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Nursing Care of an Individual with Pituitary Tumor

Opieka pielęgniarstwa nad osobą z guzem przysadki

Seçil Erden Melikoğlu¹, Aylin Aktaş Özakgöl², Hatice Kaya²

¹Pituitary Center, Cerrahpaşa Medical Faculty Hospital, Istanbul University, Turkey

²Department of Fundamentals of Nursing, Florence Nightingale Faculty of Nursing, Istanbul University, Turkey

Abstract

Individuals with pituitary tumors are faced with changes in their physical appearance, different emotional responses, lifestyle changes, and recurrent diagnostic tests. Although the pituitary tumor is benign, the patients may encounter severe morbidity and even mortality. It is very important to increase the patient's and family members' knowledge, to meet their needs and to provide supportive care in terms of signs and symptoms, treatment and care of the disease. Education and counseling within the nursing care is critical in helping individuals with pituitary tumors to reach optimal health conditions and reduce hospitalization length. In this review, nursing care of an individual with pituitary tumor is explained in terms of nursing process which is a scientific problem solving method in nursing. (JNPN 2018;7(2):86–92)

Key Words: pituitary tumors, nursing care, nursing diagnosis

Streszczenie

Osoby z guzem przysadki zmagają się ze zmianami w swoim wyglądzie, zróżnicowanymi reakcjami emocjonalnymi, zmianą stylu życia, a także cyklicznymi badaniami. Nawet łagodne odmiany guza przysadki cechują się dużym współczynnikiem zachorowalności a także śmiertelności. Bardzo ważnym jest, aby zwiększać poziom wiedzy rodziny pacjenta w celu zaspokojenia jego potrzeb, a także zagwarantowania leczenia podtrzymującego mającego na celu zajęcie się objawami i symptomami, leczeniem i opieką w chorobie. Edukacja i doradztwo w zakresie pielęgnacji jest bardzo ważne w procesie pomagania pacjentom z guzami przysadki w celu osiągnięcia przez nich optymalnych warunków zdrowotnych i skrócenia długości hospitalizacji. W niniejszym przeglądzie, pielęgnacja pacjenta z guzem nowotworu została wyjaśniona w kontekście procesu pielęgnacyjnego, który został potraktowany, jako metoda rozwiązywania procesów naukowych w pielęgniarstwie. (PNN 2018;7(2):86–92)

Słowa kluczowe: guz przysadki, pielęgnacja, diagnoza pielęgnacyjna

Introduction

Pituitary tumors, which account for 15–20% of all brain tumors, are benign tumors arising from anterior pituitary cells. The incidence has been found to be up to 20% in the community according to the epidemiological studies [1–4]. It can be seen in all age groups, but its frequency peaks between the ages of 30 to 60 years [5]. Pituitary tumors are classified as hormone-secreting and non-secreting tumors [6,7]. Adrenocorticotropic (ACTH) hormone-secreting tumors cause Cushing's disease, tumors that secrete growth hormone (GH) cause acromegaly,

prolactin (PRL) secreting tumors cause prolactinomas, and tumors that secrete thyroid stimulating hormone (TSH) lead to secondary hyperthyroidism [1,8–10].

Pituitary tumors cause a variety of clinical signs and symptoms due to the metabolic and endocrinological effects of the hormones they secrete, and due to compression on surrounding structures depending on the tumor size [11,12]. Diagnosis, treatment, care and follow-up of pituitary tumors that can be seen with severe morbidity and mortality due to the decrease in hormone secretions or hormone secretions affecting the entire biological processes of the body and the

compression effect due to tumor size; should be undertaken by a multidisciplinary team [1,6,13]. The nurse, with multiple roles in the team, handles individual needs in a unique and holistic manner and cares for the patient in a systematic approach.

