A Case of Treatment of Chronic Pressure Wound in a Paraplegic Patient

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Introduction

Chronic wounds are defined as wounds, which have failed to proceed through an orderly and timely reparative process to produce anatomic and functional integrity over a period of 3 months [1,2,3]. A non-healing or chronic wound is defined as a wound that does not improve after four weeks or does not heal in eight weeks [4,5].

These include cancer wounds, diabetic foot ulcers, venous-related ulcerations, non-healing surgical wounds, pressure ulcers of palliative care patients with poor prognosis, wounds related to metabolic disease, wounds that repeatedly break down [3]. The majority of these wounds fall into three types: venous ulcers; pressure ulcers; and diabetic ulcers [5].

Wound healing is comprised of a series of complex events with different time spans, which are not fully understood. Different pathogenetic mechanisms cause the establishment and maintenance of nonhealing wounds and may explain the divergence in existing literature on chronic wounds. Compromised venous flow, atherosclerosis, age, diabetes, renal impairment, lymphoedema, rheumatological disease, poor nutritional status, local pressure over prominent bone, and ischemia-reperfusion injury as a result of trauma are all possible causes of chronic wounds [4,6]. Chandan et al propose a unifying hypothesis of chronic wound pathogenesis based on four main causative factors: local tissue hypoxia, bacterial colonization of the wound, repetitive ischemia-reperfusion injury, and an altered cellular and systemic stress response in the aged patient [7].

In the United States, chronic wounds affect around 6.5 million patients. It is claimed that an excess of US$25 billion is spent annually on treatment of chronic wounds and the burden is growing rapidly due to increasing health care costs, an aging population and a sharp rise in the incidence of diabetes and obesity worldwide. The annual wound care products market is projected to reach $15.3 billion by 2010 [8]. Socioeconomically, management of chronic wounds reaches a total cost of 2–4% of the health budget in western countries [9]. Chronic wounds last on average 12 to 13 months, recur in up to 60% to 70% of patients, can lead to loss of function and decreased quality of life, and are a significant cause of morbidity [10]. In the UK Pressure ulcer care alone is estimated to cost around £1.2 billion a year, while surgical site infections are estimated to cost between £814 and £6626 per patient [11].

Langemo provided study within palliative care patients and found out that 13-47% of patients had pressure ulcer [12]. In UK 24% of palliative care patients develop pressure wounds [13]. In Japan study of284 hospice patients during 9 months period found out that 34.15% of patients developed pressure wounds [14]. Galvin J conducted study within 400 bedbound palliative care patients with pressure ulcer during 2 years period, and used most modern preventive and treatment dressing materials and management, but just less than 10% had tendency to heal, other 90% of patients died with pressure wounds [15]. Langemo and Brown concluded that pressure wounds of palliative care patients have no tendency to heal [16].

Key words: Palliative care, Pressure Ulcer, Wound, Paralysis, Dressing, Hospice

Case

38 years old man with spinal tuberculosis and spinal compression at T12 level was operated in September 12, 2016, but he still was paraplegic. During 10 days after operation he was bedbound. He had urine and bowel incontinence and developed pressure ulcer. In the sacral area a 4th stage pressure ulcer, with size 14x16 cm, at 11 o’clock with 2.5 cm deep tunnel, at 6 o’clock 3 cm tunnel. The wound was covered by black necrotic tissue,

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with green pus secreted from the wound. The skin surrounding the wound was red and swollen, indicating the spreading of infection. Wound had bad smell, but was not painful, because patient was paralyzed and lost sensation below T 12. Wound had no risk for bleeding. This patient's wound had multiple causes (bedbound-pressure, paralysis- nervous and blood insufficiency).

**Picture 1:** 4th stage pressure ulcer with necrotic tissue

**Management and Materials for Caring Wound**

We used the following materials and methods for management of 4th stage, big pressure ulcer of patient with compressed spinal tuberculosis, which caused paralysis. Patient was bedbound and had urine and bowel incontinence. We used next management of wound:

- debridement
- washed and cleaned infected wound by Tamedin solution and Solution of hydrogen peroxide
- used Metformin and Trihopole powder mixed with cream of Vishnevsky on the wound
- used hydrocolloid dressing
  - When wound was not infected, we cleaned wound by physiological solution and used hydrocolloid dressing
  - We taught care giver on caring bedbound patient

After debridement we washed the wound by solution of Tamedine and used powder of 2 tablets of Metformin and 2 tablets of Trihopol, which was mixed with cream Vishnevsky, and put it on the wound 2 times a day. We taught the family care givers how to change position of patient, how to change diapers and manage the wound.

After 10 days the bad smell decreased, but size of the wound was the same. We used above mentioned methodology for cleaning and dressing of wound and after 2 months wound was clean, without pus, tunnels, size was decreased up to 10x12.5 cm, and stage was 3. After 3 months of caring of this patient the wound was clean, stage was 2, size was 4x6 cm and visible regeneration in most area.

**Picture 2:** Wound after debridement

**Picture 3:** Wound dressed by power of Metformine and Trihopole mixed with Cream Vishnevsky

**Picture 4:** Pressure wound after 2 months of treatment
Conclusion

This case shows that chronic pressure ulcer needs long term specialized nursing care and using power of Metformine with Trichopole mixed with cream Vishnevsky can help to heal big pressure sore in patient with poor prognosis.

References