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Nursing Problems of the Patient after Craniocerebral Trauma — Case Report

Problemy pielęgnacyjne pacjenta po urazie czaszkowo-mózgowym — opis przypadku

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Abstract

Introduction. Cranial and cerebral injuries are an opened or closed brain damage coming into existence as a result of a short-lived mechanical factor affecting the skull. They constitute the most frequent cause of deaths amongst traumatic patients. In vast majority of fatal victims of injuries (70%) a cranial-cerebral injury is the cause of death. The aim of the work is to present the patient's nursing problems after a cranial-cerebral injury as a result of a gunshot.
Case Report. The description of the case refers to the patient aged 35 who suffered from cranial-cerebral injury as a result of the gunshot wound in vague circumstances. The patient was subjected to surgical treatment consisting in the removal of a foreign body from the skull in the mode of urgency. He required intensive nursery supervision and the long-term rehabilitation. This work presents the description of the case and chosen nursing problems of the patient after the gunshot wound.
Discussion. Cranial-cerebral injuries are regarded to be the main cause of the mortality. The most important factor in the scale of intracranial injury is, above all, the strength of the injury. This value determines the extent of injury, prognosis, survival and recovery. However, the promptness of the given help is an important factor determining the fate of the patient. The advanced neurological deficit in the sick person after the cranial-cerebral injury requires the holistic approach to the patient and involvement the entire therapeutic team in the process of diagnosing, treatment, rehabilitation or the psychotherapy.
Conclusions. The state of the patient after the gunshot wound shows shortages and nursing problems in the biological, psychical and social sphere. The actions undertaken are of highly individual nature. The care over the patient after the gunshot wound should be comprehensive, adapted for identified shortages and individual needs of the patient according to applicable standards. **(JNNN 2018;7(2):80–85)**
Key Words: cranial-cerebral trauma, nursing problems

Streszczenie

Wstęp. Urazy czaszkowo-mózgowe są otwartym lub zamkniętym uszkodzeniem mózgu powstającym w wyniku działania na czaszkę krótkotrwałego czynnika mechanicznego. Stanowią najczęstszą przyczynę zgonów wśród pacjentów urazowych. W zdecydowanej większości śmiertelnych ofiar urazów (70%) przyczyną zgonu jest uraz czaszkowo-mózgowy. Celem pracy jest przedstawienie problemów pielęgnacyjnych pacjenta po urazie czaszkowo-mózgowym w wyniku postrzału.
Opis przypadku. Opis przypadku odnosi się do pacjenta w wieku 35 lat, który doznał urazu czaszkowo-mózgowego w wyniku postrzału w niejasnych okolicznościach. Pacjent poddany był zabiegowi operacyjnemu usunięcia ciała obcego z czaszki w trybie pilnym. Wymagał intensywnego nadzoru pielęgniarskiego oraz długotrwałej rehabilitacji. Praca przedstawia opis przypadku oraz wybrane problemy pielęgnacyjne pacjenta po postrzale.
Dyskusja. Urazy czaszkowo-mózgowe są uważane za główna przyczynę śmiertelności. Najważniejszym czynnikiem w zakresie skali obrażeń wewnątrzczaszkowych jest przede wszystkim siła urazu. Jego wartość decyduje o rozległości urazu, rokowaniu, przeżyciu i powrocie do zdrowia. Natomiast szybkość udzielonej pomocy jest ważnym czynnikiem określającym losy chorego. Zaawansowany deficyt neurologiczny u chorego po urazie czaszkowo-mózgowym wymaga holistycznego

podejścia do pacjenta oraz zaangażowania całego zespołu terapeutycznego w procesie diagnozowania, leczenia, rehabilitacji czy psychoterapii.
Wnioski. Stan pacjenta po postrzale ukazuje deficyty oraz problemy pielęgnacyjne w zakresie sfery biologicznej, psychicznej i społecznej. Podejmowane działania mają charakter wysoce indywidualny. Opieka nad pacjentem po postrzale powinna być kompleksowa, dostosowana do zidentyfikowanych deficytów oraz indywidualnych potrzeb pacjenta zgodnie z obowiązującymi standardami. **(PNN 2018;7(2):80–85)**
Słowa kluczowe: uraz czaszkowo-mózgowy, problemy pielęgnacyjne

Introduction

Along with the of civilization and technological development the frequency of injury appearance has been growing. Among the causes of injuries and most serious and frequently irreparable consequences, one should mention the growing number of cranial-cerebral injuries which are becoming one of main causes of the disability and deaths among all injuries.

