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Case Report

Successful management of exudate and odor using a pouch system in a patient with malignant facial wound: A case report

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ABSTRACT

Malignant fungating wounds are associated with heavy exudate and malodor, and can thus have a devastating impact on the physical, psychological, and functional health of patients at the end of life. Management is typically limited to the use of more absorbent dressings and frequent changing of dressings. However, this method is associated with a large amount of time needed for wound care, and does not always resolve the problem of malodor. Herein, we report the use of an inexpensive ostomy pouch to manage facial fungating wounds caused by maxillary gingival carcinoma. The pouches are adhered to the skin, and collect a large amount of malodorous exudate for days without leaking. Fewer dressing changes and the absence of malodor result in an improved quality of life for the patient and family.

Introduction

Malignant fungating wounds (MFWs) are chronic wounds that can develop anywhere on the body.[1] They are typically the result of an advanced cancer (5% of cases) and metastases (14% of cases).[2] MFWs are most common in breast cancer (66%), followed by head and neck tumors (24%), neoplasms of the groin, genitals, and back (3%), and other areas (8%).[3] A MFW is non-healing as a result of aggressive proliferation of malignant cells that infiltrate the epidermis and blood and lymph vessels, leading to widespread tissue damage, hypoxia, necrosis, and sustained polymicrobial proliferation resulting in fungating ulceration.[4] Patients with these wounds may experience disfiguration, body image changes, and diminished self-esteem.[5] Most patients experience a feeling of overwhelming deterioration as the wound progresses.[6]

Patients with MFWs can develop a heavy exudate, bleeding, pain, and malodor.[7,8] The presence of necrotic tissue can predispose the wound to infection, tunneling, or undermining.[7] Heavy exudate and malodor are ranked by nurses as the two most challenging issues when caring the patients with MFWs, and also the most distressing symptoms for patients.[9] Exposure of the adjacent skin to heavy wound exudate may cause moisture-related damage.[10] Wound exudate may also contain components that stimulate inflammation and result in skin tissue destruction.[11] Heavy wound exudate also necessitates frequent wound dressing changes. “Garbage”, “rotting flesh,” and “cadaver” are the three most common descriptors elicited from patients and family members when asked to describe the malodor of MFWs.[12,13] The odor may be pervasive, permeating the clothes of patient, caregivers, and clinic staff, and the odor can escape the confines of the patient's room.

There is no “cure” for MFWs, and treatment is palliative. Though studies are ongoing, there is insufficient evidence for clear guidance of the management of the symptoms of MFWs.[14,15] Palliative care for MFWs focuses on alleviating the most distressing symptoms. Wound management consists of wound dressings, which require a thin but absorbent material to optimize mobility, absorb the large amount of exudate, evaporate fluids, and address the issue of odor, and frequent dressing changes.[7] The cost of wound dressing changes can be high because of the frequency of changes required. Despite advances in wound management, there is still no ideal wound dressing product for the management of MFWs.[16] Merz et al[7] suggested that the heterogeneous nature of MFWs requires treatment to be determined on a case-by-case basis.

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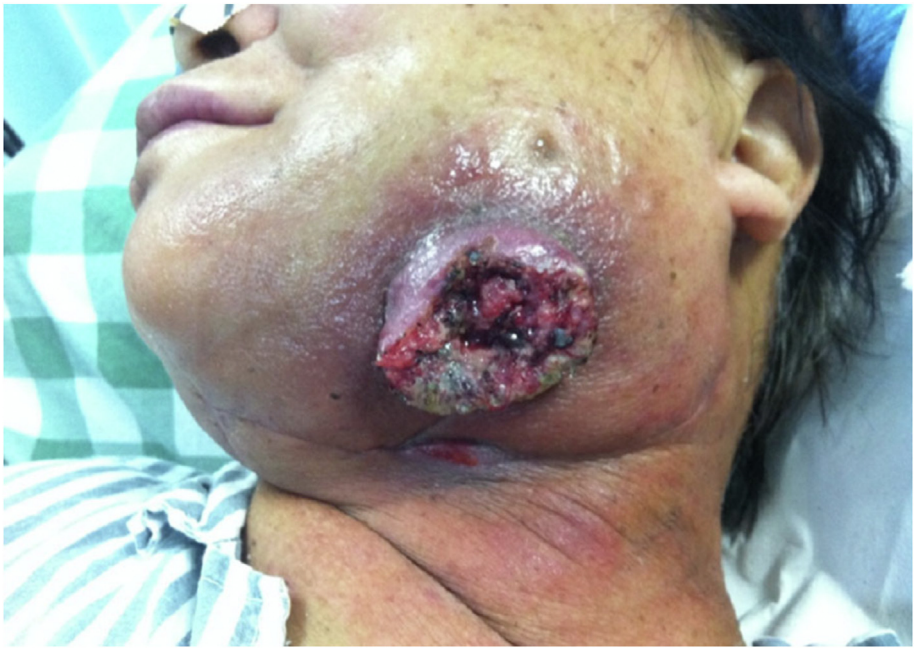

