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# FOAM DRESSING ON WOUND HEALING PROSES IN POST FRACTURE OPERATION PATIENTS

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**ABSTRACT**

Modern wound dressing is a technique of wound care that focuses on moist principles so that the use of wound dressing plays an important role in accelerating the wound healing process. This study aims to determine the Effect of Modern Wound Care with Foam Dressing on the Wound Healing Process of Post Patient's Femur Fracture Surgery. The study used a pre-experiment one group pretest posttest design. The sampling used was accident sampling. The independent variable of the study was modern wound care with foam dressing, and the dependent variable of the study was the wound healing process, assessed by Bates-Jensen Wound Assessment tools. The results of the study before the intervention, the mean Bates-Jensen Wound Assessment score was 23.50 with a standard deviation of 1.080, a minimum value of 23.00 and a maximum value of 26.00. The results of the study after the intervention, the mean score was 15.50 with a standard deviation of 0.850, a minimum value of 15.50 and a maximum value of 17.00. Post operative wound care with foam dressings is expected to be applied and routinely carried out according to the wound care schedule of postoperative patients in order to improve the quality of health services.

**Keywords**

***Foam Dressing, wound, post fracture operation***

## INTRODUCTION

*Post* femur fracture surgery is the time after done surgery in affected patients injury or fracture of the femur, ie according to fracture type and type performed operations that started at the moment patient moved from room surgery until to the maintenance unit. because it, deep room maintenance need exists gift care optimal nursing ie management good wound (Brunner & Suddarth, 2010). Maintenance wound aim For clean and avoid wound from shit , help speed up emergence cells epithelium or healing process as well as prevent happening infection (Carville, 2007). *Modern wound dressing* is technique maintenance a wound that focuses on principle *moist* until use dressing or *dressings* wound have role important, researcher get that on care wound *post* femoral fracture surgery was obtained dressing wound Still use cash register

Femur fracture is disconnection continuity femoral bone that can happen as a result of trauma direct. If somebody suffered a fracture on the part here, patient will experience bleeding profusely and can resulted sufferer experience shock. One procedures performed on fracture patients surgery (Brunner & Suddarth, 2010; Heinig & Almqvist, 2013). *Post* femur fracture surgery is the time after done surgery in patients with femoral fractures, ie according to fracture type, type operations performed and started at the time patient moved from room surgery until to the maintenance unit.

Because that management maintenance wound needed for increase healing, preventing damage skin more further, reduce risk infection, and improve comfort patient. Femur fracture can cause complications, long morbidity and disability if no get good handling (Brunner & Suddarth, 2010; Obaidur Rahman et al, 2013; Tseng et al, 2013).

Treatment technique wound the latest in the medical world that is with use principle moist and closed, atmosphere moist support healing process occurs injuries (Blackley, 2004). Treatment technique wound damp and closed or known moist wound healing is method for maintain humidity wound with use material dressing retainer humidity so that network wound experience chance for proliferate do cycle repair cell with ok. Draft moist wound healing become base emergence *modern dressings* (Shah, 2012). Nurse demanded For have adequate knowledge and skills related with the treatment process the wound started from comprehensive assessment, planning appropriate intervention, implementation action, evaluation results found during maintenance as well as documentation systematic results (Agustina, 2009) . Another issue that must be understood nurse is related with cost effectiveness. Management maintenance Modern wounds are very forward issue the. this the more many innovation latest in development product dressings used in maintenance wound.

