesiologist. Organization, time management and financial savvy are the keys to success in any regional anesthesiology program. 

Plan now for the ...
SAMBA 20th Annual Meeting
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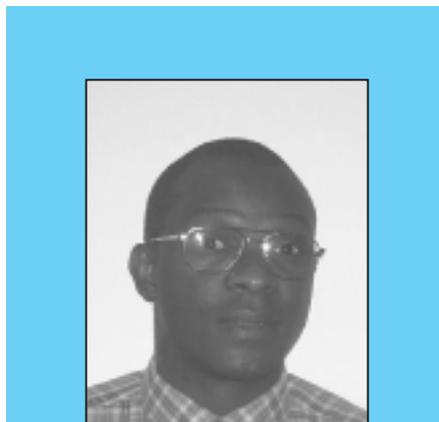
Peripheral Nerve Blocks in the Ambulatory Setting: The French Perspective

Désiré Pascal Diarra, M.D.
and
Gabriella Iohom, M.D.
Department of Anesthesiology
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Nancy, France

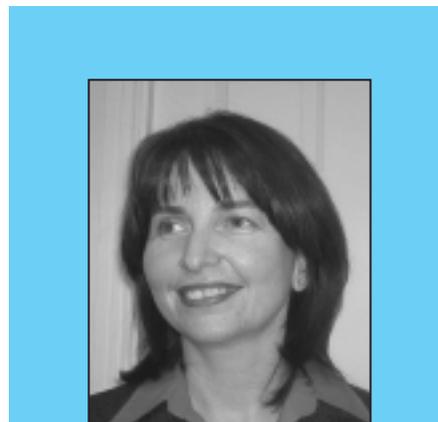
Although its growth remains modest compared to other countries, ambulatory surgery in France has experienced exponential development (from 5 percent in 1980 to 27 percent in 1996).^{1,2} Pain following ambulatory surgery occurs within the first 24-48 hours and may persist until postoperative day seven.^{3,4} The potential risk of encountering inadequate acute postoperative pain control at home was a major concern for 65 percent of general practitioners in a recent large French pilot study.⁵ Therefore effective pain management at home following ambulatory surgery is desirable.

Regional anesthesiology techniques provide excellent intraoperative and postoperative analgesia. Traditionally regional anesthesia is preferentially used by French anesthesiologists (273,000 peripheral nerve blocks in 1996, 16 times more than in 1980).⁶ It is conceivable that this tendency persists and applies equally to the ambulatory setting. Discharge home with an efficient sensory block is current practice in France following a recent consensus conference.⁷ A dense motor block is still undesirable, however. There are a number of possibilities currently employed for minimizing the motor and maximizing the sensory block following ambulatory surgery:

1. Use of ropivacaine, a long-acting amide local anesthetic structurally similar to bupivacaine, is likely to be less cardiotoxic and to produce less motor block than bupivacaine.
2. Use of selective mid-humeral block.⁸ This approach to brachial plexus block allows selective administration of local anesthetics



Désiré Pascal Diarra, M.D.



Gabriella Iohom, M.D.

(i.e., long-acting local anesthetics to the ulnar and median nerves responsible for the palmar sensory innervation and short-acting local anesthetics for both the radial and musculocutaneous nerves responsible for extension of the arm and hand and flexion movements, respectively).⁹

3. Combining a proximal plexus block (short-acting local anesthetic) with a distal peripheral block (long-acting local anesthetic), i.e., mepivacaine axillary brachial plexus block with ropivacaine ulnar block at the wrist for a Dupuytren contracture of the fifth finger).
4. Use of clonidine as an adjunct to enhance the quality of both intraoperative anesthesia and postoperative analgesia.

