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Chapter

Managing Patients with Pressure Ulcers

Eglantina Afonso, Dina Borges, Kátia Furtado, Maria do Céu Marques, Margarida Pedro, Inês Reis and Rita Morais

Abstract

This study describes care for the person and the informal caregiver with pressure ulcers. The qualitative methodological approach was used, and case study research and the data collection techniques used were the semi-structured interview and the questionnaire. The following scales were applied to the patient: Braden Pressure Ulcer Risk Assessment, Resvesch 2.0, Malnutrition Universal Screening Nutritional Assessment. Modified Barthel and direct observation of wounds, use of the acronym Tissues, Inflammation/infection, Moisture, Edges/Epithelium. The nursing intervention at the patient's home was positive in the evolution of the pressure ulcer healing and in the management of the caregiver's emotions. Providing nursing home care to the injured person is a balm for patients and caregivers. It is an excellent response to aging and consequent complications, for example, wounds. They promote gains in health and in the management of human and economic resources.

Keywords: pressure ulcers, home care nursing, caregiver and informal, caregiver burden

1. Introduction

The technological and scientific development of medicine has increased the average life expectancy. Today, living more years is not synonymous with quality of life. Society's increased concern with the perception of the quality of life is not consensual, but its association with health is unanimous.

Health is a state of balance between the physical and the mental, without discomfort and suffering, which enables the individual to function as effectively as possible in the environment, and a change in this balance causes malaise [1]. Nowadays, health policies favor homecare for dependent people [2]. The Development Plan of the National Network for Integrated Continuous Care [RNCCI] reinforces this concept by stating that the community is the most privileged place for patient care and that each person is responsible for their life and their family as a socio-family reference; therefore, home is a key aspect in health care [3].

With the increase in the population age as well as the need for care, new health requirements emerge. The RNCCI has formed Integrated Continuing Care [ECCI] to provide homecare, focusing on dependent people whose situation does not require hospitalization but who cannot move independently and where the focus of

care is centered on the patient and the informal caregiver, who are equally involved. This informal care is the care given to dependent people by their family, friends and neighbors [4]. The informal caregiver is undoubtedly a valuable aspect not only for patient care but also for the health teams provided by the state. This alliance requires the informal caregiver to be available as well as to develop caregiving skills. Given this scenario, the challenge of health policies will be to strike a balance between self-care, informal support and care provided by professionals [5].

Despite the growing interest in the positive aspects of care given by the caregiver, there is still some predominance of negative impacts. Home nursing care is a difficult task influenced by different factors [6]. Thus, it is intended that the benefits become the core of the issue. Stimulating the role of the informal caregiver is essential to keep the patient at home, to optimize his quality of life and avoid his institutionalization [7].

Nursing as a science that takes care of the human being is committed to educating and guiding [8], as one of the competences of the general care nurse. As mentioned in article 5, it is the nurse's responsibility to guide and supervise, transmitting information to the patient aiming at changing behaviors for the acquisition of healthy lifestyles or health recovery, following this process and introducing the necessary adjustments [9]. The community nurse has the role of educating by promoting adequate education as well as information and training.

One of the reasons for admitting patients to ECCI is the treatment of pressure ulcers [PUs] and/or wounds, the admission criterion being the existence of an informal caregiver as a help from the home care team, so that continuity of care is guaranteed and to achieve the goals in the prevention and treatment of complex wounds.

Physical dependence leads to long periods of immobility, endangering skin integrity, leading to the appearance of PUs [1]. PUs represent a public health problem, both nationally and internationally. These entail marked economic burdens for a country, hence the growing political and economic concern [10], and are considered the third or fourth most expensive pathology in the world [11]. PUs are an indicator of the quality of health care provided. The personal suffering caused by this pathology affects the quality of life of patients and caregivers, which can lead to death in extreme situations [12].

The European Pressure Ulcer Advisory Panel [EPUAP] in 2014 defined PU as a localized lesion on the skin and/or underlying tissue, usually over a bony prominence, as a result of pressure or a combination of torsion forces [13]. This entity classifies PUs according to their stage of evolution into six categories/grades, as follows: Category/Grade I: non-blanching erythema; Category/Grade II: partial loss of skin thickness; Category/Grade III: total loss of skin thickness; Category/Grade IV: total loss of tissue thickness; non-gradable/unclassifiable: indeterminate depth; and suspected deep tissue injury: indeterminate depth [13].

The appearance of a PU is largely due to an association of the following risk factors, such as immobilization, nutritional status, skin integrity, age and blood oxygenation level. PUs do not only occur in the geriatric population, but they can also occur in any individual who has one or more of the risk factors mentioned [14]. Demographic changes, such as the growth of the elderly population with multiple co-morbidities, lead to an increase in the number of people with injuries [15]; hence, the prevention and treatment are a challenge for health professionals, especially, nurses. According to the DGS Guideline, 95% of PUs are preventable by early identification of the degree of risk [12]. Therefore, the assessment and management of the risk of developing PUs require a general and multidisciplinary approach to the person [16].