*dressings* is materials used in a manner topical to wounds For protect wound and help healing wound. *dressings* will experience contact direct with wound and different with plaster as retaining dressings. A number of type dressing material, namely: gauze sufratulle, films, composites, hydrogels, hydrocolloids, *alginates*, foams, and other *absorptive dressings* such as *negative pressure wound therapy* (Galiano, 2007). One of the modern dressings for maintenance postoperative wound is *foam dressing* which is dressing originating wound from Polyurethane. Polyurethane itself is Something material mixture or results solvency between rubber and plastic so that obtained dissolution of materials that have very durable advantage swipe, hold wear out, hold on to a number of chemistry light, stable in temperature cold and hot. The polyurethane dressing can give effect healing wound with fast because resilience material it and stability generated temperature make wound more fast dry (Webster, 2012). Based on description that, researcher interested For study and understand quality life patient to service maintenance postoperative wound. _ So that researcher take title Influence Modern Wound Treatment with Foam Dressing for the Wound Healing Process of Post Femoral Fracture Patients

## METHOD

Study This use design pre-experimental research *one-group pre-test post-test* . Sampling used in study This is *accidental sampling. The* total number of samples obtained as many as 10 samples . Variable *independent* in study This is maintenance modern cuts with *foam dressing* . Variable *dependent* in study This is a healing process wound patient *post* femoral fracture surgery with the Bates-JensenWound Observation Sheet Assessment tools. Statistical Test *Wilcoxon* with $\alpha = 0.05$

## RESULTS

**Table 1 Distribution frequency Wound healing process before modern wound care with foam dressing in postoperative femur fracture patients.**

| Respondent No | Score " *Bates-Jensen Wound Assessment Tool* " Before intervention |
|---|---|
| 1 | 23 |
| 2 | 23 |
| 3 | 23 |
| 4 | 23 |
| 5 | 23 |
| 6 | 26 |
| 7 | 23 |
| 8 | 25 |
| 9 | 23 |
| 10 | 23 |
| Means | 23.50 |
| Minimum | 23.00 |
| Maximum | 26.00 |
| Standard deviation | 1,080 |

On table 1 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.50 with a standard deviation of 1.080. The minimum and maximum scores of " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.00 and 26.00.

**Table 2 Distribution frequency Wound healing process after modern wound care with *foam dressing* in postoperative femur fracture patients.**

| Respondent No | Score " *Bates-Jensen Wound Assessment Tool* " Before intervention |
|---|---|
| 1 | 15 |
| 2 | 15 |
| 3 | 16 |
| 4 | 15 |
| 5 | 15 |
| 6 | 17 |
| 7 | 15 |
| 8 | 17 |
| 9 | 15 |
| 10 | 15 |
| Means | 15.50 |
| Minimum | 15.00 |
| Maximum | 17.00 |
| Standard deviation | 0.850 |

On table 2 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 with a standard deviation of 0.850. The minimum and maximum scores of " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 and 17.00

**Table 3 Tabulation Distribution frequency The Influence of Modern Wound Care with *Foam Dressing* on the Wound Healing Process of Postoperative Femoral Fracture Patients.**

| Respondent No | Score "Bates-Jensen Wound Assessment Tool" Before intervention | Score "Bates-Jensen Wound Assessment Tool" After intervention |
|---|---|---|
| 1 | 23 | 15 |
| 2 | 23 | 15 |
| 3 | 23 | 16 |
| 4 | 23 | 15 |
| 5 | 23 | 15 |
| 6 | 26 | 17 |
| 7 | 23 | 15 |
| 8 | 25 | 17 |
| 9 | 23 | 15 |
| 10 | 23 | 15 |
| Means | 23.50 | 15.50 |
| Minimum | 23.00 | 15.00 |
| Maximum | 26.00 | 17.00 |
| Standard deviation | 1,080 | 0.850 |
| ρ -*value* = 0.003 ; α = 0.05 | | |

On Table 3 shows that of the 10 respondents, there was a change in the postoperative wound healing process for a better femur fracture, namely the average value of the " *Bates-Jensen Wound Assessment Tool* " before the intervention was 23.50 with a standard deviation of 1.080 and after the intervention was 15.50 with a standard deviation of 0.850. The process of postoperative wound healing was also shown at the minimum - maximum value before and after the intervention, from 23.00 - 26.00 to 15.00 - 17.00

