Volume 3, Number 4

THE ASAT SENSOR

October 1993

THE QUARTERLY NEWSLETTER OF THE

AMERICAN SOCIETY OF ANESTHESIA TECHNOLOGISTS AND TECHNICIANS

PRESIDENT'S MESSAGE ...

by George Mann

Membership for this organization is handled by John Spaulding, our Executive Director. I would like to share with you some data from the latest status report that John prepares each quarter:

1. 716 members are in good standing.
2. 188 members were lost (due to not renewing membership within the grace period).
3. 75 members inactive (membership renewal now due).

It costs money to run any organization, and paying your dues is one of the ways to help us stay solvent. If you believe in our objectives, help us; renew your membership when it comes due and encourage your fellow techs to join.

President's year: 365 days have already gone by and my year in office is winding down. I have tried to do the best that I could for the organization, but it has not been easy at times. If it hadn't been for the support of the SUNY Health Science Center Department of Anesthesiology, I could not have accomplished much. The attending staff, the secretaries, and especially the support staff, (Diane, Paul, Lou, Joyce, and Mark) made the job a lot easier. Thanks to you all.

Your Regional Directors were very supportive, and did their job to the best of their ability - I could not have asked for more. Thanks, and continue to support the incoming President.

Lee Amorin worked hard this year as President-Elect, and is ready to assume the role as President. We have set our goals, and I know that under his leadership we will come closer to reaching and exceeding them.

Inside your Sensor:

ASATT TELEPHONE:
800-352-3575

1992-1993 OFFICERS:

President
George Mann
SUNY - Health Science Center
Syracuse, NY
315-464-4640

Vice President
Lee Amorin
Harborview Medical Center
Seattle, WA
206-223-3055

Secretary
Chris Patterson
San Jose Medical Center
San Jose, CA
510-471-9327 (Home)

Treasurer
Ruth Ochoa
Salem Hospital
Salem, OR
503-370-5200 p225

Executive Director
John Spaulding
Accurate Management
& Transcription Service
206-823-4092

1992-1993 DIRECTORS:

Region 1:
Alberto Gonzalez
St Luke's Roosevelt Hospital
New York, NY
212-523-6139

Region 2:
Wilma Frisco
12014 Silmor Ave
Cleveland, OH 44103
216-541-5710

Region 3:
Ed Vasquez
Florida Hospital - Orlando
Orlando, FL
407-896-6611

Region 4:
Dean Rux
Marshfield Clinic
Marshfield, WI
715-387-7179

Region 5:
Ann Martin
Univ of Colorado Hospital
Denver, CO
303-270-8275

Region 6:
Chris Patterson
San Jose Medical Center
San Jose, CA
408-998-3212 x4812

Region 7:
Ruth Ochoa
Salem Hospital
Salem, OR
503-370-5200 p225

CORPORATE MEMBERS:

ABBOTT LABORATORIES
Abbott Park, IL

ARC MEDICAL, INC.
Clarkston, GA

BAXTER HEALTHCARE CORP.
Valencia, CA

CRITICARE SYSTEMS, INC.
Waukesha, WI

DATEX MEDICAL
Tewksbury, MA

ELECTROMEDICS, INC.
Englewood, CO

KING SYSTEMS CORP.
Noblesville, IN

LIFE SUPPORT SYSTEMS, INC.
Phoenix, AZ

MEDIREPS, INC.
Glendale, AZ

OHMEDA CORP, Division of BOC
Louisville, KY

PPG BIOMEDICAL, INC.
Lenexa, KS

SPECTRUM ANESTHESIA SERVICE
Louisville, KY

TRADEMARK MEDICAL
Fenton, MO

THE SENSOR: Quarterly Newsletter of the ASATT.

The opinions expressed herein are those of individual authors, and do not necessarily reflect the views or opinions of the ASATT.

Editor: Dianne Holley, 3810-A Tonkawa Trail, Austin, TX 78756. 512-451-7457 (Home) 512-323-1104 (Fax)
Associate Editor: Dennis McMahon, Virginia Mason Medical Center, Seattle, WA 98111 206-223-6980 (Work)

All submissions pertinent to the objectives of the ASATT will be considered for publication. Photographs, preferably black-&-white, are also welcome and will be returned.

Deadline for the next issue is December 1, 1993.

THE VIEW FROM ...

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER
PORTLAND, OREGON

by David G. Mastalski, Chief Anesthesia Technician

The Department of Veterans Affairs Medical Center is a regional, state-of-the-art, multi-care facility, which has been caring for America's veterans since 1929. We moved into our new 386-bed facility in 1988. The medical center is located atop the highest hill overlooking downtown Portland, the Willamette River, and Mt. Hood. The VA has an affiliation with Oregon Health Sciences University which was recently physically joined to us by the longest suspension pedestrian bridge in the U.S. Being affiliated with the medical school affords our Anesthesiology Service many opportunities. We provide anesthetic care to 10 operating rooms, the post anesthesia care unit, radiology, and the various intensive care units. We have 13 staff physicians (full-time and part-time), 6 residents (who rotate monthly from the university), 4 CRNA's, 5 technicians, and an outstanding office staff. Teamwork plays a key role in providing care to our patients. Anesthesia technical services are routinely provided five days a week from 0630 to 2100. Around the clock, seven-days-a-week service is provided by rotating on-call technicians and physicians.

