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Bite wounds: Don't let patients leave with a wrong impression

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Bites and stings from various types of animals are common in the emergency department. While allergic reactions to insect stings are probably the most common problem we see from bites and stings, there are other significant potential problems. We also commonly see bite wounds from humans, dogs, cats, and various other animals that have a high risk of infection, loss of function, amputation, and even death if not promptly and correctly treated. Because of this risk of adverse outcomes, bite wounds represent a significant area of malpractice risk for emergency physicians. Appropriate management and follow-up care can minimize complications and reduce the emergency physicians' malpractice risks.

Human Bites

Case No. 1: *Shelton v. United States.* In *Shelton*,[1] the plaintiff alleged that he had been negligently diagnosed and treated for a human bite wound on the middle finger of his right hand. The injury ultimately required a partial amputation of the finger, a complication that the plaintiff alleged was the result of negligent diagnosis and treatment of his injury.

There were three components to the patient's claim. First, he alleged that the emergency physician at the John Cochran Veterans Affairs Hospital (the "VA Hospital"), in St. Louis, failed to properly diagnose and treat his injured finger. Second, he alleged that the medical staff, in general, "failed to properly instruct him as to wound care upon discharge." Finally, he alleged that, as a result of the physicians' negligence, he developed gangrene and a portion of

his finger had to be amputated.

The plaintiff, a 41-year-old male, made arrangements to meet his ex-wife for dinner. While waiting for his wife, the plaintiff, "for reasons unknown," decided to pass his time in a local tavern. While in the bar, he had several drinks and struck up a conversation with an unknown woman. Upon leaving the bar alone, he encountered his new acquaintance on the street. Some sort of altercation ensued in which the plaintiff suffered an injury to the distal end of his right middle finger.

The plaintiff walked the five or six blocks to his home and called 911 for assistance. According to the court, he told the dispatcher that he had been shot. An ambulance was dispatched, and the patient was transported to the VA Hospital. In the ambulance, the patient made contradictory statements regarding the nature of his injury, i.e., "he stated that he had been shot and that he had been bitten." He refused to allow the paramedics to examine his finger.

Upon arrival at the VA Hospital emergency department, the patient was first seen by the admitting nurse. She signed the ambulance run report and took a brief history from the patient. According to the plaintiff, "he told a black admitting nurse and the doctor on duty that he had been bitten." The admitting nurse, who was white, had noted on the admission form only that the patient "had suffered a 'trauma' to his right middle finger."

Shortly thereafter, the patient was examined by the staff doctor in the emergency department, Dr. Mary Beth Cishek, a second-year internal medicine resident. According to the record, she had experience as a medical student and resident in the treatment of patients with gunshot wounds, as well as patients with bites — including human bites. She asked the patient what had happened to his finger, and he told her that he had been "bitten." However, he refused to tell her how he had been bitten or by whom. The physician noted that he "smelled strongly of alcohol," although "he appeared to be coherent and understand her questions." Later, the patient told Dr. Cishek that he "might have been shot." He would not, however, tell her how he had been shot or by whom.

The hand was examined, explored, and irrigated. The physician determined that the injury actually consisted of two wounds: "one wound was on the distal phalanx and the other on the middle phalanx." The wound on the middle phalanx was on the palmer aspect of the digit, and the wound on the distal phalanx was on the dorsal aspect near the base of the fingernail. The palmer laceration, the longer of the two, was 5 cm in length. The physician noted good capillary refill and that the finger was "intact to pinprick." There were no puncture or teeth marks noted, nor was there any evidence of any exposed bone. The lacerations were not debrided. X-rays showed "a nondisplaced fracture of the distal phalanx of the middle finger."

Dr. Cishek re-examined the finger and determined that the patient did not have an open fracture. She was, at this point, uncertain as to whether the fracture was even related to the injury suffered that evening. The patient continued to be unresponsive to her questions regarding the origin of the injuries. She consulted the plastic surgeon on call and informed the plastic surgeon of the conflicting history given by the patient and her evaluation of the injury. The plastic surgeon advised use of an aluminum splint and "a follow-up consultation with plastic surgery in a few weeks."

Because she considered the wound to be a "clean" gunshot wound, Dr. Cishek did not prescribe any antibiotics. Her instructions to the patient prior to

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discharge included advice to ice the finger for the first 24 hours, to return to the emergency department "immediately if he had drainage or swelling," and to return to the VA Hospital "in approximately four weeks for a plastic surgery consultation."

Pursuant to Dr. Cishek's orders, nurse Carol Teague, a black woman (the patient claimed that he had told "a black admitting nurse" that he had been bitten), cleansed and dressed the finger. She did not recall the patient saying anything to her about having been bitten. She did, however, recall overhearing the patient, while waiting to see the doctor, tell an unknown person that he had been bitten by a woman. Nurse Teague did not see who was with the patient at that time and did not hear a response from that person.

Nurse Teague told the patient to return to the emergency department in "about two weeks" for re-examination. Like Dr. Cishek, she did not instruct the patient to remove the bandage and splint at any time to check for signs of infection.

Over the next four days, the patient "barely ate or slept . . . because of the pain." On the fourth day he noticed a "foul smell coming from his finger." Upon removing the bandage at that time, he observed that "his finger was grossly discolored." Later that day he returned to the VA Hospital.

