Wound management principals and their application in clinical environment

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 Case#1. Wound management principals and their application in clinical environment

**Holistic Assessment of the Patient (medical history and examination of the patients)**

Mr. Will is a 77 years old man and is identified with Rectal Ca. He has got an arterial, ulcer diabetic foot ulcer, and issues with oral intakes. Two years ago he has done Coronary Artery Bypass Graft surgery and also has the issues of Gastro-esophageal reflux disease, postural hypotension, chronic obstructive, type 2 diabetes and pulmonary disease, He cannot take compact foods, is unable to control his bowel and is living alone in his house. He had also got a head stroke while he was coming to the hospital and it is because of that he got a bruise on his face.. The doctor suggested taking warfarin for the bruise. He is in the hospital for the infection of his arterial ulcer on the lower side of his right.

However, Mr. Jackson is also suffering from rectum cancer and his ulcer has damaged granular tissue by 30% and damaged up to 70% of his slow tissues. He burnt his left arm and that is a second-degree burn.

**Type of Wounds and their Causes**

* **Diabetic foot ulcer:**

A Diabetic foot ulcer is a fully thicken wound and is mostly present in the ankle levels. The pathologies include are arterial disease and diabetic peripheral neuropathy (Jhamb, Vangaveti, & Malabu, 2016).

* **Arterial ulcer:**

This type of ulcer is also known as the ischemic ulcer and is caused due to the less delivery of blood and this disorder is known as poor perfusion. Poor perfusion should be applied to the lower extremities (Kim, Wattanakit, & Gornik, 2012).

* **Pressure Ulcer:**

This type of ulcer is well known as the pressure sore or bed sore. It is an injury to the skin caused by continues pressure and can be cured by changing sitting habits (McInnes et al., 2015).

* **Burn:**

The burning of tissues due to heat, sun or exposed to another sort of radiations. There are various degrees of burn and the severe degree of burn destroys the whole skin and nervous system (Bairy, Somayaji, & Rao, 1997).

**Investigations Required for the Wound**

Mr. Will was having visible wounds that can be easily diagnosed and the sample has been investigated through pathological tests. His bruise was observed through a CT scan but no particular internal infection was found. Rectum cancer was spotted at the time of treatment of other causes and it was spotted because he was having severe pain.

**Wound Management Principles**

Wound management principle focuses on the reasons and condition of the disease. It also includes the maintenance plan after proper dressing (McInnes et al., 2015)

**Evaluation of wound:**

* **Wound bed status:**

The foot ulcer has turned yellow and is fully damaged may need steroid treatment. The pressure ulcer and the infected arterial ulcer look pink in color and are giving the granular appearance. Burn on his hand looks black and needs medication.

* **Wound characteristics:**

Puss is being seen in the pressure ulcer, the foot ulcer an also in the arterial ulcer. All three wounds are given granular appearances. A burn is also been swollen with black skin surrounded the affected tissues.

* **Condition of surrounding skin:**

The surrounded skin of the burn is black in colour as it is damaged, the skin around the foot ulcer is damaged as well and it is inflamed. Arterial and presser ulcer is surrounded by skin that is going to be damaged and looks stretched out.

**The Expectation of the Healing Process for Each type of Wound**

The healing process of the wounds of Mr. Will Jackson needs to go through four stages. The healing process where the wound oozes out and change color. Second is proliferation then, decelerated by epidermal restoration, angiogenesis, and finally shrinkage of wound is focused (Gould et al., 2015).

His rectum ulcer can be cured by chemotherapy and his hand burn needs medication and dressing. His age and mobility can affect the process of healing because he is also having pressure ulcer and his sitting position needs to be frequently changed which is not possible because he has infected his lower leg. Diabetes may also need to be cured because till will also affect the treatment of pressure ulcer.

**Wound Management Plan**

The risk assessment tool used for the pressure ulcer, foot ulcer, Arterial ulcer, and burn is to identify the Braden Scale Risk Factors that is the mobility, nutrition, friction and sensory perception of the wound need to be examined (Gruen, 2010). The patient needs to take protein more in order to get down with the healings of the wounds. Mr. Jackson cannot move his foot which is making the healing process even worse. The healing process of pressure ulcer needs positing devices and generally do not needed any dressings. But steroid dressing is needed time to time.

Arterial ulcer needs a management that included pain control by the help of occlusive dressing and by debridement. The threat for potential infection is further checked. Silver-impregnated in used as addressing for taking care of the ulcer (Boike, Maier, & Logan, 2010). While the burn needs to be dressed by the help of sterilized bandages.

**Health Education for the Patient Regarding the Wound**

The patient needs a support system as he is having a diabetic foot ulcer, arterial ulcer and he is suffering from pressure ulcer as well so he needs to change his sitting position on time to time. He needs to take in protein frequently.

**Pain management relating to the wound including:**

Mr. Jackson is been given the medications Ventolin 4, Telmisartan 40 mg , puffs t.d.s, warfarin two mg daily, Telmisartan 40 mg at a bad time, b.d, , Furosemide 20 mg b.d, Hydromorphone, Endone 10mg (tds) and 2 mg (b.d) . To cure burns and bruise he is recommended painkillers and antibiotic. The patient needs palliative care for the different types of ulcers he is suffering from.