As technicians, we pride ourselves on the quality of care given to our patients and the high standard of support provided daily to our physicians and OR staff. Our roles range from standard operating room turnovers and drug and supply stocking, to direct patient care duties, such as cell-saving and assisting with pulmonary artery catheter placement. We have a very active open-heart program, which demands technician assistance. The University Liver Transplant Program is one of the best and most active in the country. All university liver transplants are performed in our facility and require some specialty technical support.

We recently developed an Anesthesia Stat Laboratory, located in our workroom and administered in cooperation with hospital laboratory services. Our technicians are certified and skilled in running blood gases, hematocrit, electrolytes, co-oximetric values, activated clotting times, and glucose analysis on a variety of instruments. With the addition of this stat lab, our physicians are able to make accurate clinical decisions within a matter of minutes.

The entire Anesthesiology Service is committed to quality patient care, realizing that anesthesia technicians play a key role in providing that care. In conjunction with ASATT's guidelines, I have developed a technician training program which is being put into action soon. We continue to broaden our knowledge of anesthesia technology by having weekly inservices and presentations. I am proud to say that all the anesthesia technicians at the Portland VA Medical Center are active members in ASATT and are enlightened by networking with other members and reading the *Sensor*.

LETTERS ...

Don't Come As You Are...

To the Editor:

As we pack our bags for our annual ASATT meeting in October, a few questions: When did people start believing that it doesn't matter what they wear in public? When did they stop taking pride in being well-dressed?

It can't just be a matter of comfort. Men seem to dress-down when the occasion calls for dressing-up, but it's hard to believe that a jacket and slacks offer much less comfort than a sweatshirt and jeans. And while comfort led women to abandon the torture of girdles and spike heels, how much discomfort is posed by a loose skirt?

Clothes are not just something we put on to cover ourselves; they are part of the environment. Clothes can influence not only how we're treated but how we treat others. They can enhance an occasion, or bring it down. It isn't the fit of the clothes, it's the fit between the clothes and the occasion that counts.

The ASATT is a society of high-tech professionals; let's get back to the idea that we owe it to our colleagues to have our clothes match the occasion when we meet. Even more, we owe it to ourselves.

- Linda E. Nester, CIVT-AT
Charleston, WV

Keeping Your Eggs Redundant...

To the Editor:

RE: "Hanging Your Equipment By A Thread",
Sensor, July 1993; by Doug Draper, UCDMC.

I would like to respond to the above referenced article concerning Mr Draper's reference to the disadvantage of having all monitoring consolidated in the anesthesia machine chassis. In the article, Mr Draper states:

"When all monitoring is consolidated in one chassis, then

(Continued of page 10)

TECHNICALLY SPEAKING

by Wes Simpson II
San Diego, CA

Nothing can stir excitement like a significant advance in technology, especially when years of published research precede the commercial introduction of an item. The recent introduction of desflurane in the United States is no exception. In that light, this edition focuses primarily on desflurane, with secondary emphasis on sevoflurane and the other volatile agents.

Only two of the articles are strictly on the technology which supports these agents. The majority of citations pertain to clinical indications, contra-indications, and the physical properties of these agents. If we are to provide the best possible assistance to the anesthesia care team, we must be able to do more than mount or fill a vaporizer. A basic understanding of the agents in question is required.

The costs of new technology continue to take on an ever-increasing role in clinical choices. The last two citations can help to open up discussion regarding this issue, so that a well informed conclusion can be reached on what role these new agents should play in your own institution.

Zaleski L, Abello D, Gold MI: **Desflurane versus isoflurane in patients with chronic hepatic and renal disease.** Anesth Analg 76:353-6,1993.
This study of 40 patients (20 with chronic hepatic or renal disease) shows no changes in laboratory values obtained up to 24 hours post-anesthetic regardless of whether isoflurane or desflurane was used. It concludes that desflurane is as safe as isoflurane for these patients while offering faster emergence from anesthesia.

Joyce TH, Younger D, Pai UT, Manley M: **Clinical evaluation of the accuracy of TEC6 Vaporizer for desflurane.** (Abstract) Anesth Analg 76:S174, 1993.
Vaporizer dial settings of the TEC6 were compared with a Datex multigas monitor and an Ohmeda RGM5250 monitor. Accuracy was tested throughout the 2% to 9% range, selected as the norm for surgical anesthesia. A 4L/min gas flow was used. Equilibrium was achieved within 30-60 seconds after changing concentrations, with no clinical or statistical differences between dial settings and vaporizer output.

Mahadeviah A, Bennett J, Stewart J, Lingarajo N, Keykhah M, Letizia C, Fugaro J: **Desflurane versus isoflurane for control of the hemodynamic response to surgical stimulation.** (Abstract) Anesth Analg 76:S235, 1993.
59 patients undergoing orthopedic or intra-abdominal surgery were studied. Desflurane provided more rapid control of elevated blood pressures caused by surgical stimulus compared to isoflurane. Mean response times for desflurane were 4.9 +/- 0.7 minutes, and 8.4 +/- 1.0 minutes for isoflurane.

