

## The Investigation of Obscure Deaths

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### ABSTRACT

Unexpected death from obscure causes places a responsibility on the coroner which is delegated to the police, the pathologist and the laboratory. Important insurance and civil litigation issues may be at stake and crime must not be overlooked. This article stresses the importance of (a) powers of observation, (b) awareness of possibilities, (c) a flexible mind and (d) competence in forensic pathology. Cases quoted and illustrated show mistakes which have caused error—and injustice.

The importance of discussion with clinical colleagues is emphasized; painstaking autopsy and meticulous laboratory examinations are vital. Poisoning is particularly easily overlooked.

### SOMMAIRE

Les morts subites, dont les causes sont obscures, mettent en jeu la responsabilité du coroner, celle du pathologiste et du laboratoire. D'importants litiges civils et en matière d'assurance peuvent en être l'enjeu et il ne faut pas négliger les risques de crime. Le présent article souligne l'importance a) de la puissance de l'esprit d'observation, b) du flair de l'enquêteur quant aux possibilités c) de la souplesse de l'esprit et d) de la compétence du médecin légiste. Les cas cités illustrent les erreurs qui furent commises et qui ont entraîné des erreurs judiciaires et de l'injustice.

On y expose l'importance des discussions avec des cliniciens: une autopsie soignée et des examens de laboratoire méticuleux comptent parmi les éléments d'importance vitale. On semble négliger surtout assez facilement la possibilité d'empoisonnement.

**T**HE problem of unexpected death from obscure causes is a responsibility which must be borne mainly by the pathologist. Where the doctors in clinical charge, the biochemists, even those present at the time of death have no clues as to the cause, and where neither the circumstances nor the clinical features shed any light on the event, or where, of course, someone is just found dead, only autopsy can provide a proper answer. Sudden, unexpected or obscure deaths must by law be reported to the coroner, and where no doctor can give the cause of death the only proper recourse is a postmortem examination. Only thus can statistics of death mean anything, and only thus is it likely that justice will be served in matters of insurance, civil litigation and criminal procedure. To explore the unknown by having a routine hospital autopsy in the belief that some simple explanation will be forthcoming is to take substantial risks: trauma, accident, negligence, poisoning and crime have all come to light in this way, and the stupidity of inexperienced probing of the unknown that should have been the responsibility of a coroner and a forensic pathologist becomes a matter of public comment. It is for such a purpose that coronership exists, and it is for the solution of such problems that the coroner is encouraged to use the services of the hospital or forensic pathologist and his laboratories, and to enlist the aid of the police.

### POWERS OF OBSERVATION

This team, coroner, pathologist and police, can only go into action when requested, and it is of

the greatest importance that the ordinary doctor shall be on the *qui vive* for signs that this is a death needing investigation. Do doctors discharge such duties well? It is remarkable, on the contrary, how often people, even people like doctors trained to see and evaluate things, fail to do so. In my own experience:

1. A young casualty officer has had to draw the attention of ambulance men who had given artificial respiration to an unconscious woman on the way to hospital to the fact that it was not much use unless they first released the stocking which was tied tightly round the neck. She had been strangled.

2. Not one of some 10 or 12 variously trained persons—police, doctors, ambulance men and undertakers—who had been called to a dead man found *face down* in a pool of blood drew attention to the fact that he had 17 stab holes in the *back* of the jacket. It was murder, but no one suggested the possibility and the police were not aware of the fact until next day.

3. A doctor, called to a burned-out hostel since a check had revealed one girl student to be missing, failed to see her body in a closet, though the door was opened for him to look inside. The house was due to be demolished: she might well have disappeared without trace.

4. A police surgeon in London, called to examine the contents of a parcel found in a churchyard, decided it consisted of the arm and hand of a dismembered body—presumably evidence of crime.

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Fig. 1a.—A split in the scalp was casually assumed to be a tear due to a fall against furniture.

