

## Original Article

# Practice of autolysis and mechanical debridement in cancerous wound

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**Abstract:** Objective: Cancerous wound has been the difficulty of clinical treatment. Due to wound stench, symptoms like a large number of exudate and so on seriously affect the quality of life of patients and self-esteem. Inappropriate treatment of cancerous wounds not only lead to the above-mentioned symptoms aggravating with severe infection, but also affect the treatment plan. In view of the fact that wound treatment is based on well wound bed preparation, debridement is a prerequisite for ensuring a well state of the wound bed. Therefore, exploring the most suitable way for cancer wound debridement methods, can effectively control the wound symptoms, reduce secondary infection rate, reduce complications, improve patient quality of life. Method: There is a randomized controlled experiment that 22 patients with cancerous wound were nursed with autolysis debridement and mechanical debridement before and after for 2 weeks. The results of culture of secretions, the ratio of malodor, exudate and wound bed decayed tissue before and after debridement were compared. Result: Through the treatment of the combination of autolysis debridement and mechanical debridement, the rate of negative conversion of secretions is increased, the control time of malodor and exudate is shortened, and the proportion of decayed tissue is reduced. The difference is statistically significant ( $P < 0.05$ ). Conclusion: Debridement combining autolysis debridement with mechanical debridement can effectively eliminate a large number of rotting tissue, significantly shorten the time of reducing the degree of wound infection and relieving the symptoms such as malodor and exudate, ensure the treatment of wound bed preparation, advantage to Wound healing, what's more, improve patient comfort level and quality of life.

**Keywords:** Cancerous wound, autolysis debridement, mechanical debridement

### Introduction

Cancerous wound management in today's cancer is rare in practice [1]. Cancerous wound is defined by chronic wounds as the tumor invasion or metastasis to the skin, and through the blood vessels and lymphatic spread [2]. It is estimated that about 5-10% of patients will have cancerous wound happened [3]. The main goal in treatment of carcinoma of the wound's is to control the symptoms, such as pain, secretions, bleeding and infection caused by the stench, so as to achieve a better quality of life of patients and their caregivers [4]. From January 2014 to December 2016, a total of the autolysis of debridement and the method of combining mechanical debridement of 22 patients with cancerous wound care, have achieved obvious effect. Introduce is in the following.

### Material and methods

#### Subjects

Patients were selected from January 2014 to December 2016. A total of 22 patients with cancerous wound, 11 cases of breast cancer, including breast cancer postoperative flap transplantation in 1 case, 2 cases of osteosarcoma, sarcoma 4 cases, 1 case of vulval carcinoma, groin squamous carcinoma in 1 case, skin squamous carcinoma in 2 cases, the original embryo outside nerve tumor 1 case, 8 cases of male, female 14 cases; Age (50 + 15); 22 cancerous wound odor evaluation level 0 in 4 cases, 1 level in 2 cases, 3 grade 9 cases, 4 in 1 case, level 5 in 6 cases; The drainage volume of the evaluation of a large number of 19 cases, the amount in 2 cases, a small amount of 1 case; The wound bed yellow black rot group, 9 cases accounted for 75% 50% of 8

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cases, accounted for 25% in 5 cases; The wound secretion culture positive results 9 cases; 12 cases undergoing chemotherapy, radiation therapy, 1 case, chemotherapy combined radiotherapy in 3 patients, palliative care in 3, targeted therapy in 3 patients.

### *Evaluation of the wound bed*

The wound bed basal tissue color and degree of dry wet decided debridement using method of judgment. For routine for cancerous wounds we deal only with symptomatic to wet wound, and for asymptomatic dry wound, we don't need to do special treatment. According to rot wound tissue of the wound bed make up about a quarter than by specification law evaluation. Wound odor can be evaluated by grocott cancerous wound odor [5], wound seepage quantity can be evaluated by the degree of penetration of gauze 24 hours.

### *Wound cleaning*

Using the warm physiological saline to clean secretions and loose necrotic tissue is the first step to control the stench is important [6]. Water temperature and moderate is given priority to with drip in the back of hand feel warm, secondly according to the wound evaluation of rational use of antimicrobial disinfectant, such as 1% hydrogen peroxide. But we should pay attention to the use of antibacterial liquid and do not make any damage to the surrounding normal tissues. Cleaning is the first step of a debridement, to expose the wound bed is much more clear, is conducive to the operator judgment using appropriate debridement methods [7]; Cleaning with irrigation as far as possible, it should avoid friction between the dressing and the wound bed, in case of bleeding, and pain of patients. If patients have large wounds, it is better to remove the original dressing first, and then have a bath before change fresh dressing for a wound.

