Pol. J. Appl. Sci., **2023**, 9, 5-13

LONG-TERM CARE FOR A PATIENT WITH BRAIN MENINGIOMA - A CASE STUDY

Patrycja Sęk[1], Joanna Zofia Chilińska[2,3]

[1]*Student of Nursing, second-cycle studies, Faculty of Health Sciences of the University of Lomza*
[2]*Faculty of Health Sciences of the University of Lomza*
[3]*Cardinal Stefan Wyszynski Provincial Hospital in Lomza*

E-mail: jchilinska@al.edu.pl

Abstract

Introduction: Meningiomas are benign tumours of the central nervous system. They develop very slowly and most often originate from cells of the dura mater and arachnoid granules, causing distant metastases every thousand times. The incidence of brain meningioma is twice as high in women than in men. Women over 40 are at risk of developing the disease. Due to the benign nature of meningiomas, treatment involves surgical removal of the tumour tissue with foci and possibly bone. In most cases, surgery provides a complete cure. Caring for patients with a brain tumour requires knowledge and special care from medical staff. Patients need physical, social, mental and spiritual support.
The aims of the study were: To identify care problems in a patient with cerebral meningioma in the pre- and postoperative period, establish an individual care plan for a patient with brain meningioma, plan nursing interventions for a patient with a brain meningioma and assess the actions taken for the patient and her environment. Preparing the patient for self-care and self-care at home.
Material and methods: The study included a 59-year-old patient with a brain meningioma. The patient was transferred from the Neurological Department of the Specialist Hospital in Ostroleka to the Neurosurgical Clinic of the Military Medical Institute in Warsaw. The study used the individual case method, and the research tool was a nursing process prepared based on a case study.
Results: Based on the collected data, an individual nursing care plan was developed, taking into account the pre- and postoperative period, in which individual actions were selected depending on the goals of care.
Conclusions: The most important care and therapeutic problems diagnosed in the examined patient were: severe headache located on the left side according to NRS 7 caused by increased intracranial pressure and swelling of the tissues around the tumour, the patient's anxiety caused by visual disturbances in the left eye, risk of injuries caused by difficulties in movement due to lower limb paresis and amblyopia, and the patient's depressed mood and anxiety caused by the clinical diagnosis and fear of surgery. Based on the nursing diagnoses identified in a patient with a cerebral meningioma, the goals of nursing care and methods of their implementation were determined. Based on a case study, an individual nursing care plan was developed for a patient with a brain meningioma, covering the preoperative and postoperative periods, taking into account biopsychosocial aspects, including preparing the patient for self-care and self-care at home. The planned and undertaken nursing actions were assessed for their effectiveness. Detailed recommendations on self-care and self-care at home were developed, which allowed the patient's relatives to provide long-term care.

Key words: meningioma, brain tumour, nursing care, care

DOI: 10.19260/PJAS.2023.9.4.01

Introduction

PMeningiomas (Latin: meningioma) originate from the epithelial cells covering the arachnoid membrane and histologically. They are usually benign [1]. A brain tumour is any abnormal, pathological tissue that develops within the brain and, as it grows, causes intracranial tightness and pressure on the brain. The cause of uncontrolled growth is usually changes in the genetic code of these cells [2]. Brain tumours are an important cause of central nervous system disorders [3].

Tumours of the central nervous system are relatively rare. In Poland, there are 30 to 48 new cases per million inhabitants annually. In the adult population, they constitute approximately 9% of hyperplastic lesions, which are the cause of 2.6% of all deaths. In children, they constitute 20% of all malignant tumours [1]. The average incidence of primary brain tumours in the adult population in Europe in 2012 was 6.6 of which (7.8 in men and 5.6 in women) per 100,000 people, approximately half of them were malignant brain tumours [4] . According to the National Cancer Registry, brain tumours constitute 1.5% of malignant tumour cases in Poland. In 2019, the number of cases amounted to over 2,554 [5]. The most common types of cancer (CNS) in adults are glial tumours and meningioma. The most common form of malignant brain tumour are gliomas, which constitute

30% to 40% of all intracranial tumours [6]. Incidence rates in the United States and other developed countries range from 5 to 7 cases per 105 people per year and account for approximately 80% of all malignant brain tumours [7]. Meningiomas are the largest group of primary intracranial tumours. Almost 80% of them grow slowly, have a benign histology and are more common in women than men [8]. Due to their course and location, brain tumours are a direct cause of physical, mental and social disability affecting the family or caregivers [9].

