BEHAVIORAL ASPECTS OF INJURIES

"ACCIDENTS" AND TRAUMATIC NEUROSIS

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The diagnosis of traumatic neurosis rests on the concept of psychic trauma. In the general medical vocabulary, trauma refers to body tissue damage resulting from applied force: a black eye, a surgical incision, a broken bone, a bullet wound. Psychiatry has adapted this word to refer to damage upon the mental and emotional life of human beings and, by analogy, speaks of psychic trauma to a child who loses his mother, an adolescent girl who becomes pregnant, a middle-aged man who is discharged from his job. Certain kinds of accidents, also, can be psychologically traumatic.

Technically speaking, traumatic neurosis is not an officially recognized medical diagnosis; The Standard Nomenclature of Diseases published by the American Medical Association does not list the term. Although jargon, it specifies a useful concept if clearly defined whenever it is used. Keiser finds four separate definitions of it in current medical literature, and there are probably at least that many in the legal literature. Unless the antagonists, or even the protagonists, in a discussion of the subject state what the term means to them, they invite semantic confusion by using it. Some authorities recommend avoiding the phrase entirely and prefer to speak simply of psychiatric reactions to accidents.

The symptom constellations commonly following accidents are anxiety neurosis, hysterical neurosis, psychophysiologic disorders, and dependency disorders. Less common are depression and hypochondriasis. There should be no significant problem of assigning diagnostic labels; standard nomenclature is adequate for classification purposes. One variety of anxiety neurosis occurs only after sudden frightening accidents, and deserves the appellation "traumatic neurosis" if anything does.

The component parts of this syndrome are all subjective complaints voiced by the victim or his family. Objective findings are minimal and the diagnosis becomes clear only through accurate historytaking. It is exceedingly important for the physician to interview the spouse and close family members since, characteristically, the patient is concrete, unimaginative, verbally unproductive, and an inept observer of his own feelings and behavior. The symptoms are:

Anxiety. Patients regularly describe chronic free-floating anxiety; "Something is about to happen." Many suffer acute uneasiness when unable to avoid circumstances which recall the accident: hearing the hiss of steam, climbing a ladder, entering congested traffic, returning to the accident site.

Muscular tension. Symptomatic complaints are restlessness, fatigability, insomnia, impatience and the pervasive, "I just can't seem to relax."

Irritability. Hypersensitivity to noise, and commotion is most vividly demonstrated in the well-known "startle reaction" to sudden noises and intolerance of noisy offspring at home. Frequently the radio, television, or conversation of well-meaning friends will occasion an irritable lashing out or withdrawal.

Impaired concentration and memory. Psychological tests demonstrate no real memory loss; subjective complaints of this altered mental functioning result from self-preoccupied inattention to extra-ego matters in the environment.

Repetitive nightmares. Frightening dreams directly or symbolically reproduce the experienced accident.

Sexual inhibition. A notable lowering of sexual interests regularly occurs, sometimes to complete impotence or frigidity.

Social withdrawal. Interpersonal involvement with relatives, friends, neighbors, in clubs, church, recreation, the job is avoided - "Peace and quiet at any price."

A railroad switchman, working in the terminal yard at night, was unexpectedly pinned between two boxcars in such a way that he could not free himself. In much pain and mounting panic he yelled for help. His supervisor came, evaluated the situation wrongly, and signaled the engineer to back the train. Realizing that that maneuver would crush him, the switchman screamed at the supervisor and was able to halt further car movement. He was extricated and taken by ambulance to a hospital for ten days of treatment and observation. He sustained no fractures but had extensive ecchymosis of his back, shoulders, arms and thighs, and persistent low back pain from a subsequently diagnosed herniated disc. When seen for psychiatric evaluation two years later he was tense, restless, tearful and irritable. He dreamed nightly of runaway trains, imminent wrecks and locomotives speeding toward him. His wife informed of his irritability, intolerance of noise, insomnia, nightmares, anorexia, social withdrawal and total sexual impotence. Almost anyone would have been psychologically traumatized by such an experience, but would have recovered in a few weeks or months. For this man the accident was disastrous.

