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## ARTICLE CLINICAL CASE REPORT

### NURSING MANAGEMENT OF INFECTED PRESSURE ULCERS IN HOME CARE MANEJO DO ENFERMEIRO EM ÚLCERAS POR PRESSÃO INFECTADA NO AMBIENTE DOMICILIAR

### LA GESTIÓN DE ENFERMERAS EN INFECTADOS POR ÚLCERAS DE PRESIÓN INFECTADAS EN EL AMBIENTE DEL HOGAR

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#### ABSTRACT

**Objectives:** to describe the clinical evolution of pressure ulcers in two elderly, after wound management by nurses and highlight the importance of technical skill in the healing process of wounds. **Method:** clinical case descriptive study developed in the home of two elderly patients in the municipality of Joao Pessoa/PB, Northeast of Brazil. This research project was approved by the Research Ethics Committee under protocol No. 124/11. **Results:** patient 1 - V. P. L, 67 year old male, with a lesion completely covered by infected necrotic tissue and patient 2 - M. S. B, 97 years old, female, totally dependent, presenting a pressure ulcer in in the sacral region, infected, putrid odor, high exudate, perilesional area with signs of inflammation. **Conclusion:** the importance of nursing care is demonstrated for systematized wound care at home. **Descriptors:** Nursing; Home Care; Pressure Ulcer; Case Studies

#### RESUMO

**Objetivos:** descrever a evolução clínica de úlcera por pressão em dois idosos, após manejo da ferida pelo enfermeiro e evidenciar a importância da habilidade técnica no processo cicatricial de feridas. **Método:** estudo descritivo, do tipo caso clínico, desenvolvido no domicílio de dois pacientes idosos do município de João Pessoa/PB, Nordeste do Brasil. Este estudo teve aprovado o projeto de pesquisa pelo Comitê de Ética em Pesquisa, protocolo n.º 124/11. **Resultados:** paciente 1 - V.P.L, 67 anos sexo masculino, com lesão totalmente coberta por tecido necrótico infectado e paciente 2 - M.S.B, 97 anos, sexo feminino, totalmente dependente, apresentando úlcera por pressão na região sacra, infectada, odor pútrido, alto exsudato, área perilesional com sinais de inflamação. **Conclusão:** demonstrou-se a importância da assistência de enfermagem sistematizada para o cuidado de feridas no ambiente domiciliar. **Descritores:** Enfermagem; Assistência Domiciliar; Úlcera Por Pressão; Estudos de Casos.

#### RESUMEN

**Objetivos:** describir la evolución clínica de la úlcera por presión en dos ancianos después gestión de la herida por la enfermera y demostrar la importancia de la habilidad técnica en el proceso de cicatrización de las heridas. **Método:** estudio descriptivo del tipo de caso clínico, desarrollado en la casa de en dos ancianos en la ciudad de João Pessoa/PB, noreste de Brasil. Este estudio fue aprobado por el proyecto de investigación del Comité de Ética de la Investigación, el protocolo no. ° 124/11. **Resultados:** paciente 1 - V.P.L, 67 años de sexo masculino con la lesión completamente cubierta por tejido necrótico infectado y el paciente 2 - M.S.B, 97 años, sexo femenino, totalmente dependiente, con úlceras por presión en la región sacra, infectado, olor pútrido, alta exudado, área perilesional con signos de inflamación. **Conclusión:** demostrado la importancia de la asistencia de enfermería sistematizada para el cuidado de heridas en el entorno hogar. **Descritores:** Enfermería; Cuidados Domiciliarios; Las Úlceras Por Presión; Estudios de Casos.

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## INTRODUCTION

Pressure ulcers (PUs) are possible complications in persons in a fragile situation, mainly with restricted mobility and advanced age. The presence of a PU is associated with an increase in the duration of hospitalization, nursing workload and elevation in the costs of healthcare, as well as increased patient morbidity and mortality.<sup>1-2</sup>

The etiology of PU is multifactorial and depends on extrinsic and intrinsic risk factors. Studies suggest as extrinsic factors of friction and shear forces and, as intrinsic, advanced age (> 80 years), limitations in activities of daily living, urinary and / or fecal incontinence, anemia, infection, and nutritional status, thus, those inherent in every human being.<sup>3-4</sup>

The PU represents a challenge for healthcare, and usually results in pain, deformities and prolonged treatments. However, an effective and individualized assistance can minimize their deleterious effects and expedite recovery, contributing to the well-being of patients.

