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Meeting Report

Society for Ambulatory Anesthesia 15th annual meeting

The 15th Annual SAMBA Meeting was held in Washington, DC on 4–7 May, 2000. There were panels on a wide variety of topics including: Office-Based Anesthesia, Complementary Medicine, Effective Strategies for Accessing Medical Information on the Internet, Lessons Learned from the ASA Closed Claims Project, Anesthetic Outcomes, and Post-operative Dilemmas. Below are highlights from selected presentations.

Rebecca Twersky, MD (Brooklyn, NY) presented an overview of the standards, regulations, guidelines and accreditation procedures for office-based practices. She emphasized that as compared with acute care hospitals and licensed surgery centers, office-based facilities have little to no regulation. Therefore, anesthesiologists may have to assume personal responsibility for facility construction, medications, supplies, equipment, etc. Anesthesiologists also need to be familiar with procedures regarding fire safety, power outage, staffing, unanticipated patient transfers, etc. The ASA has recently published ASA Guidelines for Office Based Anesthesia (www.asahq.org). Several agencies will accredit office-based practices including: Joint Commission on Accreditation of Healthcare Organizations, Accreditation Association for Ambulatory Health Care and the American Association for Accreditation of Ambulatory Surgery Facilities. Currently, state regulations vary tremendously regarding accreditation requirements. Some states, such as Connecticut, have no restrictions on office-based surgery. Others, such as California, require licensure and accreditation as delineated in California Senate Bill (SB) 595 which was effective July 1996. SB 450 which was adopted in August 1999 deems that liposuction of more than 5000 cm^3 total aspirate per procedure is unprofessional.

The California Cosmetic and Outpatient Surgery Protection Act, which was effective January 2000, delineates staffing, ACLS, and adverse event reporting requirements. While California has been on the forefront of developing office-based surgery guidelines and standards, other states are gradually adopting their own.

The next speaker was Dr Walter Maurer (Cleveland, OH) who spoke on Safe Anesthetic Techniques for the Office. Physicians need to be very familiar with the ASA Standards for Basic Anesthetic Monitoring, Pre and Post Anesthesia Care, Guidelines for Ambulatory Anesthesia and Surgery and Guidelines for Nonoperating Room Anesthetizing Locations. Facilities will vary greatly in terms of the physical plant (which is often retrofitted), adherence to fire safety, air handling and availability of back-up generators in the event of power failure. Simple issues such as the availability of a telephone in the procedure room (in the event an ambulance needs to be called) can pose problems if not dealt with before caring for patients. Some practitioners notify the local ambulance company in advance that they will be administering general anesthesia in the office on a particular day. Adherence to basic anesthesia standards and availability of appropriately trained personnel was stressed.

The next speaker on this panel was Dr Rudolph DeJong (Columbia, SC) who presented the anesthesiologist's perspective of office-based liposuction. Dr DeJong outlined the recent history of liposuction and reasons for this procedure attracting concern in the medical and regulatory communities. The major economic force driving this procedure is cash pay and lack of red-tape from insurance and other regulators. However, there have been five fatalities in New York City in recent years and the overall mortality following this procedure is estimated at 19 per 100 000. This contrasts with a 16 per 100 000 fatality rate for motor vehicle accidents in the United States in 1996. In 1987, the term tumescent liposuction was coined. This procedure involves subcutaneous infiltration of several liters of highly dilute lidocaine ($\leq 0.1\%$) with minute amounts of epinephrine (1 mcg/ml). This solution provides profound analgesia and a virtually bloodless aspirate. The doses of lidocaine used however, are enormous and approach 35–50 mg/kg. This is well beyond the FDA ceiling of 7 mg/kg and is possible because the tumescent solution is highly dilute and is bound in the subcutaneous tissue — up to a point. Dr DeJong had a useful analogy for this paradoxical situation: 'Envision the subcutaneous drug reservoir as a baby's cotton diaper that soaks up, and retains, a limited volume of liquid — any more liquid beyond that finite limit, however, spills over to cause instant soiling'. Indeed, post-lipo-

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suction deaths attributed to lidocaine toxicity seem to be due to slowly progressive depression of intra-cardiac conduction. Other potential complications with this technique include: pulmonary embolism, pulmonary edema, hypothermia, large third space fluid shifts, and epinephrine toxicity. He concluded by stating that, 'When all is said and done, liposuction may not be quite as benign a procedure as heretofore reputed'.

