Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

CHAPTER 2

Legal, Social, and Ethical Issues

The autopsy is uniquely suited to study individual illness, provided the pathologist is aware of the broad interrelations between physiologic, pathologic and even social factors.

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AUTOPSY AUTHORIZATION

The laws pertaining to authorization for autopsy vary among the states. Local jurisdictions may establish policies or procedures for compliance, and it behooves the practicing pathologist to know the relevant statutes in his or her region. In the United States, statutes pertaining to human remains stem from Old English common law.[2] Thus, at death, possession or custody of the remains passes to a surviving spouse or legal next of kin. The legal custodian of the deceased has the duty to arrange proper disposition of the remains. Although this individual does not have ordinary property rights to the corpse, he or she may authorize an autopsy; donate tissues, organs, or the entire body for therapeutic or educational purposes; or, following appropriate legal statutes, have the remains cremated or embalmed and moved to a final resting place. The next of kin may place restrictions on the extent and manner in which an autopsy is performed. Any unauthorized dissection may be considered mutilation and is tortious or even criminal.[3] Tissue and organ retention is regulated in the United States under state rather than federal law; other countries such as Australia and the United Kingdom have enacted specific legislation with respect to retention of organs, mostly in response to organ retention controversies starting with public outcry in 1999 regarding organ retention from autopsies performed at a Liverpool children's hospital.[4] Changes in statutes regarding autopsy authorization are evolving in many jurisdictions to increase the autonomy of families to restrict either the extent of autopsy or retention of organs.[5]

Svendsen and Hill[6] surveyed autopsy law in a number of industrialized countries. Although there has been a tendency for countries to enact laws requiring next-of-kin authorization for autopsy, there are still a number of nations (Italy, Austria, and many of the countries of Eastern Europe) that give the authority to perform postmortem examinations to the medical or legal community, or both. In some countries (Denmark, France, Iceland, Norway), objections from members of the decedent's family may prevent autopsies authorized by the medical community.

Not all jurisdictions in the United States specify a strict order of preference for the person from whom permission for autopsy should be obtained. However, many establish a specific priority or rely on the code of common law or the order specified in the probate code (Box 2-1). Variations, restrictions, or exceptions may exist. For example, a legally separated or divorced spouse cannot authorize an autopsy unless he or she has custody of the eldest child if all of the children are minors. Minor emancipated children have full right with respect to their deceased spouse or children and, even if not emancipated, may have custody and the right to authorize autopsy for their children.

States vary in how they legally define stillbirths,[7] and the state definitions and reporting requirements of live births, fetal deaths, and induced terminations of pregnancy are summarized in available government documents.[8] Almost all states define fetal death as "death prior to the complete expulsion or extraction from its mother… irrespective of duration of pregnancy and which is not an induced termination of pregnancy. The death is indicated by the fact that…the fetus does not breathe or show any other evidence of life such as a beating of the heart… or definitive movement of voluntary muscles" effectively corresponding to an Apgar score of zero. Reporting of fetal deaths is required in almost all states for fetuses that are either 20 weeks or more of gestation or more than 350, 400, or 500 grams, depending on the state. Requirements for autopsy authorization usually correspond to the reporting requirements for fetal deaths. For example, in the state of California, stillborn fetuses of less than 20 weeks' gestation do not require authorization for autopsy but rather may be handled according to the rules covering organs and tissues removed surgically. However, the law does not establish a standard for determining whether a fetus has advanced to 20 weeks' gestation, and a parent may object to postmortem examination of a stillborn fetus of less than 20 weeks' gestation, so it may be prudent to require an autopsy consent for autopsies on all fetuses regardless of age. Stillbirths of 20 weeks' gestation and beyond require a fetal death certificate, and the usual laws related to disposition of the body pertain; it is our policy to send all autopsied fetuses to the medical facility's usual storage area for bodies, even if the body originated from an operating room or delivery suite.

