



NICOLAUS COPERNICUS
UNIVERSITY
IN TORUŃ

Journal of Education, Health and Sport. 2026;88:69350.

eISSN 2391-8306.

<https://doi.org/10.12775/JEHS.2026.88.69350>



Journal of Education, Health and Sport. eISSN 2450-3118

Journal Home Page

<https://apcz.umk.pl/JEHS/index>

ZIEMIAŃSKA, Joanna and MATUSIK, Sara. Case study of a patient with cervical cancer on postoperative day 1 after total hysterectomy and pelvic and para-aortic lymphadenectomy. Journal of Education, Health and Sport. 2026;88:69350. eISSN 2391-8306. <https://doi.org/10.12775/JEHS.2026.88.69350>

The journal has had 40 points in Minister of Science and Higher Education of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of 05.01.2024 No. 32318. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical culture sciences (Field of medical and health sciences); Health Sciences (Field of medical and health sciences). Punkty Ministerialne 40 punktów. Załącznik do komunikatu Ministra Nauki i Szkolnictwa Wyższego z dnia 05.01.2024 Lp. 32318. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu). © The Authors 2026; This article is published with open access at License Open Journal Systems of Nicolaus Copernicus University in Toruń, Poland Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited. The authors declare that there is no conflict of interests regarding the publication of this paper. Received: 26.01.2026. Revised: 21.02.2026. Accepted: 21.02.2026. Published: 01.03.2026.

Case study of a patient with cervical cancer on postoperative day 1 after total hysterectomy and pelvic and para-aortic lymphadenectomy

Joanna Ziemiańska email address: joanna.ziemianska@gmail.com

ORCID ID: <https://orcid.org/0009-0005-9090-3098>

Affiliation: Pediatric Hospital in Bielsko-Biała

Sara Matusik email address: saramatusik27@onet.pl

ORCID ID: <https://orcid.org/0009-0003-7606-7842>

Affiliation: Silesian Academy Katowice

Abstract

Cervical cancer remains one of the most common malignant neoplasms of the female reproductive system and constitutes a significant global health problem among women. The key etiological factor is persistent infection with oncogenic types of the Human papillomavirus (HPV), particularly types 16 and 18. Effective primary prevention (HPV vaccination) and secondary prevention (screening tests, including cytology and HPV testing) enable early detection of precancerous lesions and significantly reduce morbidity and mortality. Despite well-developed preventive programs, diagnoses at advanced stages are still observed. The treatment of cervical cancer is complex and burdensome, involving surgical methods (e.g., hysterectomy), radiotherapy, and chemotherapy. Therapy affects not only the patient's physical condition but also her psychological and social functioning. In this context, nursing care constitutes an integral element of oncological management. It includes educational activities, preparation for treatment, perioperative care, monitoring for potential complications, symptom management, and emotional support. A holistic approach to the patient is essential for maintaining the highest possible quality of life and for effective adaptation to the disease and its consequences.

Keywords: cervical cancer, nursing care, hysterectomy, prevention, psychosocial support.

Etiology and Risk Factors:

The main cause of cervical cancer is considered to be infection with the human papillomavirus (HPV), which is estimated to account for 99.7% of cases. Some HPV subtypes can cause skin warts and benign growths such as genital warts. However, more aggressive types can contribute to the development of malignant tumors, primarily cervical cancer in women and penile cancer in men. Among the hundreds of HPV types, the most oncogenic are HPV 16 and 18, which are responsible for about 70% of all infections in sexually active women and men.

The process involves infection of the mucosal cells of the skin, leading to the production of viral particles within these cells. This disrupts the natural cell cycle and causes uncontrolled cell division. Transmission occurs mainly through direct contact, with the highest infection rates shortly after the onset of sexual activity. In most cases, the infection resolves spontaneously within two years and is mild, with only a small percentage potentially leading to cancer [1,2].

Other risk factors include:

- early initiation of sexual activity,
- multiple sexual partners,
- multiple pregnancies, especially at a young age,
- age — the highest incidence of cervical cancer occurs in women between 45 and 64 years of age,

- concurrent sexually transmitted infections,
- tobacco smoking,
- weakened immune system,
- long-term use of oral contraceptives,
- poor diet and low personal hygiene [3,4,5].

Symptoms of Cervical Cancer:

Cervical cancer is a significant oncological problem for women worldwide. Its etiology is well known, as a chronic infection with high-risk HPV, but characteristic clinical symptoms usually appear only in advanced stages. Early-stage disease is most often asymptomatic, making early diagnosis difficult and worsening prognosis when detected late. As the cancer progresses, the following symptoms may appear:

- bleeding between menstrual periods,
- bleeding after gynecological examination or sexual intercourse,
- heavy, abnormal vaginal discharge,
- menstrual periods that become heavier and longer than usual (atypical),
- bleeding even after menopause,
- pelvic and lower abdominal pain,
- difficulty urinating,
- swelling of the lower limbs [6,7,8].

