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Nursing Care for Patients with Vulnus Laceratum in the Emergency Unit: A Case Report

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ABSTRACT

Vulnus Laceratum is a disruption of the continuity of tissue so that there is a separation of tissue that was initially normal; torn wounds occur due to severe violence that severs the tissue. Vulnus Laceratum is the third most common type of injury in Indonesia, with a percentage of 23.2%. Nursing problems that often arise in patients with vulnus laceratum are acute pain, impaired skin and tissue integrity, and risk of infection. The knowledge and role of nurses are essential in the rapid treatment of vulnus laceratum patients at risk of bleeding, infection and even disability. This case study aims to analyze the application of nursing care to patients with vulnus laceratum. Nursing care methods using the SDKI, SLKI, and SIKI approaches. The results of the assessment obtained four male patients, the cause of vulnus laceratum 2 cases due to vehicle accidents, 1 case due to blunt objects, and 1 case due to sharp objects. The nursing diagnoses that appear are impaired skin and tissue integrity, acute pain, risk of ineffective cerebral perfusion, and risk of infection. Nursing interventions include wound care, wound suturing, pain management, vital sign monitoring, and infection prevention. During the implementation process, all interventions were carried out. Evaluation of nursing care with impaired skin and tissue integrity disorders resolved on the 10th and 30th days, acute pain resolved on the third day, risk of infection on the seventh day, and risk of ineffective cerebral perfusion 1 hour after implementation. The results of this case study are expected to increase knowledge and complement existing sources so that knowledge and management of vulnus laceratum are appropriate and fast.

Keywords: Nursing Care, Vulnus Laceratum, Tissue

Background

The Emergency Unit is a service center that focuses on emergencies to prevent and reduce morbidity and mortality rates and disability of victims. Some things that make the situation in the Emergency Unit common include patients who need quick treatment even though their medical history is not yet clear. The services handled in the Emergency Unit are initial treatment for patients who experience life-threatening injuries. Thus, the task of the Emergency Unit itself is to provide medical and surgical nursing care for patients with emergency conditions (1). Open wound trauma ranks second in most cases in the Emergency Unit. A vulnus or wound is a break in tissue continuity that disrupts the normal process of tissue accompanied by loss of tissue substance. There are many types of wounds, including Vulnus Laceratum. Vulnus Laceratum is a disruption in the continuity of tissue so that there is a separation of tissue that was initially normal; the main implementation of the action on Vulnus Laceratum is to stop the bleeding that is experienced because bleeding is something quite serious where if the bleeding is late or not stopped quickly it can cause the risk of even

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hypovolemic shock. Nurses on duty in the Emergency Unit need Skills, knowledge, and experience to avoid emergencies.

Lacerations (vulnus laceratum) had a global prevalence of approximately 12.8% in 2019, according to the World Health Organization (WHO). In Indonesia, the prevalence reached 8.2% in 2020, with laceration rates reported at 7.5% to 8.2%. The national injury prevalence stood at 8.2%. A study in 2021, a wound association in America conducted a study on the incidence of wounds in the world based on the etiology of the disease, obtained data for surgery there were 110 million cases, trauma wounds as many as 1 million cases, abrasions there were 20 million cases and burns there were 10 million cases. Then, for Vulnus Laceratum / lacerations sufferers, it is ranked third as the most common type of injury in Indonesia, with a percentage of 23.2% (2).

Indonesia itself has a relatively high prevalence rate of Vulnus Laceratum; from the 2018 Riskesdas data, it was stated that the national injury prevalence rate was 8.2%. This figure has increased by 0.7% compared to the previous 5 years; in 2007, the national injury prevalence was 7.5%. The incidence of injury is divided into several categories of causes of injury. The prevalence of injury based on the category of cause is injury due to falls (40.9%) and motorcycle accidents (40.6%), then the cause of injury is due to being hit by sharp/blunt objects (7.3%), other land transportation (7.1%) and falls (2.5%) (3).