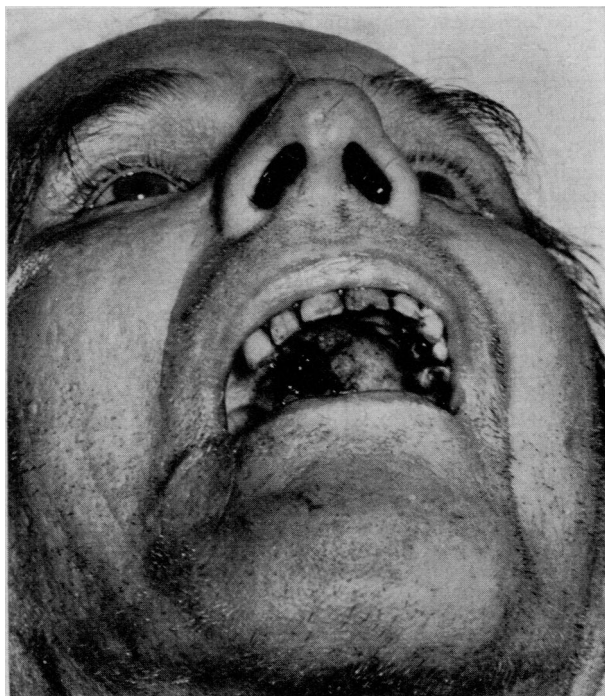


Fig. 1b.—The split in the scalp (Fig. 1a.) was in fact the exit wound of a bullet: the point of entry was in the mouth.

He failed to observe that the forearm and hand showed a meticulously careful anatomical dissection—or that the “part” smelled of carbolic acid.

These careless failures to observe what is there to see could be multiplied: they are a common cause for things becoming obscure. Not looking far enough, long enough, or carefully enough is just as bad a fault and has frequently been the cause of obscurity developing—injury, poisoning or crime even being overlooked. A doctor who brushed aside a scalp tear as “the sort of thing I often see in

people who fall across some piece of furniture in collapsing” was called back later to see the bullet-entry wound in the mouth of which the scalp tear was the exit (Figs. 1a and 1b). I also remember a call where a woman doctor who had been summoned to see a man slumped in a doorway—and who said she could not say more than that he was dead—was later asked by a kind police sergeant if she would mind if he added, in his report, that “on further examination it had been found that the body was suspended by a rope which encircled the neck”!

#### NOT THINKING OF POSSIBILITIES

Not thinking of possibilities is, of course, a common enough reason for not finding out all there is to discover—especially in cases of trivial violence—broken necks from trivial brow or face blows, air or fat embolisms in persons subjected to minor operative procedures, epilepsy or status asthmaticus whose minor postmortem features might require anticipation. The possibility of poisoning, especially gas poisoning, is commonly forgotten in those who are decrepit, diseased, drunk or disabled and whose deaths occasion no particular surprise. Everyone who has practised forensic pathology knows, too, that an emergency such as choking, strangulation or perforation which occurs while the victim is in hospital under treatment for some other complaint may escape diagnosis. “It hadn’t crossed anybody’s mind” is heard often enough; it may not even cross anybody’s mind after death—and in consequence may be overlooked. One further “possibility”, often overlooked, is the likelihood of death after the allotted span of “three-score years and ten”. Provided care has been taken to explore all other possibilities, the finding of no positive cause of death should not prompt the observer to consider a case “obscure” if the individual is sufficiently elderly. People *do* suddenly die of old age and of minor-looking degrees of hypertension or coronary insufficiency.

One other facet of powers of observation is worthy of mention. The first objective view taken of anything should never be assumed to be the only view possible. A second look at the clever “two-faced” drawing (Fig. 2) illustrates the need to look again: both a charming girl and a wicked-faced old crone are there. It also emphasizes the need to remain flexible in mind. A barrister, taking his “instructions” from a different source, may well put a different view to the doctor, and it is important to be able to see another possibility—whether or not it is accepted. To refuse to entertain the view is to reveal a dangerous inflexibility of mind. Even differing disciplines of training may colour an impression (Fig. 3): the symbol ♀ may mean “female” to doctors, but to the astronomer it signifies “Venus” and to the metallurgist “copper”. To many lay people it means nothing at all—an important point to bear in mind in giving evidence to a judge and jury.



Fig. 2.—A “double-entendre” caricature. At first sight a wicked old crone—or a charming young profile? It is a warning against inflexibility. (Courtesy of Arthur Little, Inc., Cambridge, Mass.)

If the analogy is carried into the field of the obscure autopsy, it is evident that to listen carefully to the physician, the biochemist or the anesthetist, sometimes even the psychiatrist, is to see new possibilities. A competent physician may already suspect thyrotoxicosis or acute adrenal crisis; the biochemist, hypokalemia or porphyria; and the anesthetist, a reflex vagal inhibition: a difficult-looking autopsy problem may be solved before it has become obscure. Patience in collecting and analyzing what is already known about a case often prevents it from becoming obscure.