Lebenbom-Mansour MH, Pandit SK, Kothary SP, Randel GI, Levy L: **Desflurane versus propofol anesthesia: a comparative analysis in outpatients.** Anesth Analg 76:936-41, 1993.
Four groups of patients were studied. Group one received a propofol induction followed by desflurane/nitrous oxide/oxygen for maintenance. Group two received a propofol induction followed by propofol/nitrous oxide/oxygen. Group three received a desflurane/nitrous oxide/oxygen induction and maintenance. Group four received desflurane/oxygen for induction and maintenance. All four groups' hemodynamic results were similar. Groups three and four showed more breath holding during induction. Group four had the most rapid emergence.

Andrews JJ, Johnston RV: **The new TEC6 desflurane vaporizer.** Anesth Analg 76:1338-41, 1993.
This technical article gives a complete overview of the Ohmeda TEC6 desflurane Vaporizer. Chapter headings include: unsuitability of contemporary vaporizers for controlled vaporization of desflurane, operating principles of the TEC6, effects of output at varied altitudes, effect of carrier gas composition, and safety features. Also included are diagrams which demonstrate vapor pressure/temperature curves and flow calculation formulas for enflurane, halothane, isoflurane, and desflurane, as well as a simplified schematic of the TEC6 Vaporizer.

Kelly RE, Hartman GS, Embree PB, Sharp G, Artusio JF: **Inhaled induction and emergence from desflurane anesthesia in the ambulatory surgical patient: the effect of premedication.** Anesth Analg 77:540-3, 1993.
Findings include: desflurane is irritating to the airway--but the effect is self-limiting. Use of a premedication significantly reduced irritation during mask induction. The authors recommend increasing concentration when approaching 1 MAC. This allowed for rapid establishment of deep levels of anesthesia. The study concludes that desflurane can be used for mask induction with adequate premedication.

Eger, II EI: **New inhalation agents--desflurane and sevoflurane.** Can J Anaesth 40:5/R3-5, 1993.
This article is from a talk given by Dr. Eger, the man who "wrote the book" on enflurane and isoflurane. The paper compares and contrasts desflurane and isoflurane, and sevoflurane with halothane. The stability of desflurane and sevoflurane in an alkaline environment (soda lime or barium

(Continued on page 9)

OFFICIAL NOTICE

September 10, 1993

TO: All Board Members

RE: 1993 Election Results

The following are the results of the elections that concluded on September 1, 1993. Ballots were sent to all active members eleigible to vote, and of these 95 voted. This represents 12% of the total active membership. Included in the results are write-in candidates.

Vice-President/President Elect:

Chris Patterson.....65
Wes Simpson.....29

Regional Director #1:

Jacqueline Polak.....7
John Armstrong.....4

Regional Director #2:

Election for this position in 1994.

Regional Director #3:

Jerry Guttery.....13

Regional Director #4:

Election for this position in 1994.

Regional Director #5:

Ann Martin.....8

Regional Director #6:

Election for this position in 1994.

Regional Director #7:

Ruth A. Ochoa.....13

Respectfully submitted,

John W. Spaulding,
Election Committee

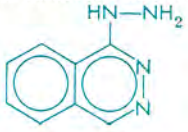
PHARMACOLOGY FOR THE ANESTHESIA TECHNICIAN

Julia E. Pollock, M.D.
Staff Anesthesiologist,
Virginia Mason Medical Center, Seattle

More than any other aspect of medicine, the practice of anesthesia requires an appreciation of pharmacology. Familiarity with the types of drugs used by the anesthesiologist/anesthetist is essential for the anesthesia technician. This chapter is intended to serve as an introduction to the drugs that may be used by the primary anesthesia provider; for a more detailed review of dosages, mechanisms of action, pharmacodynamics or side effects, the reader is referred to standard pharmacology or anesthesia texts.*

Many of the drugs in common use today are referred to by more than one name. This can be a source of continuing frustration and confusion, not only for anesthesia technicians but for residents, students and anesthesiologists as well. For the purpose of this chapter drugs will be discussed primarily by their generic name and followed in parentheses by their trade names.

There are primarily two types of anesthesia that may be performed by the anesthesiologist/anesthetist, these include general and regional anesthesia. The drugs used to provided these two forms of anesthesia are quite different and will be discussed separately.

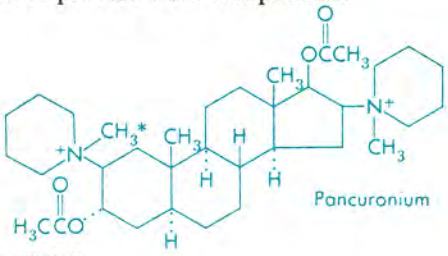


Hydralazine

GENERAL ANESTHESIA

General anesthesia may be performed using either inhalational or intravenous agents. Traditionally induction of anesthesia is completed using several different intravenous medications and anesthesia is maintained with an inhalation agent. However, inhalation agents may also be used for the induction of anesthesia (primarily for pediatric patients or those without IV access) and continuous intravenous administration of medications may be used for maintenance of anesthesia (Propofol or nitrous/narcotic techniques.)