### *Mechanical debridement*

Most cancerous wound have yellow moss, when the judge under yellow moss fresh granulation tissue, using sterile forceps tip and wound show 5° Angle shave their yellow corrupt organization, shaving resistive tissues should be used early autolysis debridement; If the judge yellow moss resilient and below is the necrotic tissue,

can lift the resilient part with sterile forceps, sterile cut parallel to the wound for stripping off the close to the yellow moss base with scissors cutting edge cut off gradually, the scissors don't form Angle to avoid friendly fire is not yet fully necrotic tissue and cause bleeding; Lidocaine gel for sensitive to the pain, for pain relief after mechanical debridement of the region. Learn to judge the position and blood vessels in the process of debridement cancerous wound rich vascular network, distribution in the fresh tissue and wound edges, debridement in the process should try to stay away from here, once the bleeding give sterile gauze compression pressure for several minutes.

### *Autolysis debridement*

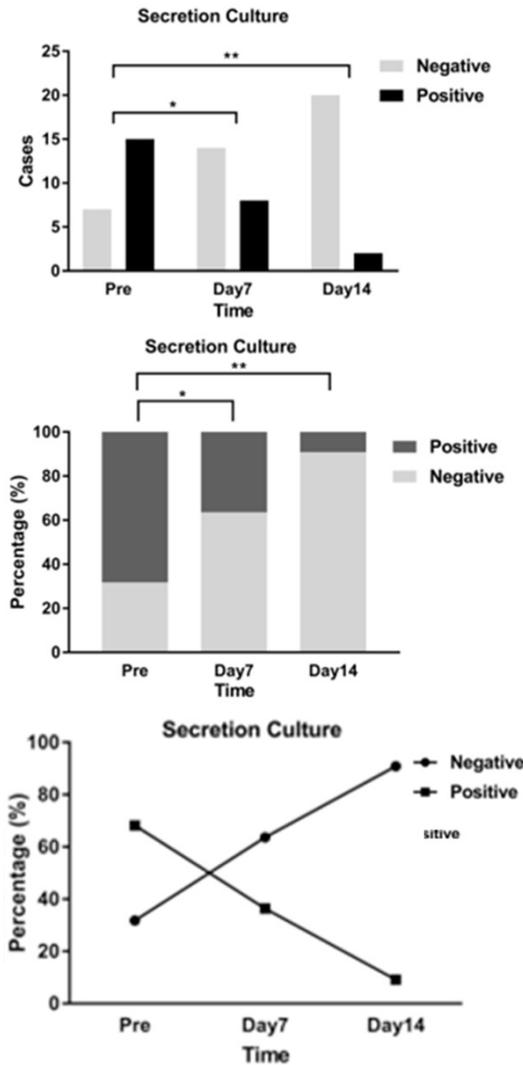
After mechanical debridement, use warm salt water to clean the wound again. Bleeder give alginate cover pressure hemostasis; Mechanical removal of thick debridement of the place daub debridement glue to liquefaction and softening attached is no clear boundary between firm and rotting organizations, to provide mechanical debridement again favorable conditions; Mechanical debridement is thoroughly part apply a thin layer of debridement glue in order to protect the fresh granulation tissue, blood vessels, and exposed nerve, reduce spontaneous bleeding, relieve pain and tension. Debridement glue upper cover the silver ion dressings and infection control outer fixed dressings with strong absorption solutions, pads and/or sponge, absorbing by using debridement glue and produce a large number of scientists, avoid the happening of the surrounding skin dipping dermatitis.

### *Measurement of smell*

The grocott cancerous wound odor evaluation guidance table evaluate cancerous smell, divided into level 6. Level 0 for an introduction to the smell; Grade 1 for one arm with the patient when smelling distance; Level 2 for smelling and patients less than an arm's distance; Level 3 is close to the patient's arm can smell peculiar smell; Level 4 for only the patient can smell; Level 5 is no peculiar smell.

### *Measurement of the seepage*

Seepage is assessed by the degree of penetration of gauze 24 hours, infiltration gauze one-



**Figure 1.** Secretion culture of 22 patients before and after nursing.

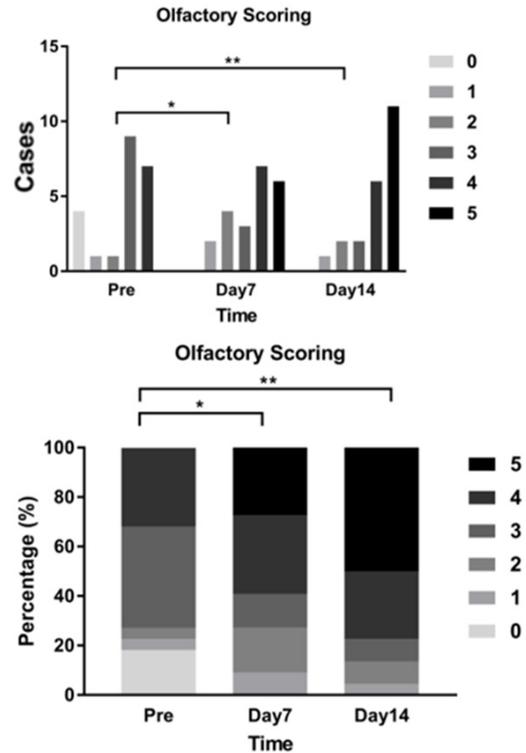
third less than 5 ml is a small amount; Penetration gauze two-thirds is medium, generally in 5-10 ml; Penetrate the whole piece of gauze or above, more than 10 ml is a large amount [8].