On this second visit, the patient was seen by Dr. Terrance Sedgewick, an orthopedic resident at the time. The patient told the resident that "he had been in a fight a few days earlier and had been struck on the finger." He also said that "he had been drinking and could not recall exactly how he had injured his finger." Dr. Sedgewick examined the finger and found it to be "grossly discolored, swollen, and full of foul-smelling parulence [*sic*]." The patient was admitted and prepped for irrigation and debridement of the fracture. The operating surgeon's report indicating a pre-operative and postoperative diagnosis of "infected open-tuft fracture of right long finger." The wound was packed open, and the patient was given antibiotics. The following day, a dressing change revealed "widespread infection," and the patient was taken back to the operating room for an amputation of the middle and distal phalanges of the finger. The subsequent pathology report noted a "massive streptococcus infection and gangrene." The patient underwent numerous postoperative irrigations and debridements of the stump due to persistent infection. After the amputation, the medical record for the first time mentioned a diagnosis of a "bite" or "human bite."

At trial, plaintiff's vocational rehabilitation expert testified that, due to his injury, plaintiff had to give up working as a waiter (his previous occupation) and take a lighter type of work at a 50% decrease in wages. In addition, according to the expert, plaintiff would never again be able to work as a waiter because of the physical appearance of his hand. The court took note that the rehabilitation expert's report failed to make note of some important facts: numerous previous injuries due to fights, drug dependency, failure to cooperate with physical therapy, and a previous felony conviction on a drug charge and third-degree assault.

There was disagreement among the experts as to whether the plaintiff had suffered an open fracture. Dr. Cishek, the only physician who actually saw the hand at the time of initial treatment, said there was no open fracture. The plaintiff's medical experts disagreed; they had not, however, seen the wound at the time of initial treatment.

The court concluded that it was not negligent for Dr. Cishek to conclude, given the information available to her, that the patient had suffered a gunshot wound, rather than a bite. However, the court also agreed with the medical testimony that "when a patient presents a serious injury with conflicting stories as to the origin of the injury; and one of the possible types of injuries has a high potential for infection with serious consequences if not treated with antibiotics, then the treating physician should prescribe antibiotic therapy." It was the court's conclusion that this was the case with plaintiff and it was therefore negligent for Dr. Cishek to fail to prescribe antibiotics, and this negligence was the proximate cause of the plaintiff's injury. The patient's $20,000 in damages was reduced to $10,000, because his own negligence contributed to the adverse outcome.

Editor's note: *In this case, the court found that the plaintiff was 50% responsible for the loss of his finger because, had he examined the wound before the fourth day, he would have found the infection and returned to the hospital earlier for treatment. The record showed that this patient had suffered numerous injuries in the past and should have had the common sense to remove the dressing when he had pain such that he was unable to sleep. Not all courts would necessarily agree. Risk-prevention strategies in bite wounds include: emphasis of the risk of infection, wound rechecks in one or two days (not four weeks as was advised in the* Shelton *case), instructions that include daily inspection of the wound by the patient,*

and antibiotics in questionable cases. In this case, antibiotics might not have prevented the ultimate outcome. However, had they been prescribed, the verdict would have been for the physician.

Human bites are most often reported on the hands and upper extremities (60-75%), head and neck (15-20%), trunk (10-20%), and lower extremities (5%).[2] When confronted with a suspicious wound that might have occurred during an altercation, physicians must always consider the possibility that it was the result of a human bite. As in the *Shelton* case, patients are often reluctant to admit the true etiology of their injury if it occurred during an altercation. The dorsum of the metacarpophalangeal (MCP) joint is frequently lacerated during fistfights ("clenched-fist injuries").

A high clinical suspicion of bite wounds is particularly important when lacerations over the dorsum of this joint are encountered. These clenched-fist injuries, when caused by another individual's tooth, are of particular concern because complications from human bites occur most frequently in hand wounds. Those complications include localized cellulitis, lymphangitis, abscess formation, tenosynovitis, septic arthritis, and osteomyelitis. Other complications are fracture, tendon injury, and even amputation. Human bites in locations other than the hand appear to have similar rates of infection as nonbite lacerations.[3]

Editor's note: *I have seen case reports of undetected tooth fragments in clenched fist injuries resulting in infection. The threshold for obtaining an X-ray should be very low in such injuries.*

Human bite wounds are polymicrobial with both aerobic and anaerobic bacteria. Pathogens include *S. aureus, Streptococcus, Corynebacterium,* and *Eikenella corrodens.* Of special concern is *Eikenella corrodens,* an aerobic gram-negative bacillus that is susceptible to penicillin. However, it is resistant to penicillinase-resistant penicillins, clindamycin, and metronidazole, and it has a variable resistance to cephalosporins. In addition, human bites also present the risk of hepatitis B and C, actinomycosis, syphilis, herpes, herpetic whitlow, and tetanus. The risk of HIV transmission through a human bite is negligible, although the virus may be present in bloody saliva.[4]

Accurate documentation is always essential in defending a malpractice claim. A complete history of the bite must be obtained, including: the time interval between injury and treatment; the alleged mechanism; and the location, identity, and infectious risk assessment of the biter. As in any laceration, sensory, motor, and vascular examinations are required. Exploration of the wound should include evaluation of tendons near the laceration, with attention to the tendon's likely position at the time of the injury. As the tendon moves with flexion and extension of the hand or finger, a full range of motion examination during exploration will help to reveal small partial tendon tears or lacerations. Radiographs should be taken in clenched-fist bite injuries to disclose foreign bodies or air within the joint space indicating joint space penetration.[5]

Initial treatment of human bites should consist of copious irrigation, cleansing, debridement, and tetanus immunization if indicated. Re-evaluation in 24-48 hours is always prudent. Aggressive proactive management is required in all bite wounds of the hand. Liberal consultation of hand surgeons in such cases is advisable. A hand surgeon certainly should be consulted if the joint capsule is penetrated or if there is any associated tendon laceration. Human bite wounds of the hand should never be closed primarily. Human bite wounds of the face, neck, and head, on the other hand, generally can be repaired with primary closure after copious irrigation and debridement of devitalized or necrotic tissue.[6] Treatment of human bites of the hand also should include immobilization and elevation. If the biter is HIV positive, the victim should have a baseline HIV serology drawn, if he or she consents, and be retested in three and six months. The Centers for Disease Control and Prevention recommends that persons exposed to potentially infectious fluids, such as *bloody* saliva, be offered appropriate chemoprophylaxis.

