



Dr. Anthony Southall

St. John Hospital and Medical Center Physician of the year

By Catherine Vreeta, M.D., M.P.H.

EMS, P.C. is pleased to announce that Anthony Southall, M.D. was elected Physician of the Year by the St. John Hospital and Medical Center Guild. Dr. Southall was born and educated in England. He earned his medical degree from King's College Hospital Medical School, University of London. He then completed a surgical residency at the Royal Air Force Hospitals in the United Kingdom. In 1972, he moved to Canada and began a general surgery practice in northern Manitoba. Dr. Southall then moved to the United States and joined the staff of St. John Hospital and Medical Center in 1974. He has been Chief of Emergency Medicine and an Executive Committee member since 1986. He is currently Chief of Staff at St. John North Shores Hospital and is also past Director of Emergency Services for that hospital.

Dr. Southall is a past President of the Michigan College of Emergency Physicians and is actively involved in numerous medical societies. He is a Clinical Associate

Professor at Wayne State University Medical School and is the 1996 recipient of the Ronald L. Krome M.D. Meritorious Service award, which is granted to one emergency physician in the state annually for outstanding services in the field of emergency medicine. Dr. Southall is board certified by the American Board of Emergency Medicine. He is actively involved in EMS activities in both Macomb and Wayne counties.

Dr. Southall's Physician of the Year award was presented at the 45th annual St. John Hospital and Medical Center Guild dinner, held on June 8, 2005. The Guild fundraising has raised over \$14 million in the past 45 years. This year, the Guild has pledged \$1.25 million to a \$156 million St. John Hospital expansion project. This plan includes construction of an 8-level, 288,000 square foot North Pavilion which will include 144 new patient rooms, as well as a new Heart and Circulatory Center, which will combine all disciplines related to Cardiovascular Services in order

to simplify the patient experience and enhance operational efficiency.

The most exciting improvement will involve doubling the size of the Emergency Department. This will improve the patient experience by providing each patient with a private exam room with enough space for family members. The layout will provide a more confidential and caring environment. With the construction of the new patient tower expanding the hospital in-patient capacity, emergency department wait-times will be significantly reduced. In addition, a dedicated imaging department that will be exclusively for emergency department patients, will also contribute to decreasing wait times.

Dr. Anthony Southall will oversee this improving emergency department in his role of Chief of Emergency Medicine, and continue to demonstrate his commitment to improving the lives of others. We congratulate him on this prestigious honor. ♦

Monday, September 12, 2005

Midwest SAEM Research Conference Sponsored by
St. John Hospital and Medical Center's Emergency Department

Inside:
Laceration Management

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Laceration Management

By René A. King M.D.

Epidemiology of Lacerations and Wound Characteristics

Most lacerations occur in young adult males. Even though people of all ages can have a laceration, roughly 33% of all lacerations are seen in patients 19-35 years old. About 50% of lacerations are found on the head and neck. Another 35% are seen on an upper extremity, especially on the hands and fingers.

Evaluation of a Patient with a Laceration

The primary goals of appropriate wound care include avoiding infection, restoring function and leaving an aesthetically pleasing scar. To better meet this goal it is important for the emergency physician to identify possible situations that increase the risk of infection or delay healing after wound closure. Some conditions which can lead to adverse results after a laceration repair include diabetes mellitus, obesity, malnourishment, chronic renal failure, steroid use, chemotherapeutic agents or immunosuppressed states, and old age. All of these risk factors may affect inflammatory processes and lead to delayed synthesis of new wound matrices and collagen.

Understanding the mechanism is another important aspect of the history. Certain injuries, such as crush injuries can lead to devitalized tissue, which is more prone to infection. Understanding mechanism of injury also identifies potential risks for foreign bodies or other wound contaminants which could delay wound healing. Failure to diagnose foreign body is the fifth leading cause of litigation against emergency physicians. Other common injury related lawsuits include the development of wound infections and missed injuries to tendons and nerves.

