The Decline of the Autopsy in Rhode Island and Nationwide: Past Trends and Future Directions

ALEX BAUMGARTNER, MD; DOUGLAS ANTHONY MD, PhD

ABSTRACT
The autopsy has long been a fundamental aspect of medical practice and research. However, in the last 50 years, the proportion of deaths for which an autopsy is performed has decreased dramatically. Here we examine some of the reasons for the decline of the autopsy, as well as several interventions that have been proposed to revive it. We also present autopsy utilization data from the Lifespan system, which mirrors nationwide trends.

KEYWORDS: autopsy, pathology, medical education

INTRODUCTION
The importance of the autopsy, or post-mortem examination, to the practice of medicine is difficult to overstate. In the clinical setting, autopsy provides information to providers, researchers, and students that cannot be gleaned from living patients. In the forensic setting, it continues to play a critical role in medico-legal cases. However, in the past several decades, the autopsy rate in US hospitals has declined precipitously. Many have voiced their opinion about ‘the death of the autopsy’, and the detriment thereof to clinicians, particularly to the pathologists who perform them. Still others have offered suggestions for the revival of the autopsy as well as its transformation to a more modern, less invasive, and timelier procedure. Here we provide commentary on the past, present, and future of the autopsy, as well as data from the Lifespan system about recent autopsy trends.

We argue that the autopsy remains a critical aspect of modern medicine, and should remain a part of the training of the next generation of physicians.

WHAT IS AN AUTOPSY?
Autopsy has its roots as far back as 5000 years ago in ancient Greece, Babylonia, and Egypt. In fact, the word autopsy comes from the Greek roots autos [meaning self] and optos [meaning sight]. Thus an autopsy, literally translated, is an opportunity to see for oneself.1 The modern autopsy originated when Renaissance physicians such as Vesalius and Morgnani began to more reliably correlate autopsy findings with clinical disease processes, and it is Virchow who is credited with integrating the use of the microscope into common autopsy practice.2 Today, the full autopsy includes a detailed external examination, as well as full dissection and investigation of the cranial, thoracic, abdominal, and pelvic cavities. Medical, or hospital, autopsies are usually performed at the request of a physician or family member of the deceased in order to answer a specific clinical question or as part of a research effort to investigate new diagnostic or therapeutic interventions. In addition, medical autopsies often have the added benefit of providing a sense of closure to family members, and also identifying any hereditary factors that could have consequences for relatives of the patient.3 These autopsies require the informed consent of legal next of kin.4

On the other hand, forensic autopsies are performed in cases of death suspected to be due to injury, poisoning/intoxication, or unexpected natural death. They are often more focused in nature, and include detailed documentation of injuries, quantification of substances within the body, determination of the ultimate cause of death, or other investigations as required by the criminal justice system. These autopsies are requested by the coroner or medical examiner, and do not require the consent of legal next of kin.1

THE DECLINE OF THE AUTOPSY
In the years following World War II, nearly 50% of US hospital deaths underwent an autopsy.2,4 Since then, the autopsy rate in the US and other western nations has steadily declined. In 1971, the Joint Commission on Accreditation of Hospitals eliminated the performance of a minimum number of autopsies as a requirement for accreditation, which fueled a further decline in the autopsy rate.1 Today, the autopsy rate in academic hospitals hovers around 10%, while many non-teaching hospitals no longer perform any autopsies.1,5

Furthermore, the leading indications for autopsy and the ages of those autopsied have changed significantly. The proportion of autopsies performed for deaths from disease decreased from 16.9% in 1972 to 4.3% in 2007, while the proportion of autopsies performed for deaths from external causes increased from 43.6% to 55.4% during the same time period.6 Of the ten most common causes of death autopsied in 2007, all but one (pregnancy, childbirth, and puerperium) were related to external causes.6 Elderly patients are now much less likely to undergo autopsy: in 1972, 37% of those autopsied were aged 64 or greater, that figure decreased to 17% in 2007.6

