

“An Analytical study of the modern wound care in managing diabetic wounds”

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ABSTRACT

Diabetes mellitus is a group of metabolic diseases that can make a foot wound easier to heal. Diabetic patients need wound care so that their wounds don't get worse over time and cause more problems. In recent wound care, a modern bandage has been used. Modern wound care products work by keeping the wound moist and keeping an eye on it. This helps the wound heal by keeping the tissue from getting too much water and the cells from dying. The goal of this study was to find out how a modern wound bandage is used on a diabetic patient and how that affects the wound healing phase. This is a qualitative study that uses the phenomenology method. Four diabetic patients with wounds who were hospitalized for two weeks and given modern wound care in the Magelang regency took part. The people who took part were chosen using a method called "purposive sampling." Observation and interviews were used to collect data, and the explanation building method was used to analyze the data. This research found four things: how to look at a wound, what kind of modern bandage to use, how to care for a wound, and what effect it has on the body. Bates-Jensen Wound was used for wound examination, hydrogel and wound ointment were used as bandages, TIME management approach was used for wound care, and wound care affects the size of the wound, how fast it grows, and how well it heals. The way a diabetic wound is treated with a modern bandage affects the wound's size, growth, and healing. For diabetic wound care, paramedics should use modern wound care methods.

Keyword: - Metabolic diseases, Modern wound, Observation, Paramedics.

INTRODUCTION

Diabetes mellitus, or just "diabetes," is a group of metabolic diseases that are marked by high blood sugar. Long-term hyperglycemia in a person with diabetes mellitus causes atherosclerosis, which makes it easier for the diabetic wound foot to heal. Epidemiologists think that between 21 million people in Indonesia will have diabetes

mellitus by the year 2030. Hasil Riset Kesehatan Dasar (Riskesdas) in 2013 showed that 45–54-year-olds were more likely to die from diabetes mellitus than from any other cause.

In urban areas, people who are 65 years old make up 14.7% of the population, while in rural areas, they make up 5.8%. To avoid complications from diabetic wounds that happen over time and to keep the patient from getting worse, it is important to pay attention to how the wound is cared for. There are four principles of diabetic wound management that will help the healing process go as smoothly as possible. The basic steps are to clean and protect the wound, put a bandage on it, and give it oxygen. By following these rules, 80% of foot problems caused by diabetic wounds should be able to be fixed, so amputations won't have to be done.

Today, wound care techniques have come a long way, and modern bandages are used to treat wounds. The idea behind modern wound care products is to keep the tissue dry and kill the cells. The issue is laid out in the modern way of taking care of wounds. It is helped by the fact that new wound care products are being made all the time. Cost, comfort, and safety are the main things that you should think about when choosing a product. Indonesia has come up with a modern way to treat wounds. Modern dressings are made of films, hydrogels, hydrocolloids, foams, alginates, and hydro fibers, and they can keep the wound's surface at the right level of humidity. This study will look at how modern bandages are used in the healing process of diabetic wounds at different stages of wound healing.

The research plan used was a single-instrument case study, and the people who took part were chosen through a process called "purposive sampling."

1. The people who took part were taken from a new wound that had not yet been treated with modern wound care for diabetic foot ulcers in the lowest grade.
2. The type of analysis used in this study was "building explanations."

CASE STUDY

In each case, the following passage is a description of the case that was talked about:

Study case first

Mrs. D is 48 years old and has had diabetes for 13 years. She has had diabetic wounds for the past three months. The wound on her right sole has already dried up, but the wound on her left sole still has a cave in stage 2 depths, a callus, and it smells bad. Bates Jensen examined the wound: wound size: 2, wound depth: 2, wound edge: 4, cave: 2, necrosis tissue type: 5, total necrosis tissue: 4, exudate type: 1, total exudate: 5, skin colour around the wound: 5, ossification of edge tissue: 2, granulation tissue: 5, epithelialization: 5. Total score: 41. Wound care includes washing the wound with wound soap and NaCL, giving the wound an antiseptic, and using mechanical debridement to remove calluses and dead tissue. After that, the wound is given an antiseptic and dried with sterile dry gauze. The dressing is a wound ointment with zinc and metronidazole that is both absorbent and seals the wound.



1st person hurt 1st day-12 day

The wound care has been going on for two weeks, and the results show that there have been changes. These include: wound size: 1, wound depth: 2, wound edge: 2, cave: 1, necrosis tissue type: 4, total necrosis tissue: 4, exudates type: 1, total exudates: 3, skin colour around the wound: 3, ossification of edge tissue: 1, granulation tissue: 4, epithelialization: 5. Total score: 31. The above description shows that the wound has changed in terms of its size, depth, cave size, amount of necrosis tissue, and total amount of exudates. The skin colour around the wound has also changed because the callus has shrunk and granulation tissue has grown, but the epithelialization has not changed.

Study case Second

Mr. P, who is 76 years old, has had diabetes mellitus for seven years and has had ulcers on his left foot. Checking a wound is: Stadium wound 2, wound sizes: 1st wound was 2.5 cm x 1 cm, 2nd wound was 1 cm x 1 cm, and 3rd wound was 2 cm x 2cm. There was no cave-in, there were no exudates, it didn't sting, and there was necrotic tissue. Wound base colour: granulation (50%), epithelisation (40%) and slaf (10%). Wound base was the same as the wound, wound edge was thin and soft the result of wound care in the second week: Stadium wound 2, wounds size: First cut: Length: 1.2 cm Width: 0.5 cm, length of second wound: 0.8 cm 0.4 cm wide, 3rd wound: has already dried, there is no cave, no exudates, it didn't sting, there is necrotic tissue, wound base colour: granulation (60%), epithelisation (40%) and slaf (10%), wound base was one with the wound, thin and soft wound edge, there was no infection and it wasn't painful.



