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Relation of Trauma, Disease, and Law - Panel Discussion

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Relation of Trauma, Disease, and Law

*A Symposium**

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Alfred Koerner, M.D., LL.M.[2] *(Moderator)*
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Doctor Koerner: (The Moderator poses the problem.)

IN PLANNING THIS SYMPOSIUM, we were aware of the tremendous scope of traumatic medicine and we realized that we must outline areas of primary importance and limit the discussion to them. We felt that these areas should be closely related to the frequency with which they appear in legal contests.

After considerable study we concluded that it was best to divide the subject into four categories: trauma in relation to heart conditions; trauma in relation to arthritic conditions; trauma in relation to malignancy; and, finally, trauma in relation to nervous and mental disorders. The discussion which

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* Recent panel discussion, under the auspices of the American Board of Legal Medicine, Inc. (1501 Broadway, New York 36, N. Y.), in conjunction with the sesquicentennial meeting of the Medical Society of the State of New York. (Complete text of the entire symposium, including questions and answers and general discussion, may be requested directly from A.B.L.M. at above address.)

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follows will consider the medicolegal problems that arise out of these categories.

Doctor Franco: (The internist's approach.)

Before entering on the specific subjects of heart disease, arthritis and cancer, let us briefly review certain general principles. According to their relation to trauma, diseases can be divided into three categories. The first includes those which are the direct result of trauma. Traumatic arthritis following a direct injury to the joint is an example. This category also includes direct trauma to the chest wall resulting in contusion of the heart, hemorrhage into the heart sac, and possibly disturbances in heart action. The deceleration type of injury to the chest is a similar type but may also include laceration of the heart valves. Some diseases are never the result of a single trauma: coronary artery disease, degenerative and rheumatoid arthritis, and cancer. Finally, the third category usually develops without trauma. Trauma is an essential factor in precipitating or aggravating an underlying situation. An example is acute coronary thrombosis following unusual exertion, or an acute flare-up of an arthritic joint following a direct injury. Injury to bone has at times been considered a precipitating factor in sarcoma of the bone. In weighing the evidence for causal relationship, the pathological examination would be most valuable, however this is often missing and perhaps accounts for the field day in hearings on this type of problem.

A history of an accident may be inaccurate if not taken immediately. If deferred, people are prone to remember something to tie in with an illness, and very often they can be honestly mistaken as regards an injury. A history taken immediately after the injury is more valuable than one taken a year later. The pathologist, however, can give the most concrete and scientific evidence on consideration. Tissue slides, blood smears and other laboratory determinations supply strong corroborative evidence. The pathological evidence for the precipitation of coronary thrombosis or myocardial infarction following severe effort or physical injury, according to pathologists, should be limited to those cases that have subintimal hemorrhage. If used as the sole criterion a good many cases would be eliminated. Similarly, adequate injury to a single joint cannot account for a generalized osteoarthritis.

From our present knowledge of cancer, there appears little

likelihood that trauma is a causative factor. The fastest cancer cells grow rather slowly. Therefore, if a tumor mass appears at the site of a recent injury it is doubtful whether the cancer is a result of injury. Rather, the injury frequently brings one's attention to the mass. Inasmuch as a tumor, appearing after injury, need not be malignant, biopsy is needed to confirm or deny any cancerous changes.

A complete history and physical examination, including an accurate investigation of his former state of health, should be secured immediately after the injury. The probability of the coincidental course of a tumor and an injury is much greater than we recognize. The type, site and severity of the injury is most important. The majority of people with complaints of arthritis usually have an injury that has been very minor, and very often not at all related to the joint involved. The same would be true of emotional factors in precipitating coronary artery disease. Most of these factors are peculiar to the individual and are related to his own personal life. When a coronary thrombosis occurs during physical exertion, the exertion caused too great a load to be placed upon an already diseased heart muscle. I think you would have to take the same tack with the consideration of so-called emotional factors. They indeed would have to be severe and unusual.*

Physical examination of the patient after the injury may disclose many pre-existing diseases. Arthritis in the majority of cases is readily diagnosed, especially by x-ray film. Latent and pre-existing but undiagnosed heart disease may be detected by the electrocardiograph. Tumors of the bone, such as osteogenic sarcoma, can be monitored accurately by serial radiogram. The development of a tumor mass at the site of an injury to bone is rather conclusive evidence of causation. In the precipitation of an acute coronary following severe exertion, the usual limit is 72 hours, though it may occasionally occur as much as a week later. Aggravation of a pre-existing arthritic condition by trauma may be delayed from one to six weeks. The latent period of osteogenic sarcoma obviously will run into months.

