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Problems in treatment of children with burns on the basis of ICNP® - case report

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Summary

Admission. Burn damage to the skin, mucosa, as well as tissues located deeper by the heat supplied from the outside. Thermal trauma is one of the most common reasons for reporting a child under 6 years of age to Hospital Emergency Departments. To assess the severity of burns take into account the degree and extent. Assessing the extent of burns most often used method: the hand, the rule of "nines" Wallace, the card Lund and Browder. In the struggle with burns importance of prompt and effective first aid. During hospitalization should be implemented proceeding analgesics, nutritional therapy and rehabilitation. In the pediatric patient care, it is important to include caregivers in treatment.

Objective of the work The aim of the study was to present the process of nurturing a child with burns using ICNP® terminology.

Material and methods. The studies used case study and interview technique, observation, analysis of medical records. The study included 15 patients hospitalized month because of thermal burns.

Conclusions: In the treatment of burns fast it plays a key role for first aid. Rehabilitation should be implemented as quickly as possible in order to avoid restriction of mobility, fast upright, prevention of contractures, and prevention against

formation of hypertrophic scars. The family of the child plays an important role in the treatment process. Takes care of the patient during hospitalization, he cares for the patient actively participates in diagnostic tests, as well as a valuable source of information about the child's psychophysical response to painful stimuli. The tasks of a nurse who has the overall care of the child oparzonym should also educate the patient's family and place it on the self-care of a child scalded.
Keywords: Burn, baby, nursing process, classification of ICNP®

Admission

Injuries are one of the most common causes of hospitalization among children under the age of 18. In the years 2014-2016 the Medical Rescue Team of the Regional Ambulance Service in Katowice intervened on burns up 2,961 times. 18% of calls were cases of burned children. The vast majority of injuries, including those related to thermal burns patients 6 years of age. This is due to lack of experience and criticism of children and increased activity characteristic of this age group. Often accidents happen as a result of inadequate care, niedopilnowania from parents and carers [1, 2].

Burns called damage to the skin, mucous membranes, as well as tissues located deeper by the heat supplied from the outside. Sources causing thermal coagulation of proteins, destruction of tissues, in severe cases, of their carbonization are: heat (high temperature), chemicals, electricity and solar and ionizing radiation. The response to damaging agents is one of the individual features, personalized for every body. Their skin is softer and thinner than the skin of an adult, so that the damage occurs more rapidly and with less intense destructive agent [1-3].

To assess the severity of burns take into account the degree and extent. Universally accepted classification of degrees of burns by Artz, Reitz and Shaekspeare'a takes into account the depth of skin damage. When assessing burns should be aware that an accurate picture of skin damage will be reliable after 24 hours of activation damaging factor. In the case when dealing with deep burns, the time may be extended up to several days, until the process of tissue damage caused by an external factor is completely stopped [2]. In addition to the factors affecting the severity of burns and burn the disease, and the risk of death include: the extent and depth of the burn wound, its location, associated injuries, age of the victim, co-morbidities [4].

In the procedure for medical treatment of burns importance of prompt and effective first aid. Burn is a very painful experience psycho, because the injured person should be given pain relieving agents [4, 5-7]. In the case of children, the absolute require hospitalization severe thermal burns, all chemical burns, electrical, circular (peripheral) and inhaled and any burn in infants. It is also necessary notification of medical services, child welfare, in whom we suspect intentional burns from the adult [6].

Objective of the work.

The aim of the study was to present the nursing process implemented during the nursing care of the patient oparzonym using the International Classification for Nursing Practice (ICNP®, the International Classification for Nursing Practice).

Material and methods.

The object of the study was the process of nurturing a child oparzonego. The care process is based on the theory of nursing Dorothea Orem. It assumes that every human

being has the inherent capacity to exercise self-care. This capability is variable and depends on many factors, including age, stage of development and health. Dorothe Orem self-care is defined as a learned activity that man alone undertakes and implements to sustain life, health, and general well-being. Inability to meet the needs of self leads to self-care deficit. This deficit is the reason for assistance, including health care. Dorothe Orem identified three types of relief nurse: fully compensating partially compensating a supporting-learning [8, 9].

