

The autopsy

The goal of any autopsy is to discover the cause of death. But when forensic pathologists wield the scalpel, they have special legal responsibilities. Their findings, and the conclusions drawn from them, may help to guide the police investigation and provide crucial evidence needed to bring a killer to justice.

The dissection of a body is just one part of a wider postmortem examination that includes identification of the body, the photography of the exterior of the body, and possibly an X-ray examination.

Mortuary team

A pathologist is not alone in the mortuary. An anatomical pathology technician prepares the body and also assists in the postmortem; an exhibits officer samples material stuck to the skin before the body is washed; and a photographer records the entire process. In murder cases, a police witness may also be present.

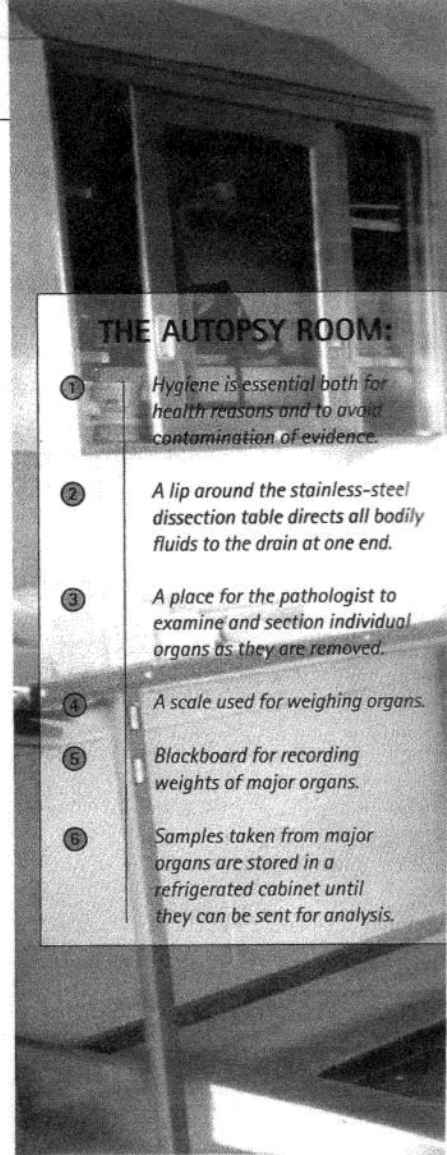
Photography is thorough: the body is photographed from front and back, full length, and in detail. If the corpse was found fully dressed, it is photographed while clothed, then again each time the pathologist removes a layer of clothing.

Before the autopsy begins, the pathologist cuts samples of hair, and either clips the fingernails or scrapes

under them. DNA analysis of these samples may help to identify an assailant, and can also reveal traces of poisons or drugs. Swab samples from the mouth, rectum, and sexual organs are also taken before dissection, and the pathologist notes all external marks on the skin—not just injuries, but tattoos and scars as well. External marks can help to identify the body, if identity is unknown (see p. 44).

Though the dissection usually begins with the opening of the chest cavity (shown below), the order varies. For example, if there are signs of strangulation, the autopsy starts with the head and neck. In a stabbing case, though, the pathologist's scalpel follows the track of the knife blade through the flesh.

Sometimes toxicology testing or histology (microscopic study of tissues) is needed before it is possible to say with certainty what the cause of death was. And in writing up their reports, pathologists are not simply documenting

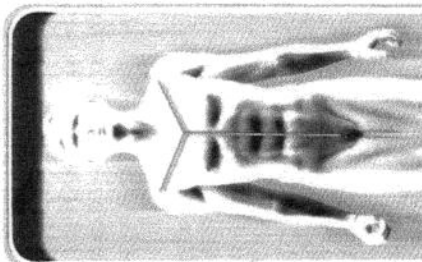


THE AUTOPSY ROOM:

- ① Hygiene is essential both for health reasons and to avoid contamination of evidence.
- ② A lip around the stainless-steel dissection table directs all bodily fluids to the drain at one end.
- ③ A place for the pathologist to examine and section individual organs as they are removed.
- ④ A scale used for weighing organs.
- ⑤ Blackboard for recording weights of major organs.
- ⑥ Samples taken from major organs are stored in a refrigerated cabinet until they can be sent for analysis.

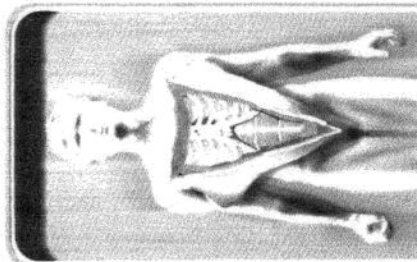
a procedure carried out in isolation. They must put their findings in the context of the police investigation, and ensure that the report will stand up as evidence in a court of law.