The duration of sensory block is limited, however, after a single-injection technique, and duration of postoperative pain outlasts the duration of analgesia in the majority of cases. Analgesia may be insufficient after resolution of the block, even if oral multimodal analgesia is commenced before this critical time. Continuous peripheral nerve blocks combined

with a simple disposable device that can be used at home offer a novel solution to part of this old problem.¹⁰ Concerns persist about patient injury from an insensate extremity, catheter migration and the potential for local anesthetic toxicity. In the few centers where patients are discharged home with perineural catheters, an infrastructure exists that is composed of several mechanisms aimed at maximizing patient safety. Comprehension of the verbal and written instructions is sought in all cases. Careful attention is paid to avoidance of inadvertent vascular catheter placement. Diluted concentrations of local anesthetics are used in an effort to minimize motor block and provide a margin of safety if delivered intravascularly. A physician is available to answer questions over the telephone if necessary, and daily telephone calls are placed to each patient to confirm safety and efficacy.

Thus continuous outpatient peripheral nerve catheters have the advantage of providing site-specific, dense, extended analgesia with minimal side effects. Developing this area of analgesia is essential to increasing the scale and scope of surgery performed on an outpatient basis. It also is crucial to enhancing the quality of

care for surgical procedures that are already considered appropriate for the ambulatory setting.

During a refresher course at the 46th National Congress of French Anaesthesiologists in Paris last April 2004, Philippe Macaire, M.D., pointed out the limiting factors to the wide use of continuous nerve blocks in France as follows:

- the cost of elastomeric pumps (from 24 to 45), especially under the circumstances of not being reimbursed by all health insurance companies;
- the cost of local anesthetic solution (240 ml ropivacaine 0.2 percent = 26 to 32); prefilled pumps should be desirable in order to minimize human error.

These obstacles will gradually disappear once health care managers realize that, on a larger scale, this method allows a substantial reduction of hospital stay and related cost, respectively.

An interesting point was raised in a poster presented at the same meeting by Ehrmann and colleagues from Tours, France.¹¹ The authors studied the rate of a ropivacaine 0.2 percent infusion delivered by three different elastomeric balloon pumps (Baxter™ LV 5, 7 and 10) under circumstances similar to those encountered in clinical practice (at a temperature range between 31° Celsius and 39° Celsius). Surprisingly they found a positive correlation between temperature and the rate of delivery for the elastomeric pumps LV 5 ($r^2 = 0.85$) and LV 7 ($r^2 = 0.68$), which was superior ($5.7 + 0.5$ and $8.6 + 0.8$ ml h⁻¹) to the theoretic values (5 and 7 ml h⁻¹, respectively, $p < 0.0001$) at 37° Celsius. The LV 10 elastomeric pumps were reliable irrespective of temperature. This finding should be taken into account when the incriminated elastomeric pump may be influenced by body temperature or other external heat sources.

In summary continuous peripheral nerve blocks using indwelling

catheters have been an integral part of acute and chronic pain management since first described by F.P. Ansboro, M.D., in 1946. This technique has been gradually refined, enabling sustained, effective postoperative analgesia, opioid-sparing, improved rehabilitation and quality of life with minimal side effects. It has been first tried on ambulatory patients by Norinder Rawal, M.D., Ph.D., in 1998.

It is only natural that with the re-evaluation of health care spending and the increased interest in expanding ambulatory surgery, this method of postoperative analgesia will gain large acceptance. Making the transition successfully on a larger scale goes beyond the successful placement of individual catheters. It requires further research, continuous education and meticulous attention to discharge and follow-up processes.

References available at www.sambahq.org. 

A Hero for All Seasons

Continued from page 1

Library-Museum of Anesthesiology, Dr. Wetchler reminded us that, in 1965, the New York State Society of Anesthesiologists asked Dr. Vandam whether an aggressive public relations program should be undertaken to improve our popular image. His response was: "It is about time that physicians stop talking about public relations programs. Our image is what we are and what we do, not what public relations experts say we are ... Each anesthesiologist is the specialty's best public relations man if he practices the way he should." In 1992, somewhat surprised at being asked the same question again, Dr. Vandam echoed the earlier response, adding for emphasis, "You cannot fool the

public and say 'here's your doctor' when the patient sees differently." Vintage Vandam!

Dr. Vandam experienced a long, rich life. The lion in winter remained curious, engaged and connected to his colleagues until the end. He not only showed us how to live; he also showed us how to die.