A second patient, a 45-year-old married man, had for 25 years been a truck and construction equipment driver. He was a dependable

worker sought after by local contractors, and had been steadily employed. He was last hired as a driver of an earthmover on the midnight-to-morning shift. After dumping one load of dirt he did not notice that the now empty truck body had not fallen entirely back down to its horizontal position but remained caught, projecting slightly above the top of the truck's cab. He was driving along a temporary road at 35 miles an hour when the edge of the elevated truck body struck a low railroad bridge. In the crash, heard a quarter mile away, the steel bridge was so buckled that trains had to be rerouted.

His first awareness of an accident came five minutes later when he regained consciousness to find himself lying on the seat of the cab with his feet out the window. When I examined him two months later, he presented nearly every symptom of a traumatic neurosis syndrome: anxiety, panic attacks, severe tension, insomnia, nightly dreams in which he drove his earthmover into a black wall, irritability, startle reaction, loss of sexual interest avoidance of people, difficulty in concentration, and complete refusal to get into a wheeled vehicle.

How do we understand such seemingly disproportionate suffering from accidents producing minimal or no physical damage? Under conditions of perceived danger, as in the first case, the alarm reaction of the ego is activated on the psychological level, and the fightflight mechanism on the physiological level. The autonomic nervous system and the consciously controlled skeletal musculature arm the human organism for attack to reduce or destroy the source of threatened danger, or for retreat to lessen the threat or avoid it entirely. If, however, as with the switchman, a victim is caught and immobilized, action either against or away from threatened danger is blocked. If the ego alarm signal and physiological fight-flight reaction are activated but cannot operate, the rapid buildup of psychic and physical tension suffuses the mental apparatus with excessive stimulation which upsets psychological balance; and as a result the unvented free-floating anxiety and muscular tension continue.

A variation of this pattern is illustrated by the plight of the construction equipment operator. He first became aware that an accident had occurred when he regained consciousness after the fact. The accident was already part of his past; realistic danger no longer existed to be met and handled. The fight-flight mechanism was automatically mobilized by his eventual awareness of something amiss but there was no target for the strong sense of danger with its accompanying anxiety and muscle tension to be discharged against. Action was not blocked, as in the first case; it was irrelevant.

An additional point about such accident situations as just described is that jeopardy occurs in familiar and presumably safe surroundings. The victim recognizes possible hazard (falling from a height, breakdown of machinery, errors of fellow workers, "acts of God"); but his accustomed experience without serious injury and his own self-protective dexterity acquired through routine precautionary practices and automatic response to danger signals (whether in walking a scaffold or driving a car in congested traffic), have lulled his natural sense of peril into a private feeling of personal immunity to calamity. Thus reassured, his psychological guard is down and he is maximally vulnerable to the psychic assault of an accident.

The <u>hysterical neurosis</u> usually consists of symptoms referable to the body site of a physical injury. Suggestibility is a prominent feature of this neurosis.

On a construction job a ten-pound sandbag fell from the third floor and struck a workman on the shoulder. An hour later, unable to work for pain, he was examined by the company physician who found no evidence of serious injury. After a week of physiotherapy he was deemed ready to go back on his job, but he returned with a "torticollis," his chin fixed over his left clavicle. Further examination revealed no physical basis for the distorted position. The disability was ended by one hypnotic session.

A 55-year-old carpenter, stepping back to admire a piece of work, fell into a hole twelve feet deep. Momentarily winded, he lay limply while fellow workers gathered around and cautioned him not to move "because something might be broken." He was raised by an improvised stretcher and taken to the nearest physician. Cursory examination revealed considerable back pain and absent patellar reflexes; the patient was sent by ambulance to a hospital. Unfortunately, he shared a room with a multiple sclerosis patient. When examined an hour after admission he was paralyzed from the waist down!

The serious disability of such a patient is often traceable to therapeutic mismanagement. If the symptoms remain unalleviated and a secondary gain of illness sets in; if a limp, blindness, loss of voice, or torticollis becomes part of a chronic invalidism - those conditions are formidably resistant to remedial treatment.

