TRAUMATIC SUBDURAL HEMATOMA—ACUTE, SUBACUTE AND CHRONIC
AN ANALYSIS OF SEVENTY OPERATED CASES

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In the past it has been common practice to class all subdural hematomas as acute or chronic. Acuteness has been estimated on the basis of elapsed time from the injury, or on the degree of associated brain damage. According to one classification, all hematomas that cause death or come to operation before the 21st day after a cranio-cerebral injury are described as acute (Kennedy and Wortis9). In another classification, cases of subdural hematoma that still show unhealed or acute brain injury are placed in the acute group, the others being classed as chronic (Munro15). In still another classification, an acute subdural hematoma is regarded as the result of a severe head injury, usually with a fracture of the skull and more or less extensive brain laceration, whereas a chronic subdural hematoma is considered to be unassociated with severe brain injury and the history of trauma, as a rule, is slight or absent (Peet17).

As Munro15 has pointed out, any classification of subdural hematomas into groups is artificial, for as Munro,13 Laudig, Browder and Watson,11 and King10 have clearly demonstrated, the chronic form of traumatic subdural hematoma, so well described in the literature, is nothing more than a later variant of the acute phase.

Acute hematomas become chronic only gradually, and progressive symptoms appear as the hematoma enlarges by the acquisition of further fluid, usually through the process of osmosis.5, 16, 21 Therefore if any classification is to be used it should clearly indicate that there is a gradual transition between the so-called acute and chronic hematomas.

The purpose of this paper is to combat the present tendency to class all hematomas as acute or chronic. Such a classification is misleading and fails to emphasize the existence of a large group of subdural hematomas which, neither on clinical nor pathological grounds, can be satisfactorily classed as acute or chronic. If this is not clearly recognized, the average observer may fail to diagnose the subdural hematoma that ends in a fatality about the end of the first week to several weeks after injury.

In reviewing the cases of subdural hematoma to be presented, it is apparent that they fall roughly into three classes, on the basis of the clinical course, type of hematoma found at operation, and degree of associated brain injury; namely, acute, more or less subacute, and chronic. There is con-

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siderable overlap between these three classes of hematoma, on the basis of the criteria mentioned, but the existence of a subacute variety (as first suggested by Bucy, Gurdjian and Webster) as well as an acute and chronic one, is borne out on analysis of the findings in patients operated upon at different time intervals following trauma.

MATERIAL

The material presented is based on a study of 70 patients with subdural hematomas operated upon during the 20-month period from January, 1941 to July, 1942, on the Neurosurgical Service, 3rd Surgical (New York University) Division at Bellevue Psychiatric Hospital. During this interval approximately 7916 patients entered the hospital with a history or signs of recent head injury. Of these, 1415 showed signs of intracranial injury, considered severe enough to admit them to the neurosurgical ward. It was among this group that most of the 70 subdural hematomas were found. A few of the more chronic ones, however, were transferred from the psychiatric or medical services, having been received there with a diagnosis other than head injury.

These statistics show that the incidence of subdural hematomas was less than 1 per cent in the entire series of head injuries, and less than 5 per cent in the group of cases of severe head trauma.

Of these 70 patients with subdural hematoma, 50 were operated on by me, and 20 by Henry Wigderson, but with 3 exceptions I followed them all pre- and postoperatively.

Thirty-five additional patients, suspected of having a subdural collection of blood as the cause of their symptoms, were explored. In many of these cases blood was found in the subdural space but they were not classified as subdural hematomas.

In order to emphasize the difference in the clinical course of the illness, and in the pathological nature of the hematomas in the various patients, they will be analyzed in groups according to the time elapsed since injury. Analysis of other data pertinent to the diagnosis and treatment of subdural hematoma will follow.

The clinical course and nature of the hematoma found in patients operated upon within 24 hours following trauma

There were 10 patients in this group. Trauma was severe in all and consciousness was lost immediately following injury. At no time did a lucid interval follow. The condition changed from coma to stupor in 5 patients, and to semi-stupor in the remaining 5. After thus showing some degree of improvement, stupor became progressively deeper in each instance. The hematoma removed at operation consisted of a large, currant-jelly-like clot with some fluid blood in 9 cases, and fluid blood alone in 1. Of the 10 patients in this group only 1 survived. The others all died within 5 days. Autopsy revealed extensive traumatic brain injury in all cases.