Although research has demonstrated that behavioral patterns can be formally taught,² it is important to acknowledge that imitation (or role-modeling) is absolutely essential to the development of professionalism. Dr. Vandam influenced not only our careers but, more importantly, our professional values and behavior. We all must strive to set proper examples by modeling excellent and compassionate patient care, active communi-

ty and professional service and collegial respect. By "what we are and what we do," we can both exemplify and preserve what is best in our profession. The new millennium may have signified the end of an era, but let us ensure that it does not mark the end of an ethos.

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Cardiac Patients and Ambulatory Surgery: Still Controversial?

Zeev Friedman, M.D.
Assistant Professor, Department of
Anesthesia and Pain Management
University of Toronto,
Mount Sinai Hospital
Toronto, Ontario, Canada

Patients presenting for ambulatory surgery are rapidly becoming as medically complex as the inpatient population. Gone are the days in which anesthesia for ambulatory surgery meant dealing with essentially healthy patients (i.e., American Society of Anesthesiologists [ASA] Physical Status 1 or 2). With the increasing numbers of ambulatory procedures reaching a projected 82 percent of all U.S. surgical volume by the year 2005, we are faced daily with decisions about patients' eligibility for ambulatory surgery.¹

Coupled with the sheer volume increase is the rising complexity of the procedures being performed on an ambulatory basis resulting from the advances in minimally invasive surgical techniques.² The combined effect of these factors in today's economically oriented practice of medicine is a "pushing of the envelope," which results in a change in practice and inclusion of patients with complex medical issues who were deemed unfit for ambulatory surgery in the past.³ One of the major aspects of safe ambulatory surgery practice is appropriate patient selection. The limited number of studies on patient selection criteria, however, has resulted in a highly variable practice that may be completely different even between adjacent centers.^{3,4} Thus patient selection remains to a large extent a matter of individual practitioner's preference.

Development of practice guidelines for patient selection should standardize practice and improve outcome without compromising patient safety. A starting point for this mission would be the definition of what is considered controversial with respect to selection criteria for ambulatory

surgery. A recently published survey of members of the Canadian Anesthesiologists' Society examined their current practice of patient selection for ambulatory surgery.⁵ The questionnaire addressed the controversial clinical and legal issues with respect to patient selection. The survey demonstrated that, although the selection criteria differed among centers, there was a clear consensus with respect to patients with extreme grades of severity in their medical conditions. Most anesthesiologists would provide or not provide anesthesia to patients with mild or severe conditions, respectively. For example providing anesthesia to ASA Physical Status 3 patients was a common practice among most responders (93.9 per-

Development of practice guidelines for patient selection should standardize practice and improve outcome without compromising patient safety.

cent), and ASA Physical Status 4 patients were still considered by 82.4 percent of responders to be unfit for ambulatory surgery. There was a disparity of opinion, however, regarding the eligibility of patients with intermediate degree of severity. In addition the changing practice of ambulatory anesthesiology was clearly reflected in the answers to the questionnaire.

Patients with cardiac disease continue to constitute a majority of "difficult" patients presenting for ambulatory surgery. With respect to cardiac patients, the Canadian survey found that patients with angina pectoris class II, prior (more than six months) myocardial infarction (MI), New York Heart Association (NYHA) class I congestive heart failure and asymptomatic valvular heart disease were con-



Zeev Friedman, M.D.

sidered suitable for ambulatory anesthesia by the large majority of the responding anesthesiologists. Similarly more than 90 percent of responders agreed that patients with angina pectoris class IV and congestive heart failure NYHA class III and IV would be unsuitable for ambulatory anesthesia.

Although patients with a history of MI more than six months prior to surgery were generally considered suitable for ambulatory surgery, those with a more recent MI remain controversial. The use of a six-month "cut off" for patient selection dates back to recommendations from the early 1970s and the cardiac risk index described by Goldman and colleagues.⁶ In contrast other studies suggested that patients with MI three months prior to surgery may be suitable for elective surgery.^{7,8} These recommendations, however, were based upon studies from the prethrombolytic therapy era and are probably less applicable to current practice.