Data from the Lifespan system mirror nationwide statistics. Approximately 90% of autopsies performed within the Lifespan system take place at Rhode Island Hospital, with the remainder occurring at The Miriam Hospital. Only rarely are autopsies performed at Newport Hospital (usually one or two cases per year). For the years 2012 through 2014,
Another frequently cited cause for the decline of the autopsy is the belief that autopsy reports will initiate and fuel malpractice lawsuits. Again, pathologists have supplied studies to counter these claims. A 2002 review of court reviews of malpractice cases showed that defendant physicians were acquitted in 61% of cases when the autopsy report favored the plaintiff, and in 100% of cases when the autopsy favored the defendant. Furthermore, in 17% of cases the autopsy findings were deemed to be important or critical to acquitting the physician.9

There remains the belief that family members are increasingly opposed to autopsy. It is important to note that patients cannot legally give consent for an autopsy before their death. It is not uncommon for a patient to express a desire to undergo autopsy, only to have the next of kin refuse consent once the patient is deceased. The reasons for this are numerous. Common motives for family members’ refusal of autopsy include concerns about mutilation, concerns about delaying the funeral, objections expressed by the patient before death, and religious or cultural beliefs.10 Unfortunately, these concerns are often not properly dispelled by clinicians. Shortcomings in the obtaining of consent for autopsy include: consents being performed by inadequately trained staff, use of outdated forms, failure to provide sufficient information, and consent being obtained from the incorrect family member.11 One study found that among family members of recently deceased patients, only 42% demonstrated satisfactory knowledge of what the autopsy entails.10 Logistical issues often present another barrier to autopsy. For instance, clinicians or other personnel are sometimes not available at the proper time to sign consent forms, which can delay or prevent the autopsy.

The financial burden of the autopsy must also be considered. Although performing an autopsy comes at a mean cost of $1,275, this cost is rarely covered by managed care organizations or third-party insurers.12,13 Thus, the cost is frequently passed on to the patient’s next of kin, at times making it prohibitive to perform the autopsy. Poor reimbursement rates are also to blame for pathologists’ decreased enthusiasm to perform autopsies. Payments for some components of the autopsy are made to hospitals through Medicare Part A; however, there is no specific reimbursement figure for autopsies under the Medicare resource-based relative value scale fee schedule.13 Deaths occurring outside the hospital present another level of complexity, in that transportation must be arranged and other additional costs are incurred by the next of kin. Although data are sparsely available, the autopsy rate for out-of-hospital deaths is far lower than that for in-hospital deaths.

Despite the decreasing rate at which it is utilized, the autopsy remains a vital part of medical science. Perhaps more than any other organ systems, knowledge of diseases of the heart and brain relies heavily on autopsy. There are multiple reasons for this: first, diseases of the brain and heart are responsible for the majority of deaths in developed nations, and second, these organs are among the least amenable to tissue investigation during life.14 Autopsy is of critical importance to research efforts in which death is an outcome measure, particularly when it is necessary to determine whether an intervention may have contributed to, or helped prevent, a patient’s death.

Concurrent with the decline of the autopsy rate has been a similar decline in the use of autopsy as an instrument of medical education, such that many medical students no longer observe any autopsies during their training.15 However, medical students who do have the opportunity to view an
The autopsy is a vital aspect of modern healthcare. However, rates of autopsy utilization have been in decline for more than half a century. The Lifespan system is no exception to this trend. Although many different reasons have been offered to explain the decline, nearly all agree that it is a detriment to practice of medicine. A multidisciplinary effort will be necessary to prevent the death of the autopsy.

CONCLUSION

The autopsy is a vital aspect of modern healthcare. However, rates of autopsy utilization have been in decline for more than half a century. The Lifespan system is no exception to this trend. Although many different reasons have been offered to explain the decline, nearly all agree that it is a detriment to practice of medicine. A multidisciplinary effort will be necessary to prevent the death of the autopsy.

References


Authors

Alex Baumgartner, MD’16, Alpert Medical School of Brown University; PGY-1, Dept. of Internal Medicine, Beth Israel Deaconess Medical Center, Boston.
Douglas Anthony, MD, PhD, Pathologist-in-Chief at Rhode Island and The Miriam Hospitals, Providence, RI; Professor of Pathology at the Alpert Medical School of Brown University.

Disclaimer

The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Lifespan Corporation, the Alpert Medical School of Brown University, or Beth Israel Deaconess Medical Center.

Correspondence

Alex Baumgartner, MD
Department of Internal Medicine- Deaconess 306
330 Brookline Avenue, Boston, MA 02215
617-632-8273
Fax 617-632-8261
abbaumgar@bidmc.harvard.edu