

Trismus Analysis Due to Head Trauma in Forensic Cases: Case Report

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ABSTRACT

Background: Head trauma frequently happens in cases of physical violence, particularly in cases of abuse. A common sign of head trauma is trismus, characterized by difficulties in mouth opening, which can diminish an individual's quality of life and disrupt daily activities. The prognosis of trismus is contingent upon various factors, necessitating appropriate management in its therapy. The age factor and the severity of the etiology of trismus must be evaluated to determine the appropriate treatment. This condition also influences the decision-making over the classification of the wound documented in the Visum et Repertum for judicial purposes.

Case: Two different cases with head injuries accompanied by trismus became the basis for analysis to determine the degree of injury for the post mortem.

Discussion: In each case, it is necessary to consider the age, the need for care in handling the victim, the length of healing required and the prognosis of recovery to determine the degree of injury. This is related to the law in Indonesia in cases of violence.

Conclusion: The trismus that occurs in cases is caused by a variety of predisposing variables, which necessitates a separate calculation when calculating the degree of wound qualifying.

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INTRODUCTION

Cases of violence in Indonesia continue to increase every year. Violence can be divided into physical violence, sexual violence, and psychological or mental violence.(1) Physical violence that often occurs is the crime of abuse. Indonesian law has classified persecution in several articles of the Kitab Undang–Undang Hukum Pidana (KUHP) as well as its liability. One of the articles of persecution is article 351 of KUHP paragraph (2), which states that: "If the act results in serious injury, the offender shall be sentenced to a maximum imprisonment of five years." Further provisions on serious injury referred to in the article are set out in article 90 of the KUHP, which states that serious injury is as follows (2):

- a. Experiencing an illness or injury with no prospect of recovery or a risk of mortality;
- b. Inability to consistently fulfill the responsibilities;
- c. Loss of one of the senses;
- d. Sustaining a significant disability;
- e. Enduring debilitating pain;
- f. Cognitive impairment lasting over four weeks;
- g. The loss or demise of a pregnancy.

According to the field of traumatology, injuries may result from blunt items, sharp objects, weapons, chemical exposure, thermal injury, and electrical injury. In the preparation of a visum et repertum, the wound's description is accompanied by its anatomical location and the duration of healing.(3)

Visum et repertum is a written report that is constructed by a physician or a forensic specialist based on an oath regarding the forensic examination that they have conducted. Visum et repertum may serve as legal evidence in court pursuant to Article 184 paragraph (1) of the Kitab Undang-undang Hukum Acara Pidana (KUHP), which establishes that the legal evidence acceptable in Indonesian criminal proceedings includes witness testimony, expert testimony, documents, instructions, and the defendant's testimony.(4) The visum et repertum aids the court in decision-making by providing the findings of an assessment that categorizes the harm as major, minor, or moderate. Consequently, every forensic physician must be adept at assessing the severity of injury classification in accordance with Indonesian law.

Head trauma is one of the most common types of wounds that can be caused by violent acts. Trauma to the head can be classified as a major injury due to the fact that it can lead to skull fractures and brain hemorrhage, both of which have the potential to be lethal.(5) This condition will be taken into consideration during the legal procedure in situations of assault if the impact on the victim is the loss of the victim's capacity to work as a result of the trauma that the victim experienced. It is possible to determine the severity of brain trauma in a number of different methods, including the following (3,6):

- a. Glasgow Coma Scale (GCS)

This evaluation technique is frequently utilized to quantify a victim's level of consciousness following a head injury. It does so by evaluating several components of the victim's ocular reaction, verbal response, and motor response. Following the completion of this evaluation, the overall score is then classified as mild, moderate, or severe on the brain injury scale.