Diagnostic tests

- **Gynecological examination** – a basic transvaginal gynecological exam, during which the doctor analyzes visible features of the cervix, identifies possible pathologies, and determines whether additional tests are needed.
- **Cytology** – a cytological examination of the cervix, also known as the “Pap test,” is a classic screening method involving the collection of a smear from the cervical canal using a brush and microscopic analysis [9].
- **HPV test** – tests that identify the DNA or RNA of high-risk human papillomavirus (hrHPV) types have become a key tool in modern cervical cancer screening programs. The HPV test has higher sensitivity compared to cytology and can be performed every five years, which is epidemiologically safer if the result is negative. Analyses of large populations have shown that HPV-based screening protocols reduce the risk of invasive cancers more quickly and effectively than cytology performed every three years [10].

- **Colposcopic examination** – involves inspecting the surface of the cervix, lower vagina, vulva, and cervical canal using an optical device. This examination confirms suspected changes identified in cytology [11].
- **Diagnostic cervical biopsy** – a short procedure performed after an abnormal cytology result or during colposcopy, aiming to collect a tissue sample from the cervix [11].

Imaging tests

- **Transvaginal ultrasound (TVUS)** – also called transvaginal sonography, used for initial assessment and potential detection of abnormalities in the reproductive organs.
- **Chest X-ray (CXR)** – to evaluate possible metastases to the lungs.
- **Computed tomography (CT)** – a non-invasive examination providing detailed, three-dimensional images of the pelvis and abdominal cavity.
- **Magnetic resonance imaging (MRI)** – a precise imaging technique for soft tissues, allowing assessment of tumor invasion depth and involvement of surrounding organs.
- **Positron emission tomography (PET / PET-CT)** – an advanced and highly sensitive test for evaluating lymph nodes, enabling detection of metastases in lymph nodes [12,13,14,15,16].

TNM Classification of Malignant Tumors (Tumor, Node, Metastasis):

Tumors can also be classified according to their stage of advancement, which affects patient treatment and allows doctors worldwide to communicate more easily.

T – Primary tumor

- **T0** – No evidence of tumor
- **Tx** – Primary tumor cannot be assessed
- **Tis** – Carcinoma in situ
- **T1 / I:** Tumor confined to the cervix.
 - **T1a / IA:** Microscopic carcinoma, ≤ 5 mm depth
 - **T1b / IB:** Clinically visible tumor:
 - **T1b1** (< 2 cm)
 - **T1b2** (2–4 cm)
 - **T1b3** (> 4 cm)
- **T2 / II:** Tumor extends beyond the uterus but does not involve the pelvic wall.
- **T3 / III:** Tumor invades the lower third of the vagina or causes hydronephrosis, or reaches the pelvic wall.

- **T4 / IV:** Tumor invades the bladder and/or rectum or extends beyond the true pelvis.

N – Regional lymph node metastasis

- **N0** – No regional lymph node metastasis
- **NX** – Regional lymph nodes cannot be assessed
- **N1 / IIIC1** – Metastasis in pelvic lymph nodes
- **N2 / IIIC2** – Metastasis in para-aortic (retroperitoneal) lymph nodes

M – Distant metastasis

- **M0** – No distant metastasis
- **M1** – Distant metastasis (e.g., lungs, bones)[17]

FIGO 2018 Staging of Cervical Cancer:

Stage I – Cancer confined to the cervix

- **IA** – Invasive cervical cancer identifiable only microscopically, maximum invasion depth ≤ 5 mm
 - **IA1** – Invasion depth ≤ 3 mm
 - **IA2** – Invasion depth > 3 mm and ≤ 5 mm
- **IB** – Invasive cervical cancer with invasion depth > 5 mm
 - **IB1** – Invasion depth > 5 mm and tumor ≤ 2 cm in greatest dimension
 - **IB2** – Invasion depth > 5 mm and tumor > 2 cm but ≤ 4 cm
 - **IB3** – Invasion depth > 5 mm and tumor > 4 cm

Stage II – Tumor extends beyond the uterus but does not involve the lower third of the vagina or the pelvic walls

- **IIA** – Cervical cancer confined to the upper two-thirds of the vagina without parametrial involvement
 - **IIA1** – Tumor ≤ 4 cm
 - **IIA2** – Tumor > 4 cm