*Yellow black rot organization of evaluation*

The evaluation was based on the principles of wound a quarter; secretions training negative conversion ratio was evaluated infection control results.

*Statistical methods*

Results of secretions culture applicate chi-square/Fisher's exact test results, the smell, the seepage quantity and decay of all use rank



**Figure 2.** Olfactory scores of 22 patients before and after nursing.

and inspection carries on the statistical analysis, 7 days after nursing  $P$  values  $< 0.05$ , 14 days after nursing  $P$  values  $< 0.01$ .

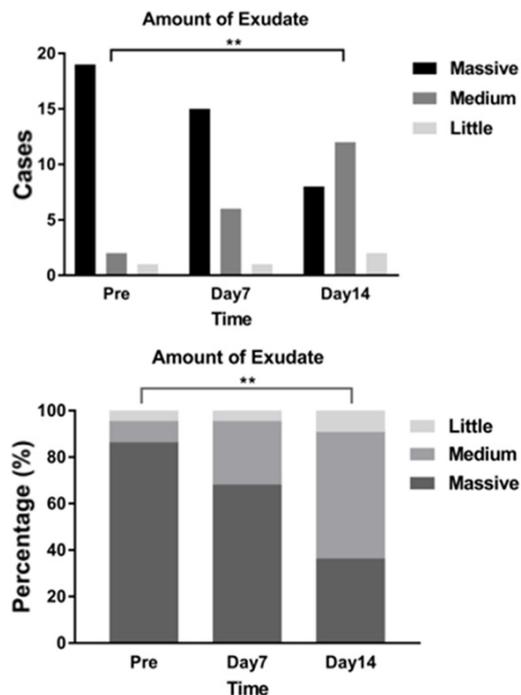
**Result**

Results of secretion culture of 22 patients before and after nursing were shown in **Figure 1**. It was apparent that after nursing the positive cases were reduced. Odor and seepage quantity evaluation was shown in **Figures 2** and **3**. Results indicated that the olfactory score significantly increased and amount of exudate decreased after nursing. Results of the wound bed decay organization before and after the nursing were shown in **Table 1**, it was obvious that the wound bed decay organization was much better after treatment.

**Discussion**

Autolyzed debridement and mechanical debridement help control symptoms literature, showing that the smell of the wound is usually caused by infection [9]. The wounds of the stench is bacteria reside in the necrotic tissue and wound. In most cases they are anaerobic

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**Figure 3.** Amount of exudate of 22 patients before and after nursing.

**Table 1.** Results of the wound bed decay organization

Time	25%	50%	75%	100%
Pre	5	0	12	5
7 d	7	8	6	1
14 d	15	5	2	0

bacteria and unbearable smell of putrescine, cadaverine. Debridement can reduce the necrotic tissue, reduce odor and help heal [10]. Autolyzed debridement is the use of debridement glue (main component is a high concentration of 10% sodium chloride) for necrotic tissue which strong adhere to the surface of the wound loosing, can be the basis of completely mechanical debridement; At the same time also can reduce pain and bleeding of the mechanical debridement in patients. While in the process of debridement there will be a temporary increase in the number of the drainage, because large necrotic tissue appears dissolved; Once can thoroughly remove decay organizations, wound drainage volume is significantly reduced, which can reduce the switching frequency. The wound surface disinfectant can use antibiotics or dressing with anti-infection, but thorough debridement able to role play

to get twice the result with half the effort. Infection, stench, and the drainage are associated, investigate its root or wound necrosis decay organizations, so debridement in the cancerous is particularly important in the process of wound care.

Preparation for late wound healing of the wound bed Cancerous wound complete healing is related to appropriate treatment such as chemotherapy, simply use the wound treatment can only control symptoms, improve quality of life of the patients. Debridement glue can let the wound in a wet environment, on the one hand, it can prevent the subtle nerve endings to reduce the pain of the wound [1], on the other hand, it provides the basis for a moist wound healing. Once treatment effective for patients, the wound cancer cells will also get the corresponding control, and then based on the debridement, it can not only repair the wound bed, but also can let the wound bed have prepared well in epithelium, and make the wound to reduce or even to heal.

### Disclosure of conflict of interest

None.

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