If there are signs of infection after a human bite, cultures should be taken. Prophylactic antibiotics should be given for all human bites of the hands and to high-risk patients (asplenia, diabetes mellitus, or immune deficiency) with bites elsewhere on the body. A clean wound without signs of infection that is seen within three hours of the time of injury and is not found on the hand, can be treated without antibiotics. This decision should be made on a case-by-case basis. Oral antibiotics are, in most cases, acceptable. Appropriate antibiotics include amoxicillin/clavulanate, a first-generation cephalosporin plus penicillin, or a fluoroquinolone. Penicillin allergic patients can be treated with clindamycin and trimethoprim-sulfamethoxazole, a macrolide, fluoroquinolone, tetracycline, or select cephalosporins (cefoxitin, cefataxime).[7] While the duration of treatment is controversial, antibiotics generally should be given for 3-5 days, unless there is

evidence of infection, in which case treatment should be for 7-14 days, or longer if the infection is not resolved.

If there are signs of infection in clenched-fist injury, intravenous antibiotics may be required. Patients presenting with clenched-fist injuries 24 or more hours after their injury, with clinical signs of mild infection (superficial cellulitis), should be given a first dose of intravenous antibiotics in the emergency department and may be discharged with 7-14 days of oral antibiotics.[8]

A recheck of the wound within 24 hours should be arranged. If, however, signs of moderate to severe infection are present, the patient should be referred to a hand specialist and admitted. In the majority of patients with established hand infection from a human bite, surgical treatment will be necessary.[9] Redness, swelling, and tenderness of large areas of the hand, and pain on passive range of motion are indications that admission is necessary. Some physicians believe that all clenched-fist injuries resulting from human bites require aggressive surgical intervention, as well as systemic antibiotic therapy.[10] In contrast, a study reported good results with a strategy that involved the hospitalization of only 6% of patients, despite an infection rate of more than 50%.[11]

The authors recommend conservative treatment. Numerous malpractice claims have arisen for failure to start antibiotics. In addition, if there is any question of the mechanism of injury (bite vs. nonbite), compliance, or follow-up, it is always prudent to be cautious and give antibiotics. If there is any possibility of a bite to the hand — or as in *Shelton*, the etiology of the wound is unclear — antibiotics are likely indicated. In retrospect, the initial treating physician in *Shelton* might have prevented infection had she prescribed an appropriate antibiotic at the time of the patient's initial visit. While no one can be certain that antibiotics would have prevented the amputation, it is clear that the judge would not have found the physician negligent had antibiotics been prescribed.

In addition, when a potentially unreliable patient presents with a wound, follow-up wound recheck should be in 24-48 hours. If there is a high risk of infection, follow-up within 24 hours should be arranged. In the case of human bites, early follow-up is always necessary, and its importance cannot be overemphasized. Patients may be referred to their personal physicians when appropriate or to hand specialists. It is often more convenient to have the patient return to the emergency department for recheck. If the patient is instructed to follow-up anywhere other than the emergency department, always instruct the patient that, should there be any problem getting an appointment with the other physician, the emergency department is always available for follow-up. Always make sure that the follow-up instructions are perfectly clear, particularly as to where to go and when. In addition, always be explicit as to what signs or symptoms should prompt the patient to return immediately to the emergency department.

Standard preprinted discharge instructions help patients understand the signs and symptoms to observe and have become standard practice. Those instructions are neatly printed and uniform, thus reducing the risk of lawsuits alleging inadequate discharge instructions. In this case, the damages were reduced by 50%, based upon the fact that a nurse documented that she went over the discharge instructions with the patient twice and the patient failed to follow them.

Editor's note: *Make sure your discharge instructions are written in extremely simple terms and never use Latin medical abbreviations (prn, qd, etc.). I constantly see charts with discharge instructions that are illegible or too complicated for patients to read and understand.*

Acute human bites are distinct and may have forensic significance. In cases of child, elder, or spousal abuse, the bite impression may be of significant legal relevance. The characteristics of the bite should be documented carefully. The physician should not speculate on the age of the bite. Rather, an accurate description of the shape, color, and size is preferred. If a crime is suspected, most states require reporting. Photographs by the authorities may be taken. The police may want saliva swabs of the wound, as well as dental impressions. This may require the assistance of a forensic odontologist.[12]

Dog and Cat Bites

Nationwide, approximately 914 dog bite injuries are treated in hospital emergency departments each day.[13] Dog bites outnumber cat bites by five to one, and are the second most common public health problem in the United States, exceeded only by sexually transmitted diseases.[14] In their lifetime, half of all Americans are bitten at least once by a dog or cat.