Anesthetizing a Laceration

Anesthetizing lacerations provides decreased patient discomfort and allows for a more thorough evaluation, management and closure of the wound. Esters and amides are the two major classes of anesthetics. During the history, many patients claim to have allergies to anesthetics. Detailed questioning may reveal a vasovagal response to a painful injection, rather than an actual allergic response. If a careful history reveals a true allergy to an ester anesthetic, often times an amide can be used because of little cross reactivity.

One of the most common local anesthetics is lidocaine, which is an amide. If a patient does have a true reaction to lidocaine, it is usually due to the preservative, methyl paraben, found in multidose vials. Methyl paraben has a similar molecular structure to a degradation product of ester anesthetics, so a person with this allergy cannot receive either class of local anesthetic.

There are alternatives available for the patient with true lidocaine allergies. One option is to use single-dose or cardiac lidocaine which comes without the preservative. Another choice is diphenhydramine. It must be diluted to a 1% solution to avoid tissue necrosis. A drawback of diphenhydramine is that it is a very painful injection. Benzyl alcohol, another choice for the patient with lidocaine allergies, seems to be as effective as lidocaine with a great deal less pain associated with injection. Another benefit is that epinephrine with 0.9% benzyl alcohol lasts longer than diphenhydramine.

TAC (tetracaine, adrenaline, and cocaine), LET (lidocaine, epinephrine, and tetracaine), and EMLA are 3 common topical anesthetics. TAC has an onset of action in about 29 minutes versus EMLA's 55 minutes. Studies suggest, however, that EMLA does seem to provide better anesthesia than TAC. It should also be noted that some serious side effects have been seen with TAC, including seizure activity and rarely death. These side effects may be due to the cocaine in the mixture. Regional anesthesia may also be achieved by administering regional nerve blocks. Nerve blocks are particularly useful for areas with multiple lacerations, regions requiring extensive scrubbing and debridement, or significant amounts of debris or foreign bodies.

Wound preparation and closure

After inspecting the wound, doing an adequate exam, and providing anesthesia the physician should then prepare the wound for closure. Sometimes preparation starts with hair removal. Removing hair allows for more precise wound closure, however, shaving may introduce infection. If an area is particularly hairy, clipping the hairs may be a better approach than shaving altogether. Note that the eyebrow is usually not trimmed or shaved because the hair may regrow in abnormal patterns.

Direct scrubbing of the wound and irrigation of the tissue are two effective methods of wound cleansing. However, vigorous scrubbing may lead to tissue damage which may lead to infection. The best way to avoid these unwanted effects is to use a high porosity sponge and a surfactant. The added cost of a high porosity sponge may not be warranted unless the wound is significantly contaminated.

Irrigating a wound is another means of wound preparation. Some disagreement does exist about how irrigation should be done. There has been some question concerning pulsatile irrigation compared with continuous. Although there is no definitive data, it is believed that continuous and pulsatile irrigation are equally efficacious. On the other hand, animal studies clearly demonstrate that high-pressure irrigation significantly reduces bacterial counts and wound infection rates versus low-pressure irrigation. Continued high-pressure irrigation, however, can lead to tissue damage, and if the pressure is high enough, infection rates may even increase. For this reason, if a laceration is located in a well-vascularized location with delicate soft tissue, such as the eyelid, high pressure irrigation is clearly contraindicated. Conversely, dense contaminated tissue with limited vascularity, such as a lower extremity wound, would benefit from high-pressure irrigation. Although studies are limited, there seems to be a general consensus that irrigation pressures between 5 and 8 psi are appropriate. These pressures can be readily obtained in the ED with a 30 – 60 ml syringe and a 19 gauge needle.

Detergents, hydrogen peroxide, and concentrated betadine have been used in the past to irrigate wounds. These solutions are no longer recommended because of damaging effects on tissues. Normal saline is the irrigation solution of choice because it does not damage tissue, it is widely available, and it is inexpensive.