In cases in which the dead are unclaimed and without a will or other instructions concerning disposition of remains, designated public officials are usually given jurisdiction. If the next of kin are not identified following a thorough search lasting a length of time specified by law, the responsible official may authorize an autopsy at the request of the decedent's physician. An individual of

Box 2-1 Example of Order of Priority for Consenting for Autopsy

1. Consent from the deceased prior to death*
2. An "attorney-in-fact" appointed as a result of the decedent's execution of a durable power of attorney for health care and authorized to consent to an autopsy
3. Spouse (not legally separated or divorced unless he or she has custody of eldest child if all children are minors)
4. Adult child age 18 or older
5. Adult grandchild
6. Parent
7. Adult sibling
8. Grandparents
9. Adult uncles and aunts
10. Other adult relative
11. Friend accepting responsibility for disposition of the body†
12. Public official acting within his or her legal authority‡

*Accepted in some jurisdictions. In some jurisdictions may be nullified by objection of next of kin after death of the deceased.
†Not accepted in all jurisdictions.
‡For unclaimed bodies.

legal age who is an acquaintance of the deceased and is assuming responsibility for burial may be allowed to authorize autopsy under the laws of some states.[9]

The enactment of anatomic gifts acts and related laws provides a living person with the authority to will his or her body or its parts for transplantation, anatomic instruction, or research. Included in the statutes of many states are provisions for allowing individuals to authorize specific disposition of their remains, including postmortem examination. However, in a majority of these states, an individual's directives regarding autopsy or interment, or both, may be nullified by the objection of the legal next of kin after death.[10] Before death, the decedent may indicate objection, and in some jurisdictions this is sufficient to prevent routine postmortem examination.[11] Some statutes include provisions stating that consent from only one of several persons with custody of the remains is sufficient. In such cases, the wishes of the relative accepting responsibility for burial are often given preference.[9] Because disposition of a dead body requires timely action, failure of an individual to assert these rights constitutes a waiver of the right.[12] When a party waives these rights, he or she cannot also allege wrongful autopsy. However, some statutes clearly indicate that objection by another person with equal right of custody may preclude an autopsy. Thus it seems that a pathologist should seek local legal guidance, such as from the health care organization's risk management group, before proceeding with a postmortem examination in which he or she is aware of conflicts among equal next of kin.

Acceptable methods of documenting consent also vary. Some jurisdictions require an original signed and witnessed written document, whereas others also accept consent in the form of a telegram or facsimile transmission. In certain circumstances, some states accept witnessed telephone authorization.[11] For example, Florida accepts witnessed telephone consent when written permission would cause undue delay in the examination. In Indiana, witnessed telephone consent may replace written authorization when the legal next of kin is outside the county where death occurred. In other states (e.g., California), telephone consents must be recorded on tape or other recording devices. However, given the ease and ready availability of authorization obtained through facsimile when the consent cannot be obtained in person, many institutions accept authorization only on an approved institutional consent form.

Unlike the consent obtained by a physician before performing a medical procedure on a living patient, the consent for postmortem examination is not usually obtained by the individual responsible for the autopsy. Why is this so? First, it is the decedent's clinician who has the closest rapport with family members and is best positioned to approach the next of kin with the sensitivity that the situation requires. Second, the clinician is probably present at the time of death; he or she notifies the family of the event and helps the family begin dealing with the legal responsibilities that accompany the death of a relative. Finally, except in situations in which the family actively requests a postmortem examination, the clinician is usually most persuasive because he or she is interested in the answers to unresolved clinical questions. Although all these reasons explain the situation of consent through proxy, the pathologist is potentially vulnerable to an improperly obtained informed consent. For these reasons, institutions may elect to require stricter criteria for autopsy consent than required by state law.

Some institutions have sought to improve the autopsy consent process by establishing offices of decedent affairs composed of individuals trained to support the family and discuss issues surrounding death, including not only postmortem examinations but also organ and tissue donations and interment.[13,14] Occasionally, pathologists provide preautopsy consultations to the next of kin in order to discuss the autopsy procedure, removal and retention (or return) of organs, and other questions that family members might have about the examination.[15] It is best practice to make note of such consultation in the autopsy records.

Regardless of whether physicians or other health care workers obtain the authorization, the autopsy consent form should include an adequate description of the procedure and provisions for retention of fluids, tissues, organs, and prosthetic and implantable devices as deemed necessary by the pathologist for diagnostic, scientific, educational, or therapeutic purposes. The autopsy consent should state, and the individual consenting to autopsy should be informed of, the eventual appropriate disposition of these materials by the pathologist or hospital. The College of American Pathologists has provided a sample autopsy consent form (Fig. 2-1).[16]

Hospitals serving large numbers of patients who do not speak English should provide written translations of the autopsy consent form. We find it helpful to provide these on the back side of our consent form. In an age of increasingly powerful methods of genetic analysis, autopsy consent forms may need modification to ensure that the pathologists, the guardians of human tissues removed for diagnostic purposes, maintain strict confidentiality not just for the patient but also for his or her descendants, who may have inherited similar genetic risks for disease.[17]

Consent and Authorization for Autopsy

Addressograph
or Patient Name / Hospital Number

The College recommends that each pathology group develop its own specific consent form tailored to applicable law, institutional policies, and local practice. This autopsy consent form is offered as a starting point. Prior to adopting a specific form, the pathology group should have the form reviewed by an attorney knowledgeable about applicable law and sensitive to local practice. The group should also have the form reviewed by appropriate individuals within any institution in which autopsies will be performed.

