



## **CASE REPORT**

# **Identification of Victims Who Have Experienced Advanced Decay**

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### **Abstract:**

**Introduction.** In the process of investigating a criminal offense, knowing the identity of the victim is something that has a very important meaning, namely as an initial step of the investigation that must be made clear before the next steps can be taken in the investigation process. **Case.** reported cases of a group of bones thought to have originated from human bones. Taken to the hospital to identify who the victim was. **Results.** Examination found a collection of 196 human bones, in the form of head, neck and the whole body remains bones as well as the right upper limb and lower limb still found skin and muscles that began to dry, blackish brown, foul smelling, a black cocoon (pupa) with a length of 3 cm, and a white maggot (instar I larvae) with a length of 0.5 cm.. **Conclusion.** Collection of bones derived from humans, with an estimated Mongoloid race (Asian), male sex, age 15-25 years (fifteen to twenty-five years), height 157-165 cm (one hundred fifty seven to one hundred sixty five centimeters), duration of death 10-20 days (ten to twenty days), with signs of violence in the form of blood infiltration on the left head bone and right skull fracture that extends to the back. The cause of death of the victim is blunt trauma to the head that causes a skull fracture.

**Keywords:** victim identification, further decay

### **Introduction**

#### **Preliminary**

In the process of investigating a crime, knowing the identity of the victim is something that has a very important meaning, namely as a first step in the

investigation that must be made clear before further steps can be taken in the investigation process. If the identity of the victim cannot be known, then it is impossible to carry out an investigation. Furthermore, if the investigation does not

find the identity of the victim, it is unavoidable that there will be errors in the judicial process which can have fatal consequences (Amir A. 2005).

Identification is an attempt to re-identify unknown victims, either alive or dead, from those that are still intact and have not decomposed to the remaining tissue. Identification aims to determine a person's identity, especially for deaths involving criminal and civil cases. (Gani M.Husni, 2002)

The role of forensic medicine in identification is mainly on unknown bodies, bodies that have been damaged, decomposed, burned, and mass accidents, natural disasters, riots that resulted in many deaths, as well as pieces of human bodies or skeletons. Of the nine known identification methods, only the method of determining identity with fingerprints (dactyloscopy), is not usually done by doctors but is carried out by the police. The other eight methods are the visual method, clothing, jewelry, document, medical, dental, serology, and exclusion method. In forensic medicine, identification examination is known which is part of the task that has a quite important meaning. It is stated that what is meant by identification is an attempt to find out the identity of a person through several characteristics that exist in an unknown person, in such a way that it can be determined that that person is the same as the missing person who was previously thought to be also known by those characteristics. That's all, identification has an important meaning both in terms of forensic and non-forensic purposes. How do identify if the corpse is dismembered or has become a skeleton? In this case, identification is the doctor's job.

### Identify the framework

The identification effort on the skeleton aims to prove that the skeleton is a human skeleton, race, gender, estimated age, height, special characteristics, and deformities and if possible facial reconstruction can be done. They also look for signs of bone violence and estimate the cause of death and the estimated time of death.

### Case Report

We report a case of a collection of bones thought to have come from human bones.



*Figure 1. A collection of bones in a plastic jute bag*

### Result

We found a collection of human bones totaling 196 pieces, in the form of the head, neck, and whole-body only bones (Fig. 1), and the upper right limbs and lower limbs still found skin and muscles that began to dry, blackish brown, foul-smelling, found a black cocoon (pupa) with a length of 3 cm, and white maggots (instar larvae) with a length of 0.5 cm.

On examination for signs of death, we found the head, neck, and whole-body only bones. On the right upper limb and lower limb, the skin and muscles were

found to be dry, blackish-brown in color, and had a foul smell.

We found one yellowish skull bone (cranial bone). The fracture was found on the right skull back to the back of the skull (parietal bone – occipital bone), with blackish edges with a length of 15 cm (fifteen centimeters), a width of 0.1 cm (zero-point-one centimeter), at 6 cm (six centimeters) from the bone tip of the right ear cavity (right process mastoid), and 9.5 cm (nine-point-five centimeters) from the bone tip of the left ear cavity (left process mastoid).



**Figure 2.** *The fracture was found at the parietal bone and occipital bone*

It was found that the junction of the anterior skull bones (coronary suture) had not yet fused, the junction of the middle skull bones (sagittal suture pars obelion) had begun to fuse (degree 1) (Fig. 2), and the junction of the posterior skull bones (lambdoid suture) was found not yet merged.

The largest length of the skull was found, measured from the connecting bones of the left and right forehead at the midline of the body and at the base of the nose (glabella) to the back of the skull at the midline of the body (median-sagittal plane) 18.5 cm and the greatest width of the skull measured by distance. The outer

wall of the temple bones is perpendicular to the midline of the body (median-sagittal plane) by 15 cm so that the cephalic index is 81.