Nursing Care

Nurses who have care for a patient with a pituitary tumor should be well aware of the signs and symptoms of the disease, potential side effects and complications of the treatment, care interventions to prevent these complications and to solve the problems when arise. It is stated that the nursing process is used for the systematic and scientific realization of the individual care and at the same time it is used together with a model/theory to meet the needs of the individual [14,15]. In this context, the nursing care of an individual with a pituitary tumor in compilation is explained by integrating it with a nursing model named “Model of Nursing Based on Activities of Living” (Roper, Logan and Tierney).

Assessment

The age, gender, self-history, family history, individual and social roles, self-perception of the health status, the reasons for applying to the health care institution, chief complaints, how and when the signs and symptoms of the illness began and progressed, the severity of the findings, which symptoms affect which daily activity of the individual, existing diseases, medications, smoking and alcohol use should be questioned.

Hypertension, weight gain, obesity, buffalo hump, and emotional disorders can be observed in Cushing’s disease, such as hirsutism, moon fattening, abdominal fat and supraclavicular area fat accumulation, purple cracks, ecchymosis, elevated blood glucose levels. Acromegaly is characterized by facial rash, opening gap between teeth, elongation in extremities, excessive sweating, sleep disturbances, snoring, decreased libido, menstrual irregularity, erectile dysfunction, headache, weight gain, and emotional disorders. Symptoms such as amenorrhea, galactorrhea, loss of libido, erectile dysfunction, infertility, and gynecomastia are common in prolactinomas. Hypopituitarism can lead to a clinical picture that adversely affects the quality of life that may progress from fatigue, weakness, loss of appetite, weight loss, nausea, vomiting, abdominal pain, constipation, hypoglycemia, decrease in muscle strength, impairment in thermogenesis and hypotension to loss of consciousness [9,16–18]. Non-hormone secreting tumors are usually large in size and manifest themselves with headache and visual disturbances due to compression on to optic

chiasm, hypothalamus, and peripheral structures [10,19]. In the diagnostic process of the pituitary tumors, measurement of serum levels of the pituitary hormones in the blood samples especially drawn between 08:00–09:00 am, give an idea about the elevated or low serum levels of hormones. Subsequently, induction and/or suppression tests are performed to diagnose endocrine disorders. Magnetic resonance imaging (MRI) is used for radiological evaluation. In addition to these assessments, patients should be undergo ophthalmologic examination (visual field, retinal examination and visual acuity assessment) [12,20].

Common Nursing Diagnoses and Care Planning

Acute Pain

Caused by increased intracranial pressure due to pituitary tumor and associated with surgical intervention.

Outcomes: Expressing that the pain is reduced and/or relieved by the individual.

Interventions: The pain of the patient is assessed by the pain scale, intense pain may be indicative of the increase in intracranial pressure due to the tumor, preclusion of activities that increase intracranial pressure (position, withdrawal etc.), if any change in the state of consciousness during pain, the environment is controlled and the physiotherapy is provided, pain relief methods (appropriate position, imagination, therapeutic touch, relaxation exercises) are taught, analgesics are applied according to the physician’s request and the efficacy is evaluated [21–24].

Risk for Acute Confusion

Associated with Hypernatremia/Hyponatremia Due to Diabetes Insipidus and Inappropriate ADH Syndrome after Hypopituitarism and Pituitary Surgery.

Outcomes: The patient is expected not develop any confusion and participate in daily life activities.

Interventions: Laboratory results including serum levels of anterior pituitary gland hormones and electrolytes such as sodium, urinalyses are monitored, causative and affecting factors are followed, fluid balance is monitored, the patient’s environment is arranged by forming a non-complex medium, and the patient will be communicated to support the patient’s sense of integrity [22–24].

Risk for Bleeding (Nasal Bleeding)

Associated with Hypophyseal Surgery (Endoscopic Endonasal Transsphenoidal Approach)

Outcomes: The patient and his/her family are aware of the risk of bleeding and clinically no bleeding event occurs.