In the Emergency Unit of Kepanjenkidul Health Center, it was recorded that in January 2025, there were 36 cases of Vulnus Laceratum; the most common causes were sharp/blunt objects and accidents. The impacts often occur in Vulnus Laceratum are pain and damage to the integrity of the skin and tissue. Acute pain in open wounds of vulnus laceration has been overcome by the author by carrying out nursing actions such as doing non-pharmacological actions of deep breathing techniques, distraction techniques, watching animated videos, and collaborating on the administration of analgesics. Deep breathing techniques or relaxation techniques are carried out to reduce pain in patients and give individuals self-control when pain occurs and physical and emotional stress on pain (4).

Meanwhile, for damage to the integrity of the skin and tissue, wound care and wound suturing can be carried out; proper handling will increase the value of wound healing optimally so that the risk of bleeding, the risk of infection, and disability can be reduced. Wound cleansing removes residual cells and attached bacteria, prepares the wound bed for wound healing, and helps prevent infection. The knowledge and role of nurses in providing nursing care to patients with vulnus laceratum will reduce damage to the integrity of the skin and tissue in the wound (5). Based on the background above, the researcher is interested in making a report, “Nursing care for patients with Vulnus Laceratum in the Emergency Unit of the Kepanjenkidul Health Center, Blitar City."

Methods

This research design is a case report with a nursing process approach, including assessment, formulating nursing problems, developing interventions, implementing, and conducting evaluations. The patients who will be treated are patients with vulnus laceratum, which has acute pain, impaired skin and tissue integrity, and risk of infection. The basis for patient selection uses major and minor data from the Indonesian Nursing Diagnosis Standards. The location where the case was taken was in the Emergency Unit of Kepanjenkidul Community Health Center, Blitar City. Nursing care was carried out for seven days. All data is documented in the form of nursing documentation.

Results

The case study was conducted in the Emergency Unit of Kepanjenkidul Community

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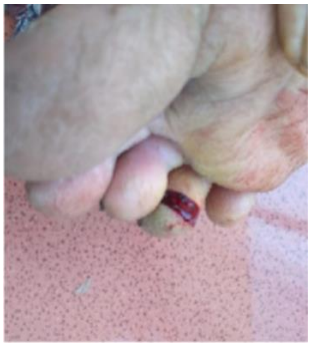
Health Center, Blitar City. The case study involved four patients diagnosed with vulnus laceratum, all men aged between 30 and 65. The patients' educational backgrounds vary, with one having completed junior high school, two having completed senior high school, and one having completed higher education. The occupations range from private employees to farmers, indicating varied socioeconomic backgrounds.

Four patients presented with various injuries primarily resulting from accidents. The first patient complained of dizziness after falling from a motorcycle and hitting their head on the asphalt. They sustained a swollen area on the head approximately 2 cm in diameter and a laceration on the outer ear, from which blood was oozing. The second patient had a laceration on the right leg caused by a fall in the rice field, where the leg struck a rock. The patient reported heavy bleeding initially, which was treated at home with crushed binahong leaves. Though the bleeding had stopped, the wound remained painful and appeared dirty. The third patient sustained a laceration above the lip after falling from a motorcycle. Meanwhile, the fourth patient suffered a cut on the left thumb from a knife incident around 4:00 PM. The wound was initially wrapped at home, but the patient still experienced pain, particularly when moving the thumb.

Four patients presented with laceration injuries on various body parts. All patients were in good general condition with stable vital signs. The first patient had a laceration on the left ear, measuring approximately 3 cm in length and 2 mm in depth, with normal temperature (36.5°C), pulse rate of 110 beats per minute, respiratory rate of 20 breaths per minute, blood pressure at 160/90 mmHg, and oxygen saturation of 99%. The second patient sustained a 3 cm long, 2 mm deep laceration on the right foot, accompanied by swelling and redness around the wound area. Their temperature was 37.4°C, pulse rate 80 beats per minute, respiratory rate 18 breaths per minute, blood pressure at 140/85 mmHg, and oxygen saturation of 99%. The third patient exhibited a torn wound above the right upper lip with an unclear boundary and a superficial abrasion below the right eye. The wound was approximately 2 mm deep. The patient's temperature was 36.5°C, pulse rate was 110 beats per minute, respiratory rate was 20 breaths per minute, blood pressure was 125/70 mmHg, and oxygen saturation was 99%. The fourth patient had a laceration on the right hand, 3 cm in width and 2 mm in depth. Vital signs were within normal limits with a temperature of 36.5°C, pulse rate of 90 beats per minute, respiratory rate of 18 breaths per minute, blood pressure at 130/70 mmHg, and oxygen saturation of 100%. All wounds were categorized as Stage 2 injuries.

