

Chapter 4

Model of nursing care for a patient after thyroid cancer dissemination and metastasis of papillary and follicular thyroid carcinoma according to the International Classification for Nursing Practice (ICNP®)

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Abstract

Thyroid cancer is a malignant neoplasm derived from the follicular cells of the thyroid gland, in addition to medullary carcinoma, which arises from neuroendocrine C cells. The last thirty years have seen a sharp increase in thyroid cancer cases.

The purpose of this study is to present a model of nursing care according to the International Classification for Nursing Practice (ICNP®) for a 77-year-old patient after thyroid cancer dissemination and metastasis of papillary and follicular carcinoma. The patient required a right parietal-occipital craniectomy and Grunenwald incision, excision of the lesion with resection of the trachea, with excision of the left internal jugular vein, plasty of both the left venous angle and the outlet of the lowest thyroid vein to the left brachiocephalic vein, as well as drainage of the left pleural cavity. Medical records, a patient interview, a patient

family interview, and assessment using scales were analysed: the VAS Scale, the life satisfaction scale and cancer adjustment questionnaire. The onset of cancer completely changes the functioning and life of the patient as well as of his/her family and loved ones, which is why family education and emotional support are so important. The ICNP[®] is a significant facilitator in the development of the nursing process and is also a facilitator of communication between nursing staff from around the world.

Key words: thyroid cancer, craniectomy, International Classification for Nursing Practice (ICNP)

Introduction

The onset of cancer completely changes the functioning and life of the patient as well as of his/her family and loved ones. Often such a diagnosis is perceived as a judgement beyond one's control. Like any chronic disease, cancer brings with it long-term effects that reduce the quality of life. It affects all dimensions of the patient's functioning, including the psychological dimension [1,2].

Thyroid cancer is a malignant neoplasm originating from the follicular cells of the thyroid gland, in addition to medullary carcinoma, which arises from neuroendocrine C cells. It is the most common malignancy of the endocrine system and causes 1% to 2% of all malignancies [3,4]. Papillary carcinomas account for more than 80% of all thyroid cancers, while about 10% are follicular [1]. Only 38% of thyroid carcinomas produce clinical symptoms, such as discomfort in the throat, a lump on the neck, difficulty swallowing, and occasionally coughing, change in voice, shortness of breath or symptoms associated with metastatic disease, which speak to further diagnosis [5]. The cause of thyroid cancer is primarily related to radiation exposure, iodine intake, diabetes, obesity, Hashimoto's thyroiditis, use of exogenous estrogens and dietary choices [6,7].

Papillary thyroid carcinomas are a heterogeneous group of neoplasms, in which variants characterised by a more aggressive course can be distinguished [5]. It is the most common endocrine neoplasm, accounting for 80% to 90% of cancers, and the incidence is steadily increasing [6]. Patients often have no symptoms except hoarseness, enlarged lymph nodes and swallowing disorders [8].

Follicular carcinoma is made of cells with low atypia that form follicles. Thus, it mimics the structure of the thyroid gland. It is the second most common type of thyroid cancer right after papillary carcinoma and accounts for 10% of differentiated thyroid cancers [6,9].

The first diagnostic step that determines the indications for deepening the diagnosis with ultrasonography in a patient with suspected focal thyroid lesions is the physical examination of the subject. A family history of papillary or follicular carcinoma increases a patient's risk of developing the disease several-fold. In the early stages, the cancer may not be palpable [9,10].

BAC, or fine-needle aspiration biopsy, is an examination for which the primary indication is focal thyroid lesions, i.e. a nodule palpable by palpation or visible on ultrasound. Ultrasound plays a primary role in the imaging diagnosis of thyroid cancer at this time. Ultrasound evaluation is a non-invasive method, widely available and inexpensive, and allows an initial assessment of the risk of the presence of an invasive lesion. CT and MRI scans are performed in patients with locally advanced disease or suspected distant metastases [5,11].