The most common symptom of a growing brain tumour is headache, which appears and is strongest in the morning and intensifies as the tumour mass increases [1]. Symptoms depend on the location of the tumour and are caused by its direct impact on the surrounding brain tissue. Symptoms of loss or irritation may occur, leading to seizures. Epilepsy occurs in slowly growing tumours, including meningiomas and oligodendrogliomas [1]. Symptoms of frontal lobe cancer have an impact on behaviour and psychopathology, including loss of initiative, emotional blunting, permanent reduction in emotional life, especially higher emotionality, reluctance to act, apathy, loss of emotional response and abulia - decreased willingness to act and think, indifference to the consequences of their behaviour [1]. In lesions located in the medial part, intellectual slowdown, concentration disorders, and the ability to remember and plan are impaired. In bilateral parabasal tumours, moria (excessive tendency to joke and to play), frontal impulsivity, irritability, and disinhibition occur. Deep infiltrating tumours lead to akinetic mutism. The patient does not make contact, is insensitive to pain, and becomes infected [1].Temporal lobe cancer - the basic symptom is aphasia - an acquired speech disorder involving the loss or impairment of the creation and understanding of spoken and written language. Tumours affecting the functions of the hippocampus make it difficult to remember and retrieve content from hard memory. Patients with temporal lobe cancer have partial epileptic seizures, during which disturbed consciousness, confusion, amnesia, depersonalization may result in visual, auditory, sensory hallucinations and autonomic disorders manifesting themselves, for example, in attacks of unpleasant odour [1]. In the parietal lobe there are various sensory disorders like a loss of recognition of signs written on the skin (agraphaesthesia) and objects held in the hand. Symptoms of damage to the parietal lobe include visual hemiattenuation, disregard for an object in the visual field on the opposite side, constructional apraxia, difficulty performing complex activities, inability to draw or dress independently, inability to recognize faces, prosopagnosia, and difficulties in left-right orientation, spatial agnosia [1]. Tumours of the political lobe cause disturbances in the visual field [1]. Increasing headaches, drowsiness, disturbances of consciousness, deterioration of vision, nausea and vomiting, and balance disorders are a consequence of increased intracranial pressure [1].

The diagnosis of brain tumours begins with an interview and imaging tests such as computed tomography, magnetic resonance imaging and its numerous varieties, such as spectroscopy (MR), which involves mapping brain activity. Isotope methods are also important in diagnostics - single photon fragment emission tomography (SPECT) and positron emission tomography (PET)[10]. Diagnosis is also important by performing a biopsy, which involves taking a piece of tissue that is subjected to laboratory analysis during tumour removal surgery. The fragment collected during the biopsy is submitted for histopathological examination, during which, based on the appearance of the vascular cells and tissue structure, it can be determined whether the tumour is malignant or benign and its stage [11].

The methods of treating brain tumours are decided by a neurosurgeon who qualifies surgical treatment or, in some cases, conservative treatment. Conservative methods are mainly based on symptomatic treatment [12]. The fight against cancer in conservative treatment is primarily chemotherapy, the aim of which is to destroy rapidly dividing cancer cells. In addition to chemotherapy, radiotherapy is also used. This method is used as a complementary treatment after determining the radioactivity of the tumour [12]. For most brain tumours, surgery, despite the risks it carries, is the most effective form of treatment. Removing the lesion results in, among other things, reducing the growing intracranial pressure. Surgery allows for complete cure or delay of tumour growth and prolongs the patient's life [12]. Surgical removal of meningioma is the only and sufficient treatment for most patients. Complete removal of meningioma is achieved only by removing the tumour together with its attachment and the bone affected by the tumour in the area of its attachment [13]. Currently, the risk of complications is reduced through electrophysiological monitoring during the procedure and the possibility of using neuronavigation [12]. Patients with a brain tumour, as a result of the disease and the treatment, develop symptoms of depression such as low self-esteem, loss of interest, sexual dysfunction and emotional lability. The occurrence of disorders is influenced by damage to neurons or changes in brain metabolism as a result of neurotoxic, immunological, microvascular and inflammatory factors as a result of cytostatic activity, the tumour itself, comorbidities and the patient's mental state [2].

Assumptions and goals of the work

The aims of the work were:

1. to identify the care problems in a patient with cerebral meningioma in the pre- and postoperative period,
2. to establish an individual care plan for a patient with brain meningioma and to plan nursing interventions for a patient with a brain meningioma,
3. to assess the actions taken for the benefit of the patient and her environment, and
4. to prepare the patient for self-care and self-care at home.

Material and methods

The study involved a 59-year-old patient with a brain meningioma. The patient was transferred from the Neurological Department of the Specialist Hospital in Ostrołęka to the Neurosurgical Clinic of the Military Medical Institute in Warsaw. The study used the individual case method, the research tool was a nursing process prepared based on a case study.

Research material about the patient was collected based on: medical history, observation, analysis of the disease history, and anthropometric measurements (body weight, height) and vital signs (blood pressure, heart rate, and body temperature). The NRS scale was used to assess pain.

Case study

Patient D.D. A 59-year-old woman was urgently admitted to the neurology department of the Specialist Hospital in Ostrołęka due to severe left-sided headache and visual disturbances in the left eye. A few days earlier, the patient had complained of streaks and dark spots appearing before her eyes. Upon admission to the ward, the patient was conscious, in logical contact, oriented to place, time, space and health condition. The patient has been treated for type 2 diabetes for two years (Formetic 500 mg 3x500mg). There has been no history of diabetes in the family so far.