The necessary requirements of an anesthetic are analgesia, amnesia, and muscle relaxation. Typically the anesthesiologist/anesthetist will combine a variety of agents with different effects to provide these components.



Pancuronium

A. INHALATION AGENTS

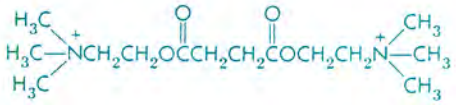
Currently available inhalation anesthetic agents include one inorganic gas, nitrous oxide, and three volatile liquids, *halothane*, *enflurane* and *isoflurane*. The mechanism by which these agents produce anesthesia remains unclear, however it most probably relates to their effect on membranes in the central nervous system. Depth of anesthesia with the inhalation agents is determined by MAC, or minimum alveolar concentration. MAC is defined as the alveolar or end-tidal concentration of an anesthetic at which 50% of patients will move in response to skin incision.

Nitrous Oxide--a nonflammable colorless gas that is compressed to a liquid state and stored in blue cylinders at 760 psi. Nitrous oxide is a low potency anesthetic and thus is most often administered in combination with other agents including the volatile agents, narcotics, or Propofol.

Halothane (Fluothane)--Introduced in 1959, halothane was developed to meet the need for a nonflammable inhalation anesthetic. Despite its chemical stability, halothane is stored with thymol as a preservative in amber-colored bottles because it is susceptible to spontaneous oxidative decomposition. Like the other volatile liquids, halothane is administered as a vapor following its evaporation in a vaporizer. The most serious side-effect associated with the use of halothane is otherwise unexplained fatal hepatic dysfunction occurring in 1:10,000 patients receiving halothane. This may be related to hepatic metabolism of halothane under hypoxic conditions.

Enflurane (Ethrane)--is a halogenated ether with a profile similar to halothane.

Isoflurane (Forane)--The newest inhalation agent in clinical use, isoflurane is an isomer of enflurane. Isoflurane has become popular because it provides good cardiovascular stability and has a relatively small incidence of associated hepatitis.



Succinylcholine

B. INTRAVENOUS AGENTS

1. **Induction Agents**-- There are a variety of intravenous medications available for the induction of anesthesia. These drugs can be used in combination or alone to provide induction of general anesthesia or in decreased dosages for intravenous sedation.

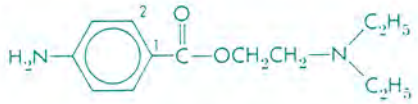
Barbiturates-- The most commonly used induction agents available today are the short-acting barbiturates. The two most frequently used are *thiopental* and *methohexital*. These drugs provide rapid induction of anesthesia by enhancing CNS inhibitory transmitters. They are not analgesic, and are potent myocardial and respiratory depressants.

Ketamine (Ketalar, Ketaject)--a phencyclidine derivative, this drug produces dissociative anesthesia. It depresses the myocardium but cause sympathetic nervous system stimulation, thus it most frequently is used in otherwise healthy hypovolemic or trauma patients. Ketamine has been associated post-operatively with bad dreams or hallucinations.

Etomidate (Amidate)--anesthesia is produced by depression of the reticular activating system. This drug provides good cardiovascular stability but is associated with a high incidence of post-operative nausea and vomiting as well as adrenocortical suppression.

Propofol (Diprivan)--recently introduced propofol has become popular because of rapid awakening and a decreased incidence of post-operative nausea and vomiting. Because of its short half-life, propofol most commonly is used as a continuous intravenous infusion. It is not analgesic and is a dose-dependent myocardial and respiratory depressant.

2. **Narcotics**-- Narcotics act at stereospecific opioid receptors in the central nervous system, spinal cord and probably other tissues. They are excellent analgesics, but have the associated side effects of nausea, vomiting, and respiratory depression. Narcotics are categorized as agonists, antagonists, partial agonist or agonist-antagonist based on their effect at the opioid receptors. The newer synthetic narcotics such as *fentanyl* (Sublimaze), *sufentanil* (Sufenta) and *alfentanil* (Alfenta) are much more potent than the traditional narcotics *morphine* and *meperidine* because of their affinity for the opioid receptor.



Procaine *

3. **Benzodiazepines**-- These drugs are used primarily in conjunction with other agents to provide the components of a balanced anesthetic. Benzodiazepines are not analgesic but are useful because they provide a very high degree of amnesia with minimal depression of ventilation or the cardiovascular system. Benzodiazepines in current use include *lorazepam* (Ativan), *diazepam* (Valium) and *midazolam* (Versed.)

4. **Relaxants**-- Neuromuscular relaxants can be divided into two broad categories based on their action at the neuromuscular junction. These two groups include depolarizing relaxants of which the only drug in clinical use is *succinylcholine,* and the nondepolarizing relaxants which block the flow of acetylcholine across the neuromuscular junction. Nondepolarizing relaxants currently in use include the intermediate acting agents *vecuronium* (Norcuron) and *atracurium* (Tracrium) and the long acting agents, *d-tubocurarine* (curare), *pancuronium* (Pavulon), *gallamine* (Flaxedil), and *metocurine* (Metubine.)