_____
Service

_____
Attending physician

_____ _____
Date of death Time of death

I, (printed name) _____, the (relationship to the deceased) _____ of the deceased, _____, being entitled by law to control the disposition of the remains, hereby request the pathologists of (name of hospital)_____ to perform an autopsy on the body of said deceased. I understand that any diagnostic information gained from the autopsy will become part of the deceased's medical record and will be subject to applicable disclosure laws.

Retention of Organs/Tissues:

I authorize the removal, examination, and retention of organs, tissues, prosthetic and implantable devices, and fluids as the pathologists deem proper for diagnostic, education, quality improvement and research purposes. I further agree to the eventual disposition of these materials as the pathologists or the hospital determine or as required by law. This consent does not extend to removal or use of any of these materials for transplantation or similar purposes. I understand that organs and tissues not needed for diagnostic, education, quality improvement, or research purposes will be sent to the funeral home or disposed of appropriately.

I understand that I may place limitations on both the extent of the autopsy and on the retention of organs, tissue, and devices. I understand that any limitations may compromise the diagnostic value of the autopsy and may limit the usefulness of the autopsy for education, quality improvement, or research purposes. I have been given the opportunity to ask any questions that I may have regarding the scope or purpose of the autopsy.

Limitations: ☐ None. Permission is granted for a complete autopsy, with removal, examination, and retention of material as the pathologists deem proper for the purposes set forth above, and for disposition of such material as the pathologists or the hospital determine.

☐ Permission is granted for an autopsy with the following limitations and conditions (specify):

_____

_____

_____ _____ _____
Signature of person authorizing the autopsy Date Time

_____ _____
Signature of person obtaining permission Printed name of person obtaining permission

_____ _____
Signature of witness Printed name of witness

☐ Permission was obtained by telephone.
The above statements were read by the person obtaining permission to the person granting permission. The person granting permission was provided the opportunity to ask questions regarding the scope and purpose of the autopsy. The undersigned listened to the conversation with the permission of the parties and affirms that the person granting permission gave consent to the autopsy as indicated above.

_____ _____
Signature of Witness Printed name of Witness

_____ _____
Date Time

INSTRUCTIONS: To be valid, this document 1) must be dated, 2) must be signed by the person obtaining permission, AND 3) must be signed either by the person granting permission or the witness monitoring the phone call in which permission was given.

Figure 2-1 Consent and authorization form for autopsy. *(From Collins KA, Hutchins GM.* Autopsy Performance and Reporting, *2nd ed. Northfield, Ill: College of American Pathologists; 2003, p 41. Used with permission.)*

IDENTIFICATION AND DISPOSITION OF THE DECEASED

Before beginning an autopsy, the pathologist must ensure that the body is correctly identified. Typically, dead bodies are identified by means of a tag on the great toe that lists the deceased's full name and perhaps other information. Deceased hospital patients may be identified by bracelets placed around their wrists or ankles that contain both their name and a unique hospital identification number. Before beginning the prosection, it is our practice to have both the pathologist and the assistant perform a "time out." Patient identity is confirmed by matching the patient identifiers to the autopsy consent form, and any

restrictions placed on the examination are noted. A simple checklist is signed by both individuals, and this document, along with a photocopy of the consent form, is kept permanently as an attachment to the final report held in our departmental archives.

Autopsy personnel should be aware of their medical facility's policy and procedures regarding handling of a death and disposition of a decedent's body. This usually includes policies for (1) physicians regarding pronouncement of death, documentation for death certification, and coroner notification; (2) nursing regarding notification of various ancillary services and preparation of the body for transfer to cold room storage, including proper identification; and (3) transport, storage, and tracking of the body. Autopsy procedures must comply with such policies, and any questions regarding logistics should be directed to the appropriate supervisor, often either a nursing supervisor or decedent affairs officer. Retention of organs, fluids, and many medical devices is expected after an autopsy, but it is unlikely that any personal effects should be retained by the autopsy service after a nonforensic autopsy.