Interventions: As the intracranial pressure increase may cause nose bleeding, the patient and his/her family should be informed and recommended to avoid activities that may lead to intracranial pressure increase such as heavy lifting, coughing, sneezing, and haemorrhage especially during the first month after surgery. Necessary measures are taken to prevent constipation. It should be explained that nasal obstruction may occur in the early postoperative period, thus he/she should be advised to avoid hard nasal cleanup since it may cause bleeding and the use of suitable nasal spray to relieve nasal obstruction is explained. If protective measures do not stop the bleeding, the patients should be strongly advised to apply to the nearest health institution for nasal pad application. It should be ensured that the individual and his/her family are informed about the risky situations that may lead to the bleeding, and that they have learned the necessary safety precautions [6,23,25].

Deficient Knowledge

About the disease process, treatment methods and results, discharge and home care.

Outcomes: The patient and his/her family well understood and can express the disease process, treatment methods and results, discharge plan and home care.

Interventions: Patient and his/her relatives are informed about the disease process, treatment methods and results, information requirements about care practices, signs and symptoms of pituitary tumor, type and duration of surgery, and possible complications. Patients and relatives are encouraged to ask questions. The importance of home care is emphasized. A written education plan for discharge training is developed and possible complications after surgery (nose bleeding, cerebrospinal fluid (CSF) escape, increased fluid withdrawal and sodium intake) and signs and symptoms of the disease are explained to the patients and their relatives. Available phone numbers are provided for use in emergency situations. Patient appointments for outpatient visits are arranged [6,13,22,23,26].

Risk for Aspiration

Associated with Pituitary Surgery.

Outcomes: Patient should be able to breathe easily and not experience aspiration.

Interventions: Respiratory rate, rhythm, breath sounds and spO₂ are evaluated at regular intervals. The patient is supported for mobilization usually on the second day after pituitary surgery. The patient is informed about

the use of suitable nasal sprayers according to the physician orders and trained for breathing via mouth. In the early period after surgery, because of oral respiration the patient is given oral care frequently and the lips are moistened [22–24].

Nausea

Associated with hypopituitarism due to the compression of large tumors, effect of anesthesia after pituitary surgery, and deterioration in electrolyte balance (hyponatremia). **Outcomes:** The patient expresses the relief of nausea.

Interventions: The patient is informed about the causes of nausea and how long it can last. A safe and clean environment is provided. It is recommended to eat slowly and slowly at frequent intervals. Laboratory results on electrolyte levels and hormone levels are monitored. The fluid that he gets out of the way is a follow-up. The antiemetic medications on the physician's order are administered and oral care is done when vomiting occurs [21–24].

Risk for Constipation

Associated with reduced metabolic rate and immobilization after surgery.

Outcomes: The individual can easily pass the stool.

Interventions: Previous intestinal habits of the patient are questioned. Intestinal sounds are listened and abdominal distention is checked. If there is no contraindication, fluid intake is increased and fibrous food is provided. Defecation is recommended every day at the same time, especially after meals. The patient is recommended not to delay defecation when triggered. It is recommended to drink a glass of warm water 30 minutes before breakfast and gently massage the lower abdomen in the toilet. The patient should be recommended to avoid straining for defecation since this maneuver may increase intracranial pressure [21–24].

Risk for Electrolyte Imbalance

Associated with Diabetes Insipidus and inappropriate ADH-secretion syndrome after Pituitary Surgery.

Outcomes: Not to experience electrolyte imbalance.

