

# Pitfalls in Emergency Care

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The provision of effective emergency care for patients with life-threatening problems requires a disciplined and systematic approach to comprehensive evaluation and management. It is unfortunately not unusual for serious problems to go unrecognized, for diagnosis to be delayed or for inappropriate treatment to be instituted because one or another basic principle of care is overlooked. This paper presents illustrative cases which stress the importance of 13 common principles for good emergency care: careful history, adequate airway, complete physical examination, evacuation of the stomach, adequate laboratory studies, appropriate follow-up of laboratory results, adequate x-ray examinations, complete patient instructions, avoidance of premature conclusions, adequate preparation for transportation, appropriate timing of discharge, careful establishment of priorities, and adequate records.

It has frequently been said that a physician's lack of clinical education does not cause trouble as often as his failure to meticulously apply the knowledge and skills he already possesses. This is particularly true in emergency medicine. One does not usually associate the methodical application of knowledge with emergency medical care, yet it is this rigid discipline, requiring a systematic approach to the patient, that can save many lives which otherwise would be lost. The practice of emergency medicine is fraught with pitfalls, and it is not the intent of this discussion to characterize them according to frequency or importance. Some of the pitfalls chosen for this paper seem so elementary that one might think it unnecessary to even mention them to the trained physician. Yet, some of the examples are cases that occurred in situations where not one, but several skilled physicians were involved while working in highly sophisticated institutions. The cases have been gathered from hospitals in several different parts of the country, and over a prolonged period of time; they have

been selected because they emphasize some of the most essential and too-often-ignored principles of emergency care.

## The Inadequate History

A 76-year-old man arrived at the emergency department entrance by private car. He was lifted into a wheelchair, and rushed into a treatment room. He was pale, diaphoretic, and semicomatose. His blood pressure was 40/0, pulse 146. The patient's age and appearance prompted the physician receiving him to make a diagnosis of myocardial infarction with cardiogenic shock and, before any diagnostic tests could be instituted, treatment for this condition was ordered. A more senior physician observing what was happening discovered that the patient's daughter was just outside the emergency department door and from her, he obtained the following history. Her father lived alone in a garden cottage behind her house. When he did not show up for breakfast, she became worried and went to investigate. She found him in bed with a large coffee can which was almost completely filled with blood. He had developed a nosebleed during the night, and bled profusely, and was so weak he could not get out of bed. Although bleeding had ceased, she recognized the need for getting him to a hospital immediately. With the help of a neighbor, she cleaned him up and brought him to

the emergency department by car. Because he had been carefully cleaned, there was no external evidence of his recent severe bleeding. However, an examination of his throat revealed blood-tinged mucus draining from his nasopharynx. It took less than 90 seconds to obtain the pertinent history; from it, a diagnosis of hypovolemic shock could be made. The treatment indicated was fluid replacement for the hypovolemia, and not the use of potent cardiogenic or vasoconstrictor drugs.

## Comment

One need not delay the institution of urgently needed life-support measures in order to obtain a history. A history can be taken concurrently with the examination, or by someone else while treatment is in progress. Information about a patient's onset of illness leading to an emergency should be obtained from any source immediately available upon the patient's arrival. Ambulance drivers, policemen, passersby, or members of the family all may be able to contribute information of vital importance to the patient's diagnosis and treatment.<sup>1,2</sup> Even a few moments delay in obtaining this information may result in the disappearance of the one individual who can give the critical clue that is needed for successful diagnosis and treatment.

In the format of the problem-oriented medical record, a data base must be gathered as quickly and completely as possible; it should be correlated with an adequate physical examination while treatment is in progress.

## Inadequate Airway

A 71-year-old woman was hit by an automobile while crossing the street. She was brought by ambulance to the emergency department and taken immediately to a treatment room. While her clothing was being removed, the attending physician checked her mouth and removed approximately two thirds of an upper denture, and an entire lower denture. A cursory inspection of the mouth revealed no other foreign bodies. Further examination revealed that the patient had sustained multiple fractures of her extremities as well as a severe head injury. She was in shock and experiencing respiratory distress. Her fractures were splinted,

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and anti-shock measures were carried out. Among the x-rays obtained was a cross-table lateral of the cervical spine. When these x-rays were studied, it was discovered that a large piece of the upper denture was lodged in the patient's throat just above the larynx. This was immediately removed, and the patient's respiration improved dramatically.