**EVIDENCE:**

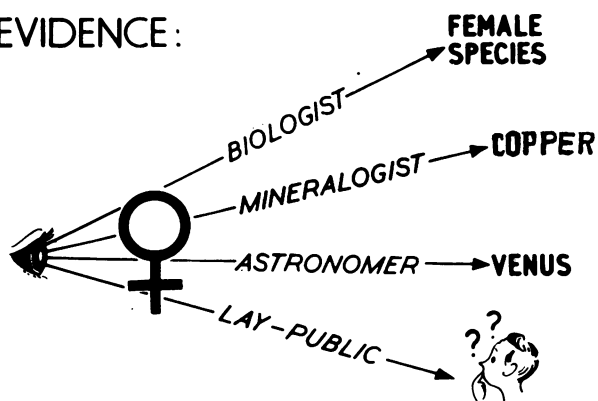


Fig. 3.—A symbol as simple as ♀ may be interpreted differently according to training.

**THE AUTOPSY**

There can be no doubt that the commonest reason for initial failure to find a satisfactory cause of death at autopsy is simple failure to explore the dead body, its tissues and their bacteriology or biochemistry sufficiently painstakingly. Where this is due to lack of enthusiasm or tiredness, pressure of time or adverse working conditions there can be no excuse, but it is more often due to an inferior autopsy technique or lack of experience. Failure to explore the pulmonary arterial tree far enough, or to explore at all the internal carotid, more distant coronary, cerebral, mesenteric, even systemic arterial tree, has, in my own experience of second autopsies, resulted in deaths becoming obscure. Recently a keen young neurological registrar, basing his views on the clinical symptoms, directed my attention to the upper ends of the vertebral arteries, both of which were thrombosed. Angiography, suggested by the cardiac surgeon in a case of unexpected heart failure after aortic valvotomy, revealed minute cretaceous emboli blocking the coronary arterial tree. The detection of air and fat emboli, often overlooked, requires only forethought and a careful technique. Fat embolism is particularly often a contributory if not sole cause of unexpected post-traumatic and operative deaths in which the repute of the anesthetist is involved. Minutiae of importance like the tell-tale bite on the tongue of the epileptic (Fig. 4), the fresh ruptured



Fig. 4.—Epileptic bite on tongue—often the sole clue to an obscure asphyxial death.

bullae of a pneumothorax, the incipient rash or adrenal lesion of a Waterhouse-Friderichsen syndrome, need no more than ordinary care and perception: both may be lacking. The need for microscopy comes later.

*Unsuspected injury* is always a possibility, and often carries important insurance and compensation sequelae. An electric burn no larger than 3 mm. and, at first sight, looking like a graze on the wrist, gave away the true cause of the fall of a workman from a crane. Another example of this observation is shown in Fig. 5. Self-reducing subluxations or frank fracture-dislocations of the neck are a well-known clinical menace and equally

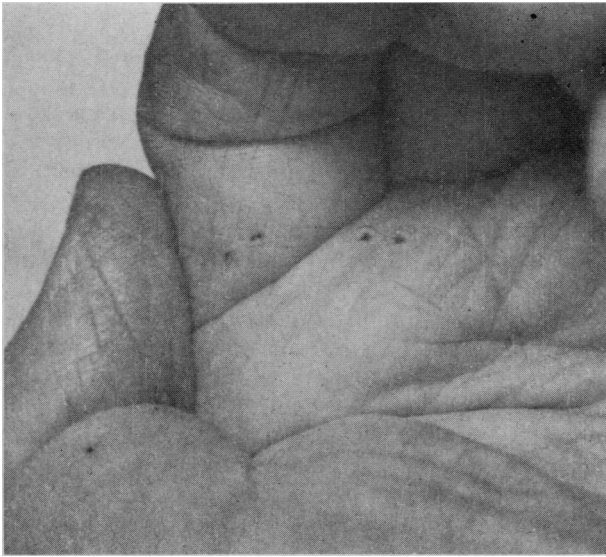


Fig. 5.—Tiny electrical discharge burns on hand—the only indication of the cause of death.

likely to be overlooked at the autopsy. Furthermore, the amount of trauma needed to initiate a fatal vagal inhibition need not necessarily leave any mark.

Where a reconsideration of an unrewarding routine autopsy is necessary, before resort to microscopy or other ancillary laboratory procedures, the exercise should always begin with a careful review of the circumstantial and factual evidence. The mode of dying is often tell-tale: of allergy, asthma, anoxia, adrenal insufficiency, acidosis—to consider only some of those causes beginning with the first letter of the alphabet.