Thrombolytic therapy and coronary angioplasty have an important impact on the "risk stratification strategies" of patients with MI. The American College of Cardiology/American Heart Association (ACC/AHA) guidelines consider an acute MI (defined as at least one documented MI less than or equal to seven days before the examination) or

a recent MI (more than seven days but less than or equal to one month before the examination) with evidence of important ischemic risk by clinical symptoms or noninvasive study as a major predictor.⁹ These guidelines place patients with an MI more than one month prior to surgery in the intermediate clinical predictor group for perioperative cardiovascular risk.⁹ Isolated intermediate predictors are considered safe for proceeding with surgery without further investigation or testing. This is particularly true with ambulatory surgical procedures, in which even the more “stressful” types of surgery such as laparoscopic cholecystectomy are considered as “low risk” surgeries (< 1 percent cardiac events).¹⁰ Thus only patients with recent MI, defined as occurring less than 30 days before surgery, are placed in the major clinical predictor group and are mandated for postponement of nonurgent surgery.

In light of these recommendations, it was surprising that only 15.9 percent of those responding considered patients with one to six months post-MI appropriate for ambulatory surgery.⁵ Even more surprisingly, two-thirds of the responders would anesthetize patients with angina pectoris class III, which is a major clinical predictor, and the ACC/AHA guidelines recommend that surgery be delayed or canceled in favor of medical management and risk-factor modification. Are these discrepancies a result of personal experiences and beliefs, which caused the responders to disagree with the guidelines and practice in a less “aggressive” manner? Or is it the result of misinterpretation or unawareness of these guidelines? These views certainly demonstrate some of the contradictions between clinical practices, expert views and published guidelines.

Although our clinical decisions should be based on evidence-based guidelines, there appears to be reluctance in acceptance of these guidelines in ambulatory anesthesiology practice, probably because they have not been

validated in the ambulatory surgical population. Ambulatory surgery is associated with a very low occurrence of major adverse cardiac events, and there is a limited amount of literature specifically addressing the risk of perioperative cardiac events associated with ambulatory anesthesia. A large prospective study of more than 38,000 ambulatory surgery patients found that only 33 (one out of 1,366) experienced major morbidity or mortality.¹¹ A four-center study of more than 17,000 ambulatory surgery patients found no association between coronary artery disease and outcome.¹² The 2.5-percent prevalence of a past MI in this cohort, however, may be insufficient for drawing conclusions.

In summary, practice guidelines are rapidly becoming preferred decision-making resources in medicine. Guidelines have played an important role in ambulatory anesthesiology as demonstrated in the area of discharge criteria. There is a need for more studies to formulate guidelines for appropriateness of a given surgical procedure in an individual patient in order to strike a balance between patient safety and the practical use of resources. Therefore developing appropriate selection criteria should be one of our top priorities for future research.

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2004 MID YEAR MEETING

What's New in Ambulatory Anesthesia?

Las Vegas, Nevada • Friday, October 22

(One day before the ASA Annual Meeting)

FOR COMPLETE MEETING INFORMATION, VISIT WWW.SAMBAHQ.ORG



7 a.m. - 7:55 a.m.

Continental Breakfast and
Registration

7:55 a.m.

Welcome

Ronald S. Litman, D.O., F.A.A.P.

8 a.m. - 9:30 a.m.

*Panel on Ambulatory Anesthesia
Research*

Tong J. Gan, M.D.

8 a.m. - 8:20 a.m.

*Novel Regional Techniques in
Ambulatory Anesthesia*

Spencer S. Liu, M.D.

8:20 a.m. - 8:40 a.m.

*Antiemetics: New Drugs and New
Strategies*

Ashraf S. Habib, M.B., B.Ch., M.Sc.,
F.R.C.A.

8:40 a.m. - 9 a.m.

*Analgesics and Outcome After
Ambulatory Anesthesia: Is There an
Association?*

Tong J. Gan, M.D.

9 a.m. - 9:30 a.m.

Questions and Discussion

9:30 a.m. - 10 a.m.

