CASE REPORT

Handling The Identification of Burn Victims in A Traffic Accident: A DVI Case Report

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ABSTRACT

The role of the forensic pathologist in a mass disaster is to identify the victims. The procedure refers to Interpol's Disaster Victim Identification (DVI) guidelines. DVI consists of 4 stages namely Scene Examination, Post-Mortem Examination, Ante-Mortem Examination, and Reconciliation. Post-Mortem (PM) and Ante-Mortem (AM) data collected include fingerprints, dental records, DNA as Primary Identifiers, medical records, and property as Secondary Identifiers. At the reconciliation stage, at least there must be a match between one Primary Identifier or two Secondary Identifiers. Theoretically, 4-phase DVI should be performed according to the DVI standard in every disaster case. In fact, the implementation of DVI encountered many obstacles in the field. This article discusses the various obstacles and problems faced when conducting DVI in the case of a car accident with a truck on the Madiun-Ngawi toll road at KM 631 A to the Madiun – Nganjuk toll road. The chronology of this incident began when the elf's vehicle hit a truck and a concrete barrier and then caught fire. Three victims were found in a burned condition leaving only the skeleton, thigh and psoas muscle. This of course does not allow fingerprints to be checked. The identification process is carried out only by comparing primary and secondary data as an identification guide given the condition of the bodies that are only slightly left. Then DNA examination was not carried out in this identification process. Tests for CO levels showed that the three victims indicated CO poisoning before they died.
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INTRODUCTION

The number of disasters that have claimed many lives has recently been increasing in Indonesia. This condition is reflected in the mass media coverage, which often report on disaster events, such as bomb terror acts, transportation accidents, earthquakes, tsunamis, floods, landslides, volcanic eruptions, aviation accidents and incidents, and others. The National Disaster Mitigation Agency (Badan Nasional Penanggulangan Bencana or BNPB) has collected data on the distribution of disaster events in Indonesia from 2010 to 2020, showing that the number of disasters tends to increase in the last ten years.

Definitions of disaster vary widely. According to WHO, disaster is any event that causes damage, ecological disturbance, loss of human life or deterioration of health or health services on a certain scale that requires a response from outside the affected community or area (Efendi & Makhfudli, 2009).

The role of the forensic pathologist in a mass disaster is to identify the deceased. identification procedure refers to the Interpol Disaster Victim Identification (DVI) guidelines. The DVI process consists of 4 stages namely Handling at the Crime Scene, Handling PM Units, Handling AM Units, Handling Data Comparison Units/Reconciliation. PM and data collected include fingerprints, dental records and DNA as Primary Identifiers as well as medical records and property as Secondary Identifiers. AM data is entered into yellow form and PM data is entered into pink form. At the reconciliation stage, someone stated that they were identified, by comparing AM and PM data. There is at least a match between one Primary Identifier or two Secondary Identifiers. Theoretically, the four DVI phases should be carried out according to the DVI.

In fact, many obstacles are encountered in the field to implement the DVI guidelines such as the large number of bodies, limited storage, forensic pathologists and time, family authority, and lack of coordination, pose many obstacles to the consistent implementation of DVI procedures (2). This article discusses the numerous constraints and problems encountered when performing DVI in the case of a car accident with a truck on the

Madiun-Ngawi toll road.

CASE REPORT

An accident occurred on Thursday, 12/03/2020 at 05.30 WIB at KM 631 A toll Madiun - Nganjuk, with chronology: This incident began when Elf's vehicle hit a truck and the concrete road barrier then caught fire. At first, the Elf car, numbered DK 8725 GV, driven by Mali, a resident of Batuampar, Pamekasan, drove from the West-East (Jakarta-Pamekasan) direction at a moderate speed in the slow lane. Arriving at the TKP KM 631/A, it was suspected that the driver of Elf's vehicle was sleepy, unable to maintain the speed and safe distance of the vehicle, so it crashed into a truck with Nopol D-8489-TM which was in front of it.

Figure 1: An elf car that caught fire due to an accident on the Madiun-Nganjuk Toll Road KM 631

This caused the truck to roll in reverse. Elf's car continued to hit the concrete barrier on the left. Then Elf's vehicle caught fire and three passengers were still in Elf's vehicle with the final position of Elf's vehicle and truck stopping on the shoulder of the road. The situation of sloping traffic flow, smooth and cloudy weather. The truck driver named Muh A Yudi Purwanto (29 years), a resident of Unggahan RT 03 RW 02, Trowulan, Mojokerto. He was seriously injured with a broken right leg. Meanwhile, the Elf driver is Mali from Sampang, Madura. He suffered minor injuries, including bruises on his face. Three people died and 10 people were injured in the accident. Based on information from the TKP, together with PJR, the speed is estimated to be between 60 to 80 km per hour.