The PU is defined as areas of dead tissue, which tend to develop when the soft tissue is compressed between a bony prominence and an external surface, for a long period. Its onset is related to two critical etiologic determinants, the intensity and duration of the pressure. Often, one of the predisposing factors for the development of skin lesions is associated with the weaknesses arising from the aging process of the skin and the peculiar conditions of each elderly care, thus, the PU can cause changes in the quality of life of these people, demanding the planning of rehabilitation and recovery actions of the elderly individual.<sup>5</sup>

At home, family members are often the sole provider of continuous care, and sometimes the evaluations carried out by health professionals may be fragmented. Thus, the routine observation of the family, on the patient's progress, should serve as a reference for decision-making regarding the care plan. Thus, it becomes imperative that family caregivers are considered essential components of the health team, receiving education regarding the prevention of PU, as well as the incentive for participation in the planning of healthcare.<sup>6</sup>

The care of patients with skin lesions, such as a PU, regarding management and specific treatment requires nurses and multidisciplinary team outlining strategies to meet their needs.<sup>7</sup>

The evaluation on the development of PU, demand critical thinking and clinical reasoning of the nurse, which are the bases for the assessment of the PU in the clinical examination. The nurse performs the anamnesis to raise data of health conditions of the patient, life habits, and family history, social and laboral. Thus, the focus of nursing care should be founded in search of information to learn about the patient's needs, develop a plan of care, implement actions and assess the results, finally, characterizing the systematization of nursing care.

## OBJECTIVES

- To describe the clinical evolution of two elderly patients with PU, after handling the wound by nurses
- Highlight the importance of technical skill in the healing process of wounds.

## METHOD

Descriptive clinical case study, developed with bedridden patients from the nursing care in two households. In the municipality of Joao Pessoa /PB/Northeast of Brazil, during the months of December 2011 to March 2012.

The sample was composed by two elderly patients who met the inclusion criteria: being 18 years or older; have a pressure ulcer with initial necrotic and infected; consent to participate in the study and sign the Statement of Informed Consent / IC.

For data collection, a structured instrument was developed for the assessment of clinical characteristics of the bearer of PU, from which if built a framework for monitoring the lesion for each service; also, were used photographic records systematized the lesion, during the entire intervention performed. Thus, there was the nursing consultation focused on the treatment of PU: history and physical examination of the patient, problems identified in this case with special attention to the wound, and performing the intervention over a period of four to 12 weeks, with continuous evaluation of the results achieved, being the latter realized from the wound assessment and photographic records.

As to the analysis of information, the clinical evolution and management of the wound of each patient will be described separately, and presented the following synoptic tables.

This study was approved by the Research Ethics Committee of the Health Sciences

Center of the Federal University of Paraiba, protocol no. 124/11.

RESULTS

Report of the first case:

VPL, 67, male, impaired general condition, conscious, disoriented, eupneic, hydrated, normotensive, sequelae from stroke, with a pressure ulcer for five months. In the initial assessment of the wound, the following was found: located in sacral region, irregular margins, high purulent exudates with a putrid odor and was completely covered by necrotic tissue coagulation (Table 1; Fig.1). Two days after the first assessment, began the process of wound debridement, which consisted of the removal with a scalpel blade of devitalized tissue adhered to the wound bed, by using a mechanical technique <sup>8</sup> , obeying the care required to prevent pain and damage to the viable tissue. The PU had an area of 9x8x2cm<sup>3</sup> (Table 1; Fig. 2).

Considering the wound assessment in this case, we adopted the following topical treatment, which lasted 45 days: cleaning of the wound was done with 0.9% saline solution,

hydrogel was used in the areas of fibrin to promote autolytic debridement, the hydropolymer being associated with silver in order to absorb the exudate and conduct local bacterial control. The dressing change was performed when the hydropolymer showed saturation, see image (Table 1, Fig.4). As secondary coverage, a plate of hydrocolloid was used. On the healthy skin, perilesional, we used the barrier cream to moisturize and protect the skin from other ailments.

At nine days of treatment, the lesion already presented an extensive area of granulated tissue, approximately 94 %, and little serous exudate, characteristic odor, without signs of infection or inflammation (Figure 1; Fig. 5). At the end of the 12th<sup>th</sup> week the lesion measured 4x5x0cm<sup>3</sup> , with 60% of granulation tissue and 40% of epithelized tissue (Figure 1; Fig.9). In the interval between 12/26/2011 to 03/06/2012, the procedures were under the supervision of the family health strategy nursing professionals.

