

INQUEST & AUTOPSY

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INQUEST

- ◆ The **inquest**, as a means of settling a matter of fact, developed in Scandinavia and the Carolingian Empire before the end of the tenth century. It was the method of gathering the survey data for the Domesday Book in England after the Norman conquest.

INQUEST

- ◆ An **inquest** is a judicial investigation, usually by a group of court-appointed people (jury), in common law jurisdictions. The most common kind of inquest is an inquiry including a medical examination by a coroner into the cause of a death that was sudden, violent, suspicious, or occurred in prison. *Inquest* can also mean such a jury and the result of such an investigation. In general usage, *inquest* is also used to mean any investigation or inquiry.

INQUEST

- ◆ In regions of the world with legal systems modeled on that used in Great Britain, an inquest takes place in a coroner's court, a specially convened court named for the official who oversees it. Under the coroner system, the coroner has the legal responsibility to investigate a death, and to delegate people to perform investigatory tasks; contrary to popular belief, coroners rarely physically examine bodies, as they prefer to allow trained professional medical examiners to perform this task.

INQUEST

- ◆ TYPES:
 1. Police (Section 174 CrPC)
 2. Magistrate (Section 176 CrPC)
 3. Coroner (Coroners Act) (Not held now)



INQUEST



- ◆ Other Inquest models:
 1. Medical examiner system
 2. Prosecutor fiscal



INQUEST



- ◆ Limitations of present system:
 1. Ill trained field staff
 2. No medical background

INQUEST

- ◆ Method Employed:
 - Information to police/ magistrate
 - Reaches scene of crime
 - Inspects scene and collect evidences
 - Prepares “Panchnama”
 - Record witnesses
 - Fill up inquest papers
 - Send body for post-mortem/ recommend for
waive off

INQUEST

- ◆ Inquest papers consists of:
 - Application for postmortem
 - Brief facts of the case
 - Form 25.35.a/b/c
 - Statement of two relative/ any other person identifying the body
 - Copy of FIR if lodged already



AUTOPSY/ POST-MORTEM



- ◆ – Definition and purpose
- ◆ – Legal requirements
- ◆ – Reasons for autopsy
- ◆ – Preparation
- ◆ – Procedure
- ◆ – Results

AUTOPSY/ POST-MORTEM

- ◆ Autopsy is a misnomer
- ◆ Post-mortem: Post means after, Mortem (band), a death metal band from Peru
- ◆ Post-mortem examination, an examination of a corpse (dead body).

AUTOPSY (TYPES)

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graph TD; A[AUTOPSY (TYPES)] --> B[Clinical or Academic autopsy]; A --> C[Medico-legal or Forensic Autopsy]
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Clinical or
Academic
autopsy

**Medico-legal
or Forensic
Autopsy**

AUTOPSY/ POST-MORTEM

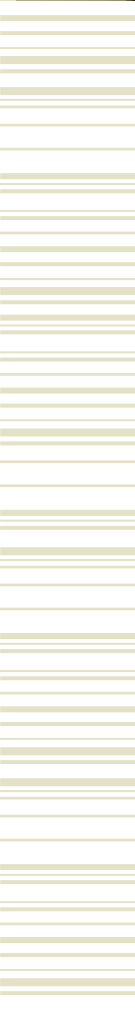
Definition and purpose

- Autopsy or post-mortem examination
- A thorough examination of a body after death to help determine:
 - ◆ – Why (cause of death)
 - ◆ – How (manner of death)





PREPARATION

- If not required by law, permission needed from the next of kin
 - Legal consent form
 - Legally what deaths must be reported to and investigated by the police/
magistrate
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REASONS FOR AUTOPSY

Why is it done ?

- injury/ trauma
- delayed complications of injuries
- poisoning
- infectious complications
- foul play
- people who die with no attending physician

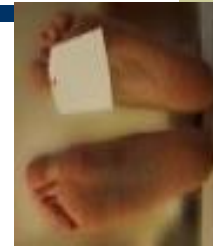
PROCEDURE

- Complete medical history and review of records, including the events leading to death



EXTERNAL EXAMINATION

- a. Body tag
- b. Weight and height
- c. Clothing and valuables identified
- d. Scars, tattoos, injuries, wounds, bruises recorded
- e. Foreign objects noted
- f. Photos and x-rays (if needed)





INTERNAL EXAMINATION

- a. Dissection of head and abdomen
- b. Organs removed, weighed, measured and examined
- c. Tissue samples examined under microscope
- d. Fluid samples tested for drugs, infection

TIME OF DEATH

- ◆ Methods to determine time of death
 1. Traditional indicators
 - a. Rigor mortis
 - b. Begins three hours after death in face and eyelid muscles
 - c. Takes twelve hours to affect entire body
 - d. Process reverses after 36 hours

Rigor mortis

An unfortunate victim of suicide. Note that rigor mortis has maintained the position of his arms after the shotgun has been removed. Rigor mortis occurs because metabolic activity continues in the muscle after death.



