



# Follow-up care in patient with breast cancer and myeloradiculopathy with severe care dependency: A case report

Arina Elhaqqa<sup>1</sup>    
Nursiswati Nursiswati<sup>2\*</sup> 

<sup>1</sup> Ners Program, Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia

<sup>2</sup> Department of Medical-Surgical Nursing, Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia

**\*Correspondence:**

Nursiswati Nursiswati  
Department of Medical-Surgical Nursing, Faculty of Nursing, Universitas Padjadjaran, Bandung, Indonesia.  
Email: [nursiswati@unpad.ac.id](mailto:nursiswati@unpad.ac.id)

## ABSTRACT

**Background:** Breast cancer stands as the most prevalent form of cancer worldwide. Metastasis to the bones represents the third most frequent occurrence in breast cancer, potentially leading to radiculopathy due to the presence of lesions. Consequently, in patients with breast cancer and myeloradiculopathy experiencing medical complications, it becomes imperative to conduct follow-up care. Such care aims to assess the treatment regimen's effectiveness, offer motivation to patients, and impart education to both patients and their family caregivers.

**Objective:** To assess the evolving levels of care dependency in complex breast cancer patients, employing a case report methodology.

**Case:** This study provides an analysis of patient dependency levels seven days prior (a0) and during follow-up care, one month post laminectomy (a1), aiming to compare dependency changes in individuals diagnosed with breast cancer accompanied by myeloradiculopathy before and after laminectomy. The methodology adopted involves a case report focusing on a single patient diagnosed with breast cancer and myeloradiculopathy, assessing dependency levels using the barthel index and care dependency scale. Results revealed notable differences in the dependency levels observed one week before and one month after the laminectomy procedure.

**Conclusion:** This report indicates that the patient's dependency level aligns with limited mobility and an inability to maintain personal hygiene independently. The findings underscore the necessity for comprehensive nursing follow-up care.

**Keywords:** breast cancer; dependency; follow-up care; myeloradiculopathy; care dependency scale

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## INTRODUCTION

According to the World Health Organization (WHO), breast cancer stands as the most prevalent and potentially fatal cancer globally, carrying a risk of metastasis. Bone metastases often lead to radiculopathy, characterized by symptoms such as progressive back pain, lower extremity numbness, weakness, bowel incontinence, and urinary retention (Shields et al., 2019). In cases involving patients with complex medical conditions, ensuring consistent and well-coordinated outpatient nursing



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## Nursing and Healthcare Practices

- *Metastatic cancer has significantly increased care dependency, requiring extensive nursing assistance, necessitating the utilization of a comprehensive scale encompassing both physical and psychosocial dimensions.*
- *The care dependency scale serves as an alternative assessment tool for nursing and healthcare practice, measuring care dependency levels in cancer patients, encompassing physical aspects as well as communication, values application, and learning abilities.*
- *Ensuring follow-up care for patients with multiple symptoms is crucial, encompassing discharge care planning, wherein nursing professionals play a key role by implementing strategies to enhance the quality of discharge planning and subsequent follow-up care.*

care is crucial (Alexander-Banys, 2014). Continuous care, coupled with follow-up care, becomes imperative for patients at risk of relapse or those facing complex health issues, notably individuals with breast cancer and a history of metastasis, facilitating early detection of local recurrence (Cardoso et al., 2019).

This study provides an assessment of the dependency level in a patient diagnosed with breast cancer and myeloradiculopathy before and after undergoing laminectomy. The dependency evaluation occurred one week before the laminectomy (referred to as 0) and one-month post-procedure (referred to as 1). The aim was to compare dependency levels in patients with breast cancer and myeloradiculopathy pre- and post-laminectomy. The Barthel Index (BI) and Care Dependency Scale (CDS) were utilized as measuring instruments for dependency levels.

## CASE

A 59-year-old female patient resides in the center of Bandung with her husband and two grandchildren and is primarily cared for

by her daughter, who lives 21 km away and alternates caregiving duties with her grandson. Her husband, employed as a laborer, lacks understanding regarding patient care. She has been diagnosed with both breast cancer and myeloradiculopathy. The Tumor, Node, Metastasis, (TNM) assessment indicated T2N0M1, signifying that the patient's breast cancer has progressed to stage IV.