- **IIB** – Cervical cancer with parametrial involvement but without pelvic wall involvement

Stage III – Tumor involves the lower third of the vagina and/or parametria up to the pelvic wall, and/or hydronephrosis or non-functioning kidney, and/or metastasis to pelvic or para-aortic lymph nodes

- **IIIA** – Tumor involves the lower third of the vagina but does not reach the pelvic wall
- **IIIB** – Tumor reaches the pelvic wall and/or causes hydronephrosis or non-functioning kidney
- **IIIC** – Lymph node metastasis to pelvic and/or para-aortic nodes

Stage IV – Tumor extends beyond the true pelvis or invades the mucosa of the bladder or rectum, confirmed by biopsy

- **IVA** – Tumor invades the bladder and/or rectum
- **IVB** – Distant metastasis[18,19]

Treatment of Cervical Cancer

The choice of treatment depends on the stage of cancer, the overall condition of the patient, age, and the presence of comorbidities. Other gynecological conditions that may affect the treatment process are also taken into account. The final decision regarding the treatment method should be made by a team of doctors, including a gynecologist, radiation oncologist, and clinical oncologist.

• **Surgical treatment**

- **Cervical conization** – a procedure involving the removal of a cone-shaped fragment of the cervix. The excision includes the cervical canal and the transformation zone. It is performed in very early stages of cancer and serves both diagnostic and therapeutic purposes, allowing histopathological assessment of the resection margins and potentially complete removal of the tumor [20,21].
- **Cervical amputation (simple trachelectomy)** – surgical removal of the cervix while preserving the uterine body. This procedure can be performed in early-stage cancer for patients who wish to preserve fertility. It usually includes examination or removal of nearby lymph nodes to check for potential spread of the disease through the lymphatic system [22,23].
- **Hysterectomy (simple hysterectomy)** – involves the surgical removal of the uterus and cervix without extensive removal of surrounding tissues. It may be performed in the early stages of the disease when the

risk of tumor spread beyond the cervix is low. Depending on medical indications, the procedure can be extended to include removal of the adnexa or assessment of regional lymph nodes [8,24].

- **Radical cervical removal (radical trachelectomy)** – involves removal of the cervix along with parametrial tissues and the upper part of the vagina, while the uterine body remains intact. It is used in early-stage cancer (tumor < 2 cm) and is an option that allows preservation of fertility. It is usually combined with pelvic lymph node removal or sentinel lymph node biopsy to check for lymphatic metastases [8,24,].
- **Radical hysterectomy with pelvic and/or para-aortic lymphadenectomy** – this surgery involves removal of the entire uterus with cervix, upper vagina, parametrial tissues, and regional lymph nodes in the pelvis. In some cases, lymphadenectomy near the aorta is performed to assess whether the cancer has spread via the lymphatic system. The extent of the surgery is important for both therapy and prognosis [8,24].

- **Radiotherapy** – is the main treatment method for locally advanced stages, as adjuvant therapy after surgery in patients with risk factors for recurrence, or when surgery is not possible. In practice, both internal radiation (brachytherapy) and external radiation (teletherapy) are used [25,26].

- **Chemotherapy** – used as an adjunct treatment; its effect is based on destroying dividing cancer cells through the use of cytostatic drugs [15,27,28].

Cervical Cancer Treatment

The choice of treatment method is made after assessing the stage of cancer development, the patient's overall condition, age, and the presence of comorbidities. Other gynecological conditions that may affect the treatment process are also considered. The final decision on the treatment method should be made by a team of doctors, including a gynecologist, a radiotherapist, and a clinical oncologist.

The aim of this work is to present the care process for a patient after a total hysterectomy and pelvic and para-aortic lymphadenectomy, with particular emphasis on nursing problems. The scope of the work also includes educating the patient and her family regarding the prevention of postoperative complications.

Patient

A **33-year-old woman**, married, with a secondary vocational education, employed as a nurse. She lives with her husband and two daughters in a single-family home. Her financial situation is good, and she has no addictions. The patient has strong family support, which facilitates adaptation to the illness. There is no family history of cancer.

Medical History

Two months after giving birth, the woman attended a follow-up visit with a gynecologist due to irregular bleeding and general malaise, which had been reported since postpartum.

A cervical cytology (Pap smear) was performed with a result of **PAP I**. She also reported bleeding and menstrual cycle disturbances but was informed that this was a normal postpartum situation.