Non-depolarizing and depolarizing drugs can be distinguished by their effects at the neuromuscular junction as monitored by the twitch monitor. Individual drugs can be characterized by the degree and route of metabolism, amount of histamine release on injection, and the effects on the cardiovascular system.

5. **Neuromuscular Relaxant Reversal Agents**-- The effects of nondepolarizing neuromuscular blocking agents can be reversed by drugs known as anticholinesterases. These drugs work by blocking the breakdown of acetylcholine at the neuromuscular junction and allowing its accumulation. In addition to allowing for reversal of neuromuscular blocking agents, the accumulation of acetylcholine can cause some unfavorable side effects (most notably bradycardia and bronchoconstriction) therefore administration of reversal agents is always accompanied by atropine, or glycopyrrolate to inhibit these adverse effects. Commonly used anticholinesterases include: *neostigmine* (Prostigmin), *edrophonium* (Tensilon, Enlon) and *pyridostigmine* (Mestinon, Regonol.)

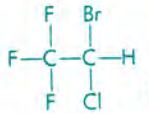
6. **Pressors**-- Vasopressors are drugs used by the anesthesiologist to support the blood pressure during times of hypotension or low cardiac output. These drugs may be used in a variety of situations from hypotension after spinal anesthesia to resuscitation following cardiac arrest. Commonly used vasopressors include: *atropine*, which is used to increase the heart rate; *ephedrine* and *phenylephrine* which are used to increase the blood pressure; *dopamine*, *dobutamine* and *amrinone* (Inocor), which are used to increase the cardiac output; and *epinephrine* (adrenalin), and *norepinephrine* (Levophed) which may be used following cardiopulmonary bypass or during periods of extreme hypotension to increase the blood pressure.

7. **Others**-- There are other drugs which may be used by the anesthesiologist with varying frequency. Some of these include:

Anticholinergics-- (*atropine*, *scopalamine*, *glycopyrrolate* (Robinul)) Used to increase heart rate, control oral secretions, and in conjunction with anticholinesterases.

Antiemetics-- (*metoclopramide*, *droperidol*) These drugs are used to prevent or for the treatment of nausea and vomiting.

Bronchodilators--(*metaproterenol*, *albuterol*, *epinephrine*) These aerosols work through sympathetic nervous system stimulation to provide bronchodilation in the treatment of reactive airway disease, anaphylaxis or other conditions associated with bronchoconstriction.



Halothane

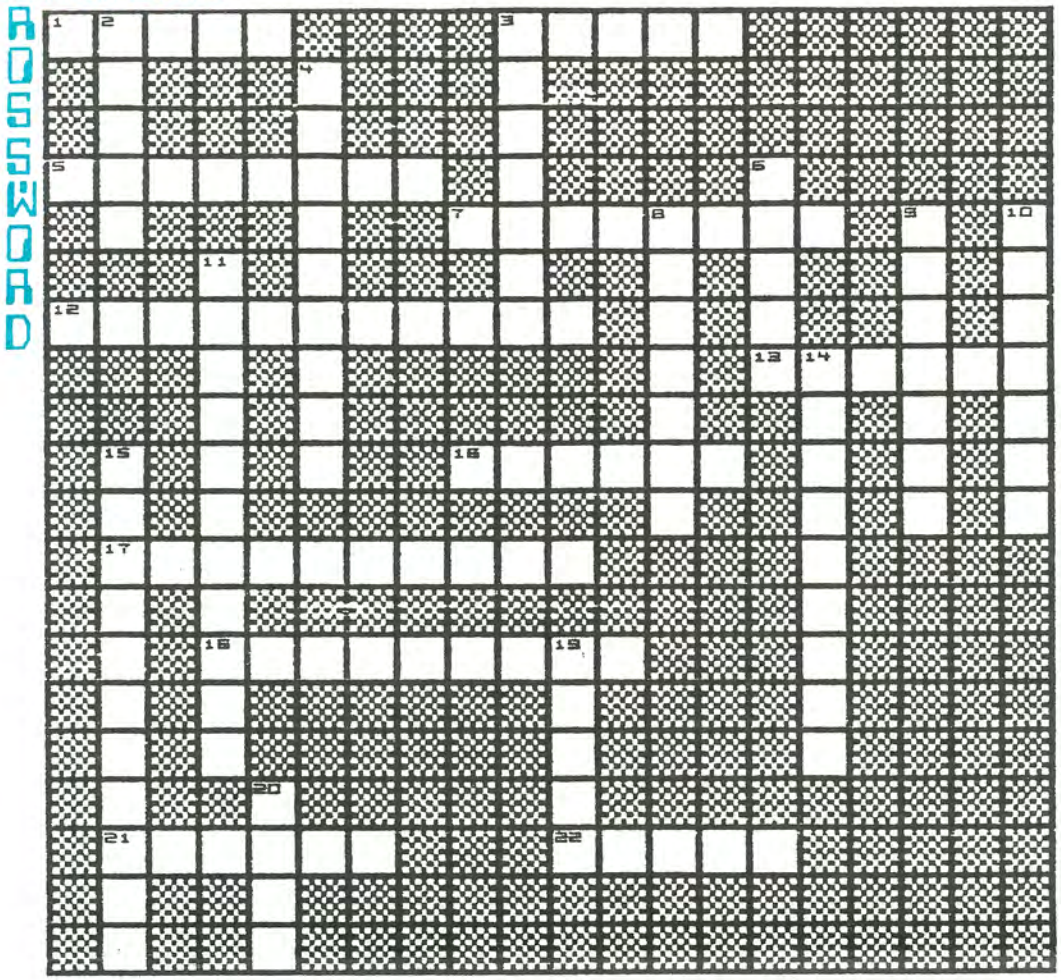
Diuretics--(*furosemide*, *mannitol*, *ethacrynic acid*) These drugs work via different mechanisms to increase urine output in patients with decreased kidney function or they may be used prophylactically in patients at high risk for renal damage secondary to ischemia (from cross-clamping) or potential nephrotoxins.