Thyroid cancer is a cancer found in the thyroid gland, and much effort has been put into improving its diagnosis, while thyroidectomy remains the primary method of treatment. The basis of surgery is to distinguish between benign and malignant thyroid nodules. Accurate diagnosis promotes efficient surgery, avoids unnecessary side effects and reduces the risk of recurrence. It also helps in the selection of comprehensive postoperative nodes of the mistreatment. Therefore, it is so important and crucial to make accurate diagnoses and prognoses of the lymph on the basis of diagnostic tests [12,13]. Surgical treatment of thyroid cancer involves complete, extracapsular removal of the thyroid gland supplemented by excision of the lymph nodes of the middle compartment of the neck, and, if nodal metastases are present, also excision of the lymph nodes of the lateral compartments of the neck.

The decision for surgical treatment should be made with great prudence. It must be preceded by a discussion with the patient, as well

as a thorough explanation of all the reasons for carrying out the operation and the possible consequences of not doing so [2].

In general, follicular, and papillary carcinomas retain the ability to uptake iodine. Radioactive iodine treatment is optimally carried out >4 weeks and usually <3 months after thyroid resection; however, therapy less than three months after surgery is sufficient treatment, while only when the period exceeds nine to twelve months after surgery is treatment estimated to be delayed. The basis for the introduction of treatment is adequate TSH stimulation, defined as TSH levels >30 mIU/l. TSH stimulation can be achieved by a four- to six-week interruption of L-thyroxine intake. Then hypothyroidism develops, the symptoms of which significantly impair the patient's quality of life, and in the case of co-morbidities such as diabetes, ischemic heart disease, epilepsy or depression, their symptoms can be dangerously exacerbated. In the three months before the scheduled date of radioiodine treatment, iodine-containing preparations should be avoided and examinations with iodine contrast agent should not be performed [6,14].

A case report

A 77-year-old patient was referred to the hospital with a diagnosis of thyroid nodular goiter based on histopathological examination. The patient was treated surgically, involving total resection of the thyroid gland. The operation proceeded without complications, and the patient was discharged home on the second postoperative day in good general condition. The patient received histopathological results, revealing that the lesion was non-neoplastic. The patient systematically reported for medical check-ups and maintained a healthy lifestyle. In 2021, the patient presented to the Clinical Department of Neurosurgery and Neurotraumatology with the goal of removing a tumour from the right parietal-occipital bone. Surgery under general anaesthesia involving right parietal-occipital craniectomy was performed. A bone tumour of the right parietal-occipital region infiltrating the dura was removed. Histopathological examination revealed the follicular variant of

papillary carcinoma. The patient was discharged home in good general condition.

Parameters and tests upon admission to the hospital: before surgery, an MRI revealed a pathological mass measuring approximately $50 \times 20 \times 45$ mm in the occipital bone on the right side.

CT scan of the head (brain) without intravenous contrast, along with a secondary study, identified a brain tumour.

Soft tissue ultrasound of the right parietal-occipital region showed a prominent heterogeneous hypoechoic lesion at the location of the palpable tumour.

Following surgery and patient mobilisation, an additional CT scan of the head was performed, indicating no need for urgent intervention. The scan revealed a visible fluid reservoir measuring 19 mm in thickness.

In August 2021, the patient was admitted to hospital to the Clinical Department of Thoracic and Oncologic Surgery department with a rehabilitation subdivision for evaluation of possible qualification for surgical treatment due to the diagnosis of the recurrence of papillary thyroid carcinoma.

The patient had a history of complete thyroid removal due to nodular goiter, chronic renal failure, bronchial asthma, hypertension, hypercholesterolaemia, obesity, and lower extremity varicose veins. An Angio-CT of the cephalic arteries was performed on the patient, which showed a polycystic infiltrate on the left side of the larynx and trachea measuring 65×36 mm extending 70 mm. A MRI of the neck with contrast was also performed, which showed suspected recurrence of thyroid cancer and a packet of enlarged lymph nodes. In September 2021, the patient underwent surgery under general anaesthesia: Grunenwald incision, excision of the lesion with resection of the trachea, with excision of the left internal jugular vein, plication of the left venous angle and plication of the outlet of the lowest thyroid vein to the left brachiocephalic vein and drainage of the left pleural cavity.