People most often suffer from them as a result of road accidents, being hit by vehicles, rides on bicycles without safety helmets on, falls from the height, acts of violence and even burns.

Cranial-cerebral grudges are opened or closed brain damage emerging as a result of the skull being influenced by a short-lived mechanical factor. They constitute the most frequent cause of deaths amongst traumatic patients. In the straight majority of fatal victims of injuries (70%) a cranial-cerebral injury is the cause of death [1,2].

The most frequent occurrences include relatively light injuries — superficial contusions and concussions often with the lost of consciousness. One should point out that in children there exists a possibility of heavy injuries not-arising as a result of accidents and the fortuitous events [3].

Nursing care of a patient after a post cerebral-cranial injury includes both the care and observation focused on detecting early manifestations of possible complications. The nurse is accomplishing the important task in the process of looking after, treatment, rehabilitation and the education of the sick person with the cranial-cerebral injury.

An important role is played by the assessment of the deficit in the scope of self-care as well as possible problems that may arise from the general condition of the patient and the assessment of the family's efficiency and knowledge in the scope of care activities [4,5].

Performing regular measurements of basic vital signs and assessment of the neurological status may have an impact on the prompt detection and prevention of complications, because the risk of their occurrence is very high. It should be stressed that one should take into account the severity of symptoms or parameters and react appropriately to any disturbing changes [6].

The aim of the work was to present nursing problems towards the patient with cranial-cerebral injury as a result of the gunshot wound and the participation of the nursing staff in preventing possible occurrence of complications, activating and adapting patients for performing the new role in the social life.

Case Report

The description of the case refers to the patient aged 35 who sustained a cranial-cerebral injury as a result of the gunshot wound in the head in vague circumstances.

The patient was subjected to the operation surgical treatment of the removal of a foreign body from the skull in the mode of urgency. He required intensive nursery supervision and the long-term rehabilitation.

The patient was admitted urgently to the Neurosurgery Clinical in the 10th Military Clinical Hospital in Bydgoszcz, unconscious in reactions to pain stimuli. Efficient in the range of the respiratory system and circulation system functioning. Symmetrical pupils, that react to the light. Left eyeball undamaged, dislocated forward. Massive right-sided paresis, verbal contact impossible to make due to speech disorders of aphasia character. Skin without pathological changes. The patient neglected hygienically, admitted in a state of alcohol intoxication.

In the image of the computed tomography of the head (CT) a conical hematoma within the brain was visible, the apex directed towards the occiput with dimensions 100×17×24 mm. In his line, in the skull cavity there was a metallic foreign body. Skull body cover undamaged. Patient periodically sleeping and periodically aggressive, psycho-physically agiteted.

The work presents the description of the case and selected nursing problems of the patient after the gunshot wound.

Problem 1: Risk of Deterioration of the Patient's Condition after Surgery

Objective: Avoiding the risk.
Actions:

1. Placing the patient in an intensive supervision room.
2. Observation of the patient's condition towards the occurrence of complications from the nervous system.

3. Assessment of the state of consciousness.
4. Control of vital parameters.
5. Cooperation with other members of the therapeutic team.
6. Participation in pharmacotherapy.

Evaluation: The desired therapeutic effect was maintained.

Problem 2: Aggression. The Patient is Psycho-motor Agitated

Objective: Decreasing aggression.
Actions:

1. Proper diagnosis of the patient's condition (nursing interview).
2. Ensuring patient safety and personal security.
3. Proceeding in accordance with the direct coercion procedure.
4. Ensuring basic psychological and social needs.
5. Cooperation with other members of the therapeutic team during the performance of nursing and caring activities.
6. Participation in pharmacotherapy.
7. Observation for undesirable injuries.
8. Supervision over performed activities by the patient.
9. Protection of the nearest environment.
10. Education of the patient and his family about the current state of health.

Evaluation: Aggression has been reduced.