Accurate diagnosis is the crux of the problem. Everyone should realize that it takes a certain amount of clinical judgment to be able to tell in the presence of an underlying disease,

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* *Editorial Note:* It may be interesting to the reader, that many coronary occlusions and cerebral vascular accidents (strokes) occur when the individual is resting or asleep.

whether it has been aggravated or accelerated by the alleged trauma. That consideration should be based on real clinical experience rather than on so-called theory derived from medical textbooks.

Doctor MacGregor: (The surgeon's approach.)

As the cause of death in the United States today, trauma ranks fourth, only preceded by: (1) heart disease, (2) cancer, (3) vascular lesions of the central nervous system. In 1956, approximately 100,000 people died as a result of accidents. Of these about 36,000 were the result of traffic accidents. It is estimated that about 10,000,000 injuries occur a year. Keeping these figures in mind we can appreciate the importance of establishing a causal relation between trauma and disease.

Categorized injuries are due to one of several things: mechanical agents, chemical irritants, radiant energy (which includes heat, radiation, x-ray and radium), and finally pathogenic organisms. However, for the present discussions, trauma should be somewhat more limited.

An adequate definition of trauma would probably be: a mechanical violence to the tissues. If we get into chronic irritants and then discuss the relation of trauma to cancer, it is entirely different than one traumatic agent of mechanical nature. Certainly as regards the surgeon's experience, every time we perform a surgical operation we create a mechanical trauma. We have adequate experience in the post-operative care of patients to follow the relation of trauma both in healthy individuals and in diseased ones. We do know that certain endocrine changes occur following trauma. We know that metabolic changes, such as increased protein breakdown, changes in the carbohydrate metabolism, changes in electrolyte pattern, do occur. We also know that, especially in diseased conditions, these changes can be quite serious.

Ordinarily, for instance, after an operation, about 70% of the sodium chloride is retained in the body instead of being excreted the first few days post-operatively. It therefore behooves us, particularly in the presence of a diseased kidney, to take this carefully into consideration. So there are many factors that come before us in the immediate post-operative care of the patient that relate trauma to disease.

There are various categories on which one is called upon to express a medicolegal opinion. First, there is the relation of

trauma to carcinoma; second, the relation of trauma to osteomyelitis; third, the so-called bugbear of traumatic appendicitis; fourth, the relation of trauma to aggravation or precipitation or development of an ulcer; fifth, the occurrence of trauma and its association with certain pre-existing diseased states; and, last, the degenerative diseases that occur in association with trauma (particularly a fractured hip). These are the general categories.

Proof is still lacking that one mechanical trauma has produced carcinoma. In order to make such an assertion we would have to categorically state that the carcinoma was not there before. That would be somewhat difficult to prove. Experimentally we would also have to say that one trauma could produce carcinoma; and to my knowledge, that has not yet been done in the experimental animal. As far as aggravation of carcinoma, as far as creation of secondary deposits or acting as a complementary exogenous factor associated with other carcinogenic factors, that is certainly a different problem. As regards osteomyelitis, we do know that a laceration of the skin, for instance, can act as a point of entry for pathological organisms. Then, following a trauma to the part, with extravasation of blood locally, having a preceding bacteremia, the germs can lodge there and start an infectious process.

The term "traumatic appendicitis" has been pretty well discredited. There may be an occasional case where an adhesion has been released as a result of trauma which causes some intra-abdominal distress. In the case of a man who has an existing ulcer and who develops a massive hemorrhage while lifting heavy objects, the question of causal relation and aggravation is often raised. The hemorrhage here might have occurred sooner or later spontaneously, and is very difficult to ascribe to the physical exertion.

There is another type of ulcer, associated with the so-called alarm or stress reaction, that may be precipitated following mechanical injuries. In a review of 30 cases of non-penetrating injury to the abdomen, most experienced injury to internal organs that had not been previously diseased. In one case an ovarian cyst was ruptured, and in another instance hemorrhage occurred around a Wilm's tumor of the kidney. Both of the last two cases were thus aggravated by the trauma. Various degenerative types of disease are precipitated in elderly folks by trauma—for instance, a fractured hip.