Ind person hurt 1st day-12 day

Study case Thirds

A client by the name of Mrs. K has had DM for ten years, and her fluctuating blood sugar levels were managed.

This is an illustration of a Bates Jansen Assessment Tool result assessment for a third study case. The initial situation consisted of post-amputation wounds on digits 1 through 5. Wound I was 1507 mm² (point 2), and there was hyper granulation tissue growth. Wound II was 10542 mm² (point 5), permeating wound, in depth level 2, and there was no cave, no necrosis tissue, no exudates, and dried exudates. Hyper pigmented skin was present surrounding the area. There was less than 4 mm of edoema around the incision, 100% granulation, less than 25% epithalization, and no wound edge ossification.



Three-patient injury (1st day-12 day)

RESULT

The outcome of second-week wound care is: GDS 250g/dl, wound I size 930 mm² (point 1), hyper granulation tissue decreased, wound II size 8897 mm² (point 4), wound is clean, depth is in stage 2, wound edge appears to be one with wound base, no cave, no necrotic tissue, no exudates, dry exudates, and hyper pigmented

skin around the wound. Around the incision, there was edoema that was less than 4 mm in diameter, no edge tissue ossification, 100% granulation, and less than 25% epitalization.

DISCUSSION

A reduction in the size of the wound, the depth of the wound, the percentage of granulation, epithelialization, reduced amounts of tissue necrosis, as well as the amount of liquid that appears are some components of the assessment of the wound by Bettis Jensen. Wound care is performed with modern dressings using moist principles. This is in line with Frank's findings, who claimed that multiple studies demonstrate the superiority of the more recent bandage, gauze bandage effective compared, and that the state of the wound also affects the outcomes of these investigations (breadth, depth of the wound, and the wound treatment duration). The wound must be cleaned, debrided, disinfected, and the installation of correct dressings, such as wound ointments and tight occlusive, must all be completed within two weeks. The region of wound closure will be seen in the first 4 weeks of the study Sheehan's treatment of patients with diabetic foot wounds, and recovery will take a total of 12 weeks.

Washing the wound area is intended to decrease the amount of bacteria in the wound and an imbalance of proinflammatory cytokines. Drinking water is the liquid utilized in wound treatment because, according to Fernandez and Griffith, there is no appreciable difference between using potable water and regular saline on the incidence of infection in chronic wounds, where using potable water is more convenient and less expensive. Debridement is the process of removing necrotic tissue, non-vital tissue, and highly contaminated tissue from the wound area while preserving as many key anatomical components as possible, including tendons, bones, nerves, and blood arteries. Performing wound debridement on both acute and chronic wounds. It is anticipated that the healing process will be enhanced and made simpler after the wound has been cleared of necrotic tissue.

Debridement's primary objective is to lessen pollution around the wound in order to manage and avoid infections. If the necrotic tissue is left in place, it will not only slow the healing of wounds but also increase the risk of losing protein, osteomyelitis, systemic infections, sepsis, amputation of limbs, and death. Numerous areas of necrotic tissue typically develop as a result of inadequate blood flow to the incision or an increase in interstitial pressure. After the removal of necrotic tissue, the wound's circulation will improve and the oxygen delivery will be sufficient. According to all of the studies that have ever been done, debridement increases wound healing compared to chronic wounds where debridement is not performed.

Iodine and regular saline are the components used. Once the wound compress had been cleaned for three minutes with iodine, the wound was washed with regular saline. Because they would impede the network's expansion, disinfectants shouldn't be applied to the wound while it is being wrapped. The idea is to restore the skin's temporary bandage function, which should be able to keep moisture in and keep pollutants out is accomplished by layering gauze, with the top layer receiving a plastic perforation. A semi-occlusive dressing is intended to be made in order to promote healthy tissue growth. Standard gauze dressings continue to be used extensively in the treatment of wounds. Gauze bandage wound care products have various advantages, including being less expensive, simpler to use, and adaptable for usage in challenging places. The primary purposes of a gauze bandage, which includes passive material, are to protect, stay warm, and conceal the wound's unsightly appearance. Additionally, the gauze bandage is utilized to keep the wound area clean, avoid bacterial contamination, and protect the site from trauma. Injuries incurred in humid circumstances are treated with contemporary wound care procedures.

In this instance, wounds are treated with a topical ointment. This type of topical therapy includes powder and ointments that are primarily made of zinc oxide. This substance aids to shield the skin around the maceration wound. It can be applied in conjunction with metronidazole powder on wounds that smell terrible. This circumstance is one possibility among many: 1) increasing angiogenesis, as hypoxia in a closed wound treatment stimulates the formation of blood vessels more quickly; 2) accelerating fibrinolysis, as fibrin formed on chronic wounds can be eliminated more quickly by neutrophils and endothelial cells in a humid environment; 3) lowering the risk of infection; 4) The incidence of infection is relatively lower than the dry type of care; 5) increasing the formation of growth factors that contribute to form the straddle;

CONCLUSION

According to Betes Jensen, current dressings that follow the humid principle for wound care demonstrate that there has been a change in the tissue in some assessment wound components, such as the shrinking of the wound's size, depth, granulation rate, and amount of visible liquid. The steps of treatment include cleaning the wound, performing debridement, administering disinfectant, and correctly positioning the dressing, which consists of wound ointment and occlusive covering.

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