REGIONAL ANESTHESIA

Regional Anesthetic techniques performed by the anesthesiologist may include spinal, epidural, caudal, axillary, intercostal or other types of nerve blocks. One thing all of these blocks have in common is that they are all performed using **local anesthetics.** Local anesthetics provide pain relief by inhibiting nerve conduction. These drugs are divided into two distinct classes based on their chemical structure. The two classes are the amino-esters which include *procaine* (Novocain), *chloroprocaine* (Nesacaine), and *tetracaine* (Pontocaine), and the amino-amides which include *lidocaine*

TECHNICIAN

CROSSWORD



HOW'S YOUR ANATOMY? 3: Abdomen & Extremities

ACROSS:

1. Organ that generates bile
3. Longest bone of the body
5. Organ that secretes digestive enzymes
7. Major artery of the upper arm
12. Bones of the hand
13. Organ that filters old red blood cells
16. Bone of the lower arm, closest to the thumb
17. Horizontal section of colon
18. Membrane covering the spinal cord
21. The armpit
22. Thicker of the two lower leg bones

DOWN:

2. The aorta divides into the _____ arteries
3. Major artery of each upper leg
4. Bone section that forms the elbow
6. Tenth cranial nerve that serves the abdomen
8. Bone of the upper arm
9. The kneecap
10. Organs that filter the blood
11. Organ that stores bile
14. Bones of the fingers
15. Longest bones of the foot
19. Number of bones in the wrist
20. Bone of the lower arm, opposite the thumb

Reference: F.H. Netter, MD: *Atlas of Human Anatomy*, Ciba-Geigy Corporation, 1989

Answers to previous puzzle:

```
  S S     P
  T U   CLAVICLE
  E B     E
PERICARDIUM
  N L     R     TWO
  U A     A     W
  M V     C     E
V   INTERCOSTAL
AORTA     I     V
G   N     C  ALVEOLI
U C       O     E
S A  ATRIUM     N  V
  R    R D     ARTERY
BRONCHI         C  N
  T     C  MITRAL T
  I     U       V  R
  D     S       A  I
   DIAPHRAGM      C
        I      JUGULAR
XIPHOID            E
```

REGIONAL SOCIETY ACTIVITIES ...

Let us announce what's happening in your area. Send a brief report of recent or future activities for the next issue by December 1st to Dianne Holley. Send newsletters, if available, or give your info on my answering machine if I'm not home. Photos (captioned) are also welcome.

California -

About 50 techs attended a Stanford Univ weekend seminar on 9/18 on cardio-vascular topics and clinical lab values.
Mark your '94 calendar now for the **CAATT** annual meeting in Monterey during May.
For further information:
Ron Turner at (510) 674-2241.

Colorado -

For information on future events:
Judy Drakiotes at (303) 270-8399.

Florida -

The **Florida Society of Anesthesia Techs** held its 4th annual seminar/exhibition at Tampa, the weekend of 9/25-26. Speakers lectured on anesthesia safety, technicians and OB, gas analysis, autotransfusion, and TEE.
For further information on future events:
Jerry Guttery at (904) 374-6051 [work] or (905) 472-3925 [home].

Illinois -

November 6-7 is the date of the next state meeting of the **Illinois Society of Anesthesia Technology**. The location will be the Oak Brook Hills Estates. Topics will include OSHA standards, airway anatomy, drugs in anesthesia, machine checks, and medical liabilities of technicians. George Mann, president of **ASATT**, will be a featured speaker.
The 1994 Midwest Anesthesia Conference sponsored by the Illinois Society of Anesthesiologists, will be held next May 13-15 at the Fairmont Hotel in Chicago. Watch your mail for program and registration materials. For general information, contact the meeting planner, Leslie Davis: (708) 520-2559.
For further information:
Jim Underwood at (309) 968-6998.

Maryland/DC -

For information on future events:
Richard Harrison at (410) 225-8176.

Michigan -

For information on future events:
Louise Martin at (313) 593-7696 or Jim McEvoy at (313) 343-4766.

New York -

For information on future events:
John Armstrong at (716) 336-3377.