MEDICAL EXAMINER/CORONER CASES

By statute, a medical examiner or coroner may perform or authorize others to perform a postmortem examination without liability if the procedure is performed in good faith and without negligence and does not wantonly disfigure the body. Although all states sanction autopsy in suspected criminal cases, they vary on authorization for other circumstances or situations. Box 2-2 lists death circumstances that should be reported to the medical examiner or coroner.[18] The office to be notified depends on the location of the body where death was pronounced rather than the location of any earlier events.

It is our policy that at the time of a patient's death, a member of the team of physicians who cared for the patient report the case to the medical examiner's office or certify that the medical examiner need not be consulted. Sometimes authorization for autopsy is obtained without appropriate notification of the legal authorities. In such situations, the pathologist assumes equal responsibility for properly notifying the medical examiner. This has particular legal consequence for the pathologist. A study by Start and colleagues[19] indicated that clinicians have considerable difficulty recognizing the full range of cases that require notification of a medical examiner or coroner. Therefore, at any stage of an autopsy—review of the medical history, prosection, or microscopic examination—at which a pathologist recognizes issues or findings that indicate that the case should be reported, it is the pathologist's obligation to notify the medical examiner or coroner. This applies equally in cases previously released by the authorities if new discoveries might place the case within their purview. Finally, notification should be made immediately at the time of discovery, not after completion of the dissection or autopsy report. As a common courtesy, the responsible pathologist should inform the physician and family of the deceased of any changes in circumstances.

Box 2-2 Brief Guide to Deaths Reportable to the Medical Examiner

Violent deaths by:
- Homicide
- Suicide
- Accident/injury (primarily or only contributory to death, whether immediate or at a remote time)

Deaths associated with possible public health risks:
- Poisoning
- Occupational disease
- Contagious disease constituting a public health hazard

Physician cannot sign the death certificate because:
- No physician in attendance
- Not under physician's care for previous 20 days
- Physician in attendance for less than 24 hours
- Physician unable to state cause of death

Other:
- Under such circumstances as to afford a reasonable ground to suspect that death was caused by the criminal act of another
- Operating room deaths (even if expected)
- Postanesthesia death where patient does not fully recover from anesthesia
- Solitary deaths
- Patient comatose for entire period of medical evaluation
- Death of an unidentified person
- Sudden death of an infant
- Deaths of prisoners
- Deaths of patients in hospitals for mentally or developmentally disabled
- Deaths where questions of civil liability exist

Adapted from Stephens BG, Newman C. *Digest of Rules and Regulations, San Francisco Medical Examiner,* City and County of San Francisco; 2001.

PUBLIC HEALTH, PUBLIC RECORDS, AND PATIENTS' CONFIDENTIALITY

Health care institutions and employees must protect a patient's right to privacy and confidentiality—even after death—unless excepted by law. Exceptions occur with communicable diseases because the responsible physician or health care worker has a legal or ethical obligation to notify public health authorities, warn endangered third parties such as sexual partners or other close contacts, advise health personnel involved with the care of the patient, and alert funeral directors or others who might have contact with infectious tissues or fluids. In the United States, state laws stipulate which diseases physicians must report to public health agencies. Thus the pathologist has a legal obligation to report cases when certain infectious diseases come to light at autopsy. Diseases that are deemed notifiable vary slightly from state to state. However, state laws are influenced by input from the Centers for Disease Control and Prevention (CDC), which makes annual recommendations for the list of nationally notifiable diseases (Box 2-3).[20] Most state public health agencies voluntarily report nationally notifiable diseases to the CDC.

Among patients, physicians, public health officials, and the courts, acquired immunodeficiency syndrome (AIDS) raises significant questions and concerns regarding rights to privacy and confidentiality of patients and patients' relatives and has been the subject of specific legislation.[21,22] These laws vary widely among states, and

Box 2-3 Infectious Diseases Designated as Notifiable to the Centers for Disease Control and Prevention (as of 2015)