Problem 3: Pain Problems

Objective: Reduction of pain.
Actions:

1. Assessment of the intensity of pain; selection of appropriate tools for assessing the intensity of pain (VAS — Visual Analogue Scale).
2. Observation of the patient.
3. Participation in pharmacotherapy.
4. Administration of painkillers on request.
5. Skillful establishing non-verbal contact (patient with speech disorders — aphasia).
6. Documenting pain intensity measurements.

Evaluation: Pain complaints have decreased.

Problem 4: Deficit in Self-care and Self-nursing Resulting from Right-sided Hemiparesis and Aphasia

Objective: Enabling the patient to perform basic activities of everyday life; in the field of hygiene in the hygiene of the environment, obstructing independent nutrition, changing the position of the posture.
Actions:

1. Ensuring the hygiene of the patient's environment.
2. Participation in nourishing the patient; adjusting the consistency of meals to the patient's condition in the area of their reception.
3. Paying attention to the patient's nutritional status (lack of appetite).
4. Help in changing the position of the posture.
5. Observation of the patient for complications.
6. Skillful contact with the patient.

Evaluation: The self-care and self-nursing deficit has decreased.

Problem 5: Difficulty in Maintaining Body Hygiene Resulting from Right-sided Hemiparesis and Aphasia

Objective: Ensuring body hygiene.
Actions:

1. Help in caring activities.
2. Education in the need to maintain body hygiene.
3. Providing facilities during bathing.
4. Prevention of uncontrolled injuries during bathing.
5. Ensuring intimacy conditions.
6. Observation of the patient for complications.
7. Skillful contact with the patient.

Evaluation: Hygiene of the patient's body is ensured.

Problem 6: Risk of Pathological Changes (Bedsores/Abrasions/Sores). The Patient Forces the Same Position of the Posture, Does not Apply Recommendations. As a Result of Aggression, he Hits the Bed Railings

Objective: Prevention of pathological changes.
Actions:

1. Protection against abrasions/injuries.
2. Anti-bedsore prophylaxis.
3. The use of anti-bedsore mattress and amenities.
4. Observation of places exposed to pathological changes.
5. Paying attention to the emotional state (patient's reluctance to cooperate).
6. Ensuring a safe environment for the patient.
7. Decreasing aggression.
8. Documenting nursing activities.

Evaluation: The risk of pathological changes has been reduced.

Problem 7: The Risk of Urinary Tract Infection. The Patient has a Foley Catheter Inserted. Manipulates at the Catheter

Objective: Reducing the risk of infection.
Actions:

1. Observation and supervision of the patient.
2. Prevention against uncontrolled catheter rupture.
3. Replacement of the catheter and urine bag according to the procedure.
4. Control of the amount of fluids accepted and excreted.

Evaluation: The risk of infection has been reduced.

Problem 8: Lowered Mood as a Consequence of the Injury. In the Following Days after the Procedure, the Patient was Depressed and Listless

Objective: Prevention of emotional consequences of the injury.
Actions:

1. Increased patient observation.
2. Ensuring readiness to help.
3. Informing the patient about planned and performed activities with the patient.
4. Allowing contact with a therapist (psychiatrist, psychologist).
5. Enabling contact with the family.
6. Participation in pharmacotherapy.

Evaluation: Emotional state was maintained at the desired level.

Problem 9: A Risk of Infection of the Postoperative Wound of the Head and the Left Eye Resulting from the Presence of a Post-surgical Wound (after I and II Treatment). The Patient Manipulates the Wound of the Head and Eye; Does not Apply to Personnel's Orders

Objective: Prevention of infections.
Actions:

1. Daily care of the wound, following the principles of asepsis and antisepsis.
2. The dressing change depends on the patient's condition.
3. Observation of the appearance of the wound for disturbing symptoms.
4. Eye care (drops and ointments according to medical orders).
5. Observation of the patient.
6. Increased supervision over the patient.
7. Participation in pharmacotherapy.

Evaluation: The risk of infection has been reduced.

Problem 10: Difficulty in Movement Due to Hemiparesis

Objective: Help in moving around and taking the right posture.
Actions:

1. Ensuring participation in classes with a physiotherapist.
2. Exercise adjustment according to the patient's efficiency.
3. Providing auxiliary equipment (walker, stroller).
4. Prevention of uncontrolled falls and injuries.
5. Eliminating unnecessary objects from the environment.
6. Help, supervision and assistance while walking.
7. Ensuring readiness to help.