Nursing practice is taking action in a complex celowyi thought. Nursing process should compensate for any deficits in the person needing help, and initiated care should take into account the roles they play a patient and a nurse (child care parents also) [9]. Good identification of needs and assessment of self-care deficits determine the selection of the best methods of nursing, which includes Orem: action "for" and "for" patient, directing and advising, providing support, creating an environment conducive to human development, learning. To the nurse could provide comprehensive care, should therefore have the knowledge and social skills and interpersonal characteristics particularly important in the nursing care of the child [8-11].

During the study we used a method of analysis which takes into account aspects of the nursing care of the patient scalded heat. Process mapping was conducted in patients with the most common problems of nursing care and activities phrases describing the diagnosis, results and interventions contained in the International Classification for Nursing Practice (ICNP®, the International Classification for Nursing Practice) [12-15].The study included 15 month old boy, hospitalized at the Clinic of Pediatric Surgery, Medical University. Wroclaw Medical University.

A case report.

The analysis of the interview the hospital determined that the child grabbed a bottle, which was boiling water and poured the contents on each other. Immediately after the incident the mother gave the boy first aid. A boy at the time of the adoption of the emergency department, medical records described as heavy. The study evaluated the physical consciousness. The child was conscious, crying out loud, acted in a suspicious terms of staff. In a clinical study, the heart rate was 130 beats per minute, rhythmic, poorly palpable. Arterial blood pressure was 105/65 mm Hg. Breath accelerated (28 / min), with no signs of dyspnea, saturation of 97%. Body temperature - 38.2 ° C. The child was evaluated the extent and depth of burn wounds. Second-degree burns diagnosed with bi III ° located on the right side of the face, neck, right shoulder, back and chest. The total area of burns was 21% of the total surface area (TBSA). The wound was pale red places, blistered with exudative fluid. It was found on the body swelling in and around occupied mating. After admission was decided to introduce a boy in a pharmacological coma to allow painless dressing assumptions. According to the order-made medical laboratory tests. Blood was collected to evaluate the morphological, biochemical and urine tests overall. The test results showed disturbances in water and electrolyte. Started leveling of water and electrolyte balance in a boy intravenously (according to the rule Parkland). Applied analgesia. Given sedatives. Boy due to decreased appetite and discomfort resulting from burns of the face and neck was the first 3 days fed by stomach tube. During hospitalization boy had lost 1.2 kg weight, which constituted approximately 12% of its initial weight.

The boy underwent surgery to remove one of necrosis on the third day of thermal injury. It was also carried out during autologous transplant. Burn wound in the neck was covered with a solid full-thickness graft from the aesthetic and functional reasons.

Chest, back and shoulder grafts were covered indirect siatkowanymi in proportions of 3: 1. At the donor site was chosen thigh. Boy wrapped using special multi-layer dressing antibacterial, moisture retaining and protecting tissues from damage. The wound on his face were treated by open due to the relatively small size and depth, and how the child felt discomfort after the founding of the dressing.

Proceedings of analgesic burnt boy was conducted according to the analgesic ladder. Monitoring the pain done with Flacca scale every 3 hours in the first days after the injury. They are taken into account the assessment of the child's behavior observed by his mother. At the time of hospital admission for intravenous pain therapy was started and continued to the complete cessation of pain. Pain further examined using a scale (SAS Rating frown face) and measuring the vital signs: heart rate, pressure.

Rehabilitation of the boy started the first day of the accident and was based on the positioning of the patient. The second day was conducted passive exercises and breathing 3 times a day. Gradually, along with the improvement of the child's increased range of exercises for activating the active fun. Prior to streamline procedures applied physiotherapist manual massage, kneading technique, alternately stroking the free parts of the body burns boy, which had a direct impact on the child's calming, relaxing muscle tension and prevented spastic contractures. After discharge from hospital rehabilitation was carried out in an outpatient setting. The child healed the wounds began as pressotherapy.