Coffee Break

10 a.m. - 11:30 a.m.

*Panel on Office-Based Anesthesia:
Update on Patient Eligibility*

Meena S. Desai, M.D.

10 a.m. - 10:20 a.m.

Patients With AICDs and Pacemakers
Scott R. Springman, M.D.

10:20 a.m. - 10:40 a.m.

Patients With Sleep Apnea
Hector Vila, Jr., M.D.

10:40 a.m. - 11 a.m.

Obese Patients
Rebecca S. Twersky, M.D.

11 a.m. - 11:20 a.m.

Patients With Renal Disease
Meena S. Desai, M.D.

11:20 a.m. - 11:30 a.m.

Questions and Discussion

11:30 a.m. - 1 p.m.

Luncheon Lecture:
*Getting Tricked by Medical Software and
Devices? Let's See Through the
Unintended Magic!*

John Wesley Gosbee, M.D., M.S.

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

Panel on Regional Anesthesia
Brian A. Williams, M.D., M.B.A.

1 p.m. - 1:20 p.m.

*Regional Anesthesia Group Practice in
Pediatric Outpatients: My Experiences
in France and Canada*
Bernard Dalens, M.D.

1:20 p.m. - 1:40 p.m.

*Regional Anesthesia Group Practice in
Adult Outpatients in a Multihospital
Private Practice Setting*
David A. Nelson, M.D.

1:40 p.m. - 2 p.m.

*Regional Anesthesia Group Practice at
the Hospital for Special Surgery, New
York: 15 Years Since Our Transformation
from General Anesthesia Practice*
Richard L. Kahn, M.D.

2 p.m. - 2:15 p.m.

Questions and Discussion

2:15 p.m. - 2:30 p.m.

Coffee Break

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

*Panel on Legal Aspects of Ambulatory
Anesthesia*

Kathryn E. McGoldrick, M.D.

2:30 p.m. - 2:50 p.m.

*What Can the Ambulatory
Anesthesiologist Learn From the Closed
Claims Studies and Other Data?*

Kathryn E. McGoldrick, M.D.

2:50 p.m. - 3:10 p.m.

*Potential Legal Pitfalls for the Pediatric
Ambulatory Anesthesiologist*
Lucinda L. Everett, M.D.

3:10 p.m. - 3:30 p.m.

Questions and Discussion

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

*Panel on International Ambulatory
Anesthesia*

Ronald S. Litman, D.O., F.A.A.P.

3:30 p.m. - 3:50 p.m.

Ambulatory Anesthesia in Italy
Pasquale De Negri, M.D.

3:50 p.m. - 4:10 p.m.

Ambulatory Anesthesia in Brazil
Pedro Paulo Vanzillotta, M.D.

4:10 p.m. - 4:30 p.m.

Questions and Discussion

4:30 p.m.

Adjournment

Yield for SAMBA Breakfast Panel at ASA Annual Meeting

Mary Ann Vann, M.D.
Beth Israel Deaconess Medical Center
Boston, Massachusetts

The SAMBA Committee on Education will present an excellent informational opportunity at this year's Breakfast Panel at the American Society of Anesthesiologists (ASA) Annual Meeting in Las Vegas, Nevada. "Traffic Patterns: Roadblocks and Detours" will be held on Wednesday, October 27, at the Las Vegas Hilton.

Moderator **Thomas W. Cutter, M.D., M.A.Ed.**, from the University of Chicago, described the panel's goals: "We are again looking at some of the most pressing problems facing ambulatory anesthesiologists. Combining theoretical ideas and practical experience, the panel will provide fresh insight into the issues of parental presence, production pressure and home readiness." Dr. Cutter is Chair of the SAMBA Committee on Education, which sponsors the panel each year.