This study aims to describe care for the person and informal caregiver with pressure ulcers.

2. Methodology

This study consists of qualitative research, more specifically a case study, with a central focus on the user and the caregiver, who are provided nursing care by the Integrated Continuous Care Team of a city in southern Portugal.

After selecting the patient for the study, informed consent was requested from the legal representative, his wife, since the patient presented changes regarding his orientation of time and space, as evidenced by the application of the Mini-Mental State scale. The study was submitted to the Ethics Committee of the Baixo Alentejo Local Health Unit.

This type of study seeks to relate the evolution of a phenomenon associated with an intervention. For this, the following resources were used: data collection through semi-structured interviews with the informal caregiver and application of the Informal Caregiver Burden Assessment Questionnaire [QASCI]. Regarding the patient, the following were used: application of the Pressure Ulcer Risk Assessment Scale: Braden Scale [12]; application of the Resvech 2.0 Scale; application of the Malnutrition Universal Screening Nutritional Assessment Scale [MUST] [17]; application of the Barthel Modified Scale [18] and direct observation of the PU, through photographic recording and based on the acronym Tissues, Inflammation/infection, Moisture, Edges/Epithelium [TIME]; the data collection through the clinical process of the patient and the diagnostic evaluation according to the life activities following the Roper-Logan-Tierney theoretical model [19], related to the changed daily living activities [DLA] in the patient. For the elaboration of the diagnostic judgments, the language of the International Classification for Nursing Practice [ICNP] [20] was used, based on the Nursing Interventions Classification [NIC 2010] and the Nursing Outcomes Classification [NOC 2010].

3. Results

3.1 Appreciation

The case study was carried out to the AF patient, male, 70 years old, Caucasian, Portuguese nationality, who lives in Beja, with an Elementary School Education, retired, married, and living with his wife and a daughter.

Personal history: hypertension; depressive syndrome; ethanolic habits, cerebral vascular accident (CVA) in 2013 with left hemiparesis, senile dementia, vascular epilepsy, venous insufficiency of the lower limbs, inguinal hernioplasty, pneumonia, acute cholecystitis and urinary tract infection. Once part of the ECCI, the patient presented with four PUs, with three of them already cicatrized (sacred, left shoulder and right trochanter).

Daily medication: ®baclofen 50 mg at breakfast and bedtime; ®warfarin 1.25 mg at 7 pm; ®pantoprazole 40 mg before meal; ®sertraline 50 mg at breakfast; ®enalapril 20 mg at breakfast and ®sodium valproate 500 mg every 8 h.

After the CVA in 2013, the patient started at RNCCI, having integrated three units. On August 11 of 2016, he was admitted in ECCI, referenced by the family health team for wound care at home. During a home visit, on August 12, 2016, four PUs were found instead of one (information given on the first day). For the healing of the sacred PU, there was a need for constant articulation with the family health team and surgery team. During the 27 months with the ECCI, the left trochanter PU did not have the expected evolution, despite its smaller size.

The patient presents with total dependence on ADL, as demonstrated by the Barthel Modified Scale Assessment with a zero score, with ankylosis of the joints, which makes hygiene care and mobilization difficult, maintains home support

three times a day (hygiene and transfers). The equipment that exists in the patient's home is an alternating pressure mattress and a shower chair. The patient gets up daily to an armchair and sleeps in a double bed with inadequate equipment. The patient presents with incoherent speech, hydrated and flushed skin and mucous membranes, normal nutritional status, with a body mass index [BMI] of 23.1. The patient has as an informal caregiver his wife, who is less than two years old than the patient, manifesting difficulties in taking care of her husband, presenting with physical and mental stress overload.

To describe the ADL, the theoretical model previously mentioned was used. Regarding his breathing and controlling body temperature, it remained unchanged. Mobilization is compromised in bedridden and ankylosing patients, and they are dependent on transfers and positions. The patient was not supported by the team's physiotherapist since he was already in a rehabilitation unit. His work and leisure time are compromised, due to his illness and dependence. Regarding the alimentation, it is his wife who prepares and feeds him soft diet meals and protein supplements, using a syringe. His wife is concerned about his well-being and quite motivated by the food aspects, which manifest with increased concern.

Personal hygiene and dressing are compromised, being performed by the home support team, with the supervision of the caregiver. Elimination is compromised but without alteration of the bladder and intestinal pattern. Regarding the following: his sleep, sleep habits are maintained; sensations, the patient presented on the observer scale, without pain; integument, compromised with the presence of PU in the left trochanter; memory, patient is disoriented in space, time and himself.