Throughout his hospitalization, the boy's parents were constantly present in the hospital, eager to engage in child care, supported the organization of free time in the ward. In supporting the boy's sense of security they were present during the procedures performed therapeutically treatments. Initial reluctance to perform these activities was associated with ignorance and fear of taking the wrong child. Educational activities undertaken by the nurse and physiotherapist affected the activation of parents to exercise physical exercises and nursing activities. The presence of parents affect the sense of security, calmed a little patient, which allowed to carry out operations therapeutic, diagnostic and rehabilitation. Knowledge of the behavior of the boy's parents also facilitate proper monitoring of pain.

The plan of nursing care for children [12-15].
Diagnosis ICNP® pain caused by wound, [10021243]
Interventions ICNP®:

- assessment of pain [10026119]
- monitoring pain [10038929]
- pain control [10025831]
- administration of the drug [10025444]
- administration of the analgesic [10023084]
- identifying attitudes toward pain [10009654]
- distraction [10039232]
- monitoring the response to treatment with [10032109]
- stacking at certain positions [10014757]
- evaluation of response to pain management [10034053]

ICNP® Result: no pain [10029008]

Diagnosis ICNP®: the risk of [10015007] hypovolemic shock [10009599]
Interventions ICNP®:

- monitoring for signs of life [10032113]

- blood pressure [10031996]
- monitoring of blood pressure [10032052]
- oxygen saturation monitoring by pulse oximeter [10032047]
- status monitoring respiration [10012196]
- evaluation of the status of breath by monitoring devices [10002799]

ICNP® score: normal process of the cardiovascular system [10028380] normal respiratory process [10028160]

Diagnosis ICNP® fever [10041539]
Interventions ICNP®:

- body temperature [10032006]
- monitoring the body temperature [10012165]
- antipyretic drug administration [10037248]
- monitoring the response to treatment with [10032109]
- the use of a cooling wrap [10036468]
- monitoring the fluid balance [10040852]

ICNP® score: normal body temperature [10027652]

Diagnosis ICNP®: the risk of impaired fluid volume [10026951]
Interventions ICNP®:

- continuous monitoring [10005093]
- monitoring of vital signs [10032113]
- evaluating the status of a cardiac monitoring device [10002706]
- evaluating fluid balance [10037881]
- monitoring bodily fluid [10035319]
- placing the device to a venous access [10034200]
- maintaining the patency of the infusion [10036577]
- fluid replacement therapy [10039324]
- treatment fluids [10039330]

ICNP® score: normal fluid balance [10033721]

ICNP® Diagnosis: burn wound [10029737]
Interventions ICNP®:

- evaluating the integrity of the skin [10033922]
- assessing the wound [10030799]
- assessing susceptibility to infection [10002821]
- dressing the patient [10031164]
- to assist the surgeon during surgery [10002866]
- wound care [10033347]
- monitoring the signs and symptoms of infection [10012203]
- skin care [10032757]
- introduction of aseptic techniques [10041784]
- teaching about wound care [10034961]
- the teaching of wound healing [10034974]

ICNP® score: improvement in skin integrity [10028517]

Diagnosis ICNP®: the risk of thermoregulatory dysfunction [10015244]
Interventions ICNP®:

- evaluation of response to temperature regulation [10007195]

- body temperature [10032006]
- monitoring the body temperature [10012165]
- assess the risks of hyperthermia [10033905]
- assess the risks of hypothermia [10002809]
- assess the risks of negative thermoregulation [10033914]

ICNP® score: normal thermoregulation [10033848]

ICNP® diagnosis: risk of infection [10015133]
Interventions ICNP®:

- the administration of antiviral prophylaxis [10001827]
- introduction of aseptic techniques [10041784]
- monitoring the signs and symptoms of infection [10012203]
- skin care [10032757]
- promote hygiene [10032477]
- Care points of entry for invasive devices [10031592]
- assessing susceptibility to infection [10002821]
- dressing the patient [10031164]

ICNP® Result: no infection [10028945]

ICNP® diagnosis: risk of nutritional deficit [10025561]
Interventions ICNP®:

- evaluating feeding and drinking behavior [10002747]
- learning about a regimen of diet [10026525]
- managing diet regime [1002386]
- Weighing patients [10033323]
- monitoring body weight [10032121]
- management of parenteral nutrition [10031795]
- interaction in fluid therapy [10030948]
- placing the device to a venous access [10034200]
- evaluating nutritional status [10030660]