The <u>psychophysiological reaction</u>, that peculiar interweaving of psychic and somatic expression, is the post-accident condition least amenable to successful management. The persistent low back pain, the chronic post-concussion syndrome, the "cardiac neurosis" -

those are the most refractory problems.

The laborer lifts a heavy load: "something snaps," and pain develops quickly. Soft tissue injury is diagnosed and orthopedic treatment is instituted. After six months the orthopedist states that the tissues should be well healed and can no longer explain the patient's persistent pain and disability on an organic basis. Eventually the patient may be persuaded to seek psychiatric evaluation, and the psychiatrist may be hard put to explain the disability convincingly from a purely psychiatric frame of reference. The probable factor of secondary gain may loom large, but the primary causative mechanisms remain obscure.

Dependency reaction, that is, the exacerbation of a patient's latent passive-dependent manner of handling stress, may appear in relatively pure culture or may complicate any other clinical observations. One common characteristic of these accident casualties might be labeled "inadequate." They are psychologically underdeveloped.

A forty-year-old plasterer fell eight feet to a terrazzo floor when his scaffold collapsed. He was badly frightened, and suffered leg pain, but the findings were essentially negative except for a linear fracture of the right os calcis requiring no specific treatment. The patient sought psychiatric evaluation two years later because of persistent inability to work and chronic diffuse pain in both legs and hips, unconfirmed by physical findings. He lives with his widowed mother who devotes much attention to his welfare.

While on maneuvers during World War II he twisted a knee and spent a year in army hospitals. He was unable to work for an additional year after discharge from the service. In 1955 gastric symptoms were diagnosed as a pre-ulcer state, and diet and medication pre-scribed. A subsequent acute perforation of the stomach required only simple closure, but he could not work for eighteen months.

This seemingly uncomplicated man struggled through life at a marginal level of adjustment. At a casual, uncritical glance he might appear an undistinguished but solid member of society. Closer inquiry revealed: a sixth grade education; pathetically awkward and fruitless approaches to women; and continued dependence on his mother and a steadily employed brother. Physicians, insurance companies, and the general public tend to find such a person irritating or contemptible. He may be called lazy, dishonest, mercenary and so forth, but these are not sufficient explanations of his behavior for psychiatrists, nor should they be. Human psychology is not that simple.

Any kind of accident, life-threatening or inconsequential, may trigger one of the psychopathological reactions I have discussed. The unexpected, potentially dangerous near miss, in the absence of physical damage to the victim, usually triggers the anxiety reaction. The scaffold collapses, the steam pipe bursts, the crane tips over, the gasoline fumes flare into a flash fire. Such experiences undoubtedly would produce at least a degree of psychic disequilibrium in even "normal" persons.

Minor accidents - the mild concussion, the wrenched back, the pratfall - usually produce a psychophysiological reaction: aching back, recurrent headache, palpitation and dyspnea, weak legs, dizzy spells. This type of valid post-accident disability is difficult for the average man to understand and credit; he is prone to suspect malingering.

As a generality, there is a compensatory relationship between physical and psychic damage. The more extensive the tissue damage - fractures, lacerations, contusions, hemorrhage - the less likely a post-accident psychiatric disorder. Significant physical damage seems to bind or neutralize the reactive anxiety or depression the patient might reasonably be expected to exhibit; he has something "real" to cope with instead of something intangible. The medical and nursing ministrations; the bed rest; the traction harness and plaster cast; the visible evidence of "battle" injury to display; the sedatives, analgesics, and narcotics; the acceptable, even required, temporary state of regressed invalidism; the legitimate, socially condoned period of convalescent inactivity - all these factors tend to inhibit the development of a neurotic complex of symptoms.

Conversely, a sudden, frightening accident with little or no physical damage is a more likely precipitant of psychiatric disorders. After the fact, the traumatized psyche is not put at rest between cool white sheets; the hyper-irritable nervous system is not soothingly bandaged, poulticed, and fed intravenously; an invisible laceration of the ego is not legal tender for special consideration; and the victim's desire to retreat temporarily from everyday stresses is not socially approved. Incidentally, all these psychological treatments: immediate rest, sedation, isolation, enforced quiet, special attention under empathic medical authority, were routinely applied to disturbed soldiers in Viet Nam with a resultant remarkably low incidence of psychiatric casualties. It is unfortunate that those hard-taught lessons of military psychiatry have not been more tellingly applied to counterpart civilian problems.