The causal relation of trauma to breast cancer is most per-

plexing. Keep in mind that the breast is an external organ, easily exposed to trauma. In the female population, cancer of the breast is the most commonly occurring of all carcinoma. Statistics show that 22% of all carcinomas of the female arise in the breast. That is the most common source of medicolegal problems in the relation of trauma to cancer.

Doctor Casey: (The neuropsychiatrist's approach.)

The unity and the oneness of the human organism is a principle and a fact of which we should not lose sight, and in fact it should be emphasized. Injury to any part of the human organism is an injury to the whole. The relation of an injury to the body and the production of disease of the mind and emotions is well known. It is well known that the high fevers in infectious systemic diseases (i.e., pneumonia, typhoid fever, rheumatic fever, etc.) produce temporary mental disorders. These vary from mild to severe, but are usually in the form of delirium. Other mental disturbances are caused by toxic amounts of drugs, metals and gases. An excellent example is alcohol. The well-defined mental conditions, such as delirium tremens, produced by this substance are well known. Toxemia of pregnancy is another example of mental disturbances occurring from injuries to the body from within the body itself. Then there are the mental disturbances that occur in the period of the change of life in both men and women. Postpartum psychosis and postpartum depressions not infrequently follow the delivery of a child. The mental disease accompanying the gradual process of growing old is dependent upon the amount of arteriosclerosis that occurs in the brain.

Simple oxygen deficiency to the brain may cause transient and occasionally permanent mental disturbances. This often occurs in cardiac diseases and cardiac failure. Permanent changes in the brain often result from syphilitic infection and epidemic brain infections of many kinds. The human organism, therefore, can be seen to be a responsive whole, and an injury to any of its parts often manifests itself in the whole organism and shows itself quite widely in many separate and distinct entities, in the form of mental disturbances.* It is well known that operations on the human body may have mental disturbances as a consequence. Examples of such are operations on the eyes, operations on the genitals, operations of a gynecological

* *Editorial Note:* See, Wasmuth, Medical Evaluation of Mental Pain and Suffering, 6 Clev.-Mar. L. R. (1) 7 (1957); Cantor, Psychosomatic Injury, Traumatic Psychoneurosis, and Law, 6 Clev.-Mar. L. R. (3) 428 (1957).

nature, amputation procedures, and plastic operations, particularly on the face. The other day I saw a 72-year old woman in a psychotic depression which followed by two weeks a successful operation for the removal of a cataract.

Practically every head injury produces *some* mental disturbance, whether it be a mild temporary confusion or a concussion with loss of consciousness or other damage. Practically every injury to the head has its accompanying mental disorder or disturbance, whether it be very slight or severe. Severe head injury often produces severe permanent mental disorders and mental deterioration.

A common accompaniment of head injuries is epilepsy. It is estimated that in penetrating wounds of the head, epilepsy occurs in about 35 to 40% of the cases. If it is a non-penetrating injury, the percentage is much lower. In the injuries to the head that produce epileptic seizures, there is quite frequently a gradual progressive mental deterioration.

Injuries to the head often produce a symptom picture known as "post-concussion syndrome." An illustration is the case of a traffic officer hit by a trolley-car while directing traffic. Among his injuries was severe damage to the head. Symptoms consisting of headache, fatigue, lack of concentration, irritability, insomnia and anxiety persisted for two or three years following the accident. These are now recognized as true "post-concussion syndrome." A head injury may also produce a change in the personality makeup of the individual. Here the complaint is simply that the person is not the fellow he used to be. He may have changed entirely in regard to certain of his well-known personality traits, characteristics and attitudes. A very good illustration is the so-called punch-drunk prize fighter. He exhibits changes in his personality as a result of repeated blows on the head causing small hemorrhages in the substance of the brain. Severe or slight injuries to the head of a child, especially between *ages of three and ten,* may cause a behavior disorder. A previously normal, well-behaved child becomes disorderly, disobedient, uncontrollable and eventually may become a delinquent. These changes can be related to the head injury that was sustained. However, the head injury known as "traumatic neurosis" is a highly controversial subject.