| Photographic record                                                                                     | Type of tissue in the wound bed                                       | Exudate and odor                                    | Measurement | Procedure                                                     | Material used                                                                                              |
|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------|-------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <br>Fig-1 12/05/2011 | Total necrosis (presence of eschar)                                   | Purulent exudate, high , odor putrid                | -           | Autolytic debridement, removal of nonviable tissue.           | hydrogel, silver hydropolymer, hydrocolloid covering                                                       |
| <br>Fig-2 12/07/2011 | Partial Necrosis 70 % ,presence of tunnels and detachment of edges    | Purulent, high exudate, putrid odor                 | 9 X 8 X 2   | Autolytic debridement, removal of nonviable tissue.           | Hydrogel, silver hydropolymer, hydrocolloid covering, cream barrier                                        |
| <br>Fig-3 12/09/2011 | Partial Necrosis 20 %, granulation tissue.                            | Medium exudate Serosanguineous, characteristic odor | 10 X 9 X 2  | Autolytic debridement, removal of nonviable tissue.           | Hydrogel, silver hydropolymer, filling the cavity with alginate hydrocolloid plate covering, barrier cream |
| <br>Fig-4 12/12/2011 | 90 %Granulated tissue. (photo silver saturated foam)                  | Medium serous exudate, characteristic odor          | 9X8X2       | Filling of cavities                                           | Hydrocolloid paste, silver hydropolymer and coverage with hydrocolloid plate, barrier cream                |
| <br>Fig-5 12/14/2011 | 95 % Granulated tissue,5% fibrin, reduction of detachment and tunnels | Little fibrous exudate, characteristic odor         | 9X8X1       | Cleaning with SF 9 % ,outer protection, antibacterial control | Barrier Cream, hydrocolloid paste, silver foam.                                                            |



|                                                                                                       |                                                                                             |                                             |                          |                                                                                                                           |                                                 |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <br>Fig-6 12/19/2011 | Tissue Retraction, presence of epithelized tissue 90% ,presence fibrous tissue10%           | Little fibrous exudate, characteristic odor | 8X7X1 WITHOUT DETACHMENT | Cleaning with SF 9 % ,outer protection, antibacterial control                                                             | Barrier Cream, hydrocolloid paste, silver foam. |
| <br>Fig-7 12/26/2011 | Epithelized tissue with retraction of edges, granulated central area, small point of fibrin | Low exudate, characteristic odor            | 6X6X1                    | Cleaning with SF 9 % , usage of hydrocolloid paste in more profound area, protection of tissue with hydrocolloid coverage | Barrier Cream, and hydrocolloid paste plate     |
| <br>Fig-8 03/06/2012 | Epithelized tissue                                                                          | Absence of exudate, characteristic odor     | 4X5x0                    | Cleaning with SF 9 % , warm jet under pressure, transparent hydrocolloid coverage.                                        | Transparent hydrocolloid                        |

Figure1 . Clinical Characteristics related to PU of Patient 1, regarding the assessment, management and evolution of the lesion. João Pessoa, 2012.

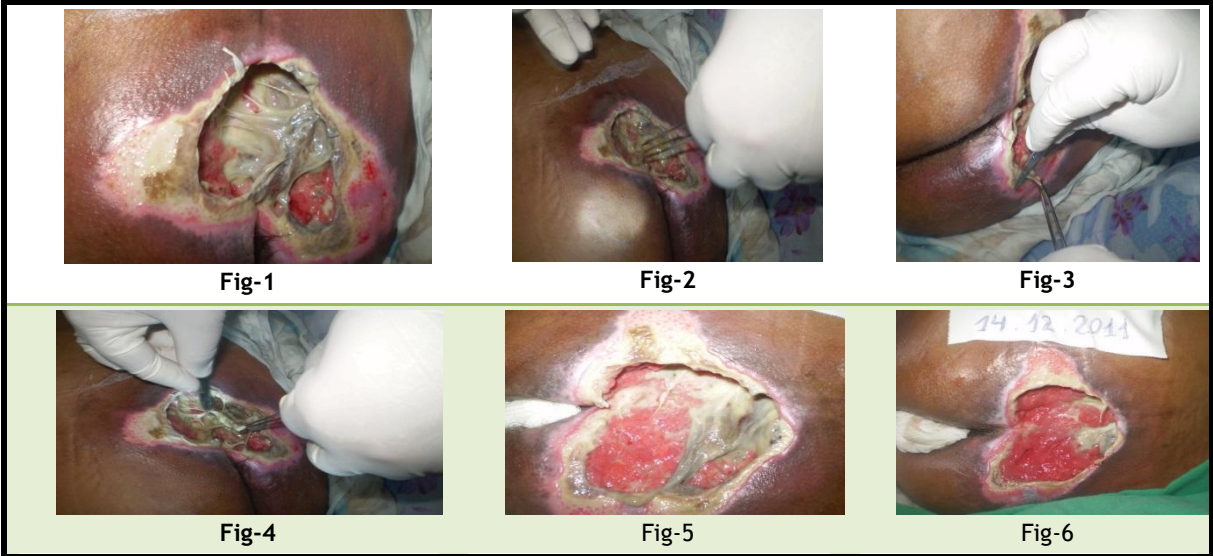


Figure 2. Procedure for removal of devitalized tissue by nurses (debridement), the PU of Patient 1. João Pessoa, 2012.