ICNP® Result: positive nutritional status of [10025002]

Diagnosis ICNP®: self-care deficit [10023410]
Interventions ICNP®:

- evaluating the degree of independence [10002723]
- knowledge assessment protector [10033876]
- evaluating the degree of independence of the family [10026600]
- the teaching of wound healing [10034974]
- learning about self care of the skin [10033029]
- evaluating self care of the skin [10030747]
- promote hygiene [10032477]

ICNP® Result: Ready to proper self-care [10025250]

Diagnosis ICNP®: the risk of hospital-acquired complications [10041296]
Interventions ICNP®:

- zchorzeń assess the risks of medical hospitalization as a result of [10033895]
- assess the risks of exposure to infection [10044013
- positioning the patient [10014761]
- management regime of exercise [10023890]

- anticoagulant therapy [10039284]
- managing diet regime [10023861]
- to evaluate the mobility pattern [10030941]
- exercising the teaching of [10040125]
- rehabilitation teaching [10033017]
- assessing the physiological status [10030694]
- check the safety devices [10030924]
- fall prevention [10040211]

ICNP® Result: no hospitalization due to complications [10033600]

Discussion

American Society of Pain (ang. American Pain Society) recognizes pain as the fifth vital parameter, for this reason it should be accurately measured and the results recorded in the observation sheet. To relieve the pain effectively, it must first be able to judge. In the case of small children the biggest difficulty is incomplete possibility of verbalizing their subjective experience. Therefore, pediatric wards used various kinds of scale to monitor the intensity of pain developed based on the observation of the behavior of the child, physiological parameters and patient self-assessment [16]. Unfortunately, it has not created one uniform scale, which could be considered when assessing children from different age groups. In patients over 4 years of age are most commonly used scales to the subjective assessment of pain suited to his age, such as visual analogue scales (VAS), numeric (NRS), reading from a rock face or painscale FACES (Wong-Baker). Behavioral tools used to assess pain in children under 3 years of age. Is evaluated frequently several parameters, such as facial expressions, behavior of the limbs and trunk, activity, vital signs or behavior during sleep. For behavioral scales include: Pippa, cries, or COMFORT Flacca. In the assessment of pain, a small child is also important cooperation with his parents, because they are often the first to see the changes in his behavior associated with chest pains. Also you can take measurements of physiological parameters, which illustrate primarily the level of excitation of the body resulting in pain. These include: heart rate, blood pressure, respiratory rate, oxygen saturation, vagal, sweating hands, intracranial pressure [16]. Pain of the child should be assessed regularly, both at rest and during activity. Initially, the pain should be monitored every 4 hours. If the reduction time may be extended to 6-8 hours. Analgesia should be continued until complete resolution of pain. As a result of inadequate treatment can lead to adverse consequences, such as anxiety, sleep disorders, anorexia, contact with the environment, immobilization, respiratory and circulatory disorders, prolong wound healing and increased risk of infection. Pain treatment should be tailored to its intensity, and the drugs administered according to the analgesic ladder in doses appropriate for the age and weight of the child. Avoid analgesics by the intramuscular route. In the case of acute pain with a high frequency should be used intravenous drip. In the later period of treatment it is recommended oral or rectal route. Proceedings of analgesic burnt boy was carried out in accordance with the recommendations and analgesic ladder.

When the body's response to the burn occurs hypermetabolism and hypercatabolic. Metabolic disorders are most evident in the two weeks after the injury, but the time may be extended due to emerging complications of burn disease. It is therefore important specialized nutritional support customized qualitatively and quantitatively to stanui age. Pediatric patients are particularly at risk of malnutrition due to the increased energy demand of adults, reduced muscle mass and fat. Research