Even though considered very stable and very normal, any individual subjected to a traumatic experience may have personality defenses disrupted. If the traumatic event is disrupting

enough a psychoneurosis may follow. These are much more common than formerly was suspected, and must be considered to be compensable. This individual should not be considered as having been sick prior to the traumatic event. Even though he had pre-existing psychological factors predisposing him to a neurotic breakdown, such a breakdown might have been avoided entirely. Obviously the accident did not delay it. Many cases would fall into the category of a neurosis developing subsequent to a traumatic event. They should be clearly distinguished from the other type of syndrome which I call the post-concussion syndrome.

A head injury rarely produces a psychosis of a permanent nature such as schizophrenia or manic-depressive psychosis. Statistics show that in the United States 0.60% of hospital commitments in a given year are due to insanity arising following trauma. In England 0.8% of all admissions to mental institutions during a given year were cases of insanity arising as a result of trauma. Somatic injury plays a much less important part in the etiology of schizophrenic and manic-depressive episodes.

Mr. Margett: (A lawyer's approach.)

In any discussion of "aggravation of disease" and "precipitation of disease," we acknowledge that there is an underlying pre-existing condition. But what the lawyer wants to know is just what was pre-existing. Was it the disease which disabled or killed the plaintiff, or was it some abnormal condition of which he may or may not have been aware?

As a practical problem, the bar no longer seeks (in those areas where there is great conflict of scientific evidence) to establish that there was a precipitation, or an aggravation of a pre-existing disease rather than the original causation due to a direct trauma. In precipitation, the condition is largely below the water level, above which it might never emerge. In the case of aggravation it is already observable.

Distinction must be made between a pre-existing condition whose presence was known and one that was unknown. The distinction is crucial, especially from the trial point of view. Suffering due to a known pre-existing disease (aggravation) should never be confused as synonymous with suffering due to an unknown pre-existing disease (precipitation). Whenever the patient's background has been symptom-free, which is to say not patently indicative of an active process, the claim should always

be that the disease process was precipitated. The defendant is responsible for the effects which follow his wrong. It is no defense that the disability would not have occurred had not the plaintiff harbored a latent disease, or that the effects would have been less serious if he had been in perfect health. Where the underlying condition has not become evident by symptoms, the plaintiff's position must be that the trauma precipitated the action, rather than aggravated an underlying condition. To the doctor it makes very little difference whether it is called aggravation or precipitation, but it makes a good deal of difference to the patient's position in court.

The defense will undoubtedly attempt to show that the pain and suffering is due to an aggravation of a pre-existing and partially disabling disease. There is no answer to this but to show that precipitation of a disease is the cause of the disability. It is the disability that is before the court.

What does the "precipitation" of a disease mean from a trial lawyer's point of view? It means "to make it manifest." How is it made manifest? It is made manifest by suffering. Precipitation means that it has brought to light the symptoms which make it impossible to function or to live at all. It is disturbing to know that a great many doctors testifying in traumatic cases are totally unprepared for the thinking of the legal profession.

On the subject of causation, aggravation or precipitation, we find that the doctors, as a result of their training, are thinking in terms of the exact, the precise, the one and only cause, of a particular condition. Lawyers, as a result of their training, are thinking, not of exact knowledge, but of the inferences of reasonable medical certainty, to be reached from a sequence of facts from which that particular inference can be derived. There is a fundamental difference between the standards of probability in the law on which a jury may pass, and the scientific certainties which the laboratory witness postulates for etiology in medicine.*

Mr. Kolbrenner: (Another lawyer's approach.)

What is the relation between medicine and the law? In one case, the New York Court of Appeals decided that what you call a disease is not a disease.

In that case the man was a milk driver in perfectly good health. One day he lifted a big can, which struck him in the stomach. He developed an ulcer and died.

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* *Editorial Note:* See, Averbach, Causation: A Medicolegal Battleground, 6 Clev.-Mar. L. R. (2) 209 (1957).

The life insurance company was sued on an accident policy issued by it. In accident or double indemnity policies "the company excludes from the risk any death or injury resulting directly or indirectly from mental or physical infirmity or disease."

Upon autopsy, this man was found to have a peptic ulcer. The company then said they would not pay, because the man died indirectly from disease, from a peptic ulcer. But you must examine the meaning of "disease" in its context.