After another four months, she returned for a visit due to heavy, irregular menstruation and worsening well-being. A transvaginal ultrasound was performed, and the doctor decided to insert a Kyleena intrauterine device. Two days after insertion, vaginal discharge with an unpleasant odor appeared, without pain. Two more gynecological visits took place, during which additional swabs and samples were taken due to worsening symptoms and bleeding. Due to deteriorating health, the patient independently went to the hospital requesting help and gynecological examination, during which a suspicion of cervical cancer was raised.

Gynecological Examination

During the first gynecological examination, a changed, hardened, and fragile posterior lip of the cervix was noted, with a suspicion of superinfection. Antibiotic therapy was recommended (Doxycycline, Augmentin, Metronidazole), and a swab was taken.

In the subsequent examination, despite treatment, a hardened, slightly bleeding posterior lip of the cervix was observed, and a referral to the Cervical Dysplasia Clinic was issued.

A follow-up examination revealed a vulva and vagina without changes, an enlarged lower lip of the cervix, and a cervical portion showing a lesion measuring 4 × 5 cm on the posterior lip, with suspicion of a polyp or condyloma. The uterus was small and mobile.

Imaging and Histopathological Diagnostics:

Transvaginal Ultrasound (USG):

Detected a lesion measuring 4 × 5 cm in the posterior wall of the cervix. Left ovary without changes, 3.0 cm; right ovary without changes, 2.5 cm. Uterus with an intrauterine device. Adnexa on both sides without changes. A cervical swab was obtained.

Cervical Swab (Cytology):

Macroscopically, two tissue fragments were collected from the cervix, totaling 18 × 8 × 3 mm, firm, yellowish, fully embedded for examination. The tumor shows narrow bands of connective tissue, stromal reaction with elongated capillaries, and a marked inflammatory infiltrate of neutrophils. Immunohistochemistry demonstrated diffuse AE1/AE3 positivity in tumor cells, focal nuclear positivity for p40, diffuse and strong p16 positivity in tumor cells, and a very high Ki-67 proliferation index up to 80% of nuclei.

Final assessment: poorly differentiated, non-keratinizing, HPV-related squamous cell carcinoma of the cervix. Maximum tumor dimension: 18 mm; maximum invasion depth: at least 3.4 mm. TNM classification: **pT1b**, histologic grade **G3**.

Computed Tomography (CT):

Gallbladder: no abnormalities. Pancreas: normal. Adrenal glands: lean bilaterally. Kidneys: normal appearance. No urinary stasis. Bladder partially filled, smooth contours. Intrauterine device in correct position. Ovarian cysts bilaterally, up to 3 cm. **Clearly visible cervical lesion with approximately 2.7 cm fluid focus on the left.** Intestines normal, no motility disorders. Major abdominal vessels enhanced normally. No significantly enlarged paraaortic, parailiac, or periaortic lymph nodes. No free air or fluid in the abdominal cavity.

Pelvic Magnetic Resonance Imaging (MRI) – with and without contrast:

Bowel loops: no pathological changes. Ovarian follicular cysts bilaterally. Bladder: normal.

Cervix: clearly visible, **primarily on the right side, nearly round lesion (thickness 4–12 mm) showing diffusion restriction, hypointense relative to normal cervical tissue.** The lesion has broad contact with the left mesorectal fascia. Rectum displaced to the right. At the level of the lesion, the fat layer between rectum and lesion is absent.

A round lymph node near the left aortic bifurcation, short axis 8 mm.

Status post pubic symphysis fusion. Active osteoarthritis of the right sacroiliac joint.

Assessment: primarily cervical cancer along the posterior wall with urgent suspicion of mesorectal fascia invasion and possible rectal wall infiltration.

Cervical Biopsy:

Histopathology of cervical tissue excision shows poorly differentiated, non-keratinizing, HPV-related squamous cell carcinoma. Clinically, a nodular lesion of the posterior cervical lip is noted. Macroscopically, two specimens:

- Specimen A: 1.0 × 0.6 × 0.4 cm
- Specimen B: 0.7 × 0.4 × 0.3 cm Both fully embedded for histology.

Histological examination: tumor entirely infiltrating the biopsy material with nests and partially solid architecture. Composed of relatively large tumor cells with eosinophilic cytoplasm. The surface is poorly demarcated, with areas showing pseudoglandular growth patterns. Other regions show fragments of glandular structures lined by pseudostratified columnar epithelium secreting at the cell surface. PAS staining shows focal cytoplasmic positivity; tumor cells also show PAS-positive fine droplets in some areas.

Immunohistochemistry: tumor cells positive for pancytokeratin, strong positivity for CK7. p40 shows stronger expression in superficial tumor regions and weaker in deeper areas. p16 is strongly and diffusely positive. Chromogranin and synaptophysin are negative. CEA is positive in superficial p40-positive cells; in other areas, only single cells are positive.