Report of the second case:

MBS, 97, female, hydrated, cachectic, eupneic, unresponsive to verbal requests, bedridden, rigid articulation, totally dependent, presented urinary and fecal incontinence and bearer of UP. During the first wound assessment, its location was verified in the sacral region, the bed was totally covered by necrotic tissue; it was an infected wound exudate with high seropurulent, putrid odor, as well as the perilesional having an area with signs of inflammation (Table 3, Fig.1).

Establishing the following topical treatment: in the first days of follow-up, after cleaning the wound with saline solution at 0.9 %, hydrogel was used, in order to promote autolytic debridement, followed by careful removal of softened necrotic tissue (mechanical debridement). After the removal

of necrotic tissue, it was evident that the presence of cavities and the area of the wound was 22x18x6 cm<sup>3</sup> (Table 3; Fig. 2).

In consecutive days, the use of the hydrogel in the fibrin areas was maintained and by treating an infected wound, for bacterial control the non-adhesive hydropolymer silver was used, this in turn besides dispensing the silver to control bacteria also acted in the absorption of exudate.

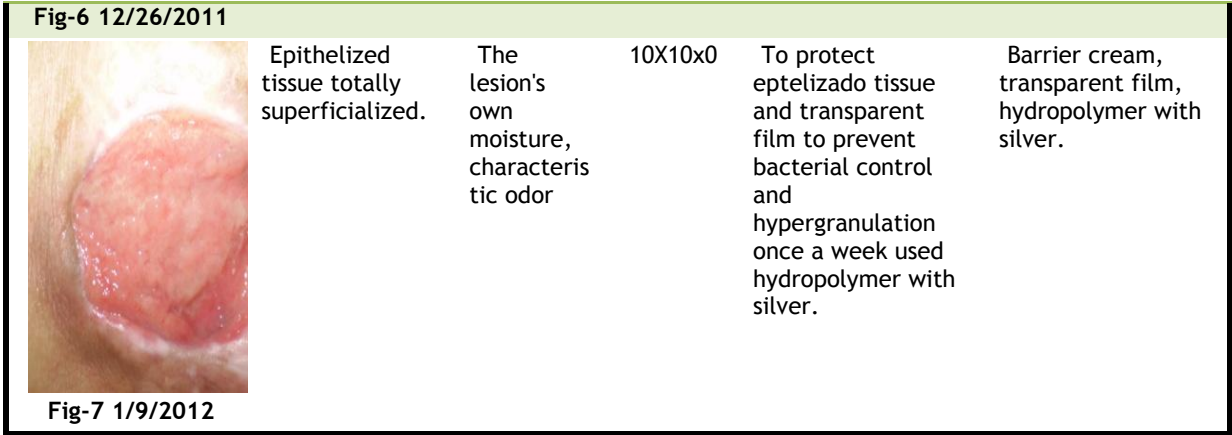
For the filling of cavities, calcium alginate was employed. After ten days of treatment a significant regression in the extent of UP was revealed as well as improvement in the appearance of the wound bed. It is worth pointing out that the cleaning was performed with SF 0.9% and antiseptic soap in the perilesional area; the wound bed cleaning was done with a pressure jet, using a 20cc syringe

and needle 40 x 12 fr, cautiously to not hurt new and vascularized tissues. The locations where the lesion had a higher migration of exudate was filled with calcium alginate tape, so that this dressing could remain more time for implementation of the next change, whereas in small areas fibrin hydrogel was used, which was later replaced by the hydrocolloid paste which accelerated the granulation (Table 3, Fig 6). As a secondary coverage, the transparent hydrocolloid was applied in order to provide the patient greater comfort and freedom for bath and hygiene in

general, since this is impervious to water and bacteria, thereby reassuring family and maintaining the dressing the greatest possible time. The barrier cream was used in perilesional area to prevent maceration of edges and dermatitis.