The first speaker, **Linda J. Mason, M.D.**, is Director of Pediatric Anesthesiology at Loma Linda University Medical Center in Loma Linda, California. She will speak on the subject of "The Problem Parent." Dr. Mason provided a preview of her presentation: "Eventually all anesthesiologists are confronted by a particularly difficult parent or child, which can be very

challenging. Identifying a difficult parent or child in advance isn't always easy, especially in the ambulatory center where many times the anesthesiologist first meets the child and family just before surgery and has limited time to assess the situation. Circumstances that may create a difficult parent or child will be discussed as well as approaches to identify and handle these problems, including parental presence during induction of anesthesia and options for premedication in the ambulatory setting."

"Do Not Pass Go: Problems in the PACU" will be discussed by **Mary Ann Vann, M.D.**, Beth Israel Deaconess Medical Center in Boston, Massachusetts. Both usual and unusual events that delay patient discharge to home will be addressed. The latest information on perennial problems of postoperative nausea and vomiting and pain control will be presented as well as novel approaches to other occurrences hindering home readiness.

The final speaker is **David B. Glick, M.D., M.B.A.**, Medical Director of the postanesthesia care unit at the University of Chicago Hospitals. Dr. Glick's talk is titled "Haste Not, Waste Not: Productivity and Safety." Dr. Glick states: "The purpose of this presentation is to introduce clinicians to some of the metrics that have been used to gauge quality and productivity of anesthesia care providers. The metrics



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developed for assessing quality and productivity in anesthesia are poor at best. Nevertheless it is important to understand the measures so that groups can understand what behaviors they are incenting and individuals can understand their position and likelihood of advancing in a given group."

Last year's SAMBA Breakfast Panel in San Francisco, California, sold out, so it is recommended to purchase tickets well in advance. The ticket price is \$15 and includes a continental breakfast. Tickets may be purchased when registering, by mail, online at <www.ASAhq.org> or at the Las Vegas Convention Center. 

Dexmedetomidine: Is There a Role in Ambulatory Anesthesiology?

Ali Jahan, M.D.
Cleveland Clinic
Cleveland, Ohio

In 1999 the United States Food and Drug Administration approved the use of dexmedetomidine by continuous infusion for sedation of initially mechanically ventilated adult patients in the intensive care setting for periods of less than 24 hours. The recommended dose begins with a loading dose of 1 ug/kg given over 10 minutes followed by a maintenance infusion ranging from 0.2 ug/kg/h to 1.0 ug/kg/h.¹ A closer look at this ultra-short-acting alpha-2-receptor agonist reveals many appealing characteristics that may find their way into the armamentum of the ambulatory anesthesiologist.

Dexmedetomidine is an imidazole compound that displays specific and selective alpha-2-receptor agonism. The mechanism of action is unique and differs from those of currently used sedative agents, including clonidine.² In general, activation of alpha-2 receptors inhibits the release of norepinephrine, terminating the propagation of pain signals and inhibiting sympathetic activity.

The mechanisms of the analgesic actions of alpha-2 agonists have not been fully elucidated. A number of sites, both supraspinal and spinal, modulate the transmission of nociceptive signals in the central nervous system.² Even peripheral alpha-2 receptors may mediate antinociception. The locus coeruleus is the predominant noradrenergic nucleus in the brain and an important modulator of vigilance. The hypnotic and sedative effects of alpha-2 receptor activation have been attributed to this site in the central nervous system.²

In a double-blinded study, Aho et al.³ compared dexmedetomidine to diclofenac (a nonsteroidal anti-inflammatory drug) and oxycodone for postoperative pain management in 96 women undergoing laparoscopic

tubal ligation. A standardized anesthetic technique with no intraoperative opioid was used. Patients received doses of 0.2 ug/kg of dexmedetomidine, 0.4 ug/kg of dexmedetomidine, 60ug/kg of oxycodone or 250 ug/kg of diclofenac when they complained of moderate to severe pain.

If adequate analgesia was not achieved with three consecutive doses of the study drug in the first hour or five doses within two hours, morphine was given. The results showed that the pain relief achieved by the first dose of oxycodone was similar to that achieved by the third high dose of dexmedetomidine. Only eight of 24 patients in the higher dose of dexmedetomidine group required morphine compared to 20 of 24 patients in the diclofenac group. Also patients receiving diclofenac or lower doses of dexmedetomidine required morphine significantly sooner than those in the other two groups.