#### MICROSCOPY AND ANCILLARY LABORATORY GUIDANCE

No obscure autopsy can possibly give cause for concern until microscopy—of the heart, the liver, the kidneys, the brain—and in the infant, especially, the lungs—has been done. In recent years the myocardial pathologies have increased in number from the obscure idiopathic hypertrophies, fibroelastoses and glycogen disorders, to the more numerous cellular cardiomyopathies, and drug and other auto-immune disorders that are beginning to call for classification. Virus and other encephalopathies—notably toxoplasmosis in infancy—may all emerge from simple microscopy, before culture or immune studies are considered.

Bacteriological shock, from overwhelming flooding by either rapidly multiplying virulent organisms or their toxins, has recently again received attention in the medical literature. Fulminating streptococcal, staphylococcal, influenzal and clostridial infections or intoxications—sometimes from food, sometimes from an infected abortion, occasionally from an infected transfusion—can cause death rapidly and with little or no primary autopsy findings.



Fig. 6.—Easily missed corrosive (Lysol) burns on the lips and chin.

Above all it is important to avoid raising suspicion of poisoning until all other possibilities have been most painstakingly explored. In my own experience, when autopsy and laboratory microscopy have failed, analysis is seldom if ever a rewarding resort—above all in the hands of the public analyst who seldom knows anything of microanalysis in pharmacological problems. Alarm and suspicion are likely to be the only rewards of such gestures of despair. However, the same vigilance is necessary at autopsy, or the slightest evidence of unsuspected poisoning (Fig. 6) may escape notice—a trickle of amobarbital from the lips or nostrils, a stray capsule (Fig. 7) (in another

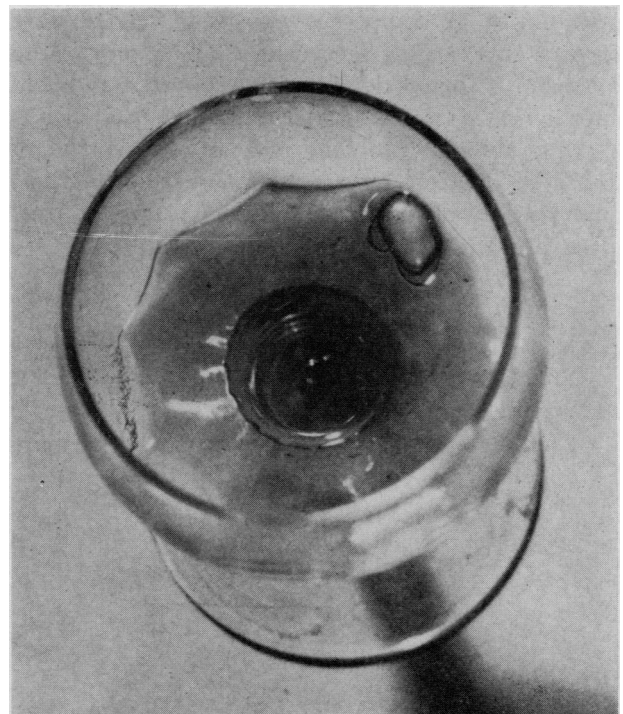


Fig. 7.—A clue to possibilities. An "oblivion" capsule in a wineglass of whisky.

instance, a partially dissolved capsule found in the throat of the victim was the only clue to a child murder in a recent English secobarbital poisoning), or the easily missed colour of the face of a victim of a carbon-monoxide (CO) death may be overlooked. In 100 successive accidental exposures to CO—from gas leaks, coke, oil and other stoves, inadequate ventilation of house gas apparatus, etc., which I examined as obscure deaths, no less than 48% had escaped detection at the scene. The characteristic colour is often to be seen only in the livid stains which lie in the underlying parts of the body—not seen by the doctor visiting the body at the scene. Such cases become obscure for the same reasons—failure to bear in mind the possibilities and slackening of standards of care.

#### CRIME TRACES

Most crimes of violence arise from incidents of small moment, growing like a cyclone into outbursts of major havoc that leave no doubts as to the cause of death. But not all; and it is worth while reflecting for a moment what traces may be detected about a dead body that give the clue to crime.

Sometimes it is *where* the body lies—buried, trussed in a trunk or strangled in a cupboard (Fig. 8)—that tells the tale clearly enough. Sometimes it is some little *disturbance of the clothing*—a tear in the “V” or panties pulled on curiously, as in an abortion death taken to the forest to be discarded (Fig. 9). Sometimes it is *how* the body lies—e.g. legs astride in a rape. Sometimes it is because it is trussed, though self-tying in cases of masochism



Fig. 8.—Murder by strangulation. Death regarded as obscure by doctor who failed to examine the body when called.