Anthrax
Arboviral diseases, neuroinvasive and nonneuroinvasive
  California serogroup viruses
  Eastern equine encephalitis virus
  Powassan virus
  St. Louis encephalitis virus
  West Nile virus
  Western equine encephalitis virus
Babesiosis
Botulism
  Foodborne
  Infant
  Other (wound and unspecified)
Brucellosis
Chancroid
Chlamydia trachomatis infection
Cholera
Coccidioidomycosis
Cryptosporidiosis
Cyclosporiasis
Dengue virus infections
  Dengue fever
  Dengue hemorrhagic fever
  Dengue shock syndrome
Diphtheria
Ehrlichiosis/Anaplasmosis
  Anaplasma phagocytophilum
  Ehrlichia chaffeensis
  Ehrlichia ewingii
  Undetermined
Giardiasis
Gonorrhea
Haemophilus influenzae, invasive disease
Hansen disease (leprosy)
Hantavirus pulmonary syndrome
Hemolytic uremic syndrome, postdiarrheal
Hepatitis, viral
  Hepatitis A, acute
  Hepatitis B, acute
  Hepatitis B virus, perinatal infection hepatitis B, chronic
  Hepatitis C, acute
  Hepatitis C, past or present
Human immunodeficiency virus (HIV) infection diagnosis
Influenza-associated pediatric mortality
Legionellosis
Listeriosis
Lyme disease
Malaria
Measles
Meningococcal disease
Mumps
Novel influenza A virus infections
Pertussis
Plague
Poliomyelitis, paralytic
Poliovirus infection, nonparalytic
Psittacosis
Q fever
  Acute
  Chronic
Rabies
  Animal
  Human
Rubella
Rubella, congenital syndrome
Salmonellosis
Severe acute respiratory syndrome-associated coronavirus (SARS-CoV) disease
Shiga toxin-producing *Escherichia coli* (STEC)
Shigellosis
Smallpox
Spotted fever rickettsiosis
Streptococcal toxic-shock syndrome
Streptococcus pneumoniae, invasive disease
Syphilis
Syphilis, congenital
Tetanus
Toxic shock syndrome (other than streptococcal)
Trichinellosis
Tuberculosis
Tularemia
Typhoid fever
Vancomycin-intermediate *Staphylococcus aureus* (VISA) infection
Vancomycin-resistant *Staphylococcus aureus* (VRSA) infection
Varicella (morbidity)
Varicella (mortality)
Vibriosis
Viral hemorrhagic fever
  Crimean-Congo hemorrhagic fever virus
  Ebola virus
  Lassa virus
  Lujo virus
  Marburg virus
  New World arenaviruses (Guanarito, Junin, Machupo, and Sabia viruses)
Yellow fever

From Centers for Disease Control and Prevention MMWR July 5, 2013, Vol. 60, No. 53: *Summary of Notifiable Diseases, United States, 2011*

the pathologist performing autopsies should be familiar with the specific local statutes. In general, two documents are of concern for the autopsy pathologist: the autopsy report and the death certificate. Autopsy reports prepared in the setting of a hospital practice are legally protected as part of the confidential medical record. However, in some states, autopsies reported by a medical examiner become part of the public record. Likewise, the public may gain access to causes of death listed on death certificates.[23] For these reasons, the Council on Ethical and Judicial Affairs of the American Medical Association recommends that infection with human immunodeficiency virus or AIDS appear in the autopsy report only when it is relevant to the patient's cause of death.[23] Others suggest that government offices adopt a two-part death certificate that includes one part for interment and immediate legal purposes and another for medical certification.[24,25] This would provide greater privacy to the family of the deceased.

ORGAN AND TISSUE DONATION

Human organs and tissues removed after death are used in transplantation and reconstructive surgery. Tissue and organ procurement is a procedure separate from the autopsy and does not usually involve the pathologist other than in a cooperative role. In cases in which there is consent for both autopsy and organ donation, procurement of viable organs must take place before any postmortem examination, and procurement of nonviable tissues, such as bone, skin, and corneas, usually precedes autopsy. An exception to this occurs in medicolegal cases

in which the medical examiner or coroner must determine whether organ donation would interfere with a forensic examination. The usual regulations for reporting cases to the medical examiner or coroner are still in effect; in fact, organ procurement from a "brain dead" individual cannot occur legally without prior consent from the medical examiner or coroner.