Most lacerations are closed primarily because it decreases patient discomfort and allows for quick healing. There does seem to be a direct relationship between the time of wound closure and the risk of infection. Information varies, but one of the best known studies about healing without infection was done in Jamaica. This study demonstrated that facial lacerations healed well regardless of the time of closure, whereas lacerations on the trunk and extremities had wound delays if done after 19 hours. In general, laceration repair must be done on an individual basis. The practitioner must consider time elapsed since injury, location of the wound, presence of contamination, risk of infection, and significance of cosmetic appearance before making the decision to close a wound primarily. So, primary closure of a facial laceration on a healthy 4 year-old child may be appropriate. However, a puncture wound on the sole of the foot of an elderly diabetic, has a significant risk for infection.

Wound closure Techniques

Four main options for wound closure are available. These include sutures, tissue adhesives, staples and surgical tapes. Sutures are the most common method for wound closure. Nonabsorbable sutures, such as nylon, are appropriate for closing the outermost layer of a laceration. Tissue reactivity in nonabsorbable sutures is minimal, and they retain their tensile strength longer. These sutures must be removed.

Absorbable sutures such as polyglactin (Vicryl) are used for closing layers deep to the epidermis. Deep sutures are beneficial because they relieve skin tension, decrease empty space and prevent hematoma formation, and it is generally believed they improve wound cosmesis. It should also be noted that deep wounds do not increase infection rates in clean, noncontaminated wounds. Synthetic absorbable sutures are available. They are less reactive and have greater tensile strength than absorbable sutures from natural sources like catgut. These sutures should only be used on deeper layers because they are extruded over time.

Tissue adhesives are another method available to close lacerations. The adhesives contain cyanoacrylates which are liquid monomers made by a combining formaldehyde and cyanoacetate. These cyanoacrylates react with hydroxyl ions, found in water and blood, thereby causing a reaction which bonds the edges of the skin. Tissue adhesives can be toxic to exposed tissue and are only for topical use. Benefits to using tissue adhesives include less pain for the patient and speedy application for the physician. One problem found with adhesives was a slightly higher infection rate. It may not be the adhesive itself that is a source of infection, but rather inappropriate wound preparation. Studies suggest that patients being managed with tissue adhesives are unlikely to be anesthetized, so the physician does not properly irrigate the wound because of patient discomfort. This finding clearly reinforces the need for adequate wound irrigation prior to closure.

Application of adhesives is simple. Skin edges should be approximated as 3 – 4 layers of the adhesive are thinly and evenly applied. If there is significant tension during manual approximation, a tissue adhesive should not be used. Similarly, they should not be applied over high-tension areas such as over joints or hands. Seven to ten days after application, the underlying skin naturally sloughs off and so does the tissue adhesive. If a tissue adhesive is misapplied, it can be easily

removed with acetone, petroleum jelly or antibacterial ointment. One other advantage of tissue adhesives is that they seem to have antimicrobial properties against gram-positive organisms, and may have some benefit during topical use.

A third option for wound closure is the use of staples. Benefits of this method include fast application, lower rate of foreign body reaction and decreased infection rate. Staples are particularly useful for wound closure in scalp, extremity, and trunk wounds. The efficiency with which staples can be applied also lends itself to being particularly beneficial in patients with many wounds or mass casualty situations.

Surgical or adhesive tapes cause little skin reactivity. However, surgical tape requires additional adhesive solutions, such as tincture of benzoin, which can lead to local induration and even wound infection. Surgical tapes are not ideal for primary closure of wounds, but can be placed after suture removal and may decrease skin tension until they fall off in a few days.