The results of hypothesis testing *Wilcoxon* value is obtained significance ( $\rho$ - *value* ) = 0.00 3 with $\alpha = 0.05$ . Up to n value significant 0.00 3 $\leq$ 0.05 ( $\rho$ *value* $\leq \alpha$), this means that Ho is rejected and Ha is accepted accordingly There is Effect of Modern Wound Treatment with *Foam Dressing* on the Wound Healing Process of Post Femoral Fracture Patients in Hospitals. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency

## DISCUSSION

1. Identifying the process of wound healing before modern wound care with *foam dressings* in postoperative fracture patients On table 1 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.50 with a standard deviation of 1.080. The minimum and maximum scores of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out were 23.00 and 26.00. This score indicates a poor wound healing process according to the " *Bates-Jensen Wound Assessment Tool* " category.

   Wound healing is a complex process due to the presence of biocellular and biochemical processes that occur continuously. The wound healing process is not only limited to local regeneration processes, but is also influenced by vascularization, anemia due to bleeding, age, nutrition, other diseases, and obesity (Ferreira et al, 2006). Conventional treatment methods are wound care methods that use gauze as the main treatment method. This treatment method includes passive materials whose main function is to protect the wound from trauma, maintain the wound area or to suppress the wound and the area around the wound and prevent bacterial contamination. Wound development is very slow compared to modern treatments, this can be caused by changing gauze every day which can cause trauma to the wound so that wound healing returns to its initial phase. And for wounds with minimal or moderate exudate, the dressing is only changed once. This causes the wound to tend to be drier which can cause the wound development process to be hampered (Handayani, 2016)

The process of wound healing that was not good in the observation of the first *postoperative treatment* occurred because it was possible for the respondent to experience bleeding during the ORIF installation operation so that the respondent experienced a lack of hemoglobin levels in the blood which could affect the wound healing process to take longer. The use of gauze as *a dressing* on ORIF bandages can also cause the surgical wound not to get moist conditions as ideal conditions for the wound healing process. In addition, the surgical wound of the femur fracture is still in the inflammatory phase, which is marked by the area of the surgical wound that looks swollen and reddish.

2. Identifying the process of wound healing after modern wound care with *foam dressings* in postoperative femoral fracture patients table 2 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 with a standard deviation of 0.850. The minimum and maximum scores of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out were 15.50 and 17.00.

   *Dressings* that can maintain moisture on the wound surface will facilitate the process of angiogenesis, in angiogenesis the formation of new blood capillaries occurs where the supply of oxygen and nutrients increases. Another process is increased autolytic debridement, in moist conditions neutrophils increase so that necrotic tissue can be removed and does not cause a pain response. This process also stimulates macrophages to produce growth hormone which can stimulate new cell growth (Keast & Orsted, 2008). A moist wound environment ( *moist* ) can accelerate the wound healing process by helping to quickly remove fibrin formed in acute or chronic wounds (fibrinolytic) by neutrophils and endothelial cells in a humid atmosphere, reducing the incidence of infection compared to dry treatment (2,6). % and 7.1%), helped accelerate the invasion of neutrophils followed by macrophages, monocytes and lymphocytes to the wound area (Gitarja, 2008). The results of this study are in line with Luh's research, (2016) which states that *moist wound healing* speeds up the wound healing process by using principles and dressings that are in accordance with *moist wound healing techniques* . In modern wound care with *foam dressings* carried out by researchers, it provides warmth and a *moist environment* to surgical wounds . Moist conditions on the wound surface can improve the process of wound repair, prevent tissue dehydration and cell death. These conditions also increase the interaction of cells and growth factors. Therefore, in the observation of the surgical wound in the 3rd treatment, the results of the *Bates-Jensen Wound Assessment Tool score* were good (the average respondent's score was 15.50) which indicated an improvement in the condition of the surgical wound for the better.