The National Association of Medical Examiners[26] has published a position paper on medical examiner release of organs and tissues for transplantation stating that procurement of organs and/or tissues for transplantation can be accomplished in virtually all forensic cases. However, supplemental imaging or laboratory tests may be needed to determine injury or disease in organs prior to procurement. Davis and Wright[27] recommended that the surgeon harvesting donated organs be required to provide a detailed note of the surgical dissection for inclusion in the medical examiner's record. Findings such as injured organs or blood within body cavities must be documented accurately. Surgeons and others procuring organs must agree to testify at no expense to the taxpayers.[26]

A small number of states allow medical examiners to remove corneas if they are unaware of any objection from the next of kin; however, they may still be liable if a plaintiff can show that the pathologist removed the tissue on the basis of "intentional ignorance" of the family's wishes.[28]

REQUEST FOR HUMAN TISSUE FOR RESEARCH

Requests from biomedical scientists for human tissue are often submitted to pathologists, particularly those affiliated with research institutions. Providing investigators with tissue for research is a noble endeavor. However, the pathologist must ensure that appropriate informed consent (usually but not necessarily part of the autopsy consent) has been received and that investigators' research protocols have been granted authorization from the appropriate regulatory committee (e.g., institutional review boards in the United States). Approval safeguards the patient's and family's privacy and ensures appropriate use of tissues. Many regulatory committees, however, may grant exemption from review for research on autopsy materials, with the reasoning that cadavers are not human subjects, but it is necessary then for the pathologist to safeguard patient privacy and family wishes while also ensuring that research personnel are properly aware of safety issues regarding blood-borne pathogens and other potential hazards.

Some advocates of patients' privacy believe that patients or their next of kin must be informed on an ongoing basis regarding the use of archival tissue to prevent genetic testing that could have deleterious effects on a patient's well-being or ability to obtain employment or insurance.[29] Debates about genetic or tissue-based research with respect to informed consent and patients' confidentiality or anonymity are likely to continue before regulatory agencies attain guidelines that protect patients yet leave scientists sufficiently unencumbered.[30] Pathologists should consult with their institution's review boards if questions arise.

Box 2-4 Procedures That May Alleviate the Need to Perform a Complete Autopsy in the Presence of Religious Objections

1. In-depth investigation of the scene, environment, terminal circumstances, and social and medical history of the deceased
2. Careful exclusion of criminal act suspicion
3. External examination
4. Radiographs or other imaging studies
5. Toxicology or other analysis performed on blood, urine, gastric samples, or cerebrospinal fluid obtained percutaneously
6. Endoscopic examination
7. In situ or minimal procedure examinations

RELIGIOUS AND CULTURAL ISSUES

A number of states have enacted specific statutes limiting or even preventing forensic examination in cases in which religious beliefs are the basis for a family's objection to autopsy.[31] In such cases, the forensic pathologist should not proceed until it has been determined that there is a compelling legal reason for autopsy and the nature of the family's objection has been clarified.[28] Understanding of and sensitivity to cultural or religious beliefs with respect to the deceased may aid in reaching an acceptable solution to conflicts. Mittelman and colleagues[32] provided a number of alternatives to autopsy in such situations, and these are listed in Box 2-4. A brief summary of attitudes of specific religions or cultural groups toward the autopsy follows.

Judaism

Interpretations of Jewish religious law as it relates to autopsy vary from the traditional Orthodox to more liberal points of view. Goodman and colleagues review the current laws and provide guidelines for performing autopsies on Orthodox Jews.[33] Discussion centers on two main issues: sanctity of the human body, which must remain inviolate even after death, and the prospect that a postmortem examination might save a life.[34,35] The Orthodox view stems primarily from the eighteenth-century attitude that the benefit of an autopsy must be readily apparent; that is, the knowledge obtained from an autopsy must help save another human life in immediate danger.[36] Its benefit cannot be exclusively experimental or theoretical. In the modern world, in which communication in effect establishes a single great parish and the autopsy has a greater influence on the treatment of disease, others express the opinion that postmortem examinations may honor the dead through service to humanity.[35,37] Consistent with this more liberal attitude, a formal agreement between the Chief Rabbinate of the State of Israel and the Hadassah Hospital and Medical School in Jerusalem permitted autopsies in cases required by law, when in the opinion of three physicians the cause of death cannot otherwise be established; in cases involving hereditary diseases when necessary to guide medical care for a family; or when an autopsy may save the lives of others with a similar disease.[38,39] However, more recently enacted laws have had the effect of limiting the number of autopsies performed in Israeli hospitals.[40]

Christianity

The Roman Catholic faith has no ecclesiastical law forbidding autopsies, although it does hold that the dignity of the human body must be recognized even in death.[10] During the early years of Christianity, the general attitude of Catholic church leaders toward autopsy and dissection was unfavorable; however, this was based more on esthetic or humanitarian grounds than on theological opinion.[41] The attitude of the Church changed as the physicians of the late Middle Ages and Renaissance performed dissections. In 1410, Pietro D'Argelata performed an autopsy on Pope Alexander V after his sudden death. In the late fifteenth century, Pope Sixtus IV issued a decree allowing the medical students at Bologna and Padua to study human remains.[41] The acceptance of autopsies by the Church was well established when, in 1556, the autopsy of Ignatius Loyola revealed stones in the kidneys, bladder, and gallbladder.[42]