POST-MORTEM STAINING

- Visible 30-60 minutes after death
- Red cells settle and skin below turns red
- In 6-10 hours, color becomes permanent



ALGOR MORTIS (POST-MORTEM COOLING)

- Usual temperature of a healthy adult is
 - 98.4°F (37°C) by mouth
 - 99° F at rectum under same condition
 - 97° F in Axilla
 - Daily variation is up to 1-1.5°F
 - Roughly in cold and temperate climates rate of fall of temperature is 1.5°F per hour and 0.75°F per hour in tropical climates

ALGOR MORTIS (POST-MORTEM COOLING)

- **Formula is**

Normal body temp. (98.4°F) - Rectal temperature

=

Rate of temp. fall per hour

= App. Numbers of hour since death



PUTREFACTION/ DECOMPOSITION

It is the final stage of dissolution of body tissues resulting in breaking down of complex organic body constituent into simpler inorganic ones by two process:

- Autolysis
- By bacterial action (dominant)

PUTREFACTION/ DECOMPOSITION

- The first visible sign of putrefaction is appearance of greenish discoloration of the skin of anterior abdominal wall, usually right iliac fossa.
- This patch of discoloration usually appears between **12-18hours** in summers and **1-2 days** in winters.
- This green patch spread over the entire body in next **24hours**.



ADVANCE STAGE OF PUTREFACTION



ADVANCE STAGE OF PUTREFACTION

- Side by side , body begins to emits nauseating smell due to gradual development of gases of putrefaction.
- In summer, gases accumulate in the intestine during **12-24 hrs** after death.
- Abdomen swells up in **24-48 hrs** after death.
- **Marbling**: blood in the vessels is haemolysed which stains the vessel walls and the adjacent tissues, give rise to marbled appearance.
- Marbling of the skin becomes prominent in about **36-48 hrs** after death in summers.

MARBLING



ADVANCE STAGE OF PUTREFACTION

- Gas accumulate between dermis and epidermis of layer of skin results in formation of blisters. Thereafter loosening of epidermis known as **skin slippage** or peeling of skin. This is seen in **2-3 days** .
- Between **3-7 days** Teeth, Hairs and Nails become loose. Skin of hands and feet may come off in a glove and stocking fashion.

SKIN SLIPPAGE



ADVANCE STAGE OF PUTREFACTION

- By **5-10 days** soft firm tissue changes into thick, semisolid black masses.
- **Skeletonization** of the body may usually occur in **1-1½ months** but it depends upon multiple factors. Such as
 - Weather
 - Medium (Air, Water, Chemicals , buried under the earth etc)
 - Insects and animals
 - Endogenous factors
 - Cause of death
 - State of the body
 - Clothing upon the body
 - Age and gender

SKELETONIZATION



Skeletonization

MODIFICATION OF PUTRIFACTION

- ◆ **Adipocere formation/ saponification**
 - It is formed by the hydrolysis and hydrogenation of body fats after death by the action of bacterial enzymes.
 - Optimal conditions for its formation are
 - Abundance of moisture
 - Presence of bacteria (Clostridium welchii)
 - Relative diminution of air
 - Abundance of adipose tissue in the body
 - Usually it occur in **3-6 months** after death.

ADIPOCERE FORMATION/ SAPONIFICATION



adipocere/ saponification

MUMMIFICATION

In this drying and desiccation of the tissues occur instead of liquefaction.

- Optimal conditions:
 - Deprivation of moisture
 - Free circulation of air around the body
 - Hot dry atmosphere.
- Usually it occur in **1-3 months**.

MUMMIFICATION



mummification





MODES OF DEATH

- ◆ Asphyxia (Lungs)
- ◆ Syncope/ shock (Heart)
- ◆ Coma (Brain)

MANNERS OF DEATH

- ◆ Natural
- ◆ Un-natural:
 1. Accident;
 2. Suicide; and
 3. Homicide
 4. Indeterminate

Difference Between Ante-mortem & Post-mortem Injury

Hemorrhage	Abundant, copious	Slight or absent
Signs of spurting	Present on body & clothes	No evidence
Coagulation	Firmly coagulated blood	No clotting or soft clot
Extravasated blood	Infiltrate in and around injured tissues and resist	Tissues are not deeply stained; can be easily

Difference Between Ante-mortem & Post-mortem Injury

Wound edges	Swollen, everted and retracted	Do not gape and edges are closely approximated
Vital reaction	Signs of inflammation and repair present	Absent



Difference in Suicide & Homicide



◆ Suicide

◆ Homicide



Second Autopsy

- ◆ Not satisfied with the outcome of 1st Autopsy
- ◆ Request by Relations
- ◆ Request from investigators
- ◆ Procedure



Thanks for your time
and active
participation