We found the forehead bone (frontal bone) erect. Found connecting the left and right forehead bones on the midline of the body where the bridge of the nose (glabella) protrudes. Found the eyebrow bone (superciliary arch) protruding. Found cheekbones (zygomatic bone) protruding. Found the eye socket (orbital cavity) rectangular. Found the nasal cavity with a length of 3.5 cm, and a width of 2.8 cm. Found the connection between the forehead and nose bones on the midline of the body (nasion) with clear angulations.

We found the length of the nasal bone is 1.8 cm. Found bony protrusion of the left and right ear cavity (process mastoids). The roof of the mouth (palate) is U-shaped. Found the protuberance of the coccyx of the head (external occipital protuberance) is not prominent. At the opening of the head cavity, no brain tissue was found. Lower jawbone: A narrow V-shaped lower arch (mandibular notch) is found. An opening in the lower jaw (mental foramen) is found near the middle of the jawbone. It was found that the angle of the jaw (mandibular angle) was approximately 120°. There were no tooth fractures. The teeth were incomplete and still attached to the upper and lower jaws, totaling 18 teeth.

On the upper jaw:

- M1 right and left: no visible wear.
- M2 right and left: no visible wear.

- M3 right and left: not growing yet.

On the lower jaw:

- M1 right and left: no visible wear.
- M2 right and left: no visible wear.
- M3 right and left: not growing yet.

The diameter size of the first molar tooth is 1 cm

Found five cervical vertebrae (cervical spine). No fractures were found. Found twelve spinal vertebrae (thoracic spine). no fractures were found. Found five lumbar vertebrae (lumbar spine), no fractures were found. Found two collarbones (clavicle bones) left and right. No fractures were found. Found two shoulder blades (scapula bones). No fractures were found. Found three breastbones (sternum bones) that are attached, the length of the upper breastbone (manubrium sterni) is 5.8 cm, and the length of the middle breastbone (corpus sterni) is 8.2 cm. Found twenty two ribs, left and right. No fractures were found. Found two pelvic bones (coxal bones) right and left. High shape, narrow and rough surface. The outer surface of the pelvic bone (iliac crest) has a clear S-shape. The preauricular sulcus is not specific. The arch is formed by the ventral cranial margin of the auricular fascia with the ventral cranial margin of the greater sciatica. The pelvic bony notch on the side (greater ischiatic notch) is narrow. The horns of the lateral pelvic bone (ischial spine) point towards the center. Found a hole in the side of the pelvic bone (obturator foramen), triangular. The angle

is formed by a line drawn from the pubic bone and the sitting bone (large ischia). The right hip joint (acetabulum) was found, with a diameter of 4.4 cm and a depth of 2.7 cm. Found the angle of the pubic bone (angulus subpubicus) less than 90°.

Found the pelvic inlet (superior pelvic aperture) rather wide and shaped like a heart (oval). A narrow pelvic inlet was found. Found a narrow pubic bone joint (symphysis pubis), but no fractures were found.

In the collarbone (sacral bone), found five pieces of bone that are attached to one, shaped like an isosceles triangle, with a base width of 10 cm, right side length: 13 cm, left side 13 cm long. The shape of the sitting bone (sacrum) is curved, there are no fractures. In the coccygeus bone, three pieces of bone were found that were attached to one. No fractures were found. Upper limbs Found two upper arm bones (humerus bones) right and left, with a length of 28.5 cm each.

There were two right and left ulnar bones, each measuring 24.5 cm long, and two right and left radial bones were found with a length of 23 cm each. Found eight wrist bones (carpal bones) on the right. Found five bones in the right palm (metacarpal bones). Found fourteen finger bones (phalanges bones) in the right hand. The lower limbs were still found to have dry skin and muscles, blackish-brown in color, foul-smelling, and advanced decay. Found two bones of the upper leg (femur bones) right and left, the length of the upper leg bone 41 cm. Found a large protrusion of the upper leg (greater trochanter) protruding, a channel (trench) in the large protrusion of the upper leg (trochanteric

fossa) is deep. The line that runs from top to bottom of the upper leg (linea aspera) is prominent, the angle formed by the neck (femoral neck) and the body of the upper leg (shaft of femur) is blunt.

Found two kneecap bones (patellar bones) right and left. Found two shin bones (tibial bones) right and left with a length of 37 cm. Found two calf bones (fibular bones) right and left with a length of 35 cm, no fracture was found. We found the ankle bones, the bones of the soles of the feet, and the toes of the right and left feet, still attached, covered in crushed muscle and skin, black and foul-smelling. No fracture was found.

Samples were taken from several pieces of bone and teeth of the corpse to prepare for DNA and blood group examinations if someone declares themselves that they are the victim's family.

## Discussion

From the results of the post-mortem in the form of bones, the 9 questions regarding the bones can be explained as well as the conclusions of the examination results, which:

1. The result of the examination showed the bones are human bones seen from the anatomical shape of the long bones, pelvic bones, and other bones. In terms of the anatomical shape, these bones are specially assessed on large bones such as the skull, which macroscopically follows the anatomical shape of human bones. Examination with the precipitin test can be done if macroscopically doubtful, for example, if the bones

found are only small pieces of bone that are not specific.