Ohio -

The **Ohio Society of Anesthesia Techs** held their SouthEast Area meeting in Zanesville over the last weekend of September, and they will hold a meeting during the fourth week of October in Cleveland. Topics will include PCA.
For further information:
Wilma Frisco at (216) 541-5710.

Pennsylvania -

For information on future events:
Norman Holst at (215) 590-2798 [work] or (215) 927-4958 [home].

Tennessee -

7/31/93 marked the beginning of the Association of Anesthesia Technicians and Technologists of Tennessee with its first business meeting at Lowe's Vanderbilt Plaza in Nashville. The purpose of the meeting was to form bylaws, elect officers, and become acquainted with fellow techs throughout the state.

The elected officers are: Sharon Baskette, President; Ken Campbell, Vice-President; forrest Douglas, Secretary; and Tammie Carr, Treasurer. An educational meeting is planned for the near future. Those interested can contact AATTT at PO Box 218161, Nashville, TN 37221.
For information on future events:
Sharon Baskette at (615) 322-4000 [work] or (615) 646-1599 [home].

Texas -

The **Texas Society of Anesthesiology** Board of Directors met in Austin on September 11 to plan for the following year. Educational meetings are regularly held in San Antonio [Raul Sanchez at (210) 675-1564], Dallas [Kyle Logsdon at (214) 820-2165], Austin [Dianne Holley at (512) 451-7457], Houston [Drucilla Overton at (713) 729-5606], and El Paso [Estella Ramirez at (915) 544-0606].
For further information:
Dianne Holley at (512) 451-7457.

Virginia -

Ballots for new officers of the **Virginia Society of Anesthesia Technicians and Technologists** have been sent out, and are due by 10/15.
For information on future events:
Linda Ferris at (703) 985-8351.

Washington -

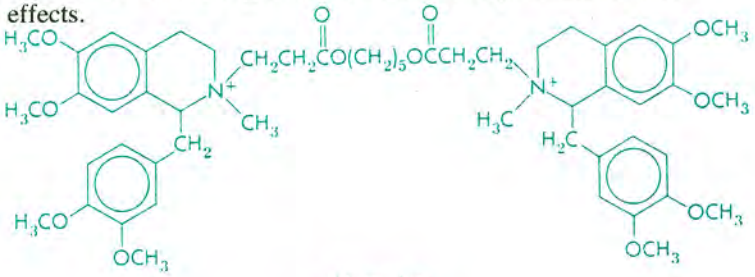
For information on future events:
Dwight Shields at (206) 548-6538 or -6510.

Wisconsin -

For information on future events:
Noreen Soeller at (715) 387-7179 [work] or (715) 387-4792 [home].

TECHNOLOGY *(Continued from page 5)*

(Xylocaine), *mepivicaine* (Carbocaine, Polocaine), *bupivicaine* (Marcaine, Sensorcaine), *etidocaine* (Duranest), and *prilocaine* (Citanest). A particular agent may be selected based on its duration of action, degree of metabolism, or potential for side effects.



Atracurium

MEDICATION STORAGE

One of the primary responsibilities of the anesthesia technician may include the restocking of anesthesia carts and the storage of medications. Most medications that are manufactured for injection should be stored away from light and at room temperature. Those drugs that are transported as powders and require reconstitution should be used within 24 hours of their reconstitution. Several of the agents require refrigeration to assure chemical stability. These include *pancuronium* (Pavulon), *atracurium* (Tracrium), and *succinylcholine* (Anectine, Quelicin). These drugs should be refrigerated at 2-8° centigrade.

Additional responsibilities of the anesthesia technician may include stocking of the "code" box. Clinicians may differ markedly in their opinion concerning what should be included in the code box. Some medications that may be included are *penthothal* or *etomidate*, *succinylcholine* or other neuromuscular blockers, and a variety of vasopressors including *ephedrine*, *phenylephrine* and *epinephrine*.

Finally, a word about controlled substances. Many of the medications used by the anesthesiologist/anesthetist are classified as schedule II or IV drugs. Federal regulation of these controlled substances is governed by the Comprehensive Drug Abuse Prevention and Control Act of 1970 and the policies are enforced by the Drug Enforcement Agency (DEA.) Individual hospital policies are generally determined with the combined input of the pharmacy, nursing, anesthesia and administration. Controlled substances must be maintained under lock and key and an accounting of their use must occur at the beginning and end of each nursing shift.

* *References:*

Goodman & Gilman: *The Pharmacological Basis of Therapeutics*. 1988. New York. MacMillan.

Stoelting RK: *Pharmacology and Physiology in Anesthetic Practice*. 1992. Philadelphia. Lippincott.

Wood & Wood: *Drugs and Anesthesia*. 1990. Baltimore. Williams & Wilkens.

RECENT LITERATURE

Technically Speaking *(Continued from page 3)*

lime) is discussed.

Matsuyuki D, Kazyuki I: **Airway irritation produced by volatile anaesthetics during brief inhalation: comparison of halothane, enflurane, isoflurane, and sevoflurane.** Can J Anaesth 40:2/122-6, 1993.

Although this study does not include desflurane, it does provide a lot of useful information about the gases studied, and their effects on tidal volume, respiratory, and functional residual capacity in the spontaneously breathing patient.

