EDITORIAL

The Declining Autopsy Rate and Its Significance for
Neuropathology: Two Viewpoints

To editorialize is to express an opinion about facts. The facts about the
decreasing autopsy rate are well known. Indeed, they are so well known that the
69 references quoted by Roberts (1) seem to be evidence enough that the
problem has been thoroughly analyzed. Why then should there be another
article, and why in this journal? Since neuropathology is especially vulnerable
to the loss of human nervous tissue obtainable only by autopsy, this constitutes
reason enough for additional comments. I will review some facts and recom-
pense a few ways in which neuropathologists can participate in correcting this
unfavorable trend.

During the past three decades, the number of autopsies performed each year
in the United States has decreased. The mean autopsy rate, approximately 50% for
all hospitals in the early 1950s, now approaches 20% (1). University hospitals
generally have higher autopsy rates than community hospitals, and in univer-
sity-affiliated children’s hospitals the rates are even higher. For example, 52% of
all patients who died in the Children’s Hospital of Pittsburgh in 1980
were autopsied. In 1966, however, this figure was 80%. How these figures
affect medicine in general, and pathology in particular, seems obvious. Less
obvious is the specific effect on neuropathology. To predict what neuropath-
ology may lose if this trend continues, it is necessary to review some of the gains
of the past.

The contributions of the autopsy to our knowledge of the etiology,
pathogenesis, and treatment of human disease have been well established (2, 3).
Neurosyphilis, cerebrovascular disease, storage disorders of the nervous sys-
tem, and dementias, to name but a few, are among the disorders in which
fundamental observations have been made by postmortem examination. Con-
sider what deficiencies or distortions of information might have resulted had
autopsy findings not been available. Moreover, the care of patients would have
suffered greatly because of therapies based on incomplete information rather
than on facts obtained by clinicopathological analysis.

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The complex diagnostic procedures and intensive therapies of the current medical environment have created a need for more and better, not fewer, autopsies. In oncology, for example, recently recognized central nervous system disease due to the combined use of radiation and chemotherapy (4) was confirmed and more sharply defined because of autopsy studies.

Medical education and training programs in neuropathology, neurology, neurosurgery, and neuroradiology will be greatly impoverished and weakened if we are denied material which only the autopsy can provide. By its nature, only limited information can be derived from the surgical biopsy. Animal models of neurological disease, either naturally occurring or experimentally produced, are, at best, approximations of human disorders. Although such models obviously provide important information, there always remains the question of the applicability of results to human beings. The autopsy continues to furnish necessary information for education, research, and new directions for investigation.

The facts about the declining autopsy rate and its effects on medicine, pathology, and neuropathology have been reviewed extensively elsewhere (1, 2, 3), and briefly here. Are there practical ways in which neuropathologists may contribute to a solution to this problem? We may aid in positively changing attitudes about the autopsy among families, their physicians, and our colleagues in pathology. In some circumstances, the neuropathologist should be available to discuss the results and contributions of an autopsy with families and their physicians. Contacts with our clinical colleagues should not be limited to those who secure permission for an autopsy. Our influence should extend to other clinicians through our participation in conferences where the value of clinicopathological correlation can be stressed. Interactions with colleagues in pathology can be more frequent and direct. The time should not return when the neuropathologist is viewed only as a person at some distant laboratory to whom brain specimens are delivered for examination.

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It is generally recognized that there is a nationwide decrease in the autopsy rate. This decline, while fluctuating somewhat from year to year and institution to institution, has reached significant levels in many major medical centers. Currently, my own institution has an adult autopsy rate of less than 30%, down
more than 10% from only a few years ago. The autopsy rate on patients from our neurological services is now less than 33%.

Much has been written about the various causes of this regrettable decline in the autopsy rate in the past decade (1–5). The expense of the autopsy, lack of interest on the part of some clinicians, absence of both interest and relevant expertise among some pathologists, excessive delay in completing autopsy reports, lack of concern for the autopsy on the part of many "academic" pathologists, and fear of possible legal repercussions from incorrect clinical diagnoses are among many suggested causes. Strictures of space prevent a more complete discussion of the reputed "causes." Perhaps a greater misfortune is the belief of some of our clinical colleagues that currently available diagnostic techniques, computed tomography (CT) being the most notable example, have made the autopsy obsolete. For example, a recent publication states, "The interest in postmortem examination has decreased in the last few decades as a result of several factors, one of which is that more accurate clinical and laboratory studies allow a precise pathologic diagnosis to be made before death" (italics mine). The authors then add, "However, from both the epidemiologic and clinical standpoints, autopsy confirmation of the neuropathologic state is highly desirable" (6). An all-too-common illustration of this attitude about the definitive nature of clinical diagnostic procedures is the case of a middle-aged patient with an acute stroke syndrome who, by CT scan, has a large area of increased density which is quickly designated an intracerebral hematoma. If the patient dies, little effort will be made to obtain an autopsy since "we know what he had." The fact that many disorders may produce such a massive hemorrhage is often ignored, and the possibility of finding a new or totally unexpected cause of the hemorrhage, such as a neoplasm, is lost. This scenario, if repeated often enough, retards our understanding of human disease and its diverse complications, demoralizes those who believe in the value of the autopsy, and removes an important monitor of medical care. Such attitudes about the autopsy also tend to engender a poor, if not actively anti-intellectual, approach to medical problems. Whatever the "causes," both valid and invalid, how does this serious decline in the autopsy rate affect teaching, practice, and research in human neuropathology?

No matter how good our neuroradiologists, electroencephalographers, or clinical neurologists, both the extent and true nature of many pathological entities can be proven only at autopsy. Only complete autopsy studies give us any real hope of delineating the natural history of many neurological conditions. How can we logically assess asymptomatic aneurysms if we do not find them? How can we determine how often angiomas bleed or which types do so?

To teach or learn neuropathology only from publications and static collections of glass slides and photographs tends to be stultifying and too passive. The importance of the "laying on of hands" applies to anatomic materials as well as clinical patients. Seeing and even assisting with neurological autopsies, as well as being present at "brain cutting" conferences is a vivid, important, and mandatory learning experience for neurologists and neurosurgeons no less than for neuropathologists.
All of the needs of medical science are not fulfilled by merely having more experts in smaller and smaller subunits of the whole spectrum of neurological disorders. It is through more and better autopsies, utilizing whatever ancillary techniques are indicated, such as postmortem angiography, microbiology, ultrastructural, and biochemical studies, coupled with intelligent clinicopathological correlation that we can continue to advance human neuropathology.

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