Only one patient in the higher dexmedetomidine group had shivering compared to 10 out of 24 in the diclofenac group. Furthermore the oxycodone group had a greater decrease in oxygen saturation than patients in the other groups. Three out of 24 patients in the higher dexmedetomidine group, however, were not arousable, and 10 out of 24 were difficult to arouse, whereas all patients in the diclofenac and oxycodone groups were easily arousable or awake. Eight out of 24 patients in the higher dexmedetomidine group needed atropine to treat severe bradycardia compared to none in the other groups.

Dexmedetomidine had analgesic properties, reduced morphine requirements and shivering while maintaining both respiratory rate and oxygenation but was accompanied by marked sedation and bradycardia.

Another double-blinded, placebo-controlled trial by Aho et al.⁴ evaluated dexmedetomidine infusion for maintenance of anesthesia in patients under-



Ali Jahan, M.D.

going abdominal hysterectomy. The study group received dexmedetomidine at 170 ug/kg/min for 10 minutes followed by a 10-ug/kg/min maintenance dose compared to the placebo group (both groups received a standard dose of fentanyl and 70 percent nitrous oxide in oxygen). Isoflurane was only used when needed as dictated by heart rate and mean arterial blood pressure or any other signs of "light anesthesia." The average duration of surgery was 110 minutes. Five out of 10 patients in the dexmedetomidine group required isoflurane, whereas eight out of 10 patients in the control group required isoflurane. Furthermore those who did require isoflurane required it for significantly less time in the dexmedetomidine group, 4 minutes versus 55 minutes. As seen in the prior study, however, the heart rate was significantly lower in the dexmedetomidine group.

The authors concluded that dexmedetomidine significantly diminished isoflurane requirements but did not provide "adequate" anesthesia and may result in significant perioperative bradycardia. The investigators did not evaluate the degree of sedation, analgesic requirements or the incidence of postoperative nausea and vomiting (PONV).

Arain and Ebert⁵ compared the cardiorespiratory effects of equisedative

doses of dexmedetomidine and propofol in 40 American Society of Anesthesiologists (ASA) Physical Status 1-3 patients scheduled for a 23-hour stay and surgical procedures under regional or monitored anesthesia care (all patients received a regional block). Those with obstructive sleep apnea or > 50 percent of ideal body weight were excluded. Patients were randomized to receive either dexmedetomidine at 1 ug/kg over 10 minutes then 0.4 ug/kg/h (maximum maintenance rate of 1 ug/kg/h) versus propofol at 75 ug/kg/min (no maximum rate) with a target bispectral index value between 70-80. The results revealed a higher intraoperative mean arterial pressure but lower postoperative mean arterial pressure in the dexmedetomidine group compared to the propofol group, 86 versus 75 mmHg and 74 versus 87 mmHg, respectively.

Surprisingly there was no difference in postoperative heart rate and respiratory function. Secondary endpoints revealed a significantly lower pain score and less morphine use in the dexmedetomidine group with similar patient satisfaction. On the downside, it took a longer time to reach the targeted sedation level using dexmedetomidine, 25 minutes versus 10 minutes for propofol. Also, even though there was no difference in the time to reach an Aldrete score of nine or the postanesthesia care unit (PACU) stay, the dexmedetomidine group was more sedated.

In another study, Arain et al⁶ compared the analgesic efficacy of dexmedetomidine with morphine in the early postoperative period. Thirty-four patients scheduled for elective inpatient procedures were randomized 30 minutes before the end of surgery to receive either dexmedetomidine (1 ug/kg over 10 minutes followed by 0.4 ug/kg/h) or morphine 0.08 mg/kg. At 30 minutes after surgery, only four of 17 patients in the dexmedetomidine group, compared to 12 out of 17 patients in the mor-

phine group, required morphine. Similarly, at 60 minutes, six out of 17 patients in the dexmedetomidine group required morphine compared to 15 of 17 patients in the morphine group. Patients receiving dexmedetomidine required 66 percent less morphine in the PACU than the morphine group. There was no significant difference in the incidence of PONV between the groups. As in other studies, the heart rate was significantly slower in the dexmedetomidine group without differences in MAP or sedation. Of interest 11 out of 17 patients in the dexmedetomidine group and seven of 17 patients in the morphine group claimed to have had better pain control when compared to their prior experiences.