Recognizing an autopsy as a legitimate method for extending medical knowledge and thereby improving the health of the living, the modern Protestant attitude holds that through an autopsy the deceased still serves God by contributing to the well-being of others.[10] However, in earlier times, the opinion of anatomic dissection in Protestant countries was often unfavorable.[43]

For example, in England, from the Middle Ages until the end of the nineteenth century when the first English anatomic law was passed, the major source of human bodies for anatomic study was executed criminals. This tradition produced an association of postmortem dissection with crime and contributed to the public's negative attitude toward autopsies.[10] The limited numbers of bodies available for dissection in nations under Protestant rule led to the practice of grave robbing and clandestine anatomic studies, resulting in additional adverse public reaction to dissection.[37]

The Eastern Orthodox churches (Greek Orthodox Church, Russian Orthodox Church, and others) do not forbid autopsy in the belief that it may lead to knowledge for physicians that could help them treat others in the future.[44] The Church of Christ, Scientist (Christian Scientist) forbids autopsy except in cases of sudden death.[45] Jehovah's Witnesses forbid autopsy except under specific circumstances.[31]

Native Americans

Although many Native Americans follow Christian practices, some maintain traditional tenets. Death rituals and burial practices vary among tribes. Traditionally, Native Americans believe in the integrity of the body and consider postmortem examinations a violation of that integrity.[45]

Islam

There has been and continues to be debate among Islamic scholars regarding topics such as postmortem examination and organ transplantation.[46] Although the issues surrounding organ donation and transplantation are not settled, both occur in some Muslim sects.[47,48] However, unless required by law, postmortem examinations are not sanctioned.[49] Similarly, the Islamic beliefs prohibit dissection for medical teaching or research. Muslim bodies are not embalmed or cremated, and the religion requires that the body be buried as soon as possible after death. Following death, the head is turned toward Mecca or to the right, the arms and legs are straightened, and the mouth and eyes are closed.[49] Preparation of the body includes ritual washing and draping with a simple white cloth by family or friends of the same sex.

Eastern Religions

Autopsy rates in Eastern countries are generally low, but one cannot attribute this to religious beliefs. Hinduism, Buddhism, Shintoism, Taoism, Shamanism, and Confucianism do not prohibit autopsy or other postmortem procedures such as organ donation.[45] Hindus do not approve of autopsies, but those required by law are accepted.[50] The Buddhist faith allows autopsies after the soul has made its transition (3 days after death or sooner if determined by a religious teacher).[44]

MORTICIAN AND FUNERAL ISSUES

The funeral director is often faced with responsibilities for which time may be critical. Thus he or she is most concerned with issues (such as autopsies) that delay release of the body from the hospital and problems related to the state of the body following death that may make it more difficult to prepare the body for viewing and/or burial. Hence it is important that both pathologist and hospital staff expedite autopsies and other decedent affairs with concern for subsequent funeral arrangements.

Following death and unless prohibited by religious faith, bodies should be placed in the supine position with the head straight and slightly elevated. The arms may be folded over the abdomen. If restraints are used, they should be soft and tied only lightly and above the elbow to ensure that the skin of the hands or arms does not become deformed. Restraints of any kind should not be used on decedents under the jurisdiction of the medical examiner or coroner to avoid causing any misleading external markings. Intravenous and other medical tubing should generally not be removed; however, it can be capped or clamped and then clipped close to the clamp. Excess tubing may be coiled, covered with gauze and taped (with paper tape only) to the skin. Remains are covered with a clean white sheet and stored in zippered plastic body pouches that are resistant to leakage. A plastic bag loosely secured over the head reduces the possibility of problems from purges of respiratory and gastric contents. Absorbable pads should be placed wherever there is persistent drainage. An identification tag should be placed on the body and on the outside of the bag.

Properly protecting individuals handling decedents is a legal requirement. Therefore, the funeral director should be alerted to any biohazard, such as radioactivity or infection, by noting it on an exterior label. It is good practice to attach to the body a copy of the autopsy consent form and contact information for the autopsy service. To delay postmortem staining and lividity, the

body should be removed to a refrigerated area as soon as reasonably possible. Before performing dissections that might interfere with embalming, the pathologist should alert the mortuary. For good cosmetic results, embalming of the head and neck is often critical and is easier if a reasonable length of common carotid artery is left intact (see Chapter 4). In some instances, depending on logistics, embalming prior to autopsy may be appropriate, and gross and microscopic results are quite good from such postmortem examinations.