Diagnosis: biopsy of the posterior cervical lip with extensive infiltration by invasive solid carcinoma. Determining the tumor's histogenetic origin is difficult; further immunohistochemical studies are planned.

Laboratory Tests:

- Leukocytes: $5.59 \times 10^3/\mu\text{l}$
- Hemoglobin: 13 g/dl
- Platelets: $384 \times 10^3/\mu\text{l}$
- CRP: 1.45 mg/dl

Other lab parameters, including urinalysis, within normal limits.

Therapeutic Procedure:

Median laparotomy, total hysterectomy using the Höckel method, pelvic and paraaortic lymphadenectomy with ovarian preservation.

Oncological Diagnosis:

Squamous cell carcinoma of the cervix, histologic grade **G3**, suspected FIGO stage **IB2**.

Postoperative TNM Classification:

pT1b pN1 (1/21) L0 V0 Pn0 R0

Biopsychosocial Assessment:

- Karnofsky Performance Status: 90% (able to perform normal activity with minor symptoms)
- Cardiovascular system: regular rhythm, pulse 72/min, BP 120/80 mmHg, no lower limb edema
- Respiratory system: 12 breaths/min, abdominal-thoracic breathing
- Digestive system: reduced appetite, normal thirst
- Nutritional status: height 158 cm, weight 53 kg, BMI 21.23 kg/m²
- Genitourinary system: normal urination
- Musculoskeletal system: osteoarthritis of right sacroiliac joint

- Nervous system: fully oriented, normal speech, no sensory disturbances or paresthesia
- Pain: VAS 1/10
- Senses: normal
- Skin: clean, no lesions, body temperature 36.6°C
- Mental state: depressed mood, anxiety, sadness, BDI 20 points, AIS 25 points
- Family situation: full support from spouse and family; good social conditions
- Family medical history: mother with autoimmune hepatitis, father with diabetes

The Patient Care Process:

Nursing Problem	Goal of care	Nursing interventions	Assessment
Severe abdominal pain caused by previous surgery	Reduction of pain intensity	<p>Interview the patient about the nature and intensity of pain using the VAS scale.</p> <p>Observe pain characteristics (nature, intensity – which positions increase abdominal pain and which relieve it, duration, location).</p> <p>Position the patient in a way that reduces tension on the postoperative wound.</p> <p>Take actions to increase the pain threshold: ensure rest and a calm environment, provide a comfortable position reducing muscle tension, attempt distraction from pain (e.g., conversation, watching TV, reading).</p> <p>Apply local anti-inflammatory measures, e.g., drying compress to the abdomen, gel compress.</p> <p>Prepare and administer analgesic and antispasmodic medications according to medical orders; monitor the patient for therapeutic effects; report adverse reactions or lack of effectiveness to the physician.</p> <p>Ensure quiet surroundings and a sense of safety during recovery.</p>	The patient's pain decreased thanks to the care measures implemented.
Risk of infection of laparoscopic surgical wounds and the drain insertion site due to decreased immunity	Prevention of postoperative complications	<p>Change dressings using aseptic and antiseptic techniques.</p> <p>Observe and assess wounds for dehiscence and signs of infection (redness, pain, swelling, elevated body temperature).</p> <p>Teach effective coughing and expectoration techniques.</p> <p>Inspect wound dressings twice daily, ensure dryness, change if wet or bloodstained.</p> <p>Monitor body temperature twice daily to detect early signs of infection.</p> <p>Provide appropriate hygienic conditions and maintain cleanliness of the patient's immediate environment.</p>	The patient did not experience any symptoms of infection, the wound was healing normally, the wound edges were close together and there was no evidence of inflammation.
Risk of hemorrhage due to surgery	Maintain hemodynamic stability and early detection of hemorrhage through systematic and targeted observation	<p>Regularly assess level of consciousness and monitor vital signs—pulse, blood pressure, respirations (every 15 minutes for the first 2 hours, every 30 minutes for the next 4 hours, every hour up to 12 hours, then every 2 hours).</p> <p>Check the postoperative dressing for bleeding or other discharge.</p> <p>Assess the amount and character of drainage (in the first 24 hours, bloody discharge not exceeding 100 ml).</p> <p>Observe skin color and moisture—pallor, coolness, or excessive sweating may indicate perfusion disorders and hypoxia.</p> <p>Monitor the patient's behavior and psychological well-being.</p>	No signs of hemorrhage were observed.
Postoperative nausea and vomiting related to anesthetic agents	Eliminate nausea and vomiting and prevent complications such as aspiration, fluid-electrolyte imbalance, and acid-base imbalance	<p>Position the patient in a semi-upright position with the head turned to the side to reduce aspiration risk.</p> <p>Assist during vomiting episodes; keep an emesis basin, tissues, and water nearby.</p> <p>Observe the amount and characteristics of vomitus.</p> <p>Ensure proper ventilation of the room and eliminate unpleasant odors.</p> <p>Allow mouth rinsing after vomiting episodes.</p> <p>Maintain fluid balance, including losses due to vomiting.</p>	Nausea and vomiting have subsided.
Risk of infection related to the presence of peripheral intravenous catheter	Prevent infection and detect early signs	<p>Inspect the insertion site twice daily for signs of local infection (redness, swelling, tenderness, discharge) and assess proper catheter placement.</p> <p>Follow aseptic and antiseptic principles during catheter insertion.</p> <p>Educate the patient on careful handling of the IV site to prevent damage or displacement.</p>	The peripheral cannula is patent and there are no signs of infection at the insertion site. Continue monitoring the cannula