Using dexmedetomidine before the completion of surgery was associated with reduction of postoperative morphine requirements and lower heart rates. Other described uses of dexmedetomidine include premedicant, addition to lidocaine for intravenous regional anesthesia,⁷ awake fiberoptic intubation and management of drug withdrawal syndromes.⁸

In conclusion dexmedetomidine is a potent, short-acting alpha-2 receptor agonist that has anxiolytic, sedative and analgesic properties with minimal respiratory depression. It has been shown to reduce the minimal alveolar concentration of inhalation anesthetics and postoperative opioid requirements and may even reduce postoperative nausea and vomiting and shivering. Other potential benefits include its ability to provide sedation and analgesia during cases when patient cooperation is needed, as when patients need to help turn themselves (e.g., during liposuction) or when opening and closing of the eyes are needed (e.g., for cosmetic surgery).

Even though this drug is very promising, the role of dexmedetomidine in the ambulatory setting remains unclear. Further studies are necessary to address the possibility of perioperative bradycardia and excessive seda-

tion. In addition the optimal dosing as well as optimal timing of discontinuing dexmedetomidine needs to be established. Furthermore a cost-benefit analysis needs to be performed to assess whether the improved intraoperative and postoperative conditions (including patient satisfaction) are worth the cost of the drug.

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Patient Selection Tops List of Current Concerns

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the SAMBA 2004 Annual Meeting last May in Seattle, Washington.

Désiré Pascal Diarra, M.D., and **Gabriella Iohom, M.D.**, Nancy, France, provide us with insights into regional anesthesiology practice in France. They also discuss the benefits and problems with these techniques. Concerns of continuous peripheral nerve blockade include patient injury related to the insensate extremity, particularly after discharge home. In addition catheter migration and potential local anesthetic toxicity (central nervous system and cardiovascular) as well as masking of surgical-related nerve injury and compartment syndrome are other concerns. There is clearly a need for refinement of peripheral nerve block techniques to improve the success rate as well as development of more effective methods for continuous administration after discharge (i.e., less bulky infusion devices and improved technology to reduce failure).

With the availability of shorter-acting anesthetic and analgesic drugs, it is now possible to have patients who are awake, alert and comfortable in the operating room soon after discontinuation of anesthesia. The side effects of opioids, particularly postoperative nausea, vomiting, sedation and dizziness, however, have been shown to delay recovery and discharge home. Dexmedetomidine is an ultra-short-acting alpha-2-receptor agonist with seda-

tive and analgesic properties. It has been shown to reduce opioid requirements and thus reduce opioid-related side effects. It has numerous benefits, particularly in patients at risk of post-operative airway compromise (e.g., obese patients with sleep apnea). There is a "learning curve" to the use of dexmedetomidine, though. Other limiting factors include side effects such as severe bradycardia and excessive sedation. These side effects can be prevented or reduced by avoidance of a loading dose and use of lower initial infusion dose and combining it with other nonopioid analgesics techniques such as local anesthetics and COX-2-specific inhibitors administered preoperatively. Although it is an expensive drug, dexmedetomidine has great potential for use in ambulatory anesthesiology. **Ali Jahan, M.D.**, Cleveland, Ohio, reviews this interesting drug.

Finally numerous ambulatory anesthesiology-related topics will be presented in a variety of forums during the American Society of Anesthesiologists (ASA) Annual Meeting to be held October 23-27, 2004, in Las Vegas, Nevada. Details about the scheduled presentations can be found in the ASA Annual Meeting Program Book or on the ASA Web site <www.ASAhq.org>. **Mary Ann Vann, M.D.**, Boston, Massachusetts, presents us with the outline of the SAMBA Breakfast Panel on Wednesday, October 27, at the Las Vegas Hilton. 