- a. Physical Examination and Anamnesis

In the course of a forensic examination, the physician will perform a physical examination and take a history in order to gather information regarding the traumatic event that produced the patient's condition. A loss of

consciousness, convulsions, dizziness or nausea, and discharge from the nose or ears are some of the physical symptoms that may be present.

b. Supportive Assessment

Obtaining a more precise picture of the status of the brain and skull structure through the use of a CT scan or MRI examination is of utmost importance in order to identify any skull fractures, brain hemorrhage, or brain tissue bruise there may be. When it comes to cases involving forensic odontology, a panoramic radiography examination could be carried out if there is a likelihood of trauma to the jawbone, teeth, or temporomandibular joint.

c. Additional Clinical Criteria

The presence of localized neurological signals, which suggest particular damage to the brain region, and bleeding from the ears, nose, or mouth, which may indicate serious injury, are additional criteria that must be met. Loss of consciousness for more than thirty minutes is an indication that a severe injury may have occurred. Following the completion of the examination, the physician will be able to ascertain the extent of the head trauma injuries that the person has experienced.

Forensic odontology is a discipline within forensic science that applies dental knowledge for legal applications. In assessing head trauma, particularly in the dental region, the involvement of forensic odontology is essential for evaluating the severity of the injuries.(6) A common sign in instances of abuse is trismus, characterized by the victim's difficulty in opening and closing the mouth. This happens due to trauma to the jaw or masticatory muscles resulting from impact or significant pressure, dislocation of the temporomandibular joint, and edema or inflammation. The ramifications of trismus can profoundly influence an individual's quality of life by impeding eating and speaking, as well as compromising oral health. Trismus may resolve spontaneously in certain instances; however, the recovery process is dependent upon the etiology and degree of the injury.(7)

During the process of self-healing, trismus, which is caused by swelling or modest muscular tension as a result of trauma, can develop in cases of minor injuries. This condition will improve with rest, analgesics, and basic physical therapy, eliminating the necessity for intricate medical intervention. Certain disorders that necessitate treatment include severe cases in which the trismus is accompanied by a dislocation of the temporomandibular joint or a fracture of the jaw that necessitates surgical intervention, as well as conditions that involve infection and inflammation.(7,8) There are a number of other symptoms that can be caused by infectious or inflammatory conditions in trismus. These include muscle stiffness that causes difficulty in movement and significant discomfort, difficulty in swallowing or dysphagia, headache, respiratory distress, reflex spasm, fever, changes in blood pressure and pulse, and risus sardonicus.(9) Therefore, a comprehensive assessment of trismus symptoms resulting from head trauma in situations of violence is necessary.

CASE PRESENTATION

CASE 1

A 73-year-old male adult presented at Kramat Jati National Police Hospital, Jakarta seeking a visum examination. The victim stated that around eleven hours prior to the examination, he was dragged by a car while protecting the car that was about to be taken by the perpetrator. The victim continued to defend the car until he collapsed on the asphalt road. Following the incident, the victim reported experiencing pain in his face

and hands, in addition to having difficulties opening his lips and swallowing. The subsequent findings pertain to the forensic pathology and odontology assessment:

- a. Forensic pathology examination
Abrasions were present on the right forehead, right cheek, right little finger, dorsal aspect of the left hand, palmar surface of the left hand, and anterior aspect of the upper leg.
- b. Forensic odontology examination
The victim's mouth was opened two fingers wide, revealing an asymmetrical face. There was tenderness upon palpation of the right cheek, a fractured left maxillary incisor, and the first and second incisors on the right side, as well as the second incisor on the left side of the maxilla, which were loose and painful.

The assessment concluded that the injury resulted from blunt trauma and had impaired the individual's ability to work or take on their profession.

CASE 2

A 28-year-old male adult presented to Kramat Jati National Police Hospital, Jakarta to obtain a visum assessment. The victim confessed that approximately six hours before the examination, the victim was struck with a helmet once on the right side of the head, and the victim was beaten by a number of unknown individuals until the victim became unconscious. The victim reported experiencing symptoms such as dizziness, nosebleeds, and discomfort in the face, both hands, and right leg after the incident. In addition to this, the victim stated that she had trouble opening her mouth and swallowing. The subsequent findings pertain to the forensic pathology and odontology assessment:

- a. Forensic pathology examination
Swelling was observed on the right posterior aspect of the skull, the base of the left ring finger, and the dorsal surface of the right foot. Bruises were present on the right cheek, and abrasions were observed on the bridge of the nose's right side, the right side of the back, the right elbow, and the outer aspect of the right forearm.
- b. Forensic odontology examination
Upon opening the victim's mouth two fingers wide, an asymmetrical facial structure is observed, accompanied by tenderness upon massage of both cheeks. There is spontaneous bleeding from the gums associated with the second incisor and canine on the right side of the maxilla, as well as mobility of the first and second incisors on the right side of the mandible.