Post-Repair Management

Cover wounds that have been stapled or sutured for 1-2 days with loose protective covering. This allows for protection from contamination until significant epithelization has occurred. After 2 days, gentle cleansing of sutured and stapled wounds is acceptable. Staples are usually removed after approximately 7 days. Facial sutures should be removed between 3-5 days, to avoid tract marks. Sutures on the hands or over joints should remain for 10-14 days because these areas have high tension forces and repetitive motion. Maintaining a moist environment, with bacitracin or white petroleum jelly, does allow for increased rate of epithelization in sutured wounds. Additionally, a moist environment lowers infection rates and decreases scab formation.

Conversely, topical ointments should be avoided when tissue adhesives are used. Ointments may disrupt the adhesive bond which may lead to dehiscence. After laceration repair with tissue adhesives, patients may shower but should not bathe or swim, as excessive moisture may loosen the adhesive bond. Excessive moisture can be gently blotted away, but vigorous scrubbing is contraindicated.

Prophylactic antibiotics are usually not needed after a simple laceration repair; however, certain factors including degree of bacterial contamination, presence of soil or other agents which potentiate infection, mechanism of injury, and underlying disease states of host (diabetes mellitus), may contribute to the decision. As a rule, adequate decontamination and irrigation of the simple wounds is much more important than antibiotic treatment. Instances when antibiotic use may be appropriate include human, dog, or cat bites, oral lacerations, open fractures, and exposed joints and tendons.

Lastly, supply the patient with wound care instructions. Suggest elevation of the injured area to decrease edema formation. Advise patients to look for signs of infection including erythema, warmth, swelling, and drainage. Providing standardized wound care instructions reinforces verbal instructions and improves patient compliance. ♦

Dr. James Fox Speaks at News Conference

By James M. Fox, M.D., F.A.C.E.P.

The first week of May saw the annual "Cover the Uninsured Week" kick-off news conference. This year, Dr. James M. Fox was invited to share the dais with state and federal political leaders as well as address the media on the challenges faced in Emergency Medicine with a burgeoning uninsured/underinsured population.

Following comments by Detroit Mayor Kwame Kilpatrick and U.S. Representative John D. Dingell, Dr. Fox outlined how an increasing uninsured population coupled with decreasing payments for underinsured patients has led to the closure of five hospitals in the City of Detroit over the past eight years.

It was hoped that by providing a unified voice for the uninsured/underinsured of our community, concerted action would be taken to rectify these inequities. Political wheels turn very slowly and the fruits of the effort placed in this conference have yet to be realized. However, with continued diligence and unwavering tenacity, positive change will undoubtedly occur. ♦

McLaren Regional Medical Center Emergency Department Receives Prestigious Award!

By Raymond Rudoni, M.D., F.A.C.E.P.

Patient Safety, Orthopedics, Oncologic Surgery, Keystone ICU, and the Emergency Department, have all received recent honors for quality and service. This is the second year in a row, the emergency department has received the Governor's Award for quality improvement initiatives for the care of Acute Myocardial Infarction! The emergency department leadership team received the award in Lansing on May 19th.

On another note, we are anticipating construction to begin on our 13 million dollar emergency department renovation this fall, which will provide the emergency department staff with almost twice as much space. This increase in square footage will help McLaren's emergency department accommodate the continued volume increase, which is up nearly 7% from last year!

Finally, as emergency department volume continues it's unprecedented growth, and our emergency department is renovated in response to this growing demand, we would like to extend a warm welcome to new members of the EMS team: Drs. Brian Dugas and Gjon Dushaj. Dr. Dugas has been working in a contingent position and Dr. Dushaj will begin full time at McLaren Regional Medical Center beginning July 1.

Melissa Lukens, PAC, has also joined our team and will work with Sue Borton, our fast track leader.

We look forward to a busy summer and our annual emergency department summer party for the staff members and their families, at Torzewski's water park, on Wednesday, July 27th. ♦

Four

CME Questions

1. Conditions which may adversely affect laceration repair include all except:

- a. Diabetes Mellitus
- b. Obesity
- c. Malnourishment
- d. Chemotherapeutic agents
- e. Increased collagen formation.