Upon admission, neurological examination showed no signs of focal CNS damage. Laboratory tests and magnetic resonance imaging (MRI) of the head were performed at the department. In the left parieto-occipital area, a pathological mass of 25/33/30 mm was visible - a tumour with the morphology of a meningioma with a mass effect and swelling of the tissues around the tumour. Anti-swelling treatment was started in the department. After a neurosurgical consultation, the patient was transferred to the Department of Neurosurgery of the 17th Military Medical Institute, where she was qualified for surgical treatment - left-sided parieto-occipital craniotomy and tumour removal. Histopathological examination showed atypical meningioma WHO G-II. The surgery was completed without complications.

In the postoperative period, a temporary speech disorder (aphasia), features of sensory and motor aphasia with a persistent problem of impaired use of complex logical and grammatical compounds, repetition disorders, the patient had minor writing disorders (agraphia) and counting disorders (acalculia), which hindered language communication. Additionally, disorders of motivational and emotional functions were noted: the patient had anxiety about being dependent on others and feared changes in performing current social roles with a tendency to feel depressed . In the postoperative period, the patient reported headaches and dizziness, nausea, vomiting, memory impairment, epileptic seizures, aphasia, and dysarthria. A CT scan of the head showed a typical early postoperative picture: cerebral oedema around the surgical site. The treatment included: antiepileptic drugs (Depakine Chrono 300mg 2x300mg) and anti-swelling drugs (Demezon 1mg 3x1mg). During the interview, the patient's pain was determined to be NRS 7, and the patient required assistance from another person during some daily activities. The Barthel scale scored 70/100, which indicated that the patient's condition was moderately severe. The patient was assigned to category II of nursing care.

The patient lives in a single-family house with her son, and her husband died 25 years ago. Her living conditions are good, and she is currently on a sickness pension and was a caterer by profession. The patient's height is 165, weight 99, body mass index is 36.6, obesity level II. On the day of receiving care, the vital parameters were: blood pressure: 135/88 mmHg, heart rate: 67 beats/min, temperature: 36.6˚ C. The patient is taking: Formetic 500 mg 3x1 PO, Depakine Chrono 300 mg 2x1 PO, Demezon 1 mg 3x1 p.o., Furosemide 40mg 1/2x2 p.o., Kalipoz prolongatum 391 mg 1x1 p.o., Diaprel MR 30 1x1 p.o., Effentora 100µg 1x1 p.o.

Results:

Based on the medical history, analysis of medical documentation, observation, anthropometric and vital measurements, care problems were identified; goals of care were defined; activities were planned in relation to the goals of care, taking into account the type of treatment and the patient's current condition; an assessment was made in terms of the goals achieved, and the patient was prepared for living at home.

Individual care plan for a patient with brain meningioma:

Nursing and care problems in the preoperative period

Nursing Diagnosis 1:

Severe headache located on the left side according to NRS 7 was caused by increased intracranial pressure and swelling of the tissues around the tumour.

Nursing activities:

1. Application of working methods "for" and "for" according to D. Orem's theory in order to relieve the patient during severe pain:
   - ¬ Active support of the patient and her relatives
   - ¬ Assistance in hygiene activities: bathing, toileting, mouth care changing diapers, perineal toilet
   - ¬ Assisting the patient in feeding
2. Assessment of the nature and intensity of pain:
   - ¬ Documenting pain intensity and pain relief methods
   - ¬ Monitoring pain intensity according to the NRS scale every 2 hours
   - ¬ Assessment of pain intensity
   - ¬ Qualitative and quantitative assessment of pain, including physical, mental, emotional and spiritual suffering
3. Regular assessment of the effectiveness of the procedure, monitoring of accompanying symptoms and the patient's clinical condition.
4. Ensuring good verbal communication with the patient and relatives
5. Addressing pain treatment as a component of overall care provided to the patient and her family
6. Observation of the patient's state of consciousness
7. Observation of the patient's reaction to pain, in particular: behaviour, mood, verbal and non-verbal contact with the environment, psychomotor drive, and sleep
8. Observation and assessment of the effectiveness of treatment of other symptoms occurring with pain: insomnia, lack of appetite, fatigue, nausea, vomiting, depressed mood, fear, and fear of death

9. Considering the use of non-pharmacological methods of pain treatment depending on the patient's clinical situation, e.g. therapeutic conversation, gentle massage, use of amenities, and psychological consultation
10. Depending on the patient's needs, initiation or modification of the existing treatment for pain and other symptoms such as depressed mood, nausea, vomiting, and dizziness.
11. Administration of painkillers in accordance with the individual medical order card
12. Observation of the therapeutic effect of analgesic treatment
13. Observation of the side effects of analgesic treatment: drowsiness, confusion, slowness, excessive sleepiness, and increasing dizziness
14. Education of the patient and her relatives regarding pain treatment
15. Providing the patient with conditions for sleep and rest
16. Psychosocial and emotional support for the patient and her relatives
17. Documenting the actions taken for the patient in the applicable documentation

Assessment: Pain reduction was achieved on the VAS scale 1. The patient required careful observation and early pain management.

Nursing Diagnosis 2:

The patient's anxiety was caused by visual disturbances in the left eye.

Goal of care: reducing anxiety, improving mental comfort, and supporting the patient.