The assessment concluded that the injury resulted from blunt trauma, which subsequently led to illness or impairment in performing work, position, or livelihood.

DISCUSSION

One of the most prevalent symptoms that can be brought on by head trauma is a condition known as trismus. It is possible that this will have an impact on the findings of the forensic examination, which the judge will then take into consideration when determining the appropriate punishment for the perpetrator. In accordance with the provisions of Article 183 of the KUHP, which provides that "the judge shall not impose a sentence on a person unless he is convinced by at least two valid pieces of evidence that a criminal offense has actually

occurred and that the defendant is the one who committed it," the judge is not permitted to impose a sentence on them.(9) For this reason, the findings of the forensic examination have a significant impact on the decisions that the judge makes. When it comes to case 1, the violence that took place was not directly produced by the person who committed the act of violence; rather, it was caused by the process that took place during the occurrence. There is a correlation between the age of the victim and the development of trismus,(10) with the elderly having a higher prevalence of trismus. However, age cannot be the determining factor for trismus. It is common for trismus to be related to the presence of diseases in the elderly,(8,9) and this is especially relevant in situations where the victim falls into asphalt. The immune system is typically weaker, which is the reason for this circumstance.(11) Trismus symptoms in elderly people can cause trouble swallowing or dysphagia due to muscular rigidity in areas such as the neck and belly, which can produce more complex symptoms.(8) This is consistent with the other example that was discussed before, in which the victim also complained of having difficulties swallowing. There is a potential of tetanus infection, a decline in the immune system, and the presence of comorbidities that cause the prognosis of healing to worsen, which means that therapy is required in an effort to cure the patient.(12) These conditions are established in the first case.

In case 2, the situation is different because the perpetrator utilized a blunt instrument to induce the head injuries, which resulted in the victim losing consciousness. Indicators of serious head trauma include the appearance of symptoms such as difficulty speaking, nosebleeds, bruises, and loss of consciousness.(13) While the victim is still a young adult, the trauma that was induced by the accident and the symptoms that they are experiencing are more severe than they were in case 1.(1) When it comes to treatment, case 2 also necessitates medical attention and supporting examinations for the purpose of further evaluation.(14) With the appropriate medical therapy, the prognosis for trismus in young adult victims is still favorable, which means that recovery can take place more rapidly and without the need for additional medical difficulties.(15)

The forensic examination came to the conclusion that both fatalities had sustained injuries as a result of blunt force, and that these injuries either caused illness or prevented them from working. As a result of this determination, the injuries that occurred in the two situations that were discussed earlier can be categorized as either moderate or severe losses. Although the KUHP does not include a particular definition of moderate injury, in order to establish that the injury is a serious injury, it is necessary to include the requirements that are mentioned in Article 90 of the KUHP.(2,3) In most cases, moderate injuries are defined as those that result in illness or a temporary impediment to the performance of work duties. For this reason, it is possible to draw the conclusion that the two situations described above involve moderate injuries that are healing and require medical attention.

CONCLUSION

Head trauma is one of the most common conditions that can occur as a result of violent acts, particularly those that involve mistreatment. In both cases, the symptoms of difficulty opening the mouth or trismus offered a definitive diagnosis in the conclusion of the post mortem, which said that the injuries produced by the occurrence were classified as moderate injuries. This was the result reached by the post mortem. The trismus that occurs in cases is caused by a variety of predisposing variables, which necessitates a separate calculation when calculating the degree of wound qualifying.

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