2. Persons with lidocaine allergies

- a. are usually allergic to the preservative methyl paraben
- b. are allergic to needles
- c. can use lidocaine if diluted to
 - a. 1% solution
- d. cannot use any local anesthetic
- e. must use only amide anesthetics

3. The 4 main options for wound closure include all except:

- a. Suture
- b. Tissue adhesives
- c. TAC
- d. Staples
- e. Surgical tape

4. Facial sutures should be removed

- a. after 1-2 hours
- b. after 12-14 days
- c. after 7-9 days
- d. after 3-5 days
- e. after 1-2 days

5. Wound care instructions

- a. discuss mechanism of injuries
- b. should reinforce verbal instructions and improve patient compliance
- c. describe benefits of prophylactic antibiotics
- d. are used for neurovascular assessment
- e. discuss allergies to local anesthetics

References: American Board of Emergency Medicine web site. Emergency Medicine Continuous Certification (EMCC)

St. John Hospital and Medical Center, an organization accredited by the MSMS Committee on Continuing Medical Education Accreditation, certifies that this activity meets the criteria for a maximum of one credit hour in Category I towards the requirements for Michigan licensure and of the Physician's Recognition award of the AMA provided it is completed as designated.

Midwest Regional SAEM Research Conference

By Patricia Nouhan, M.D.

St. John Hospital and Medical Center and the EMS, P.C. group will be hosting the 15th annual Midwest Regional SAEM Research Conference. Keep the dates of September 11 and 12, 2005 open for attendance at the conference at the Detroit Institute of Arts. Abstract submission deadline is August 1, 2005. Log on to www.SAEM.org for details. Pre-conference activities include a Tiger game, Lions game and residency question competition. The keynote speaker will be Greg Henry M.D. speaking on "The Art of Emergency Medicine." Eight hours of Category 1 CME credit will be offered. We look forward to your participation in this conference. Outstanding original emergency medicine research will be show-cased. There will be a medical student session on emergency medicine residencies as well as an ultrasound panel on the latest emergency medicine utilizations of ultrasound. ♦

St. John River District Emergency Department Receives 2004 Governor's Award of Excellence for Improving Care

By Eric Gloss, M.D.

On May 19th, 2005, St. John River District's Emergency Department received the MPRO Medicare Quality Improvement Organization's (QIO), prestigious 2004 Governor's Award of Excellence for Improving Care in the Emergency Department Setting for Acute Myocardial Infarction. The hospital was also recognized for improving care in the hospital setting for pneumonia and surgical infection prevention.

Data was collected monthly using the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and Centers for Medicare and Medicaid Services (CMS) abstraction tool. The outcomes were based on medical record reviews from January 1, 2004 – March 31, 2004. Subsequent measurements occurred quarterly ending in December 2004.

"Our staff at St. John River District Emergency Department is demonstrating that together we are providing the very best in medical treatment and care. We are extremely proud to be a recipient of this distinguished award," said Dr. Eric J. Gloss, Chief of the Emergency Department. ♦

Lapeer Regional Medical Center to Expand Emergency Department

By Kenneth Parsons, M.D., M.P.H., F.A.C.E.P.

Lapeer Regional Medical Center Emergency Department continues its campaign for setting the standard for "quality care through teamwork". This spring, the Emergency Department received the Governor's award for excellence in pneumonia and acute myocardial infarction care. The hard work by the emergency department team needs special recognition since their commitment to excellence paid off as these awards are the first of their kind for the emergency department.

The landscape is changing as construction projects continue. As mentioned in prior newsletters, the mobile pad for lithotripsy and MRI is now complete and functional. The sight that will accommodate the fixed MRI has been excavated and will be taking form soon. The highly anticipated start of the new emergency department is slated to begin this October. The new emergency department cannot come soon enough as our volume has consistently risen in double digit percentages over the past six months. Express Care has been extremely successful, with average daily volumes greater than twenty, with days reaching into the high thirties. ♦

St. John Oakland Hospital Receives Multiple Awards

By Robert Takla, M.D.