Nursing activities:

1. Assessment of the degree of vision impairment in the left eye - ophthalmological consultation
2. Observation for the severity of symptoms of amblyopia:
   - ¬ Checking visual acuity using Snellen charts
   - ¬ Actively responding to the symptoms reported by the patient
3. Securing the patient when trying to stand upright and while walking
4. Familiarizing the patient with the topography of the patient room and ward
5. Helping the patient in everyday activities - using active support methods in accordance with D. Orem's theory when getting up, walking, dressing, undressing, combing hair, fastening and unbuttoning, bathing, and mouth care
6. Maintaining verbal contact with the patient
7. Emotional support for the patient
8. Care for the closed left eye
   - ¬ Eye toilet,
   - ¬ Using drops to moisturize the eyeball
   - ¬ Protect the left eye with a sterile dressing, especially at night
9. Applying eye medication prescribed by the doctor
   - ¬ Fludrocortisone
   - ¬ Dexamethasone
10. Explaining to the patient and her relatives the cause of vision impairment
11. Educating relatives on how to deal with persistent eye disorders
12. Requesting a psychological consultation
13. Documenting the actions taken

Assessment: Amblyopia persisted, continued action recommended.

Nursing Diagnosis 3:

Risk of injuries due to difficulties in movement due to lower limb paresis and amblyopia.

Goal of care: Prevent injuries and falls, and facilitate movement.

Nursing Activities:

1. Familiarizing the patient with the topography of the ward: location of the bathroom, toilet, nursing station, and doctor's office
2. Assessment of muscle strength using the Lovett test and adjustment of activity depending on the test
3. Assistance in changing the position from lying to sitting, sitting to standing, and standing to sitting
4. Securing the patient while standing and walking
5. Introduction to the physiotherapist's rehabilitation process
6. Implementation of the rehabilitation process based on an individual rehabilitation plan developed by a physiotherapist
7. Providing the patient with orthopaedic equipment to facilitate mobility: wheelchair, ladders, walker, crutches, and/or canes
8. Educating the patient on the use of techniques for getting out of bed and moving around
9. Mobilizing the patient to take up daily activity and exercise in order to gradually restore fitness
10. Involving loved ones in the improvement process
11. Documenting actions taken for the patient

Assessment: There was no fall; the patient's safety was ensured; the continuation of activities was recommended.

Nursing Diagnosis 4:

The patient's depressed mood and anxiety were caused by the clinical diagnosis an fear of surgery.

Goal of care: Improve mood and control anxiety and fear

Nursing Activities:

1. Observation and control of the patient's feelings and emotions.
2. Establishing therapeutic contact through: respect and acceptance, patient approach to the patient and self-control, strengthening the patient's image by showing her strengths, adding encouragement and support
3. Maintaining an empathetic attitude of the nursing staff towards the patient and her relatives
4. Enabling contact with a psychologist
5. Assuaging in an understandable way all doubts arising from the treatment process at each stage of improvement
6. Providing nursing care
7. Ensuring a good specialized neurosurgical team
8. Reducing the patient's fear of surgery by: talking to the patient about the emotions and feelings, showing understanding, and listening patiently to the patient

9. Providing a sense of security through contact and active support
10. Enabling contact with patients who have undergone brain tumour removal surgery
11. Taking into account the patient's spiritual needs by enabling contact with the hospital chaplain
12. Enabling contact with loved ones
13. Documenting actions taken for the patient

Assessment: The level of anxiety was reduced; the emotional state was stable, and patient observation was recommended.

Nursing and care problems in the postoperative period

Nursing Diagnosis 5:

Dizziness caused by previous surgery.

Goal of care: Minimize dizziness and provide a sense of security.

Nursing Activities:

1. Determining the frequency, duration and factors that intensify dizziness
2. Ensuring safety by providing protection when sitting down, raising the head, and changing body position in bed
3. Belaying when trying to stand upright and walk
4. Walking support with orthopaedic equipment: walker and initially axillary
5. Documenting blood pressure
6. Avoiding sudden movements, especially when changing position, sitting down, and getting up
7. Limiting physical exercise
8. Taking care of the patient's daily bowel movements - preventing constipation
9. Ensuring safe living conditions in preparing the home environment - informing loved ones about removing carpets, rugs, and eliminating thresholds
10. Taking care of the microclimate and airing the room
11. Ensuring peace and quiet during the day and night
12. Actively motivating the patient to run
13. Mental support for the patient and her relatives
14. Educating relatives on help during dizziness: providing leaflets and brochures
15. Educating the patient regarding positioning in the bed, avoid lying flat, and the head of the bed should be raised at least 30 degrees above body level
16. Documenting actions taken

Assessment: Dizziness persisted, the patient required further observation, Continuation of activities was recommended.

Nursing Diagnosis 6:

Nausea and vomiting caused by surgery and dizziness.

Goal of care: Reducing the occurrence of nausea and vomiting, and preventing of water and electrolyte balance disorders.