shows that a child is in the critical energy needs does not deviate from the basic energy expenditure (due to the limitation of physical activity, the supply of medicines and the selection of treatment methods, often analgesia or sedation) [17]. As a result of hypercatabolic for the loss of proteins, mainly due to the breakdown of skeletal muscle and visceral protein. This leads to an average loss of 10% of body weight in the first week and 20-30% in the next weeks for patients treated nutritionally. Oparzonego child's diet should be high protein and supply approximately 2.5-4 g of protein per kilogram of body weight per day. They should be given in particular glutamine (regenerating affecting the digestive system and stimulating the immune system) and arganina (plays an important role in tissue regeneration). The amount of fat in the diet should be reduced and to cover 15-20% of the total requirement. Carbohydrates as a major source of energy should cover 40-60% of daily energy requirement. Note, however, injured child that has a reduced possibility of oxygenation of glucose to 5 mg per kilogram of body weight per minute. Therefore, you should make regular measurements of blood glucose [17]. Nutritional boy began the second day of the injury. Boy due to decreased appetite and discomfort resulting from burns of the face and neck was the first 3 days fed by stomach tube. Boy diet was enriched by a suitable infant formula to cover the daily qualitative and quantitative needs of the patient. During hospitalization boy had lost 1.2 kg weight, which constituted approximately 12% of its initial weight.

In the treatment of burn rehabilitation plays an important role. The injury that results in damage to the full thickness of the skin, beginning the process of shrinkage of the wound edges. This process aims to reduce the size of the defect, wound, however, can lead to undesirable consequences such as scar contractures. Creation of a new skin or a skin graft do not solve this problem. The new tissue does not have the same structures as the skin, because the healing time increases the amount of collagen, as a result of which a massive scar, hypertrophic often. The process of shrinking the burn wound and scarring depends inter alia on the healing time, location and shape of the wound. Burn injuries can cause disorders of physical and psychosocial development, especially in children under 6 years of age. Therefore physiotherapy proceedings should be initiated as early as the first day of the occurrence of burns. Rehabilitation measures should be individual and tailored to the age of the child and take into account the surface, the depth of burns and locations [18].

Cultivating burn scar remember the intense moisturizing and oiling of the skin. It is also important to protect against UV radiation by using sunscreen. These scars tend to hyperpigmentation which can adversely affect the cosmetic effect. Intensive rehabilitation burn is conducted until maturity scars, ie for a period of approximately 2 years. After discharge from hospital continues in an outpatient setting. In children scars burns require periodic follow-up visits until the end of growth [18]. Rehabilitation boy began on the first day of the accident and was based on the appropriate positioning of the patient. The second day began to conduct exercises and gradually with the improvement of the child through fun exercises increased range. Before exercise physiotherapist massaged the boy what had effectively prevented uspakajało and contractures. After discharge from hospital rehabilitation was carried out in an outpatient setting.

In the pediatric patient care it is also important to include caregivers in treatment. The European Charter of Children's Rights in Hospital provides care for a parent to a minor patient throughout the hospitalization. Staying on the parent unit is especially important for young children and patients with chronic diseases. The nurse should

involve carers in the care process. During the twenty-four hour stay in the hospital a parent ceases to act as an observer and became a member of the therapeutic team. In the case of education, the child's parents oparzonego be included in the wound care and burn scars, change dressings, exercises to improve, and the possibility of complications pooparzeniowych. During his hospitalization, the boy's parents were present at the hospital constantly, actively engaging in treatment. Performed actions in care, feeding the boy, he organized free time. Their presence calmed a little patient, allowing for the efficient conduct diagnostics. Knowledge of the behavior of the boy's parents also facilitate proper monitoring of pain.

Conclusions

In the treatment of burns fast it plays a key role for first aid. A child hard oparzonego direct threat to life due to the shock of burn. Further problems are hard to heal and very painful burns, a high risk of infection, problems resulting from hypermetabolism, and complications resulting from immobility and scarring, including scar contractures. Rehabilitation should be implemented as quickly as possible in order to avoid restriction of mobility, fast upright, prevention of contractures, and prevention against formation of hypertrophic scars.

The family of the child plays an important role in the treatment process. Takes care of the patient during hospitalization, he cares for the patient actively participates in diagnostic tests, as well as a valuable source of information about the child's psychophysical response to painful stimuli.

The tasks of nursing besides participating in the treatment of burn wounds, dressings, medication, treatment, rehabilitation and nutritional education should be the patient's family and place it on the self-care of a child scalded.

ICNP® reference terminology used in the formulation of nursing diagnoses proved to be sufficient to plan the necessary interventions and document care outcomes.

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