Judge Cardozo, then Chief Judge of the New York Court of Appeals, said that the Company claimed this man was diseased, and that his disease indirectly caused his death. That contract should not be construed as doctors, examining a patient, make a decision, but as the ordinary man understands plain, ordinary English. Was this man in good health? Was he diseased at the time he took his policy? Would we understand him to be diseased at the time this occurred? No! The judge did not say it. He said the jury said it. It was for the jury to decide.

It is unfair of the insurance companies to say that they only insure Apollos or Herculeses. Everyone of us is subject to some deficiency which may be latent or on the surface. It was for the jury to decide whether this man was in "good health," although he was later found to have this peptic ulcer.

Doctor Weeden: (The Workmen's Compensation Board physician's approach.)

The point regarding arthritis and its aggravation is a particularly troublesome problem in compensation. The gentleman who spoke about that said that an injury to one joint would start up arthritis which was generalized in other joints. I am sure that in making that statement he did not think about the syndrome called palindromic rheumatism which has been well established starting from one injury to one joint.

There have been a good many misstatements made regarding some of the heart cases that appear before the Compensation Board. A good many doctors get up and spend considerable time establishing a thesis that hard work does not cause heart disease. Frankly, I do not know of anyone who said that it ever did. We are concerned in compensation largely with the man who develops a coronary insufficiency because of some effort. There the medical profession expresses various opinions. But the courts, in general, have ruled that if a man has done some excessive lifting or work, and suffers, within a reasonable period of

time (and generally, that is immediately) coronary insufficiency, that it is compensable. That is the accepted point of view in compensation today.

Some of you may know that the Moreland Commission (of New York) has recently issued a report in which they asked a good many heart specialists throughout the country their opinion on various questions. Only one of the questions was answered in a way which varies from the usual way in which matters are treated by the New York State Compensation Department. A slight majority of doctors questioned said that in order to be compensable the effort had to be extraordinary. In the last four or five years the courts of this State have decided many times that as long as the effort was strenuous, it made no difference whether it was extraordinary or not.

Mr. Edward Bohne: (The Insurance Company Claims Superintendent's approach.)

In this world I think one of the most difficult problems is that of communication; that is, communicating clearly a thought and having it carried out precisely in the manner in which you yourself understood it.

And so it is with doctors and lawyers. They each develop a nomenclature of their own, and as a result they talk to each other but they do not communicate with each other. I see this very frequently in insurance. Frequently, you will see on the death certificate, "cerebral accident," and lo and behold, somebody who is not familiar with it runs off to a lawyer and decides right off the bat that they are entitled to damages, when actually, as we all know, it means nothing more than what the man on the street refers to as a stroke.

And so I am glad to see that these meetings between doctors and lawyers are occurring with greater frequency, because it is through this medium that we ultimately will learn and understand about each other's profession.

Judge Cox: (The jurist's approach.)

The Courts dislike the term "post-concussion syndrome." As a matter of fact, they do not like the word syndrome, and as soon as some judges hear that in the case, they tend to look with suspicion on the injury.

Secondly, a lot of these cases that have to do with the aggravation of a pre-existing disease or condition are hurt a great

deal by the fact that generally they make themselves apparent in an amended complaint, and are apparently not known to the attorneys at the start of the case. Therefore, I would suggest that, when a person meets with an accident, he should not only have the result of the accident diagnosed, but also the general condition, so that in case there is a pre-existing condition it can be ascertained before a complaint is served. That, I think, would tend to change the judicial mind quite a bit.

Then there are a few other things about which something perhaps might be done. Perhaps the examining physician, when the accident occurs, doesn't make a complete examination to find out what other medical conditions exist. I think it would help if he did; it would help you in court.

Today (as a probate judge) I only deal with problems that involve the mental condition of a testator or testatrix, when they make a will. Of course, the test of testamentary capacity is not a severe one. A person who can buy a radio on credit has enough testamentary capacity to make a will. However, there is another thing in the (New York) Decedents Estate Law which is quite important, and that is undue influence. It is in regard to that phase of mental status that all of these other elements of the mentality have prominence. In other words, I do not think many of us could unduly influence, let us say President Eisenhower, or any other person in high political office, or in an important position. But if the person be an average person who has become elderly, weak, or in poor physical health, then of course, undue influence can operate. So the strength or weakness of the man becomes a very important thing. What was said here today bears directly on that problem too.

(Question-and-answer discussion then followed.)