Case#. Wound management principals and their application in a clinical environment

**Medical history and Examination of the Patient and the Wounds**

Mrs. Miriam Gold is an old lady in her 80s and is suffering from various health issues including cervical cancer, pneumonia and oozing of fluids due to dialysis. She also suffered from GORD, CABGS and COPD. She is using pads and is incontinent. She is in RIB condition and cannot move. Her left groin has a malignant wound and a sinus has been developed due to the release of puss. The puss has a strong odor and it is, therefore, her house members do not want to be involved in the treatment. She has got rectovaginal fistula due to radiotherapy and her venous ulcer is also not showing any improvement.

**Type of wounds and their Causes**

* **Malignant wound:**

A malignant wound is also known with another name called tumor necrosis and is a tumorous wound. It happens due to the intrusion of metastatic tumors or primary tumors (Lazarus et al., 1994).

* **Venous ulcer:**

Venous ulcer is also called stasis ulcer and is due to extremity ulceration (Collins, & Sera, 2010).

**Investigations Required for the Wound**

Mrs. Gold was under palliative treatment and the malignant wound has a visible sinus and is releasing pus as well. The malignant wound can also be investigated based on its odor. Her cervical cancer was also showing some discharges. The side effect of radiography has caused her Rectovaginal fistula ad her venous ulcer was also not healing. So the symptoms of all the ulcers were clear which helped in further investigations.

**Wound Management Principles**

Although the patient needs a palliative treatment her the wounds of the Venous Ulcer can be managed by compression therapy that is a therapy to increase the blood flow to the lower limb. That is needed to be done for 30 minutes and should be done 3-4 times per day (Collins, & Sera, 2010).

 The malignant wound can be managed by Interdisciplinary team management as teamwork is needed for dressings and cleanings and its order can be controlled by the addition of necrotic materials (Lazarus et al., 1994).

**Evaluation of Wound**

* **Wound bed status:**

 The wound of venous ulcer has yellow puss and the skin looks firm and is giving a pinkish appearance. The Malignant wound is also oozing out some fluid and the redness of the skin is also visible.

* **Wound characteristics**

 Leakage of fluids and swelling is visible in the wounds of venous ulcer. The malignant wound has a very strong odor, bleeding, pain, and exudation. The malignant wound also interferes with the moment of legs as it is in the groin area.

* **Wound measurements**

Venous ulcer goes up to the depth of the legs because of the development of fistula and sinus, while the malignant wound is spreading horizontally.

* **Condition of the surrounding skin**

The skin is tight and looks damaged from venous cancer. It is red and giving a granular appearance. The Malignant wound is surrounded by minor swollen skin and it is giving a pinkish appearance.

* **Wound exudate:**

The malignant wound can be cured but it has also a very strong smell which is making its treatment difficult. Venous cancer is going deep due to the formation of sinus and has no odor but is constantly occurring again and again. Doppler ultrasound is needed to locate the tumor in both cases.

**The Expectation of the Healing Process of Wounds**

Both of the wounds should be free of infection and oedema should be continuously checked. Venous cancer is a constantly occurring type of disease and the wound cannot be cured easily so it needs constant care. The pathology of the malignant wound is also be controlled in order to control the spread of the tumor. The patient needs to take care of her hygiene and needs to increase protein intake that will help in the healing of the wounds.

**Wound Management Plan**

* **Moist wound healing**

The healing of malignant wound can be accelerated by the use of moistures and hydrated gels and moistures (Lazarus et al., 1994). Occlusive dressings are needed for the treatment of

Venous ulcer as it will keep the wound moist which will help in the healing process.

* **Skin risk assessment:**

 The risk assessment in case of a malignant wound is done by checking the release of blood and odor from the wound which makes the treatment difficult. Sue to high exudate level the risk of skin damaged is also been found. In the case of venous ulcer, the wound assessment should be carefully done to check the healing process.

* **Wound cleansing:**

The wound cleaning for venous ulcer and the malignant wound includes non‐woven gauze swabs to reduce the number of dead tissues and flushing the wounds with normal saline water to control infection (Lazarus et al., 1994).

* **Pressure support & relieving device:**

 Both the disease needs a pressure support device including a comfortable mattress and pillow to divert the pressure. Vacuum-assisted closure is mostly useful to get mechanical assistance for the patient of venous ulcer.

* **Prevention program:**

The family of the patient needs to be educated regarding the given diseases and the risk factors should be controlled for reoccurring of venous ulcer and malignant wounds. Body movement is necessary to increase the blood circulation to the limb and nutrient level of the patient should be taken good care.

* **Dressing product (primary dressing)**

 Semi-occlusive or occlusive wound dressings will improve the healing process of both the wounds (Lazarus et al., 1994).

**Health Education that may be provided to the Resident in Regards to their Wound**

The local and the family members should know that the patient needs emotional and financial support to fight against cancer. The wounds should be kept infection free and the patient nutrient level should be perfectly managed. The odor of the malignant wound might irritate the resident but they need to think of measures to lessen down this smell.

**Pain Management**

The patient is taking palliative treatment and is taking Midazolam 10 mg (24/24), Fentanyl 25-50 mcg (S/C ), Midazolam 2.5-5 mg (S/C), and Fentanyl 200 mcg.

The patient needs the support of her family to go through this tough time of her life.

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