On Saturday 6 May, the panel 'Complementary/Alternative Medicine: Importance to Anesthesia Providers' was moderated by Dr Charles McLeskey (Chicago, IL). Dr McLeskey provided an overview and noted that one in five US adults taking prescription medications also report the simultaneous use of 'alternative' medications. Eisenberg (JAMA 1998) estimated that 15 million US adults may be at risk for unexpected adverse drug-alternative medicine interactions. The use of 'complementary' therapies has exploded over the past 5–10 years and has increased over three-fold from 1990 to 1997. Dr Jessie Leak (Houston, TX) then presented: 'Herbal Medicines: Perioperative Considerations for the Ambulatory Anesthesiologist'. She reminded the audience that herbal medicinals are exempt from FDA regulation and approval; the products are not considered drugs but rather diet supplements and therefore undergo the same level of scrutiny as food. Currently, the FDA does not have the authority to regulate herbal medicine purity, consistency or accuracy of labeling. The FDA can demand withdrawal of a product only if it is proven to be unsafe. Given this background, it was also emphasized that there are no randomized studies, as yet, that have definitively proven herbal medicinals to be harmful in the perioperative period. Most of the information comes from case reports and surveys. Nevertheless, the potential systemic properties of the more common herbal medicinals is worth noting.

Garlic, ginkgo, ginger and ginseng are known to be associated with alterations in platelet function and may increase bleeding especially among patients who are receiving drugs with anticoagulant properties, including heparin, aspirin, and non-steroidal anti-inflammatory agents.

Ephedra sinica (ma-huang) is used as a diet aid and several deaths associated with its use have been reported. This substance is estimated to be present in as much of 17% of commercially available herbal products. Adverse events associated with ephedra include: stroke, cerebral hemorrhages, palpitations, headache, and panic attacks. Ginseng may also cause tachycardia or hypertension.

Other herbal products such as valeriana officinalis (valerian), piper methysticum (kava-kava) and hypericum perforatum (St John's Wort) may be associated with prolongation of anesthesia.

In summary Dr Leak, as well as the ASA, recommend discontinuing herbal products two weeks prior to elective surgery. This recommendation is not supported by randomized clinical trials, but 'merely prudence'. She also emphasized that awareness of the issue is critical to safe management and patients need to be asked about use of herbal or 'natural' medicinals. The audience was referred to the ASA publication on possible side effects and drug interactions of herbal medicinals (www.asahq.org/ProfInfo/herb/list.html).The next speaker on this panel was Dr T.J. Gan (Durham, NC) who spoke on 'Use of Acupuncture in the Management of PONV'. Dr Gan acknowledged that the concept of acupuncture is difficult to comprehend in Western medicine however, many studies have demonstrated the efficacy of acupuncture in specific clinical situations. The NIH/OIM (Office of Alternative Medicine) Consensus Panel on Acupuncture stated in November 1997 that there is 'clear evidence for acupuncture's efficacy for treating postoperative and chemotherapy nausea and vomiting…'. Dr Gan emphasized that well controlled randomized trials were needed before acupuncture could be considered a routine component of Western clinical practice. He went on to describe the technique for acupuncture management of PONV including: acupressure, acupuncture needling, and electro-acupuncture and TENS. Most of these modalities involve stimulation over the P6 acupuncture point (Nei Guan) which is located between the tendons of the palmaris longus and the flexor carpi radialis of the forearm. The mechanism of action is not well defined. Several studies have shown acupuncture to be as effective as conventional antiemetics or better than placebo but its optimum role in management of PONV needs further investigation.

The following day, several panelists spoke on: 'Post-Operative Dilemmas'. Dr Terri Monk (Gainesville, FL) spoke on Post-Operative Cognitive Dysfunction. Features of this disorder, which is not uncommon in the elderly, range from mild forgetfulness to permanent cognitive impairment and loss of independence. Post-operative cognitive dysfunction encompasses three entities: post-operative delirium, mild neurocognitive disorder, and dementia. Post-operative delirium is an acute change in cognition, which is relatively common in the elderly and may last from a few days to a few weeks. Post-operative delirium can occur within 24 h after surgery, so called emergence delirium. This is more common in children. Interval delirium however, occurs after a lucid interval of one or more days. The distinguishing feature between emergence and interval delirium is time of appearance. Factors affecting the incidence of delirium include preoperative medical and cognitive status and age. The etiology is multifactorial and polypharmacy, intoxication, metabolic disturbance, hypoxia, sepsis, and hypercarbia are all possible cul-

prits. Treatment is directed at correcting any of these underlying disturbances and eliminating medications associated with delirium, if possible.