The initial complaint arose a year ago with redness and a lump in the breast area, followed by subsequent complaints of back pain and leg weakness. Five days before hospital admission, the patient experienced paralysis and numbness from the abdomen down to the feet. Admitted to the hospital on October 8, 2022, she underwent a one-month hospitalization. The patient has a history of unhealthy dietary habits, preferring additives and high-fat foods. Additionally, she used an intra-uterine device during her fertile period. There is no family history of a similar disease, but there is knowledge of her father's history of heart disease. Her husband, a heavy smoker with poor physical activity, is the only other relevant familial health factor.

Upon examination at the hospital, the patient reported experiencing leg weakness, rendering her immobile, along with pain in the left breast area. Numbness extended from the abdomen down to the feet. While the patient's digestive and urinary functions remained intact, she lacked sensation during the elimination process, necessitating the use of a foley catheter and diapers. Although the back pain had subsided, she still rated the pain from breast cancer at a level of 3. The patient was fully conscious during assessment. The observed cancer resembles several papillomas. Furthermore, she presents with a second-degree pressure ulcer on the gluteal area, which is not painful. Concerningly, the patient's hygiene is notably poor, evident from excessively moist feet, dirty and tangled hair infested with lice, and long, unkempt nails. The family mentioned using only wet tissues to clean the patient.

The breast ultrasonography revealed subcutaneous thickening and multiple classifications in the left intraductal breast. Biopsy results indicated the absence of estrogen or progesterone receptors in the cancer cells but identified positive *human epidermal growth factor receptor 2 protein receptor* expression, indicating overexpression of the *human epidermal growth factor receptor 2 protein*, supporting cancer cell proliferation.

**Table 1.** Barthel Index and Care Dependency Scale scores.

Instrument	a0	Interpretation	a1	Interpretation
Barthel index	65	Partially dependent	60	Partially dependent
Care dependency scale	38	Mostly care dependent	20	Completely care dependent

*a0 (one week before laminectomy); a1 (one month after laminectomy)*

Additionally, Ki67 results indicated aggressive development in the patient's cancer cells.

The thoracic Magnetic Resonance Imaging (MRI) revealed a compression fracture at the Cervical 7 (C7) and Thoracic 2 (T2) levels, along with lesions on the pedicles of the transverse processes of Thoracic 1 and rib 1. These conditions resulted in spinal canal stenosis and myelopathy. Additionally, changes in signal intensity were observed in the corpus callosum of vertebrae C7–T2, attributed to metastatic bone disease and breast cancer. Typically, significant pain is experienced in such situations, but this patient remains painless due to the presence of myelopathy in the specific area.

needs, focusing on repositioning to prevent pressure ulcer worsening. Collaboration with plastic surgeons aimed at treating pressure ulcers using debridement. Additionally, nurses conducted careful active and passive Range of Motion (ROM) exercises to prevent muscle function loss. During leg ROM exercises, the patient experienced tingling stings, and the nurse noticed resistance in the left leg, despite the patient reporting no sensation.

In the treatment of breast cancer, nurses collaborate closely with oncology surgeons to provide direct insight into the patient's breast cancer wound condition. Wound care adheres to the principle of moist wound care. Despite ongoing hospital wound care, there was no

**Table 2.** BI Score

Criteria	a0	a1
Eating	5	5
Drinking	5	5
Transferring from wheelchair to bed	5	5
Personal toileting (wash face, comb hair, brush teeth)	5	5
Going in and out of the toilet (undressing, wiping body, flushing)	5	5
Bathing	5	5
Walk on a flat surface	0	0
Go up and down the stairs	5	5
Wearing clothes	5	5
Bowel control (Defecation)	5	5
Bladder control (urinate)	5	5
Sports/exercise	5	5
Leisure use of free time	10	5
<b>Total</b>	<b>65</b>	<b>60</b>

*a0 (one week before laminectomy); a1 (one month after laminectomy)*

The patient underwent bed rest treatment, ensuring the fulfillment of daily needs, which were assessed using the BI and CDS instruments. Tasks the patient couldn't manage independently included bathing, hair washing, changing clothes, repositioning, bowel control, and urination. Nurses collaborated with the patient's family to address these

improvement noted in the left breast area. For spine fracture treatment, nurses work alongside surgeons to perform a laminectomy. Following the laminectomy procedure, the patient was moved to the neurological recovery room. After three days of postoperative laminectomy care, the patient was discharged home.