Evaluation: Help was provided.

Problem 11: Difficulty in Preparing the Patient to Stay at Home

Objective: Providing conditions.
Actions:

1. Education of the patient and family.
2. Encouraging participation in classes with a psychologist.
3. Enabling contact with a therapist.
4. Encouraging avoidance of inactivity and prolonged bedtime.
5. Encouraging activities that do not cause problems to the patient.
6. Organizing free time in an attractive way, taking into account interests and passions.
7. Forbearance and patience in helping.
8. Cooperation with an environmental nurse in the field of patient adaptation to changed health due to illness.

Evaluation: The conditions for staying at home are provided.

The patient was hospitalized for 57 days at the Neurosurgery Ward in the 10th Military Clinical Hospital with the Polyclinic in Bydgoszcz after removing the foreign body from the head — the projectile.

Status at discharge: The patient is conscious, with right-sided paresis, oriented to his own person, place and time, calm. Verbal contact maintained (aphasia withdraws).

The patient with a deficit in self-care and self-nursing; rehabilitated, upright. He requires assistance in selected activities of everyday life, strives to be independent in the performance of simple activities. He controls the physiological needs. Discharged home in good general condition. Scheduled for admission to the Rehabilitation Ward to continue the improvement.

Discussion

Craniocerebral injuries are a serious problem in the modern world and at the same time are one of the most serious causes of mortality and disability. WHO reports that they are the third leading cause of death in the world after cancer and cardiovascular disease, and account for as much as 70% of all injuries [7].

Along with the progress of civilization, there are more and more cranial-cerebral injuries that can be observed in various age groups. Campbell in his research shows that the increase in the number of people over 80 is indicative of the risk of craniocerebral trauma. Nowadays, we can observe an increase in life expectancy, so it is reasonable that this group of people is more exposed to craniocerebral trauma [8]. The research presented by Szarpak shows that the largest group with craniocerebral injuries includes people at a young age.

Analyzing literature in terms of the cause of brain cranial trauma, it can be concluded that traffic accidents were the most common cause of injuries (35%). Such studies were demonstrated by Jackiewicz. However, the main cause of the injury resulted from falls from height, according to Szarpak and Madziała. Their studies also showed a statistically significant relationship between sex and the frequency of injury. The authors of the study found that craniocerebral injuries were more frequent in men (66.35%) than in women (33.65%) [9,10].

A similar analysis was presented by Rutkowska. Her research proved that the number of injuries in men was 82%, which was the vast majority of the respondents. Women accounted for only 18% of cases. Numerous studies by authors of many papers prove the prevalence of injuries in men and city residents (8.3). Own research by Radziwon et al. showed that the most common cause of injury was the head injury which accounted for 44.1%. Also, the influence of alcohol on craniocerebral trauma is not indifferent [3,11].

Numerous studies confirm the effect of alcohol consumption on the injuries of the head and torso.

Sienkiewicz in his research shows that in 34% of respondents, alcohol was found in both men (40.1%) and women (12.5%) [12,13]. In addition to traffic accidents, other causes of head injuries, such as beatings or gunshot wounds, must be mentioned. The effects of these injuries often require long-term rehabilitation preceded by curative and nursing activities.

The basic and fundamental goal of both difficult and complex nursing care for a patient with head injury is the detection of early signs of post-traumatic complications. A thorough assessment of the general condition of the patient and their state of consciousness, of the deficit in self-care and self-nursing is very important. These activities allow to determine the proper plan of nurturing and carrying out tasks at the highest level [14,15].

Conclusions

The most important factor in the scale of intracranial injury is, first of all, the strength of the injury. Its value determines the extent of injury, prognosis, survival and recovery. The second important factor that determines the patient's fate is the promptness of help provided; both the first and the advanced one, including neurosurgical surgery and the postoperative period.

An advanced neurological deficit in a patient after craniocerebral injury requires a holistic approach to the patient and the involvement of the entire therapeutic team in the process of diagnosis, treatment, rehabilitation or psychotherapy. Nursing activities focus on activities aimed at satisfying basic biological, psychological and social needs.

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