DISCUSSION

Identification of mass disasters victims is an effort to reintroduce the identity of a person, either from the dead or deceased victim. Meanwhile, mass identification is the process of identifying the identity of the mass victims of a disaster. Mass identification of disaster victims is conducted by adopting the Disaster Victim Identification (DVI) method recommended by Interpol.

Examinations were conducted on three dead victims of a car accident that took place on Thursday, March 12, 2020, at 05.30 WIB on Kilometer 631 A of the Madiun–Nganjuk toll road, namely Mrs.S (45 years), Mr. J (40 years), and Mr. Z (40 years), and 10 injured victims, labeled as M, F, A, F (child), R, S, R, S, S, and Mr. Y (the car driver).

The DVI process consists of 4 interrelated phases such as Scene Examination, PM examination, AMExamination, and Reconciliation.

A Scene Examination is conducted at the accident scene and the resulting consequences or other places where the victim and evidence related to the accident were found. This examination was led by members of the National Police and consisted of forensic experts, forensic odontologists, fingerprint experts and anthropologists (3).

A Mortuary or PM examination is conducted to collect PM data based on the results of a forensic examination of the victim's body. The examination is led by a forensic expert and consists of a forensic odontologist, fingerprint expert, anthropologist and photographer (4). In this examination, testing of carbon monoxide (CO) levels must be carried out in cases of motor vehicle death, because sometimes acute CO poisoning can cause death. Exhaust systems in damaged vehicles are a source of CO. CO in the blood is an important indicator that the victim is still alive after a fire occurs. The presence of a saturation level between blood and HbCO which is higher than that of smokers, which is 5%, indicates that breathing occurs after the fire has started. This examination was carried out on the three bodies. The results of the PMexamination (Table I) showed that the three victims indicated CO poisoning and died.

An AM examination is conducted to collect important data related to the victim before the incident or while the victim is still alive, including dental and medical records, fingerprints, and properties used/carried. The identification was carried out by a forensic specialist consisting of a forensic odontologist, a fingerprint expert and a photographer. The team will receive a report from the crime scene and ask for as much data as possible from the victim's family in the form of name, age, weight and height, clothes, jewelry, skin color, eyes, hair colors, blood type, fingerprints and some others medical report (5). The family that has a DNA data it can be included and for family without this information, the DNA analysis can be done by using a blood sample from the victim's. However, in fact this fingerprint identification could not be done due to the condition of the bodies in which only the skeleton, thigh muscle, and psoas muscle remained. Then the DNA examination was not carried out because the bodies had been identified with the identification results of PM and AM as shown in Table I.

Table I: Identification Process of victim.

Post-Mortem	Ante-Mortem	Identified
1. (IFXX 20.XX5/B1): 1. Sex: Male 2. The 2nd upper right incisor protruded inwards (approximately 25-40 years old). 3. The 2nd upper left incisor was perforated. 4. The body was burnt (scorched) 5. The upper right and left limbs were missing 6. Wearing a digiti IV D red agate ring 7. Wearing a digiti IV S purple agate ring 8. The body length from the head to the hip was 118 cm 9. Soot was found in the airways (trachea). 10. Formalin test: Indicated CO poisoning.	**Information from M. Rodi (Older Brother):** 1. Name: Mr. Z 2. Date of birth: 12/14/1987 (33 years old) 3. Last seen wearing: - White shirt - White sport trousers - Black sandals - Rolex black metal watch - Two red and black agate rings 4. Special Characteristics: - The right front teeth protruded inwards (crooked). - There is a scar on the back of the left hand (due to broken glass) Height 170 cm, weight 90 kg	**Body 1 (IFXX 20.XX5/B1)** **Based on primary data in the form of:** a. The 2nd upper right incisor protruded inwards. b. The 2nd upper left incisor was perforated. **Secondary data based on medical examination:** 1. Sex: Male 2. The body was burnt (scorched) 3. The upper right and left limbs were missing 4. Wearing a digiti IV D red agate ring 5. Wearing a digiti IV S purple agate ring 6. The body length from the head to the hip was 118 cm 7. Soot was found in the airways (trachea). Identical to the Ante Mortem data of Mr. Z
2. (IFXX 20.XX6/B2): 1. Sex: Female 2. The symphysis bone appeared to be flat (adult): approximately 35-40 years old. 3. No teeth were found. 4. Existing organs: right and left lungs, liver, spleen, heart, intestines, bladder, cervical spine, spine, pelvis, which appeared to be charred (burned). 5. Formalin test: Indicated CO poisoning, uterine findings.	**Information from Abdul Basit (cousin):** 1. Name: Mrs. S 2. Sex: Female 3. Date of birth: 04/19/1978 (40 years old) 4. Height: 165 cm, Weight: 58 kg 5. The only dead female victim of the accident	**Body 2 (IFXX 20.XX6/B2):** **Based on primary data in the form of:** a. No teeth were found. **Secondary data based on medical examination:** a. Sex: Female b. The symphysis bone appeared to be flat (adult): approximately 35-40 years old. c. Existing organs: right and left lungs, liver, spleen, heart, intestines, bladder, cervical spine, spine, pelvis, which appeared to be charred (burned). Identical to the Ante Mortem data of Mrs. S
3.(IFXX 20.XX7/B3): 1. Sex: Male Body length: 92 cm (head to upper limbs) 2. Properties: Several pieces of paper money (two pieces of IDR100,000 & eight pieces of IDR50,000) 3. Approximate tooth age: 20-45 years Sutures: 30-60 years 4. Teeth: dental caries (11) (12), dental fillings (21) on the upper left incisor and upper left molar, MAM (26) (36) (46) (47) on the upper right, NON (28) 5. Formalin test: Indicated CO poisoning	**Information from Anwar (Uncle)** a. Name: Mr. J b. Sex: Male c. Date of birth: 11/10/1982 (38 years old) d. Upper front teeth (cracked and filled) e. The upper left and right molars were extracted. f. Height: 158 cm (fat, short straight hair) g. Shorts and sarong h. Bringing money of ± IDR700,000	**Body 3 (IFXX 20.XX7/B3)** **Based on primary data in the form of:** a. Teeth: dental caries (11) (12), dental fillings (21) on the upper left incisor and upper left molar, MAM (26) (36) (46) (47) on the upper right, NON (28) b. Approximate tooth age: 20-45 years **Secondary data based on medical examination:** a. Sex: Male b. Approximate age based on the suture: 30-60 years old Identical to the Ante Mortem data of Mr. J