Approximately 85% of dog bites and 90% of cat bites are considered to be provoked attacks.[15]

Annual medical treatment costs are estimated to exceed $100 million, and insurance companies paid a record $1 billion for dog bite liability claims in 1996 alone.[16] While various studies have shown the rate of infection following dog bites to range from 3% to 18%, the rate of infection following cat bites has been reported to be as high as 80%. While both dog and cat bites can become infected quite quickly, the average time that infection becomes apparent in dog bites is 24 hours, and the average time is 12 hours for cat bites.[17] Cats' teeth are slender, very sharp, and can easily penetrate the soft tissues and joints. The very high rate of infection following cat bites has resulted in a recommendation that prophylactic antibiotics be used routinely.[18]

Case No. 2: *Thomas v. Ekambaram.* In this 1997 Alabama case,[19] the plaintiff, Ms. Thomas, presented to the emergency department at Humana Hospital Florence with a swollen left wrist. According to hospital records, Ms. Thomas had "hit her left wrist while trying to grasp a running cat and had also suffered cat bites to her skin in the process." Dr. Rajappa Ekambaram diagnosed a sprained wrist after X-rays disclosed no fractures. The area of the bites was cleaned, and tetanus toxoid was administered. The patient was directed to return or contact her doctor "if she noticed any worsening of her symptoms." The patient was not given any antibiotics.

On return to the emergency room two days later, the patient was seen by a different doctor. Cellulitis was diagnosed, and intravenous antibiotics were given, after which she was discharged with an instruction to return the following day. The following day, she was admitted for a six-day course of intravenous antibiotics. She was then discharged on oral antibiotics. After finishing these oral antibiotics, she again experienced pain in her wrist. She was readmitted, at which time her wrist was incised and drained, and she underwent a tenonectomy and a wrist arthrotomy.

The plaintiff claimed that Dr. Ekambaram, knowing that the patient had suffered a cat bite, had breached the standard of care by failing to prescribe antibiotics at the time of the initial emergency department visit. As a result of the defendant's negligence, the plaintiff claimed she suffered osteomyelitis and other avoidable medical conditions. The trial court had granted summary judgment for the defendant physician, i.e., dismissed the case. The plaintiff appealed to the Court of Civil Appeals of Alabama. The appeals court reversed and held that the plaintiff had "demonstrated by substantial evidence that Dr. Ekambaram's alleged breaches of the standard of care adversely affected her condition, and that a genuine issue of material fact exists concerning proximate causation." The court remanded the case to the trial court for further proceedings. The plaintiff's expert had admitted that some patients will develop an infection or other significant problems following cat bite wounds in spite of prompt antibiotic therapy. He also testified that antibiotic therapy would have increased the likelihood of a favorable outcome.

As with human bites, dog bites to the hand require antibiotics. In otherwise healthy patients, bites in other areas do not routinely require antibiotics.[20] The generally accepted antibiotic in cat and dog bites is Augmentin. If the patient is penicillin allergic, clindamycin plus ciprofloxacin, trimethoprim-sulfamethoxazole, or doxycycline may be given. Treatment should generally be for 7-10 days. Dog bites of the hands should not be closed primarily; dog bites in other areas may be primarily closed, depending on the specific clinical circumstance.

Domestic Farm Animals

It is estimated that there are approximately 39,549 attacks per year on humans worldwide by domestic horses, cows, and pigs, and more than 800 deaths are reported annually.[21] Domestic pigs can be aggressive and inflict deep injuries. Those wounds might appear deceptively small. Treatment should consist of exploration, debridement, copious irrigation, cleansing, and antibiotics. Twelve percent of veterinarians have been bitten by pigs, which makes pig bites the fourth most common bite injury for veterinarians, behind dogs, cats, and horses.[22] Pigs have a variety of oral bacteria, including *P. multocida,* and wound infection is common, despite debridement and prophylactic antibiotics. If the patient is not admitted following a pig bite, close follow-up is certainly warranted. Incidentally, throughout the 19th century, Europeans criminally prosecuted biting animals and sentenced those convicted to capital punishment. This practice was the setting for the 1995 movie, *The Advocate,* in which a pig was put on trial and charged with killing and eating an infant.[23]

Case No. 3: *Woessner v. Freeport Memorial Hospital.*[24] In *Woessner,* the plaintiff presented to Freeport

Memorial Hospital in Freeport, IL, at 4:30 a.m., suffering from an uncontrollable high fever of more than 104°F and pain from an old hog bite wound on his left that that was "swollen, red, [and] hot to touch, which he believed was infected." The patient was admitted, seen by two consultants, and at 1 p.m. he was told that he had leukemia and should be transferred to the University of Wisconsin. He was transferred at 4 p.m. after he allegedly received no treatment other than "an ice pack, routine lab/blood tests, X-ray, and general gross examination." He arrived in Madison at 6:30 p.m. and suffered complications that eventually required amputation of his left leg.

The plaintiff claimed an Emergency Medical Treatment and Active Labor Act (EMTALA) violation (42 USC §1395dd), in that he either 1) was not afforded an appropriate medical screening examination, or 2) was not properly stabilized prior to his transfer. EMTALA requires that any individual presenting to an emergency department requesting an examination be provided with an "appropriate medical screening examination" within the capability of the hospital. The purpose of the medical screening exam is to detect whether an emergency medical condition exists.[25] If no emergency medical condition is found, the requirements of EMTALA are met and the hospital's duty to the patient under EMTALA ends. While EMTALA no longer would apply, the hospital must still, of course, act within the relevant standard of conduct for hospitals.

The court rejected plaintiff's claim of failure to provide an adequate screening exam. The court held that the plaintiff could not prove that the hospital treated him differently than similarly situated patients or that it failed to adhere to its own standard emergency screening procedures when screening him. EMTALA is not violated simply because a hospital's screening is negligent; the EMTALA screening burden is met if it "conformed to its customary screening procedures." The federal courts have repeatedly rejected interpreting EMTALA as imposing a nationwide negligence standard. The purpose of EMTALA is to prevent disparate treatment, not inadequate treatment or medical malpractice.[26]

The patient also claimed that he had an emergency medical condition and the hospital failed to provide necessary stabilizing treatment (presumably parenteral antibiotics) prior to his transfer. Since his emergency medical condition had not been stabilized prior to his transfer, he argued that he was transferred improperly. The district court denied defendant's motion for summary judgment on the failure to stabilize claim and allowed the case to proceed against the hospital.