Brown BR, Frink Jr EJ: **Biodegradation and organ toxicity of new volatile anesthetics.** Current Opinion in Anaesthesiology 6:644-7, 1993.

The structural formulas of desflurane and sevoflurane are described, along with their biotransformation schemes. The authors conclude that desflurane is essentially metabolically inert, while sevoflurane is less so.

Kazuyuki I, Takasumi K: **Pharmacokinetics and pharmacodynamics of new volatile anesthetics.** Current Opinion in Anaesthesiology 6:639-43, 1993.

This article compares and contrasts desflurane and sevoflurane. Under the heading of "pharmacokinetics"--solubility, induction, and emergence is discussed. Under "pharmacodynamics"--mean alveolar concentration, factors that influence changes in MAC, as well as CNS, respiratory, hepatic, renal, and skeletal muscle effects are described. An extensive bibliography is provided with 52 citations, dating from 1975 to present.

White PF, Watcha MF: **Are new drugs cost-effective for patients undergoing ambulatory surgery?** (Editorial) Anesthesiology 78:2-5, 1993.

This editorial does not specifically address desflurane and sevoflurane. Instead, it focuses on the controversy surrounding ketorolac and ondansetron. The cost/benefit principles discussed are widely applicable, and a useful reference list of other cost analysis articles is included.

Johnstone RE, Martinez CL: **Costs of anesthesia.** Anesth Analg 76:840-8, 1993.

This is an excellent overview stressing both independent and interdependent factors which determine the cost of anesthesia. A wide range of variables is included, many of which may not be readily apparent in day-to-day application, all of which are important with the coming healthcare "reform".

LETTERS *(Continued from page 2)*

there is only one power supply; there is only one display, and there is only one AC power source. A failure of any one of these system components leaves you without any monitoring capability. Thus it follows that in our facility, we have elected to buy separate monitors...

In short, it has never been a good idea to put all your eggs in one basket; one-for-all does not necessarily translate into all-for-one."

Ohmeda addressed all of the above mentioned problems quite some time ago. Mr Draper's comments may apply to other manufacturer's machines, but certainly not the Ohmeda Modulus CD Anesthesia System. The Modulus CD is our full monitor-integrated anesthesia machine. If there is a main power outage (hospital, or that of the machine), or if there is a system or display failure, the Modulus CD will switch to the backup mode. The system's backup battery will temporarily provide power to run the ventilator, the backup mode, the SpO2 monitor, monitors for heart rate, O2, volume, and circuit pressure, the light panel, and flowmeter lighting.

During mechanical ventilation, backup power should last about one hour. Without mechanical ventilation, backup power should last about four hours. If there is a main display or system failure, all of the backup monitors, ventilator, and backup display on the ventilator will operate continuously until the problem is corrected...

I see none of the disadvantages that Mr Draper has mentioned when using a fully integrated anesthesia system such as the Ohmeda Modulus CD. I do agree that if an anesthesia system does not provide for backup monitoring, then some form of redundant monitoring would be desirable.

- Gary W. Redden, CBET
Senior Service Representative II
Ohmeda Corp.

Waving the flag... Chris Patterson, Region 6 Director, promotes the cause at ASATT's exhibit at the annual meeting of the *American Association of Nurse Anesthetists* at the Moscone Center in San Francisco, last August. President-elect Lee Amorin was invited to the opening ceremonies, and reports a very supportive relationship with AANA.

HELP CELEBRATE

NATIONAL ANESTHESIA TECHNICIANS DAY

next March 31st by submitting your ideas for posters or buttons. This competition is being sponsored by the Ohmeda Corporation; winners will be selected for the best poster and for the best button design. Each will be awarded free registration at the 1994 ASATT Annual Meeting in San Francisco (travel and accomodations not included).

*Poster designs should be 20" x 24", and buttons should be 3" in diameter. Use of the ASATT acronym slogan (**A**ssisting **S**afe **A**nesthesia **T**oday & **T**omorrow) is encouraged.*

Send your most creative ideas to the ASATT office in Kirkland, Washington by Jan 1st, 1994. For further details, contact Ruth Ochoa, Regional Director #7, at (503) 370-5200 pager 225.

GET CREATIVE!

Advertizing Rates for The Sensor

Effective 1 August 1993

Display Ads: Announcements of products, services, or educational programs relevent to the theory, maintenance, or application of anesthesia technology.

Rates: Display Advertizing (camera-ready mechanicals, one-color process):

Half-Page Horizontal	7½"wide X 4¾"deep:	$200 per insertion.
Half-Page Vertical	3½"wide X 9½"deep:	$200
Quarter Page	3½"wide X 4¾"deep:	$100

Corporate Member Discount: 25%

Classified Ads: Individuals seeking employment, or employers seeking candidates, in anesthesia technical support.

Width: 3½", CG Times type, 12-point. Typeset by editors.

Rate: $8/line, 5-line minimum

Active Member Discount: 25%

ASATT reserves the right to refuse advertizing copy for any reason at any time.

ASATT American Society of Anesthesia Technologists & Technicians
9805 N.E. 116th St. #A183, Kirkland, WA 98034