		If signs of infection occur, remove the catheter and apply an anti-inflammatory compress as prescribed.	and replacing it if necessary.
		Assess the insertion site using the Baxter scale and systematically document in the Peripheral IV Observation Chart.	
		Flush the catheter every 6–12 hours (before and after medication administration); change non-woven dressing every 72 hours, transparent dressing every 7 days or as needed.	
		Limit manipulation of the IV site.	
		Disinfect the needleless connector before administering fluids or medications.	
Discomfort related inability to maintain personal hygiene independently due to immobilization	Ensure the patient's sense of cleanliness, comfort, and improved well-being	Explain the reasons for and necessity of temporary immobilization. Assist with full body hygiene in bed. Change personal and bed linen as needed.	The patient did not experience any hygienic discomfort.
Risk of urinary tract infection related to indwelling urinary catheter	Prevent urinary tract infection and detect early signs	Provide regular perineal hygiene using cleansing and disinfecting agents. Ensure catheter patency; replace if obstructed. Keep the drainage bag below bladder level. Collect urine samples for urinalysis as prescribed. Monitor for signs of infection (fever, cloudy urine, unpleasant odor, lower abdominal pain).	No symptoms of urinary tract infection were observed.
Anxiety and low mood related to awareness of the need for further treatment knowledge deficit regarding therapy	Reduce emotional tension and improve knowledge about planned treatment	Provide emotional support and frequent presence. Supply educational materials regarding treatment. Encourage active participation in therapy. Strengthen the patient's sense of self-efficacy and control. Facilitate consultation with a psychologist. Suggest leisure activities (reading, watching TV). Administer sedative medications as prescribed	Minimizing the patient's concerns and improving her well-being

Summary:

Nursing care for a woman after a hysterectomy performed due to cervical cancer is one of the most important aspects of the entire therapeutic process, as it does not end with the completion of surgery but continues over a longer period. Cervical cancer affects not only the physical sphere but also the psychological and social aspects of a woman's life. Therefore, postoperative care should be comprehensive and multidisciplinary.

From a clinical perspective, a hysterectomy—especially in its radical form—is an extensive surgical procedure associated with the risk of numerous complications such as bleeding, infection, urinary problems, and paralytic ileus. Nursing responsibilities include not only regular monitoring of vital signs, wound assessment, and evaluation of the amount and character of discharge, but also early recognition of symptoms requiring medical intervention.

An important element of care is health education, preparing the patient for self-monitoring after discharge, discussing warning signs, hygiene principles, and restrictions regarding physical activity. The functional and rehabilitation aspects are also highly significant. The procedure may affect bladder and bowel function as well as pelvic floor stability, particularly when lymph nodes have been removed. The nurse introduces early mobilization, applies thromboprophylaxis, teaches pelvic floor muscle exercises, and provides guidance on reducing the risk of lymphedema. These actions are both preventive and rehabilitative, as they support a faster return to independence and minimize the risk of long-term complications.

The psychological and sexual aspect also deserves special attention. For many women, the loss of the uterus during oncological treatment may be perceived as the loss of an important part of identity, femininity, or the ability to bear children. This may manifest as fear of cancer recurrence, low mood, difficulties in intimate life, and uncertainty about the future. Treatment also results in sexual dysfunction, including, among other things, inability to conceive.. The nurse, being in constant contact with the patient, has the opportunity to recognize early signs of emotional crisis, offer support, and, if necessary, refer the patient to a specialist [29,30,31].