The patient felt debilitated after the procedure and was transfused with blood cells due to anaemia. The patient ate food orally, had a diabetic diet and experienced pain at two to three points according to the NRS Scale.

She was then transferred to the Department of Thoracic Surgery, where another 3j of CRC was transfused. A bronchoscopic examination was performed, which showed that the trachea was healing properly, the laryngeal oedema had resolved. The patient was discharged home in good general condition. In November 2021, the patient was admitted to the Department of Oncological Endocrinology and Nuclear Medicine for complementary treatment with I-131 under rhTSH stimulation. The histopathological examination at the request of the family, which was performed in 2014, was reconsidered, and the repeat examination showed that there were two types of cancer: follicular and papillary.

The patient was given two doses of Thyrogen on the first and second days of hospitalisation, then on the third day the patient received 3657 MBq of radioiodine I-131. Nausea and worsening of appetite without vomiting occurred: emergency antiemetics were administered with a positive result. At the end of hospitalisation, the patient was advised to undergo whole-body scintigraphy, a follow-up at the Outpatient Clinic, and control of renal parameters, fasting glucose, diagnosis of anaemia and consumption of at least 1.5l of fluids per day. After I-131 treatment, there was postoperative wound pain. After the radioiodine treatment, the patient developed painful ulcers in the nasal area and a lowered mood during the procedure due to loneliness. In May 2023, the last (fourth) treatment with radioactive iodine was planned. In 2022, stereotactic radiotherapy of the metastatic area of the right rib 3 was performed on a linear gas pedal. A total dose of 1,500 cGy in one fraction with a photon beam was administered. After completion of radiation therapy, Pharmaceris X cream was applied to the irradiated skin. The patient underwent five treatments with radioactive iodine at six-month intervals.

Nursing diagnosis

Diagnosis 1. Endocrine system dysfunction [10022965]

Client: patient

Date added: 30.04.2023

Goal: effective function of the endocrine system [10028037]

Interventions:

- blood pressure monitoring [10032052]
- monitoring blood oxygen saturation with a pulse oximeter [10032047]
- body weight monitoring [10032121]
- monitoring body temperature [10012165]
- monitoring response to treatment [10032109]
- administering the drug [10025444]
- providing a schedule for drug administration [10043185]
- managing drug side effects [10021837]
- evaluation of endocrine status [10033998]

Evaluation: positive; effective endocrine status [10033713]

Diagnosis 2. Radiation therapy [10016293], risk of radiation injury [10046449], skin pain [10005470]

Client: patient

Date added: 30.04.2023

Goal: no radiation injury [10033637]

Interventions:

- blood pressure monitoring [10032052]
- venous blood sampling [10044633]
- administering medication [10025444]
- pain control [10025831]
- pain monitoring [10038929]
- skin care [10032757]
- patient counselling [10031062]
- accompanying the patient [10042613]
- emotional support [10027022]
- teaching about wound dressing changes [10045149]
- reporting [10016771]

Evaluation: positive; no pain [10029012], no injury [10028978], no radiation injury [10033637]

Diagnosis 3. Musculoskeletal pain [10012337]

Client: patient

Date added: 30.04.2023

Goal: pain-free [10029008]

Interventions:

- administration of pain medication [10023084]
- adherence to rehabilitation regimen [10033869]
- teaching about pain [10039115]
- assessing pain control [10002710]
- assessing symptom control [10026161]
- assessing risk of negative drug interaction [10045940]
- reporting [10016771]

Evaluation: positive; no pain [10029008]

Diagnosis 4. Impaired mobility [10001005], impaired walking [10001046]

Client: patient

Date added: 30.04.2023

Goal: Ability to move [10000204], walking with devices [10020903]

Interventions:

- promoting walking with device [10037636]
- assisting walking with device [10036520]
- promoting physical mobility [10037379]
- assessing walking ability [10038917]
- teaching about ways to increase physical activity tolerance [10024660]
- teaching about how to increase tolerance of physical activity [10024660]

Evaluation: positive; walking with devices [10020903], activity performed independently [10017805]

Diagnosis 5. Fall risk [10015122], injury risk [10015146]

Client: patient

Date added: 30.04.2023

Goal: no fall injury [10038545], no fall [10034704], no injury [10028966]

Interventions:

- monitoring fall risk [10037442]
- assessing fall prevention knowledge [10039780]
- demonstrating fall prevention methods [10040248]
- teaching families about fall prevention [10040269]

- assessing falls risk [10023520]
- providing a supportive device [10037367]
- teaching about home safety [10032960]
- assisting with walking [10038986]
- promoting walking with the device [10037636]
- promoting adherence to an exercise regimen [10041628]
- teaching about rehabilitation [10033017]

Evaluation: positive; no fall injury [10038545], no fall [10034704], no injury [10028966]

Diagnosis 6. Peripheral oedema [10027482], altered blood pressure [1002295]

Client: patient

Date added: 30.04.2023

Goal: no peripheral oedema [10029020], blood pressure within normal range [10027647]

Interventions:

- blood pressure monitoring [10032052]
- monitoring blood oxygen saturation with a pulse oximeter [10032047]
- fluid balance monitoring [10040852]
- cardiac status monitoring [10034285]
- body weight monitoring [10032121]
- monitoring fluid excretion [10035319]
- medication administration [10025444]
- skin assessment [10041126]
- skin care [10032757]
- teaching self-care [10045014]

Evaluation: positive; blood pressure within normal limits [10027647]

Diagnosis 7. Wound [10021178], delayed recovery after surgery [10037403]

Client: patient

Date added: 30.04.2023

Goal: recovery after surgery [10028691]

Interventions:

- antibiotic administration [10030383]
- adherence to medication regimen [10030354]
- adherence to rehabilitation regimen [10033869]
- monitoring physical signs and symptoms of infection [10031592]
- monitoring wound healing [10042936]
- assessing the wound [10030799]
- assessing wound care knowledge [10046598]
- assessing wound healing knowledge [10046607]
- wound care [10033347]
- changing a dressing on a wound [10045131]
- controlling pain [10025831]
- providing a medication schedule [10043185]
- providing emotional support [10027051]

Evaluation: positive; recovery [10019249]

Diagnosis 8. Risk of depressive mood [10032329], sadness [10017418], grief [10022345]

Client: patient

Date added: 30.04.2023

Goal: reduced depressive mood [10027901]

Interventions:

- assessing emotional support [10030589]
- assessing depressive mood [10026055]
- assessing attitudes toward illness [10024192]
- promoting hope [10024440]
- providing emotional support [10027051]
- managing negative emotions [10031851]

Evaluation: negative: depressive mood [10005784]

Diagnosis 9. Obesity [10013457], overweight [10027300], risk of disordered eating [10023013]

Client: patient

Date added: 30.04.2023

Goal: effective weight [10027392]

Interventions:

- monitoring body weight [10032121]
- assessing diet adherence [10044481]
- interacting with dietitian [10040435]
- teaching about dietary needs [10046533]
- monitoring nutrition [10036032]
- assessing dietary need [10037875]
- assessing attitudes toward nutritional status [10002694]
- assessing risk of impaired nutritional status [10040921]

Evaluation: negative; disordered eating [10025535], overweight [10027300]

Diagnosis 10. Disturbed sleep [10027226], night terrors [10013211]

Client: patient

Date added: 30.04.2023

Goal: adequate sleep [10014939]

Interventions:

- teaching relaxation techniques [10038699]
- demonstrating relaxation techniques [10024365]
- identifying psychological status [10044241]
- providing emotional support [10027051]
- administering medication [10025444]
- teaching stress management [10038681]
- teaching breathing techniques [10039213]
- assessing sleep [10036764]
- assessing psychological status [10030734]
- teaching about adaptive techniques [10023717]