The way in which the accident syndrome develops and is manifested can be influenced by a variety of factors including the attitudes and involvements of physician, attorney, employer, insurance company, psychiatrist, family and society.

The consequent havoc of a severe stress depends in a crucial degree upon the intrinsic strength of the stressed personality. The weaker the adaptive capacity of the psyche, the less the insult necessary to unbalance it. The more sudden and potentially dangerous the accident, the more likely it is to be psychologically unsettling - especially to an already teetering balance. A young man involved in a head-on highway collision miraculously escaped physical injury. The girl riding with him was killed and a passenger in the other car seriously injured. His post-accident anxiety and depression are easy to understand; so severe a stress would be difficult for the most stable person to handle with unruffled poise.

It follows that observers using a common-sense frame of reference are puzzled by, if not suspicious of, the considerable disability some persons demonstrate after seemingly minor or even trivial accidents. Their skepticism is based on conviction that life consists only of what can be seen, that all people are approximately alike ("like me" is the usual point of comparison) and that a cause produces an event. For psychological science, all these propositions are in error. People vary greatly in their personality strengths and weaknesses, and the capacity for flexible tolerance which the victim brings with him to the accident must be duly considered as one prognostic determinant of his postaccident recovery from its psychological impact. "One man's meat is another man's poison." What to an observer is a minor stress may constitute a major psychic assault to a given victim's uniquely vulnerable arrangement of internal resources and the particular set of external circumstances that happen at the time to be impinging upon him. Outsiders may well be unaware that he was already near the breaking point from antecedent stresses, possibly not consciously recognized by the victim himself. The accident, then, can be a "last straw" phenomenon.

Many who become ill, inadvertently and unconsciously discover a secondary gain (albeit second rate) in illness. Secondary gain is a common psychological coping alternative. In medicine it may complicate any medical, surgical, obstetrical or psychiatric condition - it is not peculiar to post-accident reactions. More about this in a few minutes from Doctor Ross.

Interacting medical and legal management of the patient-client further influence the prognoses of post-accident reactions. It is unusual for the psychiatrist to see a patient suffering a post-accident psychiatric syndrome before he has been examined by at least five physicians - sometimes eight or nine. Since in these illnesses early treatment offers the best chance for recovery, it is indeed regrettable that a great many patients are referred to a psychiatrist for the first time from six months to three years after the accident. Although the reports of the several examining physicians may mention the patient's nervousness, it is noteworthy that suggestions for psychiatric referral are rare. In our experience, nearly 90 percent of cases are referred to us by attorneys. These and other problems of medical management will be discussed by Doctor Raskin.

The best treatment is in a sense preventive; in having an early awareness of: the psychological etiology, the multiple factors in the patient's life which may predispose to prolongation of symptoms, the implications of litigation, and the critical importance of avoiding medically unnecessary consultations. Prompt psychiatric intervention (not necessarily by a psychiatrist) with full and repeated explanation to the patient concerning the true nature of his problem, can have positive results. If the patient believes the doctor understands; if he is told he suffers a legitimate psychic illness; if in his being treated he is given explanations, reassurance, and direct advice, the possibility of chronic secondary gain becomes less likely, and the outlook becomes reasonably favorable.

REFERENCES

- 1. Keiser, L. <u>The Traumatic Neuroses</u>. J.S. Lippincott, Philadelphia, 1968.
- 2. Modlin, H.D. "The Trauma in 'Traumatic Neurosis.'" <u>Bull. Meninger Clinic</u>, 24:49-56, 1960.
- 3. Modlin, H.C. "The Post-Accident Syndrome: Psychosocial Aspects." Amer. J. Psychiatr. 123:1008-12, 1967.
- 4. Modlin, H.C. "Accidents and Traumatic Neurosis." <u>Lawyers</u> <u>Medical Cyclopedia</u>. Allen Smith, Indianapolis, 1973.

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