If an emergency medical condition is discovered on the medical screening examination, EMTALA requires "stabilizing" treatment for any emergency medical condition or an appropriate transfer.[27] "Stabilize" is defined as providing "such medical treatment of the condition as may be necessary to ensure, within reasonable medical probability, that no material deterioration of the condition is likely to result from or occur during the transfer. . . ."[28] EMTALA restricts the transfer of patients with emergency medical conditions or women in labor until the condition has been stabilized, unless the medical benefits of transferring the individual to another facility outweigh the risks to the individual (and to the unborn child if the patient is in labor),[29] unless the patient (or legally responsible person) requests a transfer.

The physician should have treated this immunocompromized patient (leukemia) with antibiotics long before transfer arrangements were made. The patient appeared to have an obvious infection secondary to the bite wound. While the court dismissed the failure to screen claim, it is unlikely that the stabilization requirement was met.

Currently, the reporting requirement of EMTALA obligates hospitals to determine if a patient was inappropriately transferred in an unstable emergency medical condition from another hospital in violation of federal EMTALA regulations. This places a burden on **hospitals** to determine if patients transferred from another facility were appropriately transferred, as required by EMTALA. It is important for physicians to remember that it is the hospital, not the physician, who is subject to this reporting requirement. The reporting obligation may include all patients improperly transferred after being evaluated at another hospital prior to arrival, even those who were admitted and subsequently discharged from the first hospital.

Remember that all the facts may not be known to the emergency physician at the time he or she receives the transfer. Also, patients may be dissatisfied with their care elsewhere and have a negative opinion of the previous hospital. Many physicians have encountered a patient who has distorted facts of a previous admission — e.g., "They did nothing for me," only to find out that labs, X-rays, consults, and even procedures were performed to evaluate the patient's condition. There is time to evaluate the potential violation. Don't

report too hastily. Before making a report, it is essential to involve hospital administration and receive advice from knowledgeable legal counsel. **(For a further discussion of EMTALA, including a case involving an arguably premature reporting of an EMTALA violation, see *ED Legal Letter,* December 1999.)**

Rat Bites

Rodent bites are generally small puncture wounds and have a risk of infection of 2-10%.[30] The majority of those bites are inflicted upon sleeping infants living in inadequate housing situations. Rat bites may transmit rat-bite fever, leptospirosis, tularemia, sporotrichosis, murine typhus, and plague. Hantavirus is not transmitted by the rodent bites. Rather, it is spread by the aerosolization of rodent droppings. Rabies prophylaxis may be indicated if the animal is not available for rabies testing.

Case No. 4: *Porche v. Pointe Coupee General Hospital.*[31] In *Porche,* the patient, a 2-month-old boy who had been bitten multiple times by a rat, was brought to the Pointe Coupee General Hospital emergency department in New Roads, LA, by his parents. After evaluation and unspecified treatment by a physician, he was referred to Earl K. Long Memorial Hospital (now Medical Center) in Baton Rouge, LA. The treating physician had instructed the parents to transport their infant son to the second hospital by private vehicle.

Upon arrival at the second hospital, he was seen immediately by the emergency physician, who attempted to start an IV. After several unsuccessful attempts, the child was taken to the pediatric floor for the pediatric surgeon to assist in starting the IV. Thereafter, the infant developed "serious problems," and died despite all efforts. The baby was pronounced dead at 1:45 p.m., exactly 10 hours after his arrival at the first hospital. The cause of death was hypovolemic shock.

In this case, the issue was whether or not the initial treating physician failed to recognize the extent of the baby's injuries and hypovolemia. Apparently, the bites had resulted in substantial blood loss. Additional issues were whether, given the child's condition, transfer was appropriate, and if so, should transfer have been by ambulance. At trial, the emergency physician at Pointe Coupee was found not liable, but the hospital was determined to be 25% liable for the child's death. On appeal, the court reversed the trial court's judgment apportioning only 25% of the fault to the hospital and remanded the case to the trial court for further proceedings, which left open the possibility that the hospital could be held liable for a greater portion of the damages. EMTALA was not an issue, as the events of this case occurred in 1983. EMTALA was not enacted until 1986, when it was part of the 1986 Consolidated Omnibus Budget Reconciliation Act.

While the jury did not hold the initial treating physician liable, in retrospect, one wonders whether she should have transferred the child without first initiating fluid resuscitation. In addition, transport by ambulance would, in retrospect, have been appropriate.

Editor's note: *When in doubt about the method of transport, choose an ambulance. Remember, under EMTALA, an "appropriate transfer" requires appropriate means (i.e., appropriately "qualified personnel and transportation equipment . . . including the use of necessary and medically appropriate life-support measures during the transfer"). Do not allow financial issues, no matter their source, to unduly influence your decision.*

Emergency physicians must be able to initiate fluid resuscitation in any patient that is in hypovolemic shock. Intraosseous infusion has been found to be a quick and effective method of volume replacement and for the administration of resuscitative drugs.[32]

Brown Recluse Spider Bites

Case No. 5: *Karr v. Noel, et al.*[33] In *Karr,* the plaintiff, a pregnant woman, was bitten at 7 p.m. on the right upper thigh by what she believed to be a brown recluse spider. She brought the spider with her to the hospital emergency department 30 minutes later. The bite was found to be red, raised, and approximately 2 cm in diameter. A pathologist was consulted to identify the spider, and, while he opined that the spider was from the *Loxosceles* family, it could not be specifically identified as a brown recluse. After consultation with the patient's obstetrician, the patient was discharged with two prescriptions. Telephone consultation with a plastic surgeon was made, and arrangements were made for the patient to be seen by the plastic surgeon two days later. The patient also was instructed to return if she developed any systemic symptoms.