3.2 Analysis and discussion of results

PUs are lesions that require prolonged and difficult treatment. It depends not only on the therapeutic care provided, such as the frequency of treatment and the suitability of the dressing material, but also on the general condition of the patient and the care provided to him or her by the informal caregiver, such as the frequency of positioning/repositioning; adaptive equipment; pressure reduction and relief. Based on the recommendations of NPUAP/EPUAP & PPPIA [13], the supporting surfaces are essential and should be chosen according to the pressure redistribution needs and other therapeutic functions of the individual.

Based on the diagnosis of needs, it is essential to define intervention strategies, to plan the nursing interventions appropriate to the individual, using appropriate assessment instruments.

Concerning the degree of risk of developing PU according to the Braden Scale, the patient's FA has a total score of 13, which represents a high risk, since DGS [12] reports that a score less than or equal to 16 is high risk. According to the DGS [12], the assessment of the risk of developing PU is fundamental for planning and implementing PU prevention and treatment measures. From the application of the instrument to the patient, it is verified that the mobilization and the friction and sliding forces are the most relevant factors that condition the healing of the wounds and the reappearance of new injuries, despite the intervention with the caregiver through the transmitted information and the results and lessons learned: wheelchair acquisition, viscoelastic cushion, articulated bed and correct positioning techniques, and the informal caregiver due to individual and cultural factors did not adhere to the intervention proposals planned by health professionals. The patient has an alternating pressure mattress in the bed and the caregiver positions it without collaboration, however, and uses incorrect positioning techniques, causing

damage to tissue already regenerated, as occurred in the sacred region, not considering the guidelines of health professionals.

Regarding the patient alimentation, the caregiver is concerned about the food and water intake of the patient and makes daily protein supplements. In the application of the MUST instrument, the assessment is low risk.

The informal caregiver demonstrates physical and psychological overload, proven by the application of the QASCI instrument (in October and December 2018). Given the scores, it is noteworthy that the caregiver presents instability in the performance of her role as a caregiver. The caregiver's condition worsened in November 2018, when she initiated restrictions on her health, through non-adherence to the therapeutic regimen for arterial hypertension, dental abscesses and osteoarticular pain. The caregiver's imbalance in biological, psychological and social factors has repercussions on the care she gives. ECCI's multidisciplinary team from Beja articulated with the caregiver and family team referring her to a psychiatry consultation, having attended only one consultation.

When the patient had a stroke in 2013, PU appeared, and there was a need for nursing intervention and entry into the ECCI. In the beginning, the left trochanter PU was grade I, and it was aggravated due to the number of hours that the patient remained in the left lateral decubitus, to relieve the existing PU. In the beginning, the treatment applied was once a day with ®hyperoxygenated fatty acid and protection with polyurethane foam with ®sodium carboxymethylcellulose. On September 19, 2016, the UP presented: devitalized tissue, bleeding tissue, without smell, bounded edges, with a dimension of 5 cm [cm] long by 3 cm wide. The treatment applied daily was enzymatic debridement due to the risk of hemorrhage, with irrigation with a solution of ®polyhexamethylene guanidine [PHMB], ®calcium alginate with silver and foam ®polyurethane with ®sodium carboxymethylcellulose. Articulation with the family team was carried out for close control of the international normalized ratio [INR] and respective therapeutic adjustment of the anticoagulant.

On November 14, 2016, the wound presented: hemorrhage in the wound bed, devitalized tissue, granulation tissue and odor. Despite being referred to the emergency department and a surgery doctor, his wife refused to go. Gelatin sponge dressing, pads and patching, dressing and treatment were initiated twice a day, as well as antibiotic therapy after medical observation. On November 20, 2016 (**Figure 1**), there was PU with devitalized granulation tissue, without bleeding, with inflammatory signs (redness and erythema) and without odor. The treatment applied was saline [S], ®carboxymethylcellulose single fibers, polyurethane



Figure 1.
Left trochanter November 2016, own source.

foam and ®hydrocolloid plate. For a long period, the PU did not evolve, despite vacuum therapy being applied for 1 month, without favorable results due to caregiver resistance. On September 18, 2018, the patient began treatment with honey, ®carboxymethylcellulose single fibers and ®hydrocolloid plaque. In October 2018, the wound did not heal and presented with: devitalized tissue, increased exudate and purulent characteristics, inflammatory signs, and bad smell, the non-healing mnemonics was applied, increased exudate, red and bleeding surface tissue, Dobris [NERDS]. The use of honey was suspended due to the rejection of the informal caregiver; therefore, irrigation with PHMB and carboxymethylcellulose fibers with silver, calcium alginate, polyurethane foam and ®hydrocolloid plate were restarted.