Nursing Activities:

1. When vomiting, place the patient in a high or semi-high position or on her side to prevent aspiration
2. Assessment of vomiting in terms of: intensity, content, presence of pathological admixtures (blood, mucus), factors intensifying vomiting (change in positioning)
3. Reduce nausea by: drinking cool fluids, giving cold Coca-Cola (a small amount), giving small amounts of salty snacks, and taking deep breaths
4. Ensuring personal and bedding hygiene
5. Providing lignin, a vomit bag and water to rinse the mouth in case of vomiting
6. Taking care of oral hygiene - assistance in mouth care
7. Taking care of the microclimate and airing the room
8. Providing peace and quiet
9. Assessment of the patient in terms of hydration, the assessment should include: skin elasticity, capillary return, blood pressure value, pulse value, diuresis value, and fluid balance.
10. Hydration, the route depends on the response to oral fluid administration and the patient's condition.
11. Monitoring water and electrolyte balance, electrolyte testing ordered by a doctor
12. Administration of electrolytes as ordered by a doctor, depending on the electrolyte values: potassium and sodium
13. Documenting the actions taken

Assessment: Vomiting stopped; the patient's well-being improved; electrolyte disturbances were not observed, continuation of activities was recommended.

Nursing Diagnosis 7:

Verbal communication disorders caused by dysarthria and aphasia.

Goal of care: Improving communication and facilitating contact with the environment.

Nursing Activities:

1. Showing understanding, patience and emotional support when establishing contact
2. Conducting a conversation with the patient using short sentences, using codes and pictograms to facilitate feedback, e.g. blinking the eyelids when understanding and agreeing with the information provided and nodding the head
3. Communicating in short sentences: form - eat, drink, cold, hot
4. Motivating free speech by using breaks between sentences,
5. Reading to the patient and encouraging loved ones to read books and articles
6. Giving the patient more attention during the conversation and giving the patient enough time to express herself
7. Maintaining eye contact with the patient
8. Observing the patient's facial expression while speaking
9. Guiding the patient into the right context and focusing the patient's attention on only one issue
10. The use of various facilities such as ready-made boards: boards with letters of the alphabet, boards with ready-made words, and boards with ready-made pictures.
11. Using relaxation exercises and listening to music,
12. The use of isometric exercises consisting in rotational and sideways head movements with tightening and relaxing the sternocleidomastoid muscle
13. Education of relatives in communicating with the patient
14. Enabling contact with her son and loved ones
15. Use of exercises ordered and conducted by a neurological therapist aimed at improving the speech apparatus - reading aloud and learning effective exhalation

16. Enabling contact with a clinical psychologist
17. Documenting actions taken

Assessment: Contact with the environment has improved slightly; continuing the activities is recommended.

Nursing Diagnosis 8:

Disturbed orientation due to recent memory disorders caused by a past event surgery in the area (CNS).

Goal of care: to facilitate orientation in the surroundings.

Nursing Activities:

1. Assessment of the degree of memory disorders by asking questions
2. Showing understanding and kindness to the patient
3. Constant care for the patient
4. Informing the patient about the nursing activities performed care
5. Do not change the arrangement of furniture in the rooms where the patient stays
6. Removal of objects that could threaten the patient's safety such as furniture with sharp edges
7. Education of relatives on how to deal with recent memory disorders
8. Motivating relatives to care for the patient so that she feels safe
9. Encouraging the patient to read and practice memory exercises

Assessment: The patient required the continuation of activities, and memory impairment still persisted.

Nursing Diagnosis 9:

Risk of hypoglycaemia due to type 2 diabetes.

Goal of care: Minimize the risk of hypoglycaemia.

Nursing Activities:

1. Re-education of the patient regarding the principles of self-control in type 2 diabetes
2. Providing leaflets and a brochure about type 2 diabetes
3. Educating the patient about glycaemic control: hand washing techniques, preparing fingertips for blood collection, reminding how to use the glucometer, and documenting the measurements taken
4. Education of relatives on what to do in the event of hypoglycaemia
5. Providing checks at the diabetes clinic

Assessment: Hypoglycaemia did not occur; the continuation of actions was recommended.

Nursing Diagnosis 10:

Knowledge deficit in self-care and self-care at home.

Goal of care: Improving knowledge in the field of self-service and self-care.

Nursing Activities:

1. Recognizing the degree of knowledge deficit in everyday activities such as: bathing, moving freely, safely, independently, dressing independently, using the toilet independently, controlling stool and urine, as well as preparing and eating meals independently
2. Instructing the patient in the hygiene of the entire body, dressing independently, as well as preparing and eating meals
3. Creating appropriate conditions for performing everyday activities: furniture and lighting arrangement
4. Creating a menu so that the patient can make her own meals, preparing recipes: preparing soups, preparing oatmeal, etc.
5. Education of the patient and her relatives in performing everyday activities
6. Motivating the patient in everyday activities
7. Providing education about taking the patient's medications
8. Documenting the actions taken

Assessment: The patient was able to perform self-care activities independently self-care.

Nursing Diagnosis 11:

Risk of depression due to the patient's inability to come to terms with the diagnosis.

Goal of care: Prevent depression.

Nursing Activities:

1. Showing the patient empathy, support and understanding
2. Mobilizing for activity, walks, and contacts with loved ones
3. Motivating her to believe in her own strength and possibilities
4. All doubts should be explained to the patient and her relatives, and all information should be provided on an ongoing basis
5. Providing the family with education on how to deal with the patient: support for the patient and her relatives
6. Enabling contact with loved ones
7. Motivating the patient to be active in occupational therapy
8. Facilitating psychological consultation
9. Enabling contact with the clergy
10. Documenting the actions taken

Assessment: Continuation of activities was recommended; depression was not observed.