2. The bones come from one individual, judging from the size of the bones, the number of bones, the color of the bones, the density of the bones, and the left and right of the bones. If it is difficult to determine macroscopically, then the examination that can be done to determine the number of individuals is by serological examination (blood group) and DNA examination for each existing piece of bone.
3. The sex of the victim, judging from the anatomical shape of the cranium, long bones, and pelvis, was male.
4. The estimated height of the victim is seen by measuring the long bones using several formulas:
  - Trotter and Glesser formula for mongoloid = (156.92 – 164.52) cm
  - Estimated height roughly = 164 cm
  - Estimated height according to UGM physical anthropology = 161.04 cm
  - Estimated height according to Topmid and Rollet formula = 90.2 cm
  - Estimated height according to Parikh formula = 156.62 cm
  - Estimated height according to Stevenson's formula = 159.49 – 163.84 cm
  - Estimated height according to Djaya Surya Atmaja = 160.13 – 168.84 cm

From various formulas to produce an estimate of height, in this case, we determined the victim's height (156.92



- 164.52) cm according to the Trotter and Glesser formula because this formula is more suitable for Indonesians.
5. The estimated age of the victim is seen from:
    - The degree of suture obliteration, where obliteration of the S3 sagittal suture was complete/complete in the age range of 20-29 years for males, while in this victim obliteration still occurred at the early stage of the S3 sagittal suture (degree 1), so we conclude that the age of the victim is 20-25 year.
    - The fusion of the epiphyses with the diaphyses at the ends of the long bones of the femurs appears to have been fully fused, with an age range of more than 18 years.
    - There are still 28 teeth (7 for each part) which mean that the third molars (M3) have not yet grown, the age range is 12-14 years, while M3 grows at the age of 17-25 years, which means the current age range of the victim between 12-25 years.
    - The degree of tooth wear, the first molars (M1) and the second molars (M2) were found to have zero degrees of wear (no visible wear), while the third molars (M3) had not yet grown, so the victim's bones belonged to the age group 15-25 year.
    - From all the measuring tools for the estimated age of the corpse/bone above, we conclude that the estimated age of the victim is a young adult with an estimated age of 18-25 years.
  6. The estimated length of death is around 10 – 20 days, based on:
    - Thanatology states that corpses die for 6-10 days, the soft tissues of the body soften and eventually become destroyed, the chest and abdominal cavities can be seen because some of the muscles have been destroyed, and so on until finally only bones are left.
    - Forensic entomology states, that if there are cocoons that have hatched into adult flies, the time of death is approximately 11 days or more. Meanwhile, the victim found cocoons and larvae, which means that the second fly cycle is currently underway. This means, death between 11-22 days.
    - Estimates based on odor, color, and bone compactness, found that this collection of bones had a foul smell, and yellow color and was still quite dense so it was included in the bone age group of fewer than 5 months.
    - Bone age estimation based on Bernard's method (determination of nitrogen content, amino acids, benzidine reaction, fluorescence, immunology) was not carried out because this assessment is specific to bone age over 5 years to 800 years.

Of all the measuring tools for determining the age of the bones above, considering the condition of the corpses, some of which have undergone a process of advanced decomposition and some still show skin and muscle tissue, and maggots in the form of instar larvae and cocoons

are found, I tend to use the science of thanatology and forensic entomology. From the two sciences above, I conclude that the duration of the victim's death is estimated to be 10-20 days

7. Assessment of the collection of bones comes from the Mongoloid race, it can be seen from:

- The anatomical shape of the prominent zygomatic bone, square cranium,
- Head index (cephalic index) 81 which is suitable for mongoloid race.

Some of the other body index values in this victim are:

- a) Brachial index : 80,70
- b) Crural index: 90.24
- c) Humero-femoral index: 69,512

8. Signs of antemortem/postmortem violence on these bones were blood infiltration in the left skull and right skull fractures that extended to the back, where the edges of the fractures were darker in color than their surroundings, this indicates that the trauma/fracture that occurred during antemortem (occurs while the victim is still alive).

9. The cause of death of the victim was blunt trauma to the right side of the head which caused the skull bone to fracture.

### Legal aspects

Based on the investigator's report, until now no one has been named as a suspect. The case is still under investigation,

however, the legal sanctions that can be imposed on the suspect/perpetrator are:

#### 1. Article 338 of the Criminal Code concerning crimes against life reads:

"Whoever deliberately takes the life of another, is threatened with murder with a maximum imprisonment of fifteen years."

#### 2. Article 340 of the Criminal Code reads:

"Whoever intentionally and with premeditated deprivation of another person's life, is threatened with premeditated murder, with a death penalty or imprisonment for life or for a certain period of time, a maximum of twenty years."

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