Reconciliation consists of data matching with various identification methods in the form of primary identification (fingerprints, dental records, and DNA) and secondary identification (personal description/ medical findings, and victim's properties). A person can be declared identifiable if there is a match between AM and PM data of at least 1 type for primary identification and 2 types for secondary identification (Ismail & Syarifudin, 2020). The three dead victims were taken to Bhayangkara Hospital, Nganjuk. The results of the identification was displayed in table 1.

Body 1 (IFXX 20.XX5/B1) Based on primary data in the form of 2 upper right incisors protruding inward and 2 upper left incisors with cavities then secondary data based on medical examination identified male sex, burned body and upper limbs left and right missing, one body was identified wearing a red agate ring digiti IV D and a purple agate ring digiti IV S, body length from the tip of the head to the pelvis was 118 cm and soot in the respiratory tract (trachea) from these results it can be concluded that the data are identical to the AM data Mr. Z.

Body 2 (IFRSB KDR 20.146/B2) based on primary data, the teeth were not found and secondary data from medical and property examinations identified female gender, the synapses appear flat (adult) Estimated age is 35-40 years, the organs are in the form of right and left lungs, liver, spleen, heart, intestines, bladder, cervical spine, spine, pelvis, which appeared to be charred (burned). From these results it can be concluded that the body of 2 was identified as Mrs. S.

Body 3 (IFRSB KDR 20.147/B3) based on primary dental data including dental caries (11) (12), dental fillings (21) upper left upper molars, MAM (26) (36) (46) (47) upper right, NON (28) with an estimated age of 20-45 years. For secondary data from medical and property examinations identified as male and an estimated age of 30-60 years from these data it can be stated that 3 bodies identified as Mr.J.

Theoretically the four phases of DVI must be carried out according to the DVI standard in disaster cases, but the facts in the field are that the body's fingers are not found and have been burned leaving only the bones and psoas muscles. In addition, in this case, DNA analysis was not carried out because the three bodies could already be identified at the time of reconciliation between the PM and AM data.

CONCLUSION

The three bodies were identified based on findings from the primary dental and secondary medical as well as their properties.

REFERENCES

1. DEPKES RI – POLRI. Pedoman Penatalaksanaan Identifikasi Korban Mati pada bencana Massal, Disaster Victim Identification. Cetakan ke dua. Jakarta: direktomo; 2006.

2. Interpol. Disaster Victim Identifiation Guideline. 2018. http://www.interpol.int/public/ICPO/PressReleases/PR2018/PR201831.as.

3. Toetik Koesbardiati and Delta Bayu Murti. Petunjuk Identifikasi Rangka Manusia. Surabaya: CV. Cakra Nusantara Surabaya; 2018.

4. Saukko P and Knight B. KNIGHT's Forensic Pathology Fourth Edition. CRC Press; 2016.

5. Dominick J and Vincent JM. Forensic pathology 2nd Edition. CRC Press; 2001.