Nursing Diagnosis 12:

Lack of acceptance of cancer.

Goal of care: Facilitate acceptance of the disease.

Nursing Activities:

1. Talking to the patient about her concerns about cancer
2. Enabling consultations with a clinical psychologist
3. Encouraging the patient to verbalize thoughts and feelings
4. Consulting with an oncologist to discuss further treatment and follow-up
5. Providing the patient with psycho-emotional support in the fight against the disease through: conversation, support of loved ones, and help in solving problems
6. Educating relatives on how to talk to the patient
7. Proposing contact with other patients who have a similar experience

Assessment: The patient required further support to strengthen acceptance of the disease.

Tips for self-care and self-care at home

1. Explaining the necessity and regularity of using the advice of a neurologist.
2. Systematic performance of exercises recommended by a neurologist.

3. Teaching the patient and her relatives to cope with difficulties resulting from difficult communication due to aphasia and dysarthria.
4. Regularly taking recommended medications and fulfilling other recommendations.
5. Systematic monitoring in the neurosurgical and neurological clinic.
6. Preparing the patient's relatives for emotional support during recovery.
7. Instructing relatives to prepare the patient's environment for the needs of a disabled person: eliminating carpets, slippery floors, poor lighting, unnecessary things that hinder free movement and protecting against falls and injuries.
8. Avoiding constipation, using an easily digestible diet to prevent bleeding in the surgical site.

Discussion and discussion of the study results

Cancers of the nervous system constitute a serious health problem in modern medicine. Due to their location, they are very difficult to diagnose and, consequently, to treat. Meningiomas are most often primary, intracranial, benign and slow-growing tumours [14]. Symptoms of a brain tumour are the result of a progressive disease process, as a result of which there is an increase in intracranial pressure in the skull cavity, known as intracranial compartment. Normal intracranial pressure is influenced by the brain, blood and cerebrospinal fluid. A change in the volume of one of them causes intracranial hypertension. According to Kamińska [11], a long-term increase in intracranial pressure is the cause of many symptoms. The most common of which is headache, which increases as the mass of the tumour increases [11].

The examined patient reported headaches, dizziness and visual disturbances due to increased intracranial pressure and tissue swelling in the area of tumour growth. According to Kozubski [1], when intracranial pressure increases, stasis occurs in the veins leaving the eye and the papilla of the optic nerve bulges, resulting in a symptom called optic disc congestion. It is an overactive and underactive thyroid gland that causes vision deterioration and a limitation of the visual field characterized by poorer visual acuity. Headaches with increased intracranial pressure occur most often in the morning and are usually intensified by coughing, sneezing, lifting weights, and the urge to defecate. According to Prusiński [15], epilepsy very often occurs as the first symptom of a brain tumour (meningiomas constitute 40-60%). During the development of the tumour, as well as in the immediate preoperative and postoperative period, the patient did not suffer from epileptic seizures. The patient's main problem was dizziness. Both Kozubski [16], Pietrzak and Kalinowska [17] describe dizziness as an unpleasant symptom after tumour resection. Any abnormality in the central nervous system may cause an increase in intracranial pressure, which causes, among other things, non-systemic dizziness. Pietrzak and Kalinowska [17] describe the symptoms of vertigo as disturbances of balance, sensations of movement, spinning, swimming and floating. These are subjective sensations, objective balance disorders, visible in neurological tests as unsteady or disturbed gait. Dizziness is associated with symptoms of increased intracranial tightness. During dizziness, there is an illusion of instability, uncertainty, and lack of balance. The basis for diagnosing the causes of dizziness is an interview with the patient and a general and neurological examination [17]. Another significant problem diagnosed in the examined patient in the postoperative period was speech disorders. According to Prusiński [15], speech impairment causes difficulties in verbal communication. Pąchalska [18] emphasizes that intracranial tumours are cancerous tumours developing inside the skull. They may arise in the brain itself or in the meninges (e.g. meningiomas), which cause pressure on adjacent brain areas. Depending on the type of tumour, its location and growth process, various disorders in speaking or understanding statements appear, these are symptoms of aphasia. Speech disorders, like other symptoms, are influenced by an increase in intracranial pressure; speech disorders manifest themselves in difficulties in naming, distortion of words, disturbances of consciousness and increased drowsiness [18]. It is difficult to describe the most important causes and consequences of brain damage that would describe the picture of aphasia, because the area of these disorders is large. According to Tarkowski [19], aphasia is a speech disorder that results from damage to the speech centres in the cerebral cortex. Partial or complete damage to human brain structures disrupts speech functions. This results in the inability to express thoughts and incomprehension of speech. According to Zielińska et al.[20] and Tarkowski [19], speech abnormalities resulting from disorders of the articulatory apparatus, i.e. the muscles of the tongue, palate, larynx and pharynx are referred to as dysarthria. A poorly functioning speech organ limits the movement of the lips, tongue and soft palate. Speech disorders are manifested by slurred speech and altered voice, laziness of articulatory and respiratory muscles, accelerated (tachylalia) or delayed (bradylalia) dullness of speaking, hoarseness, aphonia, and abnormal accentuation may also occur. Movement disorders are an important element in the clinical picture of diseases of the nervous system, they may occur in various forms. It is necessary to determine where the motor neuron was damaged. Most often, these are vascular disorders or tumours. After brain tumour surgery, the patient developed symptoms of limited movement, manifesting as paresis. Paresis involves limited movement or reduced muscle strength. Depending on the type of cancer, the location of the lesions, the histopathological diagnosis and the stability of the spine, physiotherapy may be started. Passive, active-passive and assisted exercises are used. Physiotherapy treatment should be adapted to the patient's abilities [21]. Paresis or flaccid paralysis may result from neurogenic causes [15]. A significant problem experienced by the patient was fear of surgery. According to Zięzio and Szepietowska-Ilach [22], a diagnosis of cancer arouses strong fear in everyone, which causes a storm of feelings such as anxiety, disorientation, anger, sense of helplessness, frustration, shock, and disbelief. Łukaszek and Kaptacz [21]. They describe anxiety as a manifestation of emotional disorders in dangerous situations, which accompanies the patient from the moment of diagnosis through all stages of treatment. Lelonek, Cieślik and Kamusińska [23].