During the care developed by the nurse, was performed the continuous evaluation of the wound and observation of the patient's general condition, including guidance on hygiene, change of decubitus and nutrition. This lesion showed a significant healing in less than 60 days of treatment.

| Photographic record                                                                                     | Type of tissue in the wound bed                                                                                           | Exudate and odor                                                         | Measure ment | Procedure                                                                                                                                                                    | Material used                                                                                                   |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <br>Fig 1 12/02/2011  | 100% Necrosis                                                                                                             | Purulent and bloody, putrid odor                                         | ---          | Cleaning with SF9 % ,mechanical debridement and autolytic with hydrogel , transparent film coverage                                                                          | Hydrogel, transparent film                                                                                      |
| <br>Fig-2 12/6/2011  | 80% necrosis / fibrin slough) and 20% small area vascularized tissue.                                                     | Purulent, serous, putrid odor                                            | 22X18x6      | Cleaning, alginate in cavitary areas (tunnels) detachment of lateral edge and on average 6 cm, use of silver hidropolimero (infection control), hydrocolloid coverage.       | Hydrogel, alginate , silver hydropolymer and transparent silver hydrocolloid dimer and transparent hydrocolloid |
| <br>Fig-3 12/12/2011 | Superficed lesion with granulated edges and central area with presence of colliquative necrosis.                          | Significant Reduction of exudate, the same fibrous, characteris tic odor | 18X14x0      | Cleaning, use of hydrogel hydropolymer with silver hydrocolloid coverage. Conducting mechanical and autolytic debridement.                                                   | Hydrogel, hydropolymer silver, barrier cream, hydrocolloid.                                                     |
| <br>Fig-5 12/19/2011 | Lesion 98% granulated, only a small presence of fibrin tissue.                                                            | Low exudate, characteris tic odor                                        | 16X13x0      | Cleaning with SF9% lukewarm, with jet under pressure, perilesional area, always the use of barrier cream, deepest areas of the lesion using more hydrocolloid plate paste.   | Barrier cream of hidrocolioide, hydrocolloid plate paste.                                                       |
|                      | Frank epithelialization tissue, demonstrating edges tensile strength of contraction. Complete absence of necrotic tissue. | The lesion's own moisture, characteris tic odor                          | 13X10x0      | Maintained cleaning with SF% warm under pressure, area protection perilesional with barrier cream, hhydrocolloid and transparent coverage plate for hydrocolloid film paste. | Barrier Cream, Hydrocolloid paste, transparent film                                                             |



DISCUSSION

The success of the healing process of pressure ulcers studied was achieved by a systematic series of actions that have been implemented according to each case, ranging from the assessment of the general condition of the patient, the investigation of the risks for UP, the specific evaluation of the wound for its treatment. It was also possible to demonstrate the importance of the competence of the nurse in the handling of complex wounds, such as the infected UPs, in the home environment, both with regard to the assessment, implementation of procedures, as well as, on the knowledge and skill in removal of nonviable tissue through the mechanical debridement after autolytic debridement. Therefore as stated by some authors, the successful closing of a complex wound depends on a well-done debridement.<sup>9</sup>

The intervention performed for the treatment of UPs through planning and revaluations of the care plan, showed that the home environment is essential to provide safety and involvement of the caregiver / family in the continuity of care driven by nurses. Fitting the latter to assess the patient in their entirety, plan their topical treatment in the case of wounds, and guide them in the prevention of new PUs. Therefore, according to Ferreira, Aguiar, Soares, Silva and Oliveira<sup>10</sup>, in their study, the nurses' performance involves the planning and implementation of actions that involve and valuing the caregiver, as being a new element for the promotion of health. Which by technical training and performance of the activities of less complexity, such as maintenance of hygiene and mobilization in the bed, one will be able to act effectively on the minimization of risks and prevention of worsening of PUs, and may reduce the morbidity and mortality of these users.

It is worth pointing out that the thematic pressure ulcer in homecare is poorly documented in the literature, especially with

regard to the prediction and prevention of PU. According to Salonga-Moreno<sup>11</sup>, the few studies that have been completed have confirmed that there is a gap in the management of pressure ulcers in home care. In addition, it is also observed that the homecare nurses do not follow the current guidelines recommended for practice on PU.

CONCLUSION

Home care focused on patients with pressure ulcers requires proper communication between the nurse, patient and family, with the latter being the primary care giver, since the continuity of care is under their responsibility.

This study demonstrated the importance of a systematic nursing care for wound care in the home environment and the competence of nurses in the management of infected ulcers encompasses knowledge in wound evaluation, technical skill and appropriate therapy. Therefore, these aspects together were determining factors for the healing of the chronic lesions studied in this paper.

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