### *Comment*

The immediate establishment of an adequate airway is essential to good emergency medical care. An obstructed airway is generally quite obvious and attracts the attention of the emergency physician; however, not infrequently, the examination of the nose, mouth, and throat is not carried out completely, resulting in fairly large objects sometimes being missed. Another problem that frequently escapes the physician's attention is the aspiration of foreign bodies, such as teeth, or portions of denture which can lodge in one of the main stem bronchi. In all severe injuries of the head and neck, routine chest x-rays should be taken. This will assist in identifying pneumothorax, hemothorax, contusions of the lung, atelectasis, mediastinal emphysema from fractured tracheas, as well as other pathology of the thorax and its contents which was pre-existing or unsuspected. In addition to discovering current injuries and previous pathology, such x-rays also provide a good source of reference for comparative x-rays later in the patient's treatment if pulmonary complications develop.

### **The Inadequate Physical Examination**

A young man arrived at the emergency department by ambulance as a "Code 3." He was rushed into a treatment room, and stripped of his clothing, exposing obvious multiple stab wounds of the abdomen. He was in critical condition and bleeding profusely intra-abdominally. Fluid replacement was started immediately, blood was ordered, and the patient was rushed to the operating room. During the next four hours, a skillful and meticulous repair of the intra-abdominal injuries was performed. The patient was taken to the recovery room where he quietly expired three hours later. Autopsy revealed a completely successful abdominal opera-

tion. It also revealed a massive hemothorax on the left and a solitary, small stab wound in the back just below the edge of the left scapula.

A patient involved in an automobile accident sustained multiple and severe injuries to his face. He was brought by ambulance to a university hospital emergency service where it was discovered that profuse bleeding and bilateral fractures of the mandible were causing airway problems. The emergency physician immediately proceeded to clear the airway and control the bleeding, at the same time calling for a maxillofacial specialist who arrived within a few minutes and began definitive therapy of the maxillofacial injuries. The patient became shocky, and intravenous fluids were started. A perfunctory examination of the chest and palpation of the abdomen through loosened clothing did not indicate the existence of serious injuries in these areas. Two and a half hours later, the patient was in profound shock, and a decision was made to move the patient to an intensive care area before continuing with treatment of his maxillofacial injuries. It was at this time that the patient was completely undressed for the first time. Upon removing his trousers, it was discovered that he had bilateral fractures of the femur, and that this was why he had gone into shock.

### *Comment*

Attention to the patient's airway is of top priority; however, while his airway is being cleared, the patient should be completely undressed so that a physical examination of his entire body can be carried out by someone else while the most obvious problem is being treated.<sup>2,3,4</sup> There is a tremendous temptation to focus one's attention on the most visible injuries, and to devote one's time to treating these, while more occult conditions threaten the patient's life.

### **Failure to Evacuate the Stomach**

A young man involved in a serious automobile accident was brought to a community hospital emergency department. He had sustained severe head injuries and had signs of markedly increased intracranial pressure. Immediate neurosurgical steps were taken to relieve his intracranial pres-

sure, after which his condition improved dramatically. He was placed in intensive care and given the usual supportive measures. A nasogastric tube had not been passed on this patient, nor had his stomach been evacuated. Four hours after admission to the hospital, he vomited a copious amount of old blood, aspirated, and died.

### *Comment*

Regardless of the cause, an unconscious patient's stomach should be emptied. If the cause of the unconsciousness is unknown, the possibility of drug ingestion certainly demands gastric lavage. In cases of trauma, especially of the head or neck, the stomach should be evacuated even if the patient is not unconscious. The danger of vomiting old blood or other gastric contents and aspirating is great, and preventive measures should be taken as early in the treatment program as possible. If the patient is in respiratory distress and will need respiratory assistance, an endotracheal tube should be placed first, before attempting to evacuate the stomach. If an endotracheal tube is not necessary, the patient can be placed in Trendelenburg position on his side with suction apparatus functioning, and the nasogastric tube then passed into the patient's stomach. If this causes the patient to vomit, gravity and suction will help to prevent the complications of aspiration. In addition to eliminating the danger of vomiting and aspirating old blood, food, and gastric juices, a gastric tube is needed frequently for decompression of the stomach. Air-swallowing following chest injuries, positive pressure resuscitation without the use of a cuffed endotracheal tube, and air-swallowing by the patient due to a variety of reasons can cause tremendous gastric dilatation with impairment of respiration and venous return.