Nursing recommendations for the patient after hospital discharge:

1. Follow a conservative lifestyle; avoid sudden movements and excessive physical exertion.
2. Avoid lifting heavy objects for approximately 2–4 months after surgery.
3. Take short but frequent walks outdoors.
4. Maintain proper hygiene: shower with warm water, disinfect the postoperative wound twice daily, and ensure frequent ventilation of living spaces.
5. Avoid excessive filling of the urinary bladder.
6. Wear loose, cotton underwear.
7. Maintain regular bowel movements.
8. Attend follow-up appointments as prescribed by the physician, including suture removal.
9. Collect the histopathology results after approximately 2–3 weeks.
10. Refrain from sexual intercourse for about 6 weeks.

Author's contribution: Conceptualization: Joanna Ziemiańska ,Sara Matusik; Formal analysis: Joanna Ziemiańska, Sara Matusik ;Data curation: Joanna Ziemiańska, Sara Matusik; Writing -review and editing: Joanna Ziemiańska, Sara Matusik; Visualization: Joanna Ziemiańska, ; Supervision: Joanna Ziemiańska; Project administration:..Joanna Ziemiańska,; All authors have read and agreed with the published version of the manuscript.

Written informed consent was obtained from the patient for the publication of this case report. All patient data have been anonymized in accordance with applicable regulations

Funding statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for profit sectors.

Institutional review board statement

Not applicable.

Informed consent statement

Not applicable.

Data availability statement

Not applicable.

Conflict of interest statement

The authors declare no conflict of interest

References

1. Jouya S, Shahabinia Z, Mazidimoradi A, Allahqoli L, Salehiniya H, Lee D-Y. Cervical Cancer Epidemiology: Global Incidence, Mortality, Survival, Risk Factors, and Equity in HPV Screening and Vaccination. *J Clin Med.* 2026;15(3):1079.
2. Ojha PS, Maste MM, Tubachi S, et al. Human papillomavirus and cervical cancer: an insight highlighting pathogenesis and targeting strategies. *VirusDis.* 2022;33:132–154.
3. Magiera K, Rybak J, Magiera B, Grabarczyk A, Grabowska-Szczurek M. Rak szyjki

macy – czynniki ryzyka i nowe możliwości profilaktyki w Polsce. *Med Srod.* 2023;26(3-4):109–13.

4. Bedell SL, Goldstein LS, Goldstein AR, Goldstein AT. Cervical cancer screening: past, present, and future. *Sex Med Rev.* 2020;8(1):28-37.

5. Rerucha CM, Caro RJ, Wheeler VL. Cervical cancer screening. *Am Fam Physician.* 2018;97(7):441-448.

6. Selvajothi J, Hewitt M, de Haan A, Ting S, Philpott D, Hayes-Ryan D. Managing women with cervical cancer symptoms: Cervical One-Stop Assessment Clinic. *Ir Med J.* 2026;119(1):9.

7. Xu M, Cao C, Wu P, Huang X, Ma D. Advances in cervical cancer: current insights and future directions. *Cancer Commun.* 2025; 45: 77–109.

8. Cohen PA, Jhingran A, Oaknin A, Denny L. Cervical cancer. *Lancet.* 2019;393(10167):169–82

9. Stanisławska J., Janikowska K., Stachowska M., Talarska D., Drozd Gajdus E., Szewczyczak M.: Ocena wiedzy kobiet w zakresie profilaktyki raka piersi i raka szyjki macicy *Probl. Hig. Epidemiol.* 2016; 97(1): 38-44

10. Jach R, Basta A, Kotarski J, Markowska J, Paszkowski T, Dębski R et al. Ten years of anti-HPV vaccinations: what do we know?. *Menopause Review/Przegląd Menopauzalny.* 2016;15(3):170-175.

11. Kornovski Y, Slavchev S, Kostov S, Ivanova Y, Yordanov A. Etiologia, klasyfikacja, diagnostyka i profilaktyka stanów przedrakowych szyjki macicy. *Onkologia w Praktyce Klinicznej - Edukacja.* 2021;7(6):387–393.