Gambar 1 Kasus 1



Gambar 2 Kasus 2

Gambar 3 Kasus 3

Gambar 4 Kasus 4

Four patients received similar medical therapy consisting of Amoxicillin 500 mg taken three times daily and Mefenamic Acid three times daily to manage infection and pain. For initial treatment, two patients underwent wound suturing due to the severity of their injuries, while the other two received standard wound care. The combination of antibiotics and anti-

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inflammatory medication aimed to support healing and prevent complications.

Four patients presented with various injuries primarily resulting from blunt trauma, leading to skin and tissue damage. The primary nursing diagnoses across these patients included Impaired Skin/Tissue Integrity due to blunt object trauma accompanied by bleeding (D.0129), Acute Pain related to physical injury agents as evidenced by grimacing (D.0077), and Risk for Infection due to either environmental pathogen exposure or invasive procedures (D.0142). One patient was also diagnosed with a Risk for Ineffective Cerebral Perfusion due to head injury/hematoma (D.0017).

Nursing interventions were comprehensive and tailored to each patient's condition. For the patient with cerebral perfusion risk, vital signs were closely monitored, including blood pressure, pulse, temperature, and oxygen saturation, with observations documented and explained to the patient.

All patients underwent wound care management involving gently removing dressings, saline cleansing, necrotic tissue debridement, gentamicin ointment, and sterile rebandaging. Education was provided regarding signs of infection and the importance of high-calorie, high-protein diets to promote healing. Suturing procedures were performed where indicated using sterile techniques, including appropriate needle and suture material selection, administration of local anaesthesia, and correct stitching technique. Patients were educated on wound care, infection signs, and timing for suture removal.

Pain management was integral to care, with pain assessments conducted regularly (location, intensity, duration, and triggers). Non-pharmacological strategies like cold compresses and deep breathing were encouraged. Analgesics such as mefenamic acid were administered, and patients were educated on their use.

Infection prevention measures were emphasized, including monitoring local/systemic infection signs, strict hand hygiene, and aseptic techniques during procedures. Patients were also taught proper wound inspection and handwashing techniques and advised to increase nutritional and fluid intake.

Evaluations indicated improvement in all patients. Pain levels had decreased, wound bleeding had stopped or reduced significantly, and patients appeared less anxious and more comfortable. In some cases, interventions were continued to fully resolve the remaining symptoms, while in others, the problems were considered resolved, and care was concluded.

Discussion

The study conducted in this case involved emergency assessments through a primary and secondary survey approach. The primary survey serves to systematically evaluate, detect, and manage life-threatening complications from trauma or incidents. It uses the ABCDE method (Airway, Breathing, Circulation, Disability, and Exposure). For Airway, assessments focused on obstructions such as secretions, foreign bodies, or abnormal sounds. In all four cases, the airways were clear, and no abnormalities were observed. For breathing, respiratory function was assessed via inspection, and all patients had normal respiratory rates (18–20 breaths/min), symmetrical chest movement, and oxygen saturation above 98%, indicating adequate ventilation. Grasping the variability of respiratory rate (RR) as a marker for risk stratification across different chief complaints is essential to minimize misjudgment of the risks associated with clinical outcomes and develop precise risk assessment tools (6). The Circulation assessment measured signs like capillary refill time (CRT), extremity temperature, and blood pressure. All patients had a CRT of less than 2 seconds and warm extremities, though one case showed elevated blood pressure (160/90 mmHg) and dizziness due to head trauma, suggesting possible cardiovascular disturbance. Disability was evaluated using the Glasgow Coma Scale (GCS), and all patients were fully conscious, with a GCS score of 15, and showed no