### **Inadequate Laboratory Studies**

A patient was brought to the emergency department with a history of having overdosed on tricyclics. Blood was drawn and sent to the laboratory for tricyclic determination. Gastric lavage was carried out, and the patient was admitted to the hospital. The laboratory report came back showing high levels of tricyclics, but not in the

danger zone, and no further drug screening was carried out. The next morning the patient was comatose, and at that time, a complete laboratory request for gas chromatography and urine screening was requested. This second examination revealed a high level of barbiturates.

#### *Comment*

In cases of drug overdose or poisoning, it is extremely important that a full spectrum of drug screening tests be carried out. The available history on patients who have overdosed is notoriously inaccurate, and the identification of one drug does not eliminate the possibility of multiple drug ingestion.

#### **Failure to Follow-up on Laboratory Tests**

A 45-year-old woman came to the emergency department with a chief complaint of headache, malaise, weakness, and nausea. She had no significant past medical history. There were many people being seen at that time with flu symptoms, so she was given symptomatic treatment for this condition. However, the physician was mildly suspicious that all of her symptoms might not have been due to the "flu." He ordered an SMA 6/60, and told the patient to report back to the hospital in several days for the results. Four days later, the patient returned to the emergency department, unconscious, with a blood sugar of 840 mg%. A search for her previous laboratory work revealed a blood sugar of 420 mg% on her first visit.

#### *Comment*

In busy emergency departments with many doctors, the danger of abnormal laboratory work not being followed-up is great. There are many instances in large hospital out-patient services where abnormal x-ray and/or laboratory results are not communicated to the patient or the physician. Each physician and each institution in which he works should devise a method whereby abnormal x-ray or laboratory results are brought to the attention of the physician so that the patient can be contacted when follow-up is indicated.

#### **Inadequate X-ray Examination**

A patient sustained a fall, striking

his head and losing consciousness. He was brought to the emergency department and x-rays of the skull were ordered. These were reported as negative. The next morning, the consulting neurosurgeon noted that there was blood behind the eardrum, and that a basilar fracture of the skull was likely. Further x-rays were ordered, including a specific request for a brow-up-lateral view. This showed an air-fluid level to be present in the sphenoid sinus and a diagnosis of basilar fracture of the skull was made, even though the fracture line could not be demonstrated.

#### *Comment*

When routine skull x-rays are done, the lateral is usually taken with the patient's head turned so the Bucky can be used; however, a lateral taken in this manner will not reveal an air-fluid level in the sphenoid sinus because it is being taken vertically to the pooled blood. Not only should the x-ray be taken as a cross-table lateral to reveal an air-fluid level in the sphenoid sinus, but when the x-ray is interpreted, the film should be put in a brow-up position so that there is conformity between the air-fluid level and the patient's position when the x-ray was taken.

Any patient sustaining a blow to the head that results in significant injury, including blows of a magnitude that would dislodge or fracture teeth, should have an x-ray of the cervical spine. X-rays showing the seventh cervical vertebra should be taken by placing the patient in the swimmer's position. In addition, a patient arriving at an emergency department who has lost consciousness for unknown reasons should have a cross-table lateral of his cervical spine, since a small percentage will have either fractures, dislocations, or subluxations. It is also important that x-rays read by an emergency physician be re-read by a radiologist. Many patients have sustained injuries visible on x-rays that were interpreted as being negative by the emergency physician, but which the radiologist later found to reveal pathology. If the interpretations are at variance, follow-up notification of the patient must be carried out immediately. This situation is particularly dangerous when it occurs with transient patients who may be on their way to another city soon after discharge from the hospital.