They believe that anxiety is a state of emotional arousal caused by a sense of threat, which occurs in all seriously ill people, especially oncological patients. Lelonek, Cieślik and Kamusińska [23] also describe that feelings of regret, sadness, guilt, anxiety, dissatisfaction, as well as the inability to make decisions, lack of willingness to act, loss of appetite, weight loss, sleep disorders, sense of hopelessness are symptoms of depression, as a result the patient undergoing the study cannot cope with the disease. Ziółkowska, Rogala and Hawryło [24] Usually, the patient's first reaction to learning about the cancer diagnosis is short and may involve feelings of emotional upset, fear, sadness, denial and lack of acceptance. Pasek et al. [3] claim that therapeutic methods significantly accelerate the patient's return to functional capacity, which means that patients can perform everyday activities independently more quickly. Physical activity and patient education are important according to Zięzio and Szepietowska-Ilach [22].

A cancer patient, regardless of the tumour's location, is in a difficult situation that he or she cannot always cope with. Attempting acceptance requires physical, mental and intellectual effort from the patient. The balance between needs and tasks that need to be done is disturbed. Twardak et al.[25]. believe that cancer leads to permanent consequences, because of it the quality of life in all areas is worse, and it affects the patient's poorer functioning in society.

Results

1. The most important care and therapeutic problems diagnosed in the examined patient were:
   - ¬ Severe headache located on the left side according to NRS 7 caused by increased intracranial pressure and swelling of the tissues around the tumour.
   - ¬ The patient's anxiety caused by visual disturbances in the left eye.
   - ¬ The risk of injuries caused by difficulties in movement due to lower limb paresis and Amblyopia.
   - ¬ The patient's depressed mood and anxiety caused by the clinical diagnosis and fear of surgery.
2. Based on the identified nursing diagnoses in a patient with meningioma in the brain, the goals of nursing care and methods of their implementation were determined.
3. Based on the case study, an individual nursing care plan was developed for the patient with a brain meningioma, covering the preoperative and postoperative periods, taking into account biopsychosocial aspects, as well as including preparing the patient for self-care and self-care at home.
4. The planned and undertaken nursing actions were assessed for their effectiveness.
5. Detailed instructions for self-care and self-care at home were developed, which allowed for long-term care of the patient.

Literature

[1] Kozubski W, Liberski P. P.: Neurologia .Redakcja Naukowa tom 2. Wydawnictwo Lekarskie PZWL Warszawa 2014,549,537,538

[2] Barańska B., Barnaś E., Bartoszewska L. i wsp. Standardy i procedury w pielęgniarstwie onkologicznym .Redakcja Naukowa Marta Łuczyk ,Zdzisława Szadowska-Szlachetka, Barbara Ślusarska. Wydawnictwo PZWL, Warszawa 2017,21,174,175,189.

[3] Pasek J.,Pasek T., Ładziński P., Sieroń A.: Rehabilitacja szpitalna u pacjentów po operacji guza mózgu. Rehabilitacja po operacji guza mózgu, 2013,143,148.

[4] Andersen ZJ. Pedersen M., Weinmayr G., Stafoggia M., Galassi C., Jørgensen JT., Sommar JN., Forsberg B., Olsson D., Oftedal B., Aasvang GM., Schwarze P., Pyko A., Pershagen G., Korek M., De Faire U., Östenson C.G., Fratiglioni L., Eriksen K.T., Poulse Long-term Exposure to Ambient Air Pollution and Incidence of Brain Tumor: the European Study of Cohorts for Air Pollution Effects (ESCAPE). Neuro-Oncology, 2017

[5] Dane Krajowy Rejestr Nowotworów (KRN) 2019 47

[6] Thambi R. Kandamuthan S., Sainulabdeen S., Vilasiniamma L., Abraham T.R., Balakrishnan P.K.: Histopathological Analysis of Brain Tumours- A Seven Year Study from a Tertiary Care Centre in South India, Journal of Clinical and Diagnostic Research, 2017, 11, 6, EC05-EC08. doi: 10.7860/JCDR/2017/25623.9990.