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neurological impairment. Pupil responses were equal and reactive. For exposure, the focus was on visible injuries, notably lacerations ranging from 3–7 cm in length and 2 mm in depth, with associated pain. In the secondary survey, all four cases involved male patients of varied ages and occupations. Causes of injury included motorcycle accidents, blunt force trauma, and sharp object lacerations. Two cases presented with elevated blood pressure, and two showed tachycardia (heart rate >110 bpm), likely due to pain, anxiety, or bleeding. Laceration sizes varied but were generally small, and proper wound care was emphasized to prevent bleeding and infection. Overall, emergency assessment was consistent with theoretical approaches, highlighting accurate and effective clinical evaluations.

The nursing diagnoses in these four cases were formulated using the Indonesian Nursing Diagnosis Standard (SDKI) in 2018 (7). The common diagnoses associated with laceration wounds include hypovolemia, risk of shock, acute pain, hyperthermia, impaired skin integrity, impaired physical mobility, risk of infection, disturbed sleep pattern, and anxiety (2,8). For the four cases studied, the emerging diagnoses included risk of ineffective cerebral perfusion, impaired skin/tissue integrity, acute pain, and risk of infection. Based on the author's assessment, all the objective (DO) and subjective (DS) data collected during patient assessment supported the selection of these diagnoses. In case 2, the primary diagnosis was the risk of ineffective cerebral perfusion, based on objective data such as headache, restlessness, and increased systolic and diastolic blood pressure. In cases 2, 3, and 4, the primary diagnosis was impaired skin and tissue integrity based on findings such as laceration wounds, bleeding, and reports of pain. The second diagnosis in all four cases was acute pain, with data indicating grimacing, restlessness, rapid pulse, and a pain score of 4 (moderate pain). Therefore, the expected outcomes of nursing interventions planned to be implemented within one 5-minute session included reduced pain complaints, decreased grimacing, less restlessness, and improved pulse rate. In all four cases, the risk of infection was also formulated as a diagnosis, indicated by increased exposure to pathogenic organisms and invasive procedures. Not all diagnoses appeared in these cases. The author prioritized life-threatening diagnoses, selecting only those relevant to the client's clinical condition (9).

Nursing interventions refer to any treatments carried out by nurses based on knowledge and clinical judgment to achieve expected outcomes (10). Nursing action plans are determined based on each diagnosis's expected outcomes and result criteria. Vital signs monitoring was performed in case 1 to assess cardiovascular, respiratory, and body temperature functions, as the client had elevated blood pressure. Wound care was performed in cases 2 and 3 as initial treatment to promote wound healing and prevent complications, particularly because case 2 involved a wound over 5 hours old with redness around it. In case 3, the wound had irregular borders. Wound suturing was done using sterile sutures in cases 1 and 4, as the wounds were clean and not infected. Pain management involves identifying and managing sensory or emotional experiences related to tissue damage. In addition to pharmacological methods, non-pharmacological techniques were used, such as relaxation, massage, compresses, music therapy, Quranic recitations (mutual), distraction, and guided imagery. A cold compress was used in case 1 to relieve pain from a head hematoma. Cold compresses effectively reduce blood flow to the injury site and decrease inflammation, swelling, pain, and bleeding (11). In cases 2, 3, and 4, deep breathing relaxation techniques were used for pain management, as these are simple and can be done independently by the client. Infection prevention was conducted in cases 1 and 4, as skin integrity damage exposed clients to environmental pathogens. Hand hygiene and wound cleanliness were emphasized (10).

In the Nursing Implementation in case 1, vital signs were monitored every 30 minutes over 1 hour to diagnose the risk of ineffective cerebral perfusion. The interventions included monitoring blood pressure, pulse, temperature, and oxygen saturation. These actions were taken

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because the client reported dizziness following a head injury with a 3 cm hematoma. Monitoring was essential to detect potential cerebral perfusion issues. In cases 2 and 3, wound care included cleansing with 0.9% NaCl, removing necrotic tissue, applying gentamicin ointment, and bandaging wounds. Removing necrotic tissue was necessary because case 2 involved an old wound, and case 3 had an unclean wound with irregular borders. The author also educated clients to consume high-protein foods, as protein helps repair tissue and boost immunity (12). In cases 1 and 4, wound suturing was done after verifying no anesthesia allergy, selecting appropriate suturing material (catgut 3-0), cleaning the wound with antiseptic, administering lidocaine, and properly suturing the wound. Patients were instructed to return for follow-up on day 3, keep the wound dry, and be informed about suture removal.