#### **Inadequate Patient Instructions**

A patient reported to the emergency department with a history of thrombophlebitis and an empty bottle of Coumadin. After examination and evaluation, it was determined that it would be in his best interest to continue him on Coumadin. He was given a refill and instructed to report back to the hospital in five days. His instruction from the examining physician was to take one 5 mg tablet of Coumadin daily. However, the patient instruction sheet on the emergency department records was not filled out or given to the patient. Five days later, the patient returned to the emergency department with massive ecchymoses over his entire body. When questioned, he said that the physician had told him to take five Coumadin tablets a day even though the instructions on the bottle directed him to take only one tablet daily, the dosage he had previously been taking. He had interpreted the physician's instructions as "Take five tablets per day," when in actuality, the doctor had said to take 5 mg per day. Because the instructions were not given to the patient in writing, a near-fatal accident occurred.

#### *Comment*

Emergency department forms should include a patient instruction sheet to be filled out by the examining physician and signed by the patient, indicating that he understands the instructions. A copy of these instructions are then given to the patient. It has been well documented that even the most intelligent patients are unable to retain information regarding their treatment and the instructions for their continued care when they are under the emotional stress of an emergency department visit. Repetition helps to diminish the misunderstanding of the instructions, but even when the instructions are repeated as often as four or five times, a substantial number of patients cannot repeat the instructions an hour later. It is for this reason that patient instructions should be given in writing, read to the patient, and the patient asked to interpret what those instructions mean to him.

#### **Jumping to Conclusions**

A patient arrived at the emergency department by ambulance as a transfer

from another hospital. The transferring diagnosis was dissecting aortic aneurysm. When the patient arrived, he was nearly moribund; he was in shock and ashen in color. Without further evaluation, preparations were made to rush him to X-ray for arteriography and then to surgery. Before arrangements could be made to carry out these procedures, the patient vomited a large quantity of coffee-ground material and expired. A review of the case revealed that a mass seen in the chest by x-ray was not, in fact, an aneurysm, but was an atelectatic left upper lobe with a bronchiogenic tumor causing the atelectasis. The coffee-ground vomitus was from bleeding varices and gastritis.

Another interesting example of this pitfall concerns a patient who was hospitalized for a mild cerebrovascular accident. He left the hospital a few days later with mild weakness on the left side and some difficulty with speech, but in otherwise very good condition. About ten days later, his wife heard him fall. She rushed to the basement, where she saw him lying unconscious at the bottom of the stairs. He was returned immediately to the hospital where a diagnosis of cerebrovascular accident was made. His symptoms on admission were consistent with stroke; however, several hours after admission, he began to develop signs of an epidural hematoma. He was rushed to surgery where a large epidural hematoma was evacuated. About a week later, while still hospitalized, the patient regained consciousness and showed evidence of focal neurologic impairment not explainable by his stroke. He was taken to X-ray and pictures of his cervical spine were taken. These revealed a fracture-dislocation of C-4 on C-5.

#### *Comment*

When one is faced with a patient entering the emergency department, there is a great tendency to seize on the observations and evaluations of a colleague, and base the therapeutic regimen on data accumulated by someone else. It cannot be too strongly emphasized that physicians working in emergency departments should always verify the diagnosis made in some other facility. In a majority of instances, the admitting diagnosis will be correct; however, a sufficient number

of mis-diagnoses emphasize the need for approaching each patient as a new problem. In each of the above-mentioned instances, the physician jumped to the conclusion that he knew the extent of the injuries and failed to carry out a comprehensive evaluation.

#### **Inadequate Preparation for Transportation**

A patient arrived by ambulance at the emergency department receiving cardiopulmonary resuscitation. The patient had been in an automobile accident and was taken to an outlying community hospital where intravenous five percent dextrose in saline was started, using a 22-gauge needle. Without further evaluation, preparation, or treatment, the patient was then transferred to the receiving hospital. On the way, he stopped breathing. Resuscitative efforts were to no avail, and it was apparent that the patient had exsanguinated internally from abdominal injuries.

#### *Comment*

Even though facilities or personnel in the community hospital were not adequate to handle the degree of trauma that this patient had sustained, a great deal more could have been done toward saving his life. An airway, a nasogastric tube, a catheter, and two or more large-bore intravenous lines should have been established and preparations made for massive fluid volume replacement during transportation. The ten or 15 minutes needed to carry out these preparatory measures prior to transportation could have made the difference between life and death. Every facility purporting to render emergency service, whether it be basic, general, major, or comprehensive (categories 4, 3, 2, or 1) is required to have the capability of rendering the services necessary to insure the maximum safety of the patient during his transfer to another facility.