3. Analyzing the Effect of Modern Wound Care with *Foam Dressing* on the Wound Healing Process of Post Femoral Fracture Patients

   On Table 3 shows that of the 10 respondents, there was a change in the wound healing process after the femoral fracture surgery for the better, namely the average value of the " *Bates-Jensen Wound Assessment Tool* " before the intervention was 23.50 with a standard deviation of 1.080 and after the intervention was 15.50 with a standard deviation of 0.850. The process of postoperative wound healing was also shown at the minimum - maximum value before and after the intervention, from 23.00 - 26.00 to 15.00 - 17.00

   Result _ test hypothesis *Wilcoxon* value is obtained significance ( $\rho$ - *value* ) = 0.00 3 with $\alpha = 0.05$ . Up to n value significant 0.00 3 $\leq$ 0.05 ( $\rho$ *value* $\leq \alpha$), this means that Ho is rejected and Ha is accepted accordingly There is Effect of Modern Wound Treatment with *Foam*

*Dressing* on the Wound Healing Process of Post Femoral Fracture Patients in Hospitals. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency.

Wound healing is defined as a complex and dynamic process that results in improvements to the anatomical structure and function of tissues (Hess, 2002). The results of Luh's research (2016) stated that *moist wound healing* accelerates the wound healing process by using principles and dressings that are in accordance with modern wound care techniques . Modern wound care products have made a major contribution to wound care methods. The principle of modern wound care products is to maintain and keep the wound environment moist to facilitate the wound healing process, maintain tissue fluid loss and cell death (Delaune, 1998 in Sartika & Dewi, 2008). *Foam* is a foam that has been modified so that it has high exudate absorption but is controlled because it consists of matrix cells of different sizes, is soft and flexible and can be useful as a cushion to protect wounds. *Foam dressings* can absorb a lot of liquid, so they are very suitable for use in the early stages of wound growth. In addition, *dressing foam* is comfortable and soft on the skin and can be used for several days so that it can save *costs* on patient care (Fatmadona & Oktarina, 2016). The results of research on wound care techniques with the principle of *moist* and covered with *dressings* made from poly-ethylene (foam) have the advantage that wounds can heal 2 times faster than wounds that are left to dry (Shah, 2012). This is in accordance with the results of Frank's research (2006) which said that several studies have proven that *modern dressings* are more effective than gauze *dressings* . The results of this study are in accordance with Faswita's research (2016) which states that there is an effect of modern wound care measures on the speed of the wound healing process after open fracture surgery . One form of physiological problems in postoperative patients with limb fractures is appearance limitations movement that causes weakness _ obstructed muscle and vascularization of the postoperative wound area so that exercise mobilization active nor passive and caring good wound _ be one _ factor important in support recovery wound *post* operation . According to healing process researcher femoral fracture postoperative wound after given *foam dressing* delivers optimal results so maintenance postoperative wound _ must routine done in accordance timetable take care wound . Besides That development *modern dressings* must offset with enhancement knowledge and skills clinical For support maintenance quality wound . _ Nurse have role important in nurse patient *post* femoral fracture surgery , ie support unification discontinuity femur bone , prevention infection and accelerate healing postoperative wound _ with method do maintenance wound *modern* , for one use *foam dressing* . Management House Sick more notice facilities and infrastructure specifically tools _ _ For maintenance modern wounds as well maximizing knowledge nurse through maintenance training and seminars wound.

## CONCLUSIONS

The process of wound healing before modern wound care with foam dressings in postoperative femoral fracture patients at the hospital. Bhayangkara Moestadjab TK III Nganjuk Regency has a mean value of 23.50 with a standard deviation of 1.080, a minimum value of 23.00 and a maximum value of 26.00. The process of wound healing after modern wound care with foam dressings in postoperative femoral fracture patients at the hospital. Bhayangkara Moestadjab TK III Nganjuk Regency has an average value of 15.50 with a standard deviation of 0.850, a minimum value of 15.50 and a maximum value of 17.00. Modern wound care with

foam dressings has an effect on the wound healing process in postoperative femur fracture patients at the hospital. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency. This is based on the results of the Wilcoxon hypothesis test with a significant value of 0.003 ≤ 0.05.

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