At her follow-up appointment with the plastic surgeon two days later, the lesion was 10 cm in diameter. She was re-examined several times by the plastic surgeon, and the wound was not excised and grafted until three weeks after the bite. The plaintiff brought suit because of an unsightly, painful scar, which she alleged was caused by the physicians' negligence. An expert witness for the plaintiff testified that, because the bite was more than 1 cm in diameter, he would probably have excised it primarily. The expert also opined that the emergency physician should have insisted that the plastic surgeon see the patient within 24 hours of her discharge. He admitted that the emergency physician had otherwise acted within the acceptable standard of care in treating the bite. Defense experts disagreed. At trial, a verdict for the defendants was returned.

The venom of brown recluse spiders causes epidermal and subcutaneous necrosis, a local reaction surrounding the bite. Usually, patients are not aware of having been bitten and rarely can identify or bring the spider to the emergency department. The brown recluse is nocturnal and generally not aggressive toward humans. Most encounters occur when the spider is forced into contact with humans. The spider is tan to dark brown, 0.2-2.5 cm in length, and has a violin-shaped marking on its back. When bitten, two central puncture marks may be visible. Over the next several hours to days, necrosis of the skin and subcutaneous tissue occurs. This reaction may remain localized or spread significantly — up to 25 cm in diameter. The most extensive necrosis occurs in areas with increased subcutaneous fat,[34] and secondary infections are common.

Systemic symptoms are rare and may include fever, malaise, nausea, vomiting, hemolytic anemia, thrombocytopenia, disseminated intravascular coagulation, seizures, and coma.[35] There is no direct assay available to assist with clinical diagnosis. Fatalities are more common in children younger than 7 and in debilitated patients, and they generally are the result of severe intravascular hemolysis. Evaluation of patients with systemic symptoms should include a complete blood count, electrolytes, BUN, creatinine, prothrombin time, partial thromboplastin time, platelet count, and urinalysis.

The management of brown recluse spider bites appears to be more settled, since *Karr* was decided. Generally accepted initial treatment of brown recluse bites includes ice, elevation, and rest. Avoid injection of the wound with antihistamines, corticosteroids, and/or vasodilators. Use of antibiotics is suggested, but not routinely required.[36] Some experts recommend that they be withheld until there are signs of infection.[37] Dapsone may prevent progression; however, its use is controversial and has many significant adverse side effects that physicians must consider prior to its use. Dapsone should be reserved for moderate to severe cases with an initial dose of 50 mg to 100 mg orally twice a day.[38] Debridement and skin grafting should be delayed until wounds have stabilized (6-8 weeks), because the venom may delay wound healing.[39] Corticosteroids are not routinely recommended, but should be considered if there are systemic symptoms.[40] Outpatient management with close follow-up in 24-48 hours is acceptable treatment for mild to moderate cases.

Extensive necrosis, rapid progression, or systemic symptoms should prompt admission. Importantly, warn all patients of the potential complications: skin necrosis, large scars, and possible surgery. Patients who are made aware of the potential complications are less likely to be surprised when a complication arises and less likely to resort to litigation.

Snakebites

Poisonous snakes inflict approximately 8,000 bites and between nine and 15 fatalities per year in the United States. More than 90% of the bites occur on the extremities, and most occur during the summer. The states with the highest incidence of poisonous snakebite are, in descending order: North Carolina, Arkansas, Texas, Georgia, West Virginia, Mississippi, Louisiana, and Oklahoma.[41]

Case No. 6: *Buck v. the United States.*[42] In *Buck*, a 14-year-old boy was bitten on the leg by a large eastern diamondback rattlesnake, the largest poisonous snake in North America. Interestingly, the boy was in an area of MacDill Air Force Base commonly known as "Rattlesnake Road" when he was bitten. The patient was brought to MacDill Air Force Base Hospital near Tampa, FL, where he was initially examined and treated by a physician who had no prior training or experience in treating poisonous snakebites. This physician (the "admitting physician") consulted his superior, a surgeon who also had no specific training or experience in treating poisonous snakebites, by telephone. Seventeen hours later, after the patient had significantly

deteriorated, he was transferred to Tampa General Hospital, less than 10 minutes from MacDill Air Force Base, where specialized treatment was available. The patient's treatment at MacDill included intramuscular injections of anti-venom. It was not until approximately 15 hours after the patient's admission that he finally was given anti-venom intravenously, as recommended by the manufacturer, albeit in an inadequate dose.

After transfer to Tampa General, the patient underwent an extensive fasciotomy resulting in large disfiguring scars. He subsequently underwent an unsuccessful tendon transplant procedure in an attempt to correct his foot drop. The boy's subsequent course was complicated with multiple medical problems, all the result, according to the court, of negligent treatment by the physicians at MacDill.

In his malpractice claim, the plaintiff alleged negligence on the part of the admitting physician, including: 1) delayed and inadequate treatment; 2) inadequate observation and attention after admission; and 3) failure to appropriate consult with or transfer the patient to a hospital experienced in the treatment of rattlesnake bites. In a harshly worded opinion, the court concluded that the care provided at MacDill was negligent: "improper, inadequate, unreliable and grossly neglectful treatment." The court awarded damages of $185,000, certainly a considerable sum in 1977.