Evaluation: positive; adequate sleep [10024930]

Diagnosis 11. Nausea [10012453]

Client: patient

Date added: 30.04.2023

Goal: nausea-free [10028984]

Interventions:

- medication administration [10025444]
- assessing nausea [10043694]
- teaching about nausea management [10043687]
- managing nausea [10043673]
- pain control [10025831]

Evaluation: positive; no nausea [10028984]

Diagnosis 12. Heartburn [10043298]

Goal: effective regulatory system process [10033491]

Client: patient

Added: 30.04.2023

Intervention:

- medication administration [10025444]
 - nutrition monitoring [10036032]
 - teaching about the drug [10019470]
 - teaching about dietary needs [10046533]
 - managing the dietary regimen [10023861]
 - interacting with diet regime [10026190]
- Evaluation: positive; positive digestive system process [10028016]

Diagnosis 13. Fatigue [10007717], weakness [10022880], dizziness [10006160]

Client: patient

Date added: 30.04.2023

Goal: no dizziness [10045681], no fatigue [10034727]

Interventions:

- assessing dizziness [10045917]
- assessing fatigue [10026086]
- use of a safety device [10002472]
- administering pain medication [10023084]
- nurse-led monitoring of risk of negative pain response [10039896]
- drug response evaluation [10007182]

– support [10019142]

Evaluation: positive; no dizziness [10045681], no fatigue [10034727]

Diagnosis 14. Risk of dissatisfaction with health care [10040899], lack of trust [10025947]

Client: patient

Date added: 30.04.2023

Goal: trust [10025934], healthcare satisfaction [10040092]

Interventions:

- establishing trust [10024396]
- facilitating communication of needs [10038196]
- providing continuity of care [10006966]
- providing emotional support [10027051]
- promoting health-promoting behaviours [10032465]
- managing anxiety [10031711]
- managing negative emotions [10031851]
- evaluating satisfaction with health care [10040490]

Evaluation: negative; lack of confidence [10025947], frustration [10008252]

Summary

Based on the model of individual nursing care, nursing diagnoses were made and goals and nursing interventions were determined, which latter were aimed at recognising the patient's main health problems and deficits. It was then determined how to solve them, so that the patient would have the greatest possible freedom and independence during her recovery. The nursing process developed was based on the model of care according to the ICNP[®] (International Classification for Nursing Practice).

The patient's knowledge deficit on healthy diet, disease and care was attempted to be resolved through effective patient and family education, support and motivation. The patient's education emphasised the need to implement an appropriate diet and provided extensive information

on healthy eating and weight monitoring, post-operative wound care and dressing changes. Support was provided for sleep disorders and relaxation techniques to help sleep were demonstrated. An opportunity to speak with a nutritionist and a psychologist was also provided. The patient's family was willing to cooperate and support the patient in the further stages of her illness.

This case shows how crucial and important a role for the patient is played both by the nurse in the process of treatment and recovery and the patient's trust in the medical staff. The role of the nurse in the perioperative and postoperative care of the patient is extremely important. It is the nurse who prepares the patient for surgery, takes an active part in pharmacotherapy, nursing and rehabilitation, surrounds the patient with care and helps the patient adapt to the hospital environment. The nurse is also that person among the members of the therapeutic team whose attitude, behaviour and way of communicating with the patient can influence the minimisation of anxiety and reduction of postoperative stress.

Conclusions

The patient's deficits were determined in terms of knowledge about the disease, healthy eating, and care.

The patient received medical, psychological and educational support.

The nursing staff made accurate nursing diagnoses, identified appropriate goals and interventions whose implementation was aimed at improving the patient's quality of life.

The ICNP^{*} is a significant aid in the development of the nursing process, as well as a facilitator of communication between nursing staff from around the world.

The onset of cancer completely changes the functioning and life of the patient as well as of his/her family and loved ones, which is why family education and emotional support are so important.

An extremely important element in cancer is also correct medical diagnosis and selection of treatment.

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