[7] Benke G. Turner M.C., Fleming S., Figuerola J., Kincl L., Richardson L., Blettner M., Hours M., Krewski D., McLean D., Parent M.E., Sadetzki S., Schlaefer K., Schlehofer B., Siemiatycki J., van Tongeren M., Cardis E.: Occupational solvent exposure and risk of glioma in the INTEROCC study, British Journal of Cancer, 2017, 117, 8, 1246–1254.

[8] Kessel K.A., Fischer H., Oechnser M., Zimmer C., Meyer B., Combs S.E.: Highprecision radiotherapy for meningiomas: Long-term results and patient-reported outcome (PRO), Strahlentherapie und Onkologie, 2017, 193, 11, 921–930.

[9] Pouchieu C., Baldi I., Gruber A., Berteaud E., Carles C., Loisseau H.: Descreptive epidemiology and risk factors of primary central nervous system tumors: Current knowledge, Revue Neurologique, 2016, 1, 46-55.

[10] Cegła P., Adamska K., Smoleń M.,Pachowicz M.:PET/CT w diagnostyce guza mózgu. Diagnostyka Inżynier i Fizyk Medyczny 5/2018,306.

[11] Kamińska B., Jak powstają guzy mózgu czyli o pożytku badań całych genomów, Wszechświat, Tydzień Mózgu ,t.116,nr1-3/2015 nowywszechswiat.ptpk.org/index.php/wszechswiat/article/view/799/639 data pobrania 10.02.2023.

[12] Słupska-Kartaczowska M. Wybrane problemy pielęgnacyjne chorego z guzem mózgu.nr 15 (2)/2015.data pobrania 05.02.2023. 48

[13] Fijuth J., Dziadziuszko R., Biernat W. i wsp. red Jacek Fijuth, Rafał Dziadziuszko.:Zalecenia postępowania diagnostyczno-terapeutycznego w nowotworach złośliwych. Nowotwory ośrodkowego układu nerwowego.2013,56.

[14] Jaskólski D.J.: Guzy mózgu i zespół wzmożonego ciśnienia

wewnątrzczaszkowego, Pielęgniarstwo Neurologiczne. pod red. Naukową Jaracz K, Domitrz I. Wydawnictwo Lekarskie PZWL, Warszawa 2023,515-527.

[15] Prusiński, A. Zaburzenia Mowy. Neurologia praktyczna. Red. . Warszawa: PZWL Wydawnictwo Lekarskie, 2015, 149.

[16] Kozubski W., Domitrz I., Bóle i neuralgie w zakresie głowy i twarzy [w:] Neurologia Podręcznik dla studentów medycyny, Red Naukowa Kozubski W, Liberski P. P.: tom 2. Wydawnictwo Lekarskie PZWL Warszawa 2014,716. 49

[17] Pietrzak A., Kalinowska A.,: Zawroty głowy [w:] Pielęgniarstwo Neurologiczne. pod red. Naukową Jaracz K, Domitrz I. Wydawnictwo Lekarskie PZWL ,Warszawa 2023,487-496.

[18] Pąchalska M. Afazjologia. Red. Warszawa: Wydawnictwo Naukowe PWN, 2012, 416.

[19] Tarkowski, Z. Afazjologia. Red. Tarkowski, Zbigniew: PZWL Wydawnictwo Lekarskie, 2021, 556.

[20] Zielińska J., Ślusarz R., Zieliński M., Opis przypadku z dyzartrią. Gerontologia Polska, 2016,24,71-74.

[21] Łukaszek B., Kaptacz I., Opieka na pacjentem z objawami neuropsychiatrycznymi. Pielęgniarstwo opieki paliatywnej. Red. : PZWL Wydawnictwo Lekarskie, 2016, 114-124.

[22] Zięzio M., Szepietowska-Ilach., Problemy pacjentów i ich rodzin w sferze psychicznej. Standardy i procedury w pielęgniarstwie onkologicznym. Wydawnictwo Lekarskie PZWL Warszawa 2017,181-186.

[23] Lelonek B., Cieślik A., Kamusińska E.: Problematyka stresu w chorobie nowotworowej. Problemy pielęgniarstwa, 2013,21(1),128-136.

[24] Ziółkowska M., Rogala D., Hawryło J.: Wsparcie społeczne a lęk i depresja u pacjentek z nowotworem piersi, mózgu i płuc poddanych radioterapii. Współczesne badania przyrodnicze i medyczne :zastosowania praktyczne Wybrane zagadnienia. Red naukowa mgr Remigiusz Chęciński. Uniwersytet im. Adama Mickiewicza w Poznaniu. Poznań 2019,89-94.

[25] Twardak I M., Lisowska A., Pogłódek D. i wsp.: Opieka nad pacjentem z przerzutowym guzem mózgu w schyłkowej postaci choroby-studium przypadku. Pielęgniarstwo i Zdrowie Publiczne, 2018, 8(4), 325-331.

Received: 2023
Accepted: 2023