A month after discharge, follow-up care

**Table 3.** CDS Score

Activity	a0	a1
Eat and drink	3	2
Incontinence	1	1
Body posture	1	1
Mobility	1	1
Day or Night pattern	5	2
Putting on and Undressing	1	1
Body temperature	2	1
Hygiene	2	1
Avoid danger	1	1
Communication	5	3
Contact with other people	5	2
Norms and values	3	1
Daily activities	1	1
Recreational activity	2	1
Ability to learn	5	1
<b>Total</b>	<b>38</b>	<b>20</b>

a0 (one week before laminectomy); a1 (one month after laminectomy)

was conducted through a home visit. Prior to the follow-up, the patient and family reported worsening breast cancer wounds, tingling in the legs, cold hands, fluctuating body temperature, and sleep disturbances over the phone. During the follow-up assessment, the patient appeared uncomfortable and struggled to articulate her feelings. Expressing repeated discomfort with “ouch”, she found it challenging to complete sentences due to significant discomfort, hampering effective communication and rest. Additionally, she experienced difficulty maintaining activity cycles throughout the day and night. The family noted an increase in her dependency and reported inadequate nutrition intake.

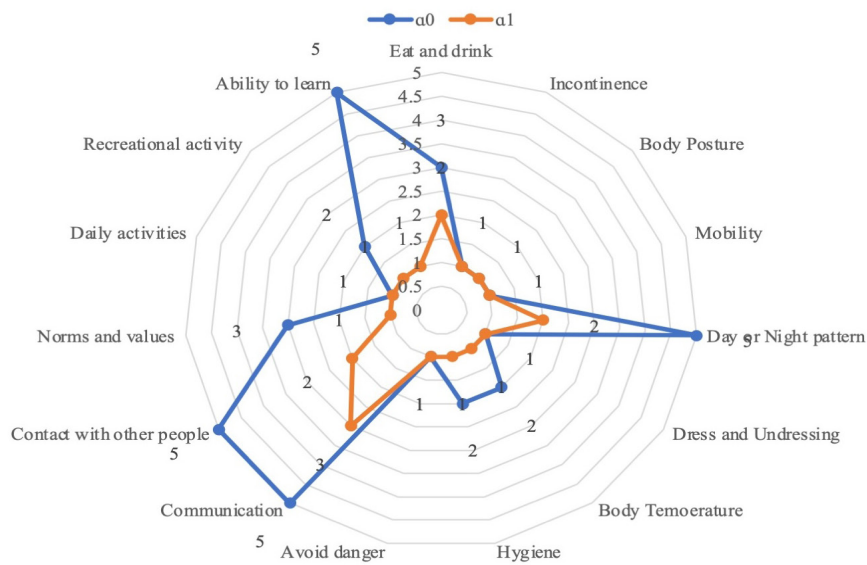
## DISCUSSION

Unstable body temperature, excessive sweating (hyperhidrosis), and discomfort are common signs indicative of infection. During the inspection assessment, purulent tissue was observed on the surface of the patient’s left breast cancer, alongside a grade 3 pressure ulcer on the gluteal area emitting greenish discharge with a noticeable odor. New wounds were discovered on both leg areas, and a catheter was present in the genital area, highlighting overall poor hygiene. Moreover, inadequate wound dressings were noted,

as they were smaller than the actual wound size. The patient’s family admitted their lack of knowledge regarding wound treatment. The patient’s personal hygiene, including perineal care, was notably inadequate. Consequently, the nurse provided health education to the patient’s family regarding wound care and personal hygiene practices.