Mild neurocognitive dysfunction, which is a type of post-operative cognitive dysfunction, is detected days to weeks after surgery and can last for an indefinite period of time. Dysfunction ranges from mild memory loss to severe impairment. These patients do not meet criteria for dementia but are not functioning as expected for their age and preoperative status. Diagnosis is confirmed by neuropsychological testing. Although the causes of post-operative neurocognitive dysfunction are not known, identified risk factors include: advanced age, duration of anesthesia, low education level, need for second operation, post-operative infections, and respiratory complications. In a multinational study of patients having non-cardiac surgery, the incidence of late post-operative cognitive changes was 14% for patients older than 70 years and 7% for those between 60 and 70 years of age. Dr Monk emphasized the need for further studies to better elucidate the etiologies, mechanisms, and markers for the development of post-operative cognitive dysfunction.

The next speaker was Dr David Sinclair (Pittsburgh, PA). His talk, entitled 'Simulated Driving After Ambulatory Anesthesia' focused on how to use driving simulators to assess 'street fitness'. Although this technology is in its infancy and most of the studies to date have used volunteers, preliminary results are encouraging. Driving simulators measure several performance variables including response time, lane position, and number of collisions. Recent studies have been volunteer cross-over studies where subjects have either alcohol or a general anesthetic (propofol, N20, desflurane) and are then placed in a driving simulator. Driving performance was impaired as late as 4 h post-anesthetic but was back to baseline by 24 h. Dr Sinclair stressed that further studies using actual patients, interpretation of road data, impact of post-operative medications and rigorous evaluation will be necessary before incorporating simulators into actual clinical practice.

Next Dr Frances Chung (Toronto, Canada) spoke on 'Post-Operative Complications: Beyond PONV'. She reviewed the relatively low morbidity and mortality rates associated with ambulatory surgery and reported on the incidence of major adverse events, especially those relating to the cardiorespiratory systems. Hypertension and hypotension are the most common cardiovascular adverse events in the ambulatory setting and occur with an incidence of 2–16% depending on the study. Rhythm disorders occur in about 1–2% of ambulatory patients. The long term sequelae of these events is difficult to quantify, but the incidence of severe cardiovascular complications in a well screened ambulatory surgery population is less than in age matched controls. Certainly prolonged post-operative stays, which may be a surrogate for post-operative adverse events (or unrealistic expectations), is related to the type of anesthesia and the surgical procedure. General anesthesia is associated with a higher incidence of PONV (as compared with MAC or regional anesthesia) and certain ENT; orthopedic and urologic procedures may be especially painful, resulting in prolonged stays. Once discharged, the most common reasons for readmission are bleeding, fever, pain wound disruption and urinary retention. Patients undergoing urologic procedures are most likely to be readmitted. Although ambulatory surgery and anesthesia has an excellent safety record, Dr Chung concluded by noting that there is still room for improvement, especially by reducing the incidence of 'minor' adverse events since these events, while not life-threatening, affect patient satisfaction and post-operative function.

The last speaker, Dr Girish Joshi (Dallas, TX) addressed the topic: 'Fast Tracking: Lessons Learned'. Dr Joshi emphasized that the selection of the anesthetic technique (general vs. regional anesthesia) is a major determinant of recovery after ambulatory surgery. Furthermore, success of fast-tracking is critically dependent on preventing post-operative complications of all sorts — from airway obstruction to nausea. The use of short-acting muscle relaxants and anesthetics, multimodal pain management, and prophylaxis of PONV all help to set the stage for fast-tracking. However, the implementation and success of a fast track program requires interdisciplinary collaboration between anesthesiologists, surgeons, and nurses. He stressed that the goal of any fast track program should be to eliminate unnecessary aspects of care and improve the quality of care and patient satisfaction, without putting the patient at any additional risk. He concluded by noting that while fast tracking is feasible, more studies are needed to show that fast tracking can be accomplished safely and in a cost effective manner in varied patient populations.

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