Editor's note: *It was uncontested that the treating physicians had essentially no training and experience in the treatment of poisonous snakebites. Their lack of training and experience did not render their care of the patient negligent per se (although one might expect emergency physicians on a base with an area commonly known as "Rattlesnake Road" to be prepared to treat a rattlesnake bite). The negligence was the result of the physicians embarking on treatment without bothering to consult the literature or other available physicians who were experienced in handling such injuries and their failure to properly observe the patient and transfer him in a timely way. Additionally, they failed to follow the manufacturer's directions when they administered the anti-venom.*

Tick Bites

More than 300 cases of Rocky Mountain spotted fever are reported each year, and 90% occur in the mid-Atlantic and southern states. Many tick bites have resulted in litigation against emergency physicians. Lyme disease cases are increasingly resulting in litigation. The medico-legal lesson is easy: Physicians must be familiar with regional diseases. If you don't consider a disease, you will never diagnose it.

Case No. 7: *Bradshaw v. Daniel.*[43] *Bradshaw* presents an interesting medico-legal issue: liability resulting from a physician's failure to warn the spouse of his Rocky Mountain spotted fever patient of her risks of contracting the disease. In *Bradshaw,* Elmer Johns went to the Methodist Hospital South emergency department in Memphis, TN, complaining of headaches, muscle aches, fever, and chills. He was admitted and ultimately treated for the late stages of Rocky Mountain spotted fever. Four days after admission, he died.

A week after her husband's death, Genevieve Johns presented to a different hospital emergency department in Memphis with symptoms similar to those of her late husband. She also was admitted and treated for Rocky Mountain spotted fever but died three days later. The plaintiff claimed Mr. John's physician was negligent in: 1) failing to advise Mrs. Johns that her husband had died of Rocky Mountain spotted fever; and 2) failing to warn her of her risk of contracting the disease.

The Supreme Court of Tennessee held that Dr. Chalmers Daniel Jr., the physician who had treated Mr. Johns, despite having no physician-patient relationship with Mrs. Johns, had a duty to advise her of the cause of her husband's death and her risk of contracting the disease. Dr. Daniel had conceded at trial that he had not so advised Mrs. Johns.

There have been previous cases in which a physician has been held to owe a duty to a third party at risk because of the patient's condition. Prior to *Bradshaw,* those cases involved patients with psychiatric illness (e.g., *Tarasoff*[44]) or contagious diseases. This case is unique, because Rocky Mountain spotted fever is not a contagious disease in the narrow sense — i.e., transmitted person-to-person — and it was conceded that Dr. Daniel did not have a physician-patient relationship with Mrs. Johns. Despite the lack of a physician-patient relationship between Dr. Daniel and Mrs. Johns, the court held that he had a duty to inform her of her risk. The court pointed out that a physician-patient relationship is necessary to maintain a malpractice suit; this case, however, was based on a theory of ordinary negligence, not malpractice.

Editor's note: *We will be anxious to see if this*

apparent expansion of a physician's duty expands outside Tennessee.

Risk Management Tips

• Obtain and document a complete history and physical with a high clinical suspicion of human bites when lacerations occur over the metacarpal-phalangeal joints on the dorsal aspect of the hand.

• Prescribe appropriate antibiotics — oral or intravenous depending on clinical judgment — for human bite wounds to the hand.

• Cleanse, irrigate, explore, and appropriately debride all bite wounds.

• Consider the location and type of bite wounds. Primary closure of a bite wound may be more convenient to the patient, and potentially, more cosmetic. But, in the case of high-risk wounds, delay in closure may be best.

• Instruct the patient to follow up within no more than 24-48 hours for high-risk wounds or infected wounds. Because follow-up generally is not by the same initial treating physician, drawing an outline of the erythema with a pen will facilitate the follow-up physician's evaluation. Always make your discharge instructions explicit as to time, place, and what treatment should be expected.

• Use standard preprinted discharge instructions to help patients understand the signs and symptoms of infection. Preprinted instructions are neatly printed and uniform, thus reducing the risk of lawsuits alleging inadequate discharge instructions. Always make sure your patients fully understand your discharge instructions.

• Warn patients of the worst case scenario. Preparing them for the worst may reduce their anger if a complication occurs. Effective communication has been shown to be the No. 1 element in preventing malpractice claims.

• Consult the appropriate specialist in a timely manner when confronted with any situation you are uncomfortable treating, whether due to lack of training or experience, or any other reason.