#### **Premature Discharge**

A patient who was unconscious and not breathing was brought by private car to the emergency department where immediate resuscitative efforts were instituted. History from friends and needle tracks on his arm verified the suspicion of a heroin overdose. He was given 0.8 mg of Narcan intra-

venously, and unassisted respirations were restored. He remained semi-comatose during the next five or ten minutes, so another 0.4 mg of Narcan was given. Within 30 minutes, the patient was awake and quite alert, talking to the nurses. During the next hour, he sat on the edge of the gurney, asked for coffee, and appeared quite normal. He insisted that he wanted to leave. The physician told him that a period of observation was necessary. The patient refused to accept the physician's advice, and left the hospital against medical advice. Two hours later, he was returned to the hospital D.O.A. Resuscitative efforts were to no avail.

#### *Comment*

It is a desirable policy to titrate Narcan so the patient does not completely wake up. The patient is thereby kept quiet and under complete control until the narcotic is metabolized sufficiently so as not to endanger him after he awakens. There are a number of hazards associated with prematurely discharging patients who have suffered an overdose. Narcan represents but one of the problems. Patients who have overdosed on tricyclics may seem to be doing perfectly well, yet they are susceptible to fatal arrhythmias as long as five days after the initial overdose. Patients involved in breathing or sniffing hydrocarbons are also susceptible to fatal arrhythmias for varying periods of time after inhalation.

Premature discharge of patients with precordial pain is also extremely dangerous. A patient presented at the emergency department with vague substernal discomfort. The history was not typical of angina pectoris, and physical examination plus electrocardiogram and enzymes were negative. The patient was discharged from the emergency department and given an appointment for a follow-up visit three days later. Two days later, he came into the hospital by ambulance D.O.A. from a massive coronary occlusion.

#### *Comment*

A number of cardiology services have instituted a policy of admitting to the Coronary Care Unit for a 24 to 48-hour period of observation, all patients with chest pain or suspected

of having coronary insufficiency. The directors of these programs feel that negative findings at the end of their observation period in 50 percent or more of the patients is an acceptable figure. There is no doubt that the survival rate of patients sustaining massive coronaries while in intensive care units is much greater than the rate for patients sustaining that same type of catastrophe at home or at work.

### Inadequate Establishment of Priorities: Failure to Use a Comprehensive Approach in Treating a Patient

A patient was brought into the emergency department with acute abdominal injuries caused by a motorcycle accident. He had perforations of the bowel and massive intra-abdominal bleeding. In the emergency department, large-bore intravenous lines were placed, central venous pressure was monitored, and the patient was rushed to surgery. It was known at the time that he was in the emergency department that he had sustained fractures of his extremities; however, because the intra-abdominal bleeding was massive and life-threatening, he was operated on for his abdominal catas-

trophe before the orthopedic surgeons were called in. When the abdominal emergency was cared for and the patient's abdomen was being sewed up, the orthopedists were summoned to evaluate his fractures. Upon seeing the patient and examining him, they discovered that the left leg was pulseless, discolored, and no longer salvageable.

### Comment

Regardless of how urgent a situation may seem to one specialty, the patient's injuries requiring care by another specialty should be evaluated at the earliest possible moment. In the case just cited, the orthopedic surgeons could have been operating on the leg, at least sufficiently to restore circulation, while the abdominal surgery was in progress. It is for this reason that sometimes a family physician or a competent emergency physician of general medical and surgical orientation can better establish priorities in patient management than can the specialist who may have "tunnel" vision regarding injuries or illnesses falling within the bounds of his specialty.

### Inadequate Records

There is no need to enumerate the many examples of problems that can be generated as a result of inadequate records. Insurance companies' files bulge with examples of their inability to adequately defend physicians who have not kept complete and precise medical records. Using the format of the problem-oriented medical record can do a great deal to assist a physician in making certain that he is recording adequate data about his patient. A data base, a problem list, a record of the subjective complaints of the patient, the objective findings, the assessment, and the plan furnish a reasonably complete record that is easy to defend.

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