The evaluation post-suturing showed reduced tissue damage and bleeding, consistent with Budiman et al. in 2021, who noted that suturing promotes faster healing by closing wounds and preventing contamination(13). Pain management was implemented in all four cases. Pain assessments included identifying pain's location, characteristics, duration, frequency, intensity, and collaboration for analgesic administration (mefenamic acid 3x1). Non-pharmacological methods included deep breathing and cold compresses. Rapport was established before deep breathing relaxation therapy was implemented in cases 2, 3, and 4. The technique helped clients independently manage intermittent pain, especially when touched at the wound site. Deep breathing is easy to perform and effective in reducing sudden pain. In case 1, cold compress therapy for a hematoma showed benefits by reducing prostaglandins and inflammatory processes (14). Cold compresses induce vasoconstriction, limiting blood flow to the area and reducing pain (15). In cases 1 and 4, infection prevention measures showed reduced redness and pain by day 3. Handwashing is the most effective method for preventing nosocomial infections (16).

The nursing Evaluation includes both outcome and process assessment. Outcome assessment determines the extent of goal achievement, while process assessment examines errors across the assessment, diagnosis, planning, intervention, and evaluation stages. In case 1, the problem of ineffective cerebral perfusion risk was resolved within 1 hour through vital signs monitoring. The client showed reduced headache, restlessness, anxiety, and improved systolic and diastolic blood pressure. Managing a patient with an accident involves hourly monitoring of vital signs, identifying signs of increased intracranial pressure (ICP), ensuring proper fluid balance, and maintaining a semi-Fowler position (20–30° head-up) (17). In cases 1 and 4, wound suturing interventions were discontinued on day 10 post-stitch removal, with results showing reduced tissue damage, pain, and bleeding, consistent with (13). Sutured wounds heal faster due to protection from contaminants. In cases 2 and 3, wound care was continued until day 30, with outcomes showing reduced tissue damage and bleeding. Wound healing includes inflammation, proliferation, and maturation phases, typically taking up to 3 weeks but may be longer due to various factors (18). In these cases, improper initial wound care and traditional treatment using binahong leaves delayed healing. In case 2, the diagnosis of infection risk required wound care similar to that for impaired skin/tissue integrity. Individuals are at risk of infection from various pathogens due to external or internal exposure. Since the client used binahong but left the wound unclean, professional wound care was necessary to prevent worsening infection (19). The pain management interventions using deep breathing relaxation techniques showed reduced pain levels from a scale of 4 to 2, decreased protective behaviour, less grimacing, and reduced restlessness. Deep breathing significantly reduces pain in laceration wound patients by creating a calming effect (11). Cold compress therapy in case 1 showed by day 3 that the client's hematoma had shrunk and pain had decreased. Cold compresses reduce swelling, pain scale, and bleeding risk by constricting blood vessels (11). Infection prevention in cases 1 and 4 led to no visible redness, swelling, pus, and reduced pain by day 3. Proper

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infection control is crucial, as untreated sutured wounds can result in tissue death. Effective prevention ensures proper healing and eliminates infection risk.

Conclusions and Recommendations

Based on the case study, four cases of Vulnus Laceratum were analyzed, all involving male patients. The causes included motorcycle accidents, blunt force trauma, and sharp object injuries. Nursing diagnoses included risk of ineffective cerebral perfusion, impaired skin integrity, risk of infection, and acute pain. Using pharmacologic and non-pharmacologic techniques, interventions such as vital sign monitoring, wound care, and pain management were appropriately applied. All plans were implemented, and evaluations were completed accordingly.

Health workers should continuously update wound care knowledge, health facilities must educate the public on early wound management, and educational institutions should provide updated research for practical student application.

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