Endnotes

1. 804 F.Supp. 1147. (1992).
2. Brunxli WF, et al. Current management of human bites. *Pharmacotherapy* 1998; 18:227-228.
3. Tintinalli JE, et al. *Emergency Medicine, A Comprehensive Study Guide.* 5th ed. New York City: McGraw-Hill Health Professions Division; 1999.
4. Brunxli at 228.
5. Id.
6. Donkor P, Bankas D. A study of primary closure of human bite injuries to the face. *J Oral Maxillofac Surg* 1997; 55:479.
7. Brunxli at 232; Tintinalli at 334.
8. Stevenson J, Anderson I. Hand infections: An audit of 160 infections treated in an accident and emergency department. *J Hand Surg* 18B:115, 1993. See also Dellinger infra note 9.
9. Dellinger EP, et al. Hand infections: bacteriology and treatment: A prospective study. *Arch Surg* 1988; 123(6):745.
10. Patzakis MJ, et al. Surgical findings in clenched-fist injuries. *Clin Orthop* 1987; 220:237-240.
11. Dreyfuss U, Singer M. Human bites of the hand: A study of 106 patients. *J Hand Surg* 1985; 10:884.
12. Gold KW, et al. Evaluation and treatment of patients with human bite marks. *Am J Forensic Med Pathol* 1989; 10(2):140.
13. Weiss HB, Friedman, DI, Coben, JH. Incidence of dog bite injuries treated in emergency departments. *JAMA* 1998; 279:51-53.
14. Rieck D. Dog bite prevention from animal controls perspective *J Am Vet Med Assoc* 1997; 210:1,145-1,146.
15. Kelleher AT, Gordon SM. Management of bite wounds and infection in primary care. *Cleve Clin J Med* 1997; 64:137-141. Patrick GR, O'Rourke RM. Dog and cat bites: Epidemiologic analyses suggest different prevention strategies. *Public Health Rep* 1998; 113:252-257.
16. Monti DJ. Dog bite prevention campaign: Nipping a problem in the bud. *J Am Vet Med Assoc* 1998; 212:1345.
17. Talon DA. Dog, Cat, and Human Bites. Preventing and Treating Infections. Presented at the ACEP Scientific Assembly. Las Vegas; October, 1999.
18. Israeli E, et al. Smitten by a kitten. *South Med J* 1999; 92(9):909-911.
19. *Thomas v. Ekambaram,* 706 So. 2d 1245 (2960604), Court of Civil Appeals of Alabama (July 18, 1997).
20. Tintinalli at 1253.
21. Auerbach, PS. *Wilderness Medicine.* 3rd ed. St. Louis: Mosby; 1995.
22. Landercasper J, et al. Trauma and the veterinarian. *J Trauma* 1988; 28(8):1,255.
23. Evans EP. *The Criminal Prosecution and Capital Punishment of Animals.* London: 1906. Reprinted, Faber and Faber Limited; l987.
24. 1993 U.S.Dist LEXIS 160 (N.D. Ill.).
25. The Act defines an "emergency medical condition" as a condition manifesting itself by acute symptoms of sufficient

severity, including severe pain, such that the absence of immediate medical attention could reasonably be expected to result in: 1) placing the health of the individual, pregnant woman, or unborn baby in serious jeopardy; 2) serious impairment to bodily functions; or 3) serious dysfunction of any bodily organ or part. 42 U.S.C. § 1395dd(e)(1)(A).
26. See Kuettel AC. The changing role of receiving hospitals under the emergency medical treatment and active labor act. *J Leg Med* 1998; 19:354.
27. 42 U.S.C. & 1395dd(b)(1)(A).
28. 42 U.S.C. & 1395(e)(3)(A).
29. 42 U.S.C. & 1395dd(C). *Johnson v. Univ. of Chicago Hosp,* 982 F.2d 230, 232-33 (7th Cir. 1992); Green v. Toura Infirmary, 992 F.2d 537, 539 (5th Cir. 1993).
30. Ordog G, et al. Rat bites: 50 cases. *Ann Emerg Med* 1985; 14:126.
31. 554 So.2d 1345 (1989).
32. Barkin RM. *Pediatric Emergency Medicine.* 2nd ed. St. Louis: Mosby; 1997.
33. 212 Ill.App.3d 575 (1991).
34. Allen C. Arachnid envenomations. *Emerg Med Clin North Am* 1992; 10(2):269-298, 289.
35. Tintinalli at 1606.
36. Harwood-Nuss AL. *The Clinical Practice of Emergency Medicine.* 2nd ed. Philadelphia: Lippincott-Raven; 1995 (at 1449).
37. Allen at 291.
38. Rees RS, et al. Brown recluse spider bites: A comparison of early surgical excision versus dapsone and delayed excision. *Ann Surg* 1985; 202(5):659-63.
39. Tintinalli at 1606. See also Harwood-Nuss at 1449, and Allen supra at 291.
40. Id.
41. Gold BS, Barish RA. Venomous snake bites, current concepts in diagnosis, treatment, and management. *Emerg Med Clin North Am* 1992; 10(2):289.
42. *Buck v. United States of America,* 433 F. Supp. 896, U.S. District Court, M.D. (Florida, 1977).
43. *Bradshaw v. Daniel,* 854 S.W. 2d 865, Supreme Court of Tennessee (1993).
44. *Tarasoff v. Regents of University of California,* 551 P.2d 334 (Cal 1976).

Physician CME Questions

17. Which of the following is **not true** regarding human bite wounds:
    a. Bites to the hand, particularly clenched-fist injuries, require antibiotics and close follow-up.
    b. High-risk patients (asplenia, diabetes, immunocompromised) with human bites should be given antibiotics.
    c. HIV testing and prophylaxis is always required after bite wounds.
    d. Initial treatment includes cleansing, irrigation, and appropriate debridement.

18. In brown recluse spider bites, which of the following is **not true:**
    a. Admission for emergent debridement is generally required.
    b. Injection of antihistamines or corticosteroids into the wound is not indicated.
    c. Patients with systemic symptoms should generally receive corticosteroids.
    d. Dapsone has been shown to decrease the spread of necrotic areas in moderate to severe cases.

19. General management of animal and human bite wounds includes all of the following <u>except</u>:
    a. Cleansing the wound, irrigation, debridement
    b. Tetanus immunization if indicated
    c. Many states require the reporting of animal bites.
    d. Rabies vaccination is indicated in a majority of cases.

20. Which of the following antibiotics alone or in combination is <u>not</u> recommended in human or dog bite wounds:
    a. Augmentin
    b. Clindamycin plus ciprofloxacin
    c. Clindamycin plus doxycycline
    d. Cephalexin (Keflex)

In Future Issues: Privacy of electronic records