THE PROCEDURE



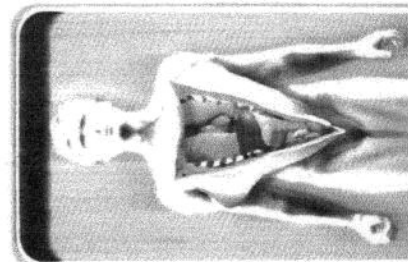
EXTERNAL INSPECTION ▲

External injuries, marks, and stains may dictate the order of the autopsy, so the pathologist first carries out a careful external examination. The wounds of violent deaths are usually obvious, but subtle signs can also suggest an unnatural death.



SIMPLE INCISION ▲

Where the death seems natural, the pathologist makes one cut up the torso, and removes internal organs for examination. This procedure is similar to a medical autopsy, which charts the progress of disease as well as establishing the cause of death.



SUSPICIOUS DEATHS ▲

With a victim of crime, the pathologist makes a T- or Y-shaped cut that allows better access to the body cavity. If there are any injuries to the neck or head, the pathologist will start there before opening the chest and abdomen.



EVIDENCE SOURCING ▲

The autopsy room is where the pathologist painstakingly pieces together the facts behind a suspicious death. A corpse may hide many valuable clues, both inside and out, that can only be uncovered by meticulous examination.

TOOLS FOR THE JOB

A pathologist needs a range of tools and equipment to complete the full procedure. Here is a sample of some of the instruments used.

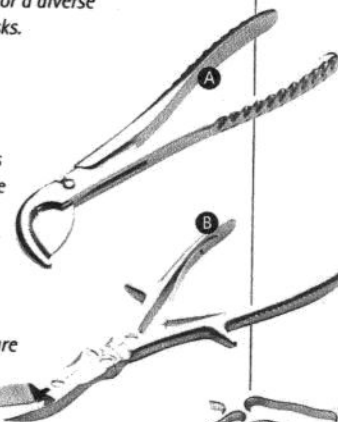
SCALPEL ►

Different shaped, interchangeable blades adapt the scalpel for a diverse range of small cutting tasks.



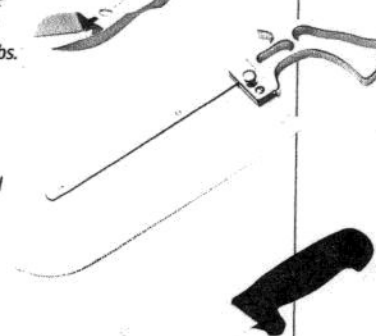
BONE CUTTERS ►

These cut through the ribs so as to lift the chest plate and allow access to the internal organs. Pair A are used for the smaller ribs. Pair B have been designed with a compound action, which applies more pressure on the blades for the same effort, and are used on the larger ribs.



HAND SAW ►

Sturdy stainless steel hand saws are used for amputations and a variety of cutting tasks.



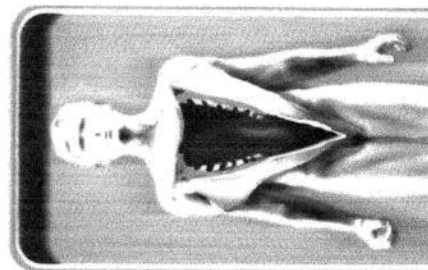
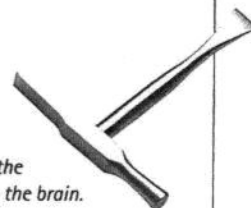
BRAIN KNIFE ►

Used to cut sample slices of all large organs, not just the brain.



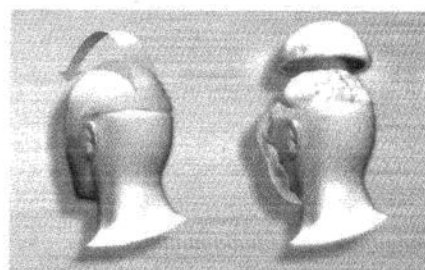
CRANIUM CHISEL ►

After scoring the skull with a saw, the chisel gently finishes the separation and gains access to the brain.



MAJOR ORGANS ▲

Cutting the ribs allows the removal of the chest plate. Some pathologists remove the heart, lungs, trachea, and esophagus together, others individually. Abdominal organs are treated similarly. Samples of fluids are removed for analysis.



THE HEAD ▲

Cutting the skull, nerves, and blood vessels allows the pathologist to remove the brain. Studying it with the naked eye rarely reveals much. However, microscopic examination of very thin slices of brain tissue can show tearing and tiny blood clots.



WEIGH AND MEASURE ▲

The pathologist weighs organs as they are removed. Depending on suspected cause of death, samples may be cut from every organ for microscopic analysis of the tissue. This allows for a more complete study of the body.