For the second consecutive year, St. John Oakland Hospital was awarded a Top 100 Hospital in the USA Performance Improvement Leader Award for a five-year period, among 6,000-plus hospitals. We are the only medium-size hospital in the country to be honored in the first two years of the survey, and one of only twelve in the nation to repeat among the Top 100 Hospitals.

St. John Oakland Hospital has also received the Governor's Award of Excellence for Improving Care in the Hospital Setting. This is the second year in a row that we've received this honor. This year, the award was specifically for Acute Myocardial Infarction and CHF.

In addition, St. John Oakland Hospital was recognized by the Blue Cross Quality Incentive program for exceeding very high standards in adhering to evidence-based care practices for patients, establishing a safety culture, improving medication safety, and a statewide project to improve safety and outcomes of ICU care. An incentive was awarded for meeting both clinical excellence and patient safety related indicators. Contributions specific to the emergency department included the timely administration of antibiotics for patients with pneumonia. ♦

Questions & Comments

Emergency Medicine Specialists, P.C. is comprised of health care professionals who are committed to providing the highest level of medical care. EMS has specialized in emergency medicine, urgent care and after hours care for over thirty years. As a self-reliant professional corporation, EMS has become one of the industry leaders in southeast Michigan.

If you have any questions or comments regarding this publication or suggestions, please contact us at:

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The information contained within this journal is not intended to establish the standard of care for any physician or employee of EMS, or St. John Health, but only to provide generalized education with respect to healthcare issues which arise in our profession.

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July Calendar

- 7) Lapeer ER Section *7:30 AM Dining Room A&B*
- 7) McLaren Regional Medical Center, Department Meeting *8:00 am, ED Conference*
- 10-13) MCEP, 32nd EM Assembly, Grand Hotel, Mackinac Island, MI
- 21) EM/Surgery Trauma Conference, St. John Hospital and Medical Center
7:00 Lower Level Conference Room
- 21) McLaren Quality Improvement Meeting, *8:30 AM ED Conference Room*
- 18) St. John North Shores Golf Outing, Moravian Hills Country Club, Clinton Twnshp
- 27) St. John Hospital EM Staff Meeting *8:00 Classroom C*
- 27) St. John Hospital EM Faculty Meeting *10:00 Classroom C*
- 27) McLaren/Lapeer Annual Picnic, *10 AM - 7 PM Torzewski County Park, Lapeer*

August Calendar

- 10) McLaren Regional Medical Center, Staff Meeting *6:00 PM, Ballenger Auditorium*
- 15-21) McLaren Regional Medical Center, EMS Week
- 18) McLaren Quality Improvement Meeting, *8:30 AM ED Conference Room*
- 18) EM/Surgery Trauma Conference, St. John Hospital, *7:00 Lower Level Conference Rm*
- 23) MCEP, Residents' Assembly Sheraton Hotel, Lansing, MI
- 24) St. John Hospital EM Staff Meeting *8:00 Classroom C*
- 24) St. John Hospital EM Faculty Meeting *10:00 Classroom C*
- 26-29) MCEP, ACEP Scientific Assembly, Washington, DC

September Calendar

- 15) EM/Surgery Trauma Conference,
St. John Hospital *7:00 Lower Level Conference Room*
- 17) St. John Hospital Quarterly Staff Meeting *6:30 Grasse Pointe Yacht Club*
- 28) St. John Hospital EM Staff Meeting *8:00 Classroom C*
- 28) St. John Hospital EM Faculty Meeting *10:00 Classroom C*
- 26) Lapeer Quarterly Medical Staff Meeting *7:00 PM ACR 4&5*



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