Interventions: The vital signs and neurological status of the patient are closely monitored. Signs and symptoms of hypernatremia (dry skin, increase in body temperature, weakness, irregular contractions in skeletal muscles) are checked. Signs and findings of fluid overload due to hypernatremia such as increase in blood pressure, tachycardia, increase in body weight, thirst, and edema

are also closely monitored. Symptoms which can be seen due to aggravation of hypernatremia include restlessness, confusion, stupor, and even coma, decrease in deep tendon reflexes, neuromuscular hyperactivity and subsequent seizures. Patients are monitored for signs and symptoms of hyponatremia (headache, lethargy, weakness, disorientation, abdominal pain, thirst, fatigue, nausea, vomiting, hypothermia, and even coma). In the treatment of patients who develop hyponatremia, restriction in fluid intake to 800–1000 ml/day is applied in order to prevent possible dilution of plasma sodium level. The reason for fluid restriction should be explained to the patient and his family. Frequent oral care is applied as fluid restriction can cause dry mouth. In order to reduce thirst sensation, the patient may be recommended to suck ice cubes and chew sugar-free gum. All medicines (hypoglycemic agents, diuretics, synthetic hormone replacement, etc.) that increase the risk of hyponatremia are checked, if necessary, intravenous sodium chloride solutions are administered according to the physician's order [6,13,26–28].

Risk for Impaired Skin Integrity

Associated with Changes in Hormone levels, Sweating and Immobility after Surgical Intervention.

Outcomes: Applying preventive measures and achievement of maintaining skin integrity.

Interventions: Skin care, cleaning and moisturization are provided. The importance of skin care should be explained to the patient and his/her family and applied. Adequate and balanced feeding is supported. Care is taken to ensure that bed linen and clothing are dry, clean and wrinkle free. After the operation, the patient is usually mobilized on the second day and supported [21–24].

Risk for Imbalance Body Temperature

Associated with increased intracranial pressure due to pituitary tumor and impaired thermogenesis.

Outcomes: To keep body temperature of the patient is within normal limits.

Interventions: Body temperature and other vital signs are checked at regular intervals. Risk factors that may cause change in body temperature are identified and these risk factors are controlled. The temperature and other environmental conditions are regulated according to the patient's requirements [21–24].

Fatigue

Associated with inadequate hormone synthesis due to pituitary tumor compression effect (hypothyroidism and hypocortisolism).

Outcomes: The patient feels himself strong and can perform daily activities easily.

Interventions: The causes of fatigue and weakness are explained and the patient is encouraged to explain his/her feelings about the effects of tiredness. Plans are made to implement basic activities during times when he/she used to feel high energy. Energy conservation techniques are taught. Training on correct and regular use of medicines (corticosteroids and levothyroxine treatment) given according to the physician's order due to inadequate hormone synthesis [21–24].

Ineffective Role Performance

Associated with Headache, Fatigue, Anxiety, Pain, and Disruption in the Perception of Body Image.

Outcomes: The individual can maintain self-care, fulfill his/her responsibilities at home and work.

Interventions: Factors affecting the role performance of the individual are determined. The patient is encouraged to express his/her feelings and thoughts. The capacity of the individual is determined. Tools are provided to help fulfill his/her roles and responsibilities. Participation of family members is supported in the care of the individual. Social support systems are provided [21–24].

Sexual Dysfunction

Associated with headache, fatigue, changes in body appearance (due to acromegaly and Cushing's disease), anxiety, loss of libido secondary to excessive synthesis of ACTH, PRL and GH or decrease in hormone production (estrogen and testosterone).

Outcomes: To be able to describe the effects the pituitary tumor on sexual functions, express concerns about this issue, and maintain a satisfying sexual life with his/her partner.

Interventions: The patient and his/her partner are informed about normal sexual activity and the effects of pituitary tumor on sexual functions. The couple is encouraged to ask questions about their sexuality and sexual functioning, to share their concerns, and discuss the strengths of their relationships. It is recommended to perform sexual activity during the time of the day he/she feels restful and well-being, to make some activities to relax him/herself before the sexual intercourse such as taking a shower and/or undergoing massage. They are informed about timing, position and facilitating

techniques for sexuality. General education about sexual health is given and, if necessary, directed to sexual counseling [21–24].