Fig. 9.—Clues at the scene: a rucked-up panty-waist indicating the probability of a sex-murder—or abortion.

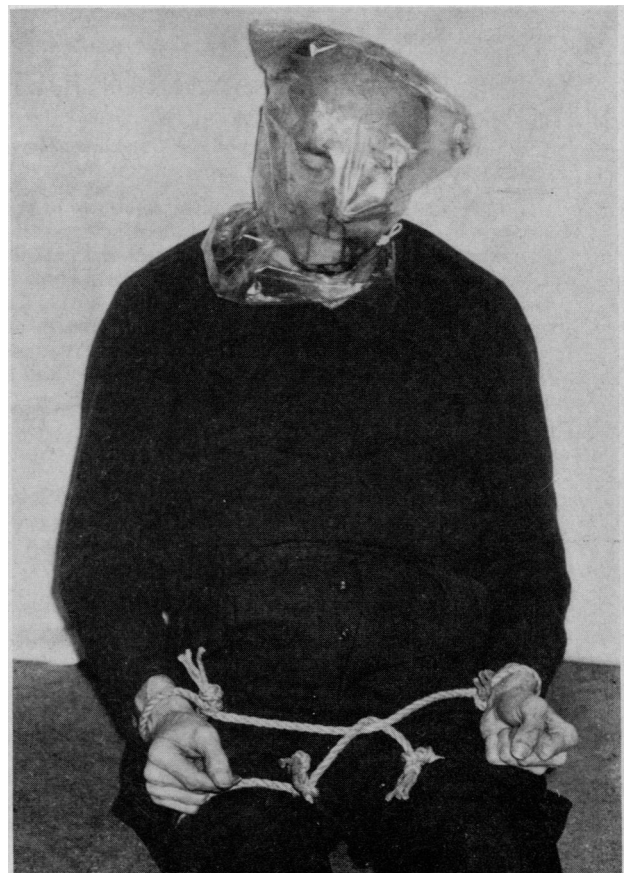


Fig. 10.—Suspicion of crime: a sexy masochistic self-tying and plastic-bag anoxic death.

(Fig. 10), self-suspension and the currently popular plastic bag over the head may all have simple psychotic colour. Sometimes it is in the *character of injuries* done to the body—cutting and stabbing, shooting, poisoning and the like, although all these must be assessed with much care to distinguish accident from suicide—and homicide. Any may be missed for lack of care (*vide supra*) or misinterpreted from lack of experience. In my own experience the asphyxias are easiest to miss altogether, for there may be little to see but a few minute petechiae in the eyelids or conjunctivae, and the shootings are the easiest to misinterpret—for shooting may not have been suspected and accident is so common.

A matron, irritated at an elderly patient's refusal to take a night draught, grappled with her as she screamed and finally pulled a pillow over her face "to quieten her", holding it down until the shouting had died away. The old lady was dead. No one suspected foul play. A doctor was called and the matron just said "Mrs. P. has died; would you give us a certificate?" He did!

An elderly man found dead on a path he often walked over on a Sunday had been attended for hypertension by a doctor. The latter, on being told the old man was dead, gave a certificate stating the cause of death as "Senility: hypertensive heart failure", but

as the old man was being undressed in the mortuary two .22 bullets fell out of the clothing. He had been shot as he strolled along the edge of the wood, by a trigger-happy youth who had stolen a gun. No one suspected the possibility.

A Czech soldier found on Westminster Bridge, dead of a bullet wound through the heart, lay on his back near the parapet. There was no gun, and suspicion was aroused because there was a near (not contact) wound over the breast of the uniform. Could he have inflicted the wound and discarded the gun? He could. The gun was found on dragging the river, with his issue number on it and a single fresh discharge.

As with most problems, the explanation for obscurity is likely to be failure to think of possibilities, lack of powers of perception or ignorance, failure to maintain a high standard of care in examination, or inexperience in interpreting the findings. These are corrigible faults and it behoves us all to tighten our standards: this is particularly necessary where we have erred yet continue to believe that microscopy and the laboratory chemist may still solve our problems. Very occasionally indeed the cause of death remains obscure. This is no cause for shame if due vigilance and care have been shown: the possibility of dying without having a trace of the cause must be admitted—but rarely indeed.

## CANADIAN JOURNAL OF SURGERY

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