OBLIGATIONS OF THE AUTOPSY PATHOLOGIST

The pathologist incurs certain moral responsibilities because the autopsy is an important element in (1) the welfare of patients, families, and society; (2) quality control and improvement of care provided by health care organizations and providers; and (3) education of tomorrow's physicians.[51] The pathologist must always perform autopsies with proper respect for the dead, the feelings of relatives, and the patient's physicians. He or she should evaluate the quality of the autopsy consent form and ensure that it is valid. Permission obtained through deception or coercion is invalid. If the pathologist suspects such, he or she must ensure that the next of kin understands and consents knowingly and willingly before the autopsy is begun. Next, the pathologist has a professional obligation to perform a competent postmortem examination and report the autopsy results accurately and promptly.

The pathologist must communicate and consult with clinicians to avoid misinterpretations of clinical information and, ultimately, diagnostic errors.[52,53] Except under unusual circumstances that might prevent the pathologist from performing a competent examination, the pathologist has an obligation not only to allow the clinicians responsible for the patient's care the opportunity to observe the autopsy but also to encourage their attendance at the procedure. Therefore, whenever possible and with consideration of the families' need for timely funeral arrangements, the pathologist should accommodate the schedules of the clinicians. If the clinician's obligations to other patients prevent his or her attendance at an autopsy, the pathologist should communicate the findings by conversation, as well as by the usual report. For complex cases, select labeled gross photographs sent by secure electronic communication are particularly helpful. The pathologist should be readily available to present autopsy findings at hospital conferences or at quality improvement meetings. In complicated cases, the pathologist also has an obligation to seek consultation from his or her pathology colleagues or, when necessary, from expert consultants.[54] In contentious cases, the pathologist should take extra care with the wording of the autopsy report to avoid unnecessary provocation of the clinical teams or the families. Occasionally depositions will be requested regarding nonforensic autopsy findings, and it is best to work with the facility's risk management department for advice regarding such depositions. The pathologist who performs a nonforensic autopsy has a legal obligation to appear in court if a subpoena is issued.

In the United States, the laws covering confidential postmortem medical information vary. Autopsy reports of medical examiners' and coroners' offices are part of the public record in a number of states. In the hospital setting, the pathologist must protect the patient's confidentiality unless withholding information results in probable harm to others.[55] This includes protecting sensitive information made available electronically.[56] When communicating outside the medical record, it is important to protect privacy by providing only the minimum necessary information, through secure channels, and only to appropriate parties.

Although the autopsy has inherent teaching value for other health care professionals and students, these individuals are allowed in the autopsy suite only at the discretion of the pathologist. The pathologist must provide protective clothing and supplies to any observers, because he or she assumes legal liability for any injury or exposure. The pathologist should also ensure that observers who could be exposed to bodily fluids have had proper vaccination (see Chapter 3) and appropriate training regarding potential exposure to pathogens. Generally, the pathologist has the right to exclude physicians hired by the next of kin to view the autopsy except in cases of workers' compensation where state statutes allow such representation.[10] There is no place at an autopsy for members of the lay public or curiosity seekers. Occasionally, religious laws dictate that a keeper stay with the body until burial, and they can usually be stationed in or adjacent to the autopsy room, far from potential exposures and usually out of direct sight.

As already discussed, the pathologist has an obligation to report the autopsy findings to the physician(s) of the deceased. The primary obligation to inform the family of the autopsy findings lies with the clinician. In this era of protected health information, it is best for family members who wish to receive copies of the autopsy report to get it from the medical records department, because they are best able to discern who may have access. Family members who then call the autopsy service with questions regarding content of the report are directed to the pathologist or director of the autopsy service. In our experience, calls to the autopsy service from family members occur in four well-defined settings: (1) when the family has insufficient rapport with the involved physician, (2) when the physician is unavailable, (3) when the questions concern technical specifics of the autopsy, or (4) when the family has reservations about the patient's medical care.

When choosing the specialty of pathology, a physician must accept the obligation to clinicians, families, and society to perform autopsies despite potential dangers. However, pathologists have the right to demand adequate protection from biologic and physical hazards for themselves and their assistants so that the examination can be performed safely and efficiently. Chapter 3 contains a discussion of safe autopsy practice.

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