On November 20, 2018, the wound presented: fibrin that was removed, granulation tissue and devitalized, odorless. The treatment was warm saline, ®carboxymethylcellulose single fibers, polyurethane foam and ®hydrocolloid plate (**Figure 2**). Due to acute illness on December 15, 2018 (**Figure 3**), hospitalized patient referred to the unit. He was discharged on January 10, 2019, continuing with ECCI support. On January 23, 2019, PU with granulation and devitalized tissue, macerated and thickened edges, applied with warm saline and

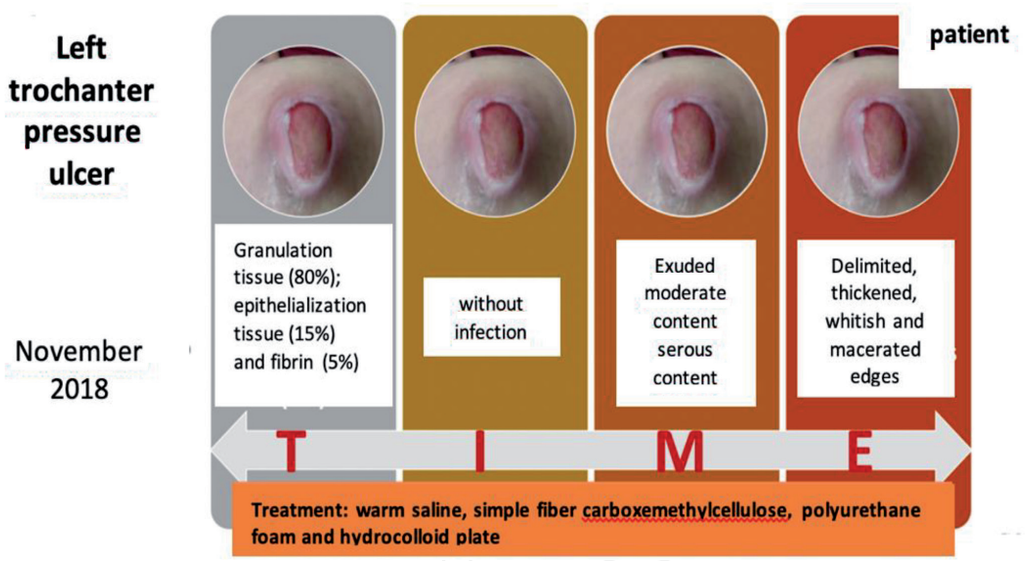


Figure 2.
Evolution with acronym TIME November 2018, own source.



Figure 3.
Left trochanter December 2018, own source.

Date	TIME			
	T	**I**	**M**	**E**
September 19, 2016	Necrotic tissue (10%), devitalized tissue (40%) and granulation tissue (50%)	Pain, redness and edema	Serous hematic and purulent exudate	Delimited edges and macerated perilesional skin
November 14, 2016	Granulation tissue (95%) and devitalized tissue (5%)	Light redness, odor and pain	Considerable sanguineous exudate	Delimited edges
November 20, 2018	Granulation tissue (80%), epithelialization tissue (15%) and fibrin (5%)	–	Moderated serous drainage	Delimited, thickened, whitish and macerated edges
January 23, 2019	Granulation tissue (80%) and devitalized tissue (20%)	Edema, erythema, no odor or pain	Moderated serous drainage	Delimited, thickened and macerated edges

Own source.

Table 1.
Preparation of the wound bed, comparison from August 2016 to January 2019.

®carboxymethylcellulose single fibers, polyurethane foam and ®hydrocolloid plate. For a better understanding, **Table 1** represents the comparison regarding PU bed preparation.

4. Final considerations

We can conclude that a correct diagnosis in favor of the needs felt by the informal caregiver and the patient is crucial in the planning of nursing interventions and the result of health gains for both the patient and those who take care. The positive aspects of the present study were the commitment of the caregiver together with the professionals in self-care in hygiene/comfort and nutrition, leading to the healing of three initial PUs. However, something remained to be done, the barriers created by the caregiver to the management of the physical space, the non-healing of the left trochanter PU and constant maceration of the sacred region, the care inherent in positioning/repositioning avoiding friction and sliding forces, despite the intervention through the teachings done over time. Taking care of a patient is not easy, and the nurse has to know the entire biopsychosociocultural context of the patient and the caregiver, to give the appropriate response to the detected needs. Homecare nurses can promote interventions aimed at favoring and promoting conditions so that the patient and the informal caregiver can transform the negative aspects into positive ones, as a way to achieve a quality of life. What makes the difference is people, for that it is necessary to rethink strategies and put them into practice.

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