12. Olthof EP, Bergink-Voorthuis BJ, Wenzel HHB, et al. Diagnostic accuracy of MRI, CT, and [18F]FDG-PET-CT in detecting lymph node metastases in clinically early-stage cervical cancer: a nationwide Dutch cohort study. *Insights Imaging.* 2024;15(1):36

13. Colletini F, Hamm B. Cervical cancer. In: Forstner R, Cunha TM, Hamm B, editors. *MRI and CT of the female pelvis. Medical Radiology.* Cham: Springer; 2017

14. Dziukowska J. Diagnostyka obrazowa w onkologii. W: Kułakowski A, Skowrońska-Gardas A, red. *Onkologia. Podręcznik dla studentów medycyny.* Warszawa: PZWL Wydawnictwo Lekarskie; 2020. s. 42-45

15. Klimek M, Kojs Z. Zasady leczenia raka szyjki macicy. W: Wicherek Ł, Kojs Z, Bręborowicz GH, red. *Ginekologia onkologiczna.* Warszawa: PZWL Wydawnictwo Lekarskie;

2016. s. 111–126

16. Mustafa WA, Ismail S, Mokhtar FS, Alquran H, Al-Issa Y. Cervical cancer detection techniques: a chronological review. *Diagnostics (Basel)*. 2023;13(10):1763.
17. Sobin LH, Gospodarowicz MK, Wittekind C, editors. TNM. Klasyfikacja nowotworów złośliwych. Wyd. 8. Gdańsk: VM Media Sp. z o.o. VM Group Sp. k. (Grupa Via Medica); 2017. 272 s.177-205
18. Piątek S, Bidziński M, Panek G, Wielgoś M, Sobiczewski P. Rak szyjki macicy — ocena zaawansowania choroby według kryteriów FIGO 2018. *Ginekologia i Perinatologia Praktyczna*. 2019;4(4):149–154.
19. Piątek S. Korekta do artykułu: Rak szyjki macicy — ocena zaawansowania choroby według kryteriów FIGO 2018. *Ginekologia i Perinatologia Praktyczna*. 2020;5(2):102–103
20. Han L, Chen Y, Zheng A, Chen H. Effect of preoperative cervical conization before hysterectomy on survival and recurrence of patients with cervical cancer: a systematic review and meta-analysis. *Gynecol Oncol*. 2023;174:167-174.
21. Li H, Gao R. Efficacy and safety of cervical conization combined with neoadjuvant chemotherapy versus radical trachelectomy in early-stage cervical cancer treatment. *Eur J Gynaecol Oncol*. 2024;45(4):170-176.
22. Sznurkowski JJ, Bodnar L, Szyłberg Ł, Zołciak-Siwińska A, Dańska-Bidzińska A, Klasa-Mazurkiewicz D, et al. The Polish Society of Gynecological Oncology guidelines for the diagnosis and treatment of cervical cancer (v2024.0). *J Clin Med*. 2024;13(15):4351.
23. Smith ES, Moon AS, O’Hanlon R, Leitao MM Jr, Sonoda Y, Abu-Rustum NR, et al. Radical trachelectomy for the treatment of early-stage cervical cancer: a systematic review. *Obstet Gynecol*. 2020;136(3):533-542.
24. Leziak M., Żak K., Satora M., Szpyra J., Kluz N., and Kułak K., Fertilitysparing treatment of endometrial cancer - is it possible? A case study, „Journal of Education, Health and Sport”, 2022, t.12, pp. 573–578.
25. Manning-Geist BL, et al. Evaluation of toxicity after radical hysterectomy or trachelectomy and post-operative pelvic intensity-modulated radiation therapy with concurrent chemotherapy for cervical cancer. *Int J Gynecol Cancer*. 2025;35(12):102712.
26. Cibula D, Pötter R, Planchamp F, Avall-Lundqvist E, Fischerova D, Haie-Meder C, et al. The ESGO/ESTRO/ESP guidelines for the management of cervical cancer. *Int J Gynecol Cancer*. 2018;28(4):641-655

27. Porras GO, Noguera JC, Chacón AP. Chemotherapy and molecular therapy in cervical cancer. *Reports of Practical Oncology and Radiotherapy*. 2018;23(6):533-9.
28. Ryu SY, Kim MH, Nam BH, et al. Is adjuvant chemotherapy effective in cervical cancer treated with radical hysterectomy? *Gynecol Oncol*. 2017;145(1):136-142
29. Ciecicka M, Pawełko A. Sexual disorders in a 45-year-old patient after hysterectomy in the home. *Journal of Education, Health and Sport*. 2025;83:64017
30. Wojtas AK, Cygnarowicz A, Sacher K, Zabrojska K, Korotko U, Mandziuk A, Witowska K, Turemka M, Biskupski M, Hosseinnejad N. Pelvic organ prolapse – general overview and latest therapy possibilities. *Quality in Sport*. 2024;25:56803
31. Wojtas AK, Cygnarowicz A, Sacher K, Zabrojska K, Korotko U, Mandziuk A, Witowska K, Turemka M, Biskupski M, Hosseinnejad N. Pelvic organ prolapse – general overview and latest therapy possibilities. *Quality in Sport*. 2024;25:56803