The nurse also reviewed the patient’s medication history and noted the intake of 10 pills of cefixime, each at a 200 mg dose, administered every 12 hours for a period of 10 days. This cefixime therapy was administered twice, following the same dosage regimen after the patient’s return from the hospital. Additionally, the patient was prescribed paracetamol and gabapentin. Subsequently, the nurse engaged the family caregiver to ascertain changes in caregiving responsibilities before and after the hospital discharge. The family reported an increased burden of care and expressed uncertainty about the correct course of treatment for the patient. The caregiving burden specifically referred to the increased number of actions required to fulfill the patient’s Activities of Daily Living (ADLs). To substantiate this information, the nurse conducted a reassessment using the Barthel Index and the Care Dependency Scale for the second time (Table 1).

BI and CDS are assessment tools utilized



**Figure 1.** Care Dependency Scale; a0 (one week before laminectomy); a1 (one month after laminectomy)

to evaluate disability (Dijkstra et al., 2012; Mahoney & Barthell, 1965). The BI measures physical functioning through 10 ADLs, while the CDS applies Henderson's theory of human needs. Various studies assessing the Indonesian CDS have confirmed its reliability and validity, establishing it as a dependable tool for measuring care dependency (Nursiswati et al., 2020). Scoring differs between the BI and CDS, with the BI using either a 5 or 10-point scale, while the CDS is more detailed, utilizing a 5-point scale. Despite their differences, both scales share a similar interpretation: lower scores indicate higher dependency. Additionally, the BI comprises 13 items, whereas the CDS comprises 15 items, differing in the number of variables assessed.

Table 1 shows discrepancies in intervention dependency results were observed between the two assessment instruments, despite similar changes in scoring. While the BI maintained consistent interpretation, the CDS indicated a shift from high dependency to complete dependency. Table 2 shows notable differences in the BI were identified regarding leisure time use. Pre-laminectomy, the patient spent free time using the phone; however, post-laminectomy, the patient experienced substantial discomfort, struggling to maintain focus for more than 5 minutes. Table 3 shows nine points on the CDS exhibited a decrease. These points included eating and drinking, day/night patterns, body temperature regulation, hygiene, communication, social interaction, adherence to norms, recreational activities,

and learning abilities. Conversely, certain items such as incontinence, body posture, mobility, dressing, safety awareness, and daily activities remained unchanged. The decrease in points signifies an escalation in the patient's dependency, primarily attributed to the discomfort experienced, which may be symptomatic of an infection (Figure 1).

Breast cancer patients with spinal metastases often encounter bone fragility and heightened radicular stimulation, leading to immobility and increased dependency levels, substantiated by assessments using the BI and CDS instruments. The decline observed in both BI and CDS scores can be attributed to the patient's response to an ongoing infection. Infections, particularly breast cancer wounds, pressure ulcers, and urinary tract infections, pose significant risks among these patients, with wounds serving as potential entry points for bacteria. Maintaining proper hygiene and effective wound care significantly reduces infection risks (Al-Rifaa'i et al., 2018). However, the follow-up care revealed inadequate hygiene, despite instructions provided to the family. Poor hygiene can be attributed to the patient's limited comprehension due to a lower educational background. Nurses hold a pivotal role in addressing patients' basic needs to enhance their quality of life and reduce dependency, necessitating tailored education considering the patient and family's educational level. The personalization of follow-up care for cancer survivors remains challenging due to insufficient evidence-based self-management

education, inadequate support systems, underdeveloped IT solutions, and inconsistent care coordination (Urquhart et al., 2022). Hence, nurses need to strategize personalized follow-up care for cancer patients, emphasizing thorough education beginning from discharge planning.

## CONCLUSION

There exist variations in aspects and assessment points between the BI and CDS instruments, yet when applied to a patient, the dependency patterns observed are comparable. Notably, differences in scoring results were evident between a0 and a1 for this patient. Pre-laminectomy, the patient displayed a partially dependent level, whereas post-laminectomy, complete care dependency was noted. The patient's clinical condition, immobilizing their extremities, contributed to the low dependency score. Furthermore, the patient's response to infection-related symptoms led to a decreased dependency score following the laminectomy. It's advisable for nurses to meticulously assess a patient's dependency level, focusing on addressing basic personal hygiene needs and evaluating their learning abilities. This approach empowers patients to improve self-management skills while managing their dependency levels.

## Declaration of Interest

The authors declare no conflict of interest.

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## Data Availability

The data that support the findings of this study are not publicly available due to privacy restrictions but are available from the corresponding author upon reasonable request.

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