

Case Report

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Dextra Tibia Fracture Resulting from a Traffic Accident

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ABSTRACT

Background: By definition, blunt force trauma is a force that is caused by a blunt object on the surface of the body, which results in injury.

Blunt trauma can be caused by objects that have blunt surfaces such as stones, wood, hammers, fists and so on, which also includes falls from high places, traffic accidents and so on, which are currently increasing in severity.

Case Report: It was reported that a victim, initials N, was a pedestrian who was hit by a motorbike

Results: on physical and radiological examination the victim suffered an open right tibial fracture.

Conclusion: The female victim was involved in a traffic accident and suffered abrasions, lacerations and broken bones due to blunt trauma which required the victim to undergo treatment.

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Introduction

Blunt trauma can be caused by objects that have blunt surfaces such as stones, wood, hammers, fists and so on, which also includes falls from high places, traffic accidents, gunshot wounds and so on. Negligence in using the tool can cause injury, which is indicated by the presence of damaged tissue. An injury due to mechanical force can result in conditions such as: (2.5-6)

1. Abrasion (abrasions/scrapes)
2. Laceration (torn wound)
3. Contusion or rupture (bruised or broken/split)
4. Fracture (broken)
5. Compression (pressure)
6. Bleeding (bleeding)

1. Abrasions = Eroded (Abrasion)

(3.6)

An abrasion is a wound condition in the form of loss or damage to the surface of the epithelial cells covering the skin (epidermis) or mucous

membrane caused by pressure on a hard object, blunt object, rough object or weapon.

2. Bruise = Contusion = Hematoma (Bruise/Contusion)

Bruises usually occur with the surface of the skin (continuous skin tissue) intact, but bleeding occurs in the tissue under the skin/cutis, broken capillaries and veins and entering the connective tissue caused by blunt object violence (1,2,4.6).

Bruises that occur can be caused by various blunt objects and can sometimes provide clues about the object causing the bruise

such as:

- Tire injury (marginal hemorrhage)
- Shoe tread marks
- Whip marks
- Rock / ball tracks
- Hand pinch/strangulation

3. Broken Bones (Fractures)

A fracture is a loss of continuity of bone, cartilage, either total or partial. Fractures are known as broken bones, usually caused by severe trauma or minor trauma which can cause fractures if the bone itself is affected by certain diseases. The strength, angle, force, condition of the bone, and soft tissue around the bone will determine whether the fracture that occurs is called complete or incomplete. A complete fracture occurs when the entire bone is broken, while an incomplete fracture does not involve the entire thickness of the bone.

A fracture occurs when there is trauma that affects the bone, where the force of the trauma exceeds the strength of the bone. Two factors influence the occurrence of fractures:

- **Extrinsic:** includes the speed and duration of trauma affecting the bone, the direction and strength of the trauma.
- **Intrinsic:** includes bone capacity to absorb trauma energy, flexibility, strength and bone density.

Case Report

A case was reported, with a pedestrian victim with the initials N aged 10 years coming to the ER with complaints of pain in his right leg due to being hit by a motorbike, and based on a letter requesting a post mortem from the Belawan Harbor Resort Police,

Medan Labuhan Sector with letter number VER/163/VIII/2023/ Mdn-Lab by the Head of the Labuhan Sector Police, Head of the Traffic Unit as Investigator, with the rank of AKP, NRP 67110075 dated 3 August 2023, the victim was taken to the Emergency Room of RSUP. Haji Adam Malik Medan on 3 August 2023 at 17.25 WIB 11 hours from the accident. From the anamnesis, the victim named Natalyn Abigail Napitupulu, 10 years old, admitted that she had a traffic accident on Jl.K.L.Yos Sudarso Km.17.5 Kel. Martubung Kec. Medan Labuhan, precisely in front of the SD Inpres 51 school. The victim was hit by a motorbike on Thursday 3 August 2023 at around 06.30 WIB, the victim had previously received treatment at the Delima General Hospital, then was referred to the Haji Adam Malik Central General Hospital Medan suspected a fracture based on the referral letter.

Result

a. The victim arrives conscious and can communicate well (cooperative), with a general condition that appears to be in pain. Vital signs: respiratory rate 20 times per minute. Blood pressure is 110/80 tens of millimeters of mercury, pulse rate is 80 per minute, body temperature is 36.5 degrees Celsius.

b. A white three-layered gauze was found on the inner side of the right lower leg, each measuring eight centimeters long and eight centimeters wide. Layer I: White gauze, layers 2 and 3 blood red.

• **Wound 1:** There was an open wound with uneven edges and a bridge of tissue and bruising around the wound on the inner side of the lower leg, with a length of three centimeters, width, zero point eight centimeters, depth..., with a distance of 8 cm from the knee, 5 cm distance from the ankle.

• **Wound 2:** There was a wound that damaged the surface of the skin, irregular reddish edges on the inner side of the lower leg, with a length of three centimeters, a width of zero point five centimeters, a distance of 10 cm from the knee, 24 cm from the ankle.

Discussion

The general condition appeared to be moderately ill with pain in the right leg, with radiological results showing a broken tibia and requiring temporary treatment. The victim found an open wound with uneven edges and a bridge of tissue and bruising around the wound on the inner side of the lower leg which was consistent with the characteristics of a torn wound resulting from blunt trauma. The victim also had wounds that damaged the surface of the skin, reddish irregular edges on the inner side of the lower leg, which were characteristic of abrasions. The victim also had a broken right tibia which required treatment, so the victim suffered at least moderate injuries. (Pasal 351 KUHP)

From the medicolegal aspect, this case is an accident case according to the results of the anamnesis that the victim was suddenly hit on foot by a motorbike from the front on the right side and the injuries occurred in an open area, at the time of the incident the victim was wearing a skirt.

In this accident case, it is alleged that the motorcyclist was passing in the wrong lane, causing an accident which resulted in the victim being injured and subject to traffic law.

Additional check:

AP/Lateral Right Cruris Radilogy (08-04-20230),

Examination results: Fracture in the proximal 1/3 of the right tibia with a cast attached.



Figure 1: Dextra Tibia Fracture



Figure 2: Open Wounds 3x0,5 cm

Conclusion

From the examination of the victim above, it can be concluded that:

1. The victim is a known woman.
2. The victim suffered abrasions, lacerations and broken bones.
3. The violence experienced by the victim was the result of blunt trauma.
4. The violence experienced by the victim was a traffic accident.
5. The victim experienced blunt force which requires temporary treatment.
6. The perpetrator in this case is subject to sanctions Undang-undang No.29 Tahun 2009 (pasal 284 UU LLAJ) (7).
7. If the victim requires treatment in hospital, the victim is entitled to assistance with medical costs from the government in accordance with Undang-undang No.34 tahun 1964 (8) (road traffic accident coverage).

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