Disturbed Body Image

Associated with the secondary changes in the physical appearance of the patient (obesity, growth in hands and feet, and coarsening of facial features) due to excessive hormone (ACTH and GH) production originating from the pituitary tumor.

Outcomes: Expressing feelings and thoughts about himself and identifying his positive qualities. Getting information about his/her body appearance and function. Attending self-care and expressing his/her acceptance of the changing body image.

Interventions: The perception of the physical appearance of the patient is assessed. He/she is encouraged to express feelings and thoughts and ask questions. Correct information is given about changing body functions. The patient is encouraged to share feelings with family members and other important individuals and to meet with people having similar experience. He/she is encouraged to develop social relations. He/she is encouraged to take care of personal hygiene to improve self-esteem. Individual coping mechanisms are supported to be developed [21–24].

Disturbed Sleep Pattern

Associated with disease process, headache, lifestyle change and postoperative nasal obstruction.

Outcomes: The patient states that the symptoms of insomnia have diminishing and having a good sleep and resting more at nights.

Interventions: The sleeping patterns and habits of the individual are determined. A noise-free, quiet environment suitable for sleeping is prepared. If present, the pain and respiratory problems of the patient are removed with some applications. Measures are taken (drinks, reading books, massages, listening to music) that will make it easier for the individual to adapt to his sleeping habits without medication. The patient is recommended to avoid daytime sleeping as much as possible. It is advisable to perform discharge activity before going to bed, and avoid caffeinated beverages and heavy foods [21–24].

Discharge Plan of the Individual with Pituitary Tumor

Before the discharge, ensure that the patient and his/her relatives are adequately informed.

1. Firstly, the recommended drugs in the postoperative period (antibiotics, analgesics and hormone replacement if hormone deficiency develops) and the aims, appropriate doses, application forms, duration of use and side effects of the drugs are explained.
2. In particular, it is explained that inappropriate ADH-secretion syndrome develops usually during the first week after postoperative discharge, and signs and symptoms are taught to patients and their relatives [26].
3. It is explained that it is necessary to apply to the healthcare establishment if there is an escape of CSF in the early postoperative period, if there is colorless, odorless, clear liquid from the back and when there is an increase in body temperature.
4. If there is no other health problem that will limit the nutrition of the patient, it is said that there is no need for a special diet after surgery, and information is given about adequate and balanced nutrition.
5. If the patient has an incision site in the abdominal region, it must be told that the seams in this region can be bathed until it is taken out, using waterproof tapes, with avoiding to wet this region [6].
6. It is explained how to avoid the activities (heavy lifting, hauling, diving, etc.) that may cause increase in intracranial pressure particularly during the first month after surgery [13].
7. Outpatient appointments are planned (three days after discharge from an early electrolyte follow-up, post-op 10th day suture removal and electrolyte monitorization, post-op 3 months of multidisciplinary approach both endocrinology and neurosurgery visits).
8. Early recurrence of the tumor and the importance of regular follow-up visits on all aspects of treatment are described [29].
9. Detailed information is provided about the persons who will communicate to manage the crisis situation [2,30].

Evaluation

When the patient's response to nursing care is assessed, it is evaluated whether the individualized goals/expected outcomes identified in the care plan can be achieved. At the same time, the results of physical diagnostics and diagnostic tools will help us in assessing the effectiveness of the health care.

Conclusions

Individuals with pituitary adenomas require getting help, changing/improving their lifestyle, effectively using health services, managing stress, establishing and maintaining the communication. In the individualized care of the person with pituitary adenoma, using nursing process in combination with a model increases the effectiveness and quality of the care. As a matter of fact, with this approach based on holistic understanding and humanistic philosophy is also considered to improve the quality of life of the individual and his/her family.

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Corresponding Author:

Seçil Erden Melikođlu, BSN
Pituitary Center, Cerrahpaşa Medical Faculty Hospital,
Istanbul University, Turkey
GSM: 05547606316
e-mail: secil_erden@hotmail.com

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