Figure 1. A malignant fungating wound in the left mandible with two ulcerations.

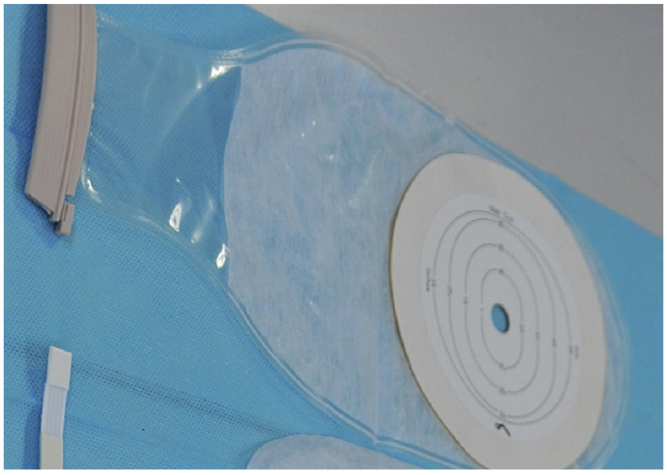

Figure 2. A large size, one-piece stoma pouch bag (#1903, Coloplast, Denmark).

Herein, we report the use of an inexpensive ostomy pouch to manage facial fungating wounds caused by maxillary gingival carcinoma.

Case report

A 72-year-old female was diagnosed with maxillary gingival carcinoma approximately six months prior, and surgery and combined chemoradiotherapy was completed four months prior. About three weeks prior to admission a mass developed in her left lower mandible, which progressed into two ulcerative wounds with heavy exudate and unpleasant odor. The patient was changing wound dressings about every 2 h, and a cotton pad that was dripping with exudate covered the wound when she arrived at the clinic for care.

On examination, the wound dressing was fully soaked with leaking exudate that had a rancid smell (a rating level 0 [odor is obvious in the house/clinic/ward] according to Grocott's description of the smell of cancer wounds in 2001[2]). She indicated that the pad had been changed less than 2 h prior. Removal of the dressing revealed two ulcerations that were close to each other but not connected. The ulcerations measured 10 × 9 cm and 3 × 2 cm, had uneven bases, and were covered about 50% with granulation tissue and 50% with necrotic tissue (Figure 1). The skin around the wounds was macerated without breakdown. Neither wound was connected with the oral cavity.

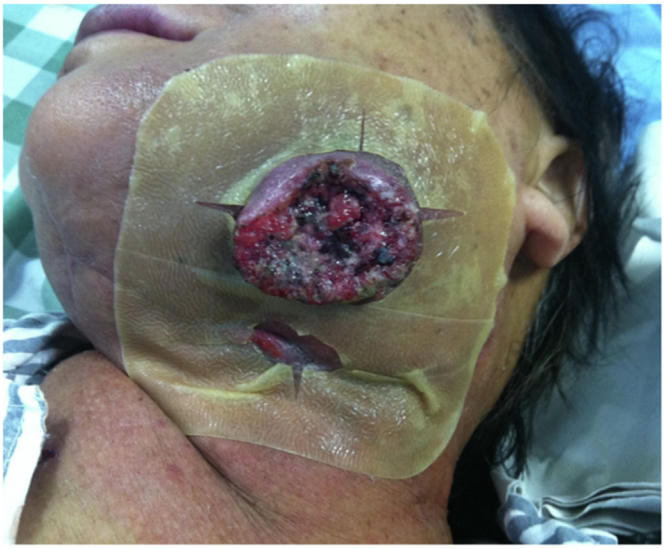

Figure 3. A hydrocolloid dressing (DuoDerm extra thin, ConvaTec, UK) was applied to protect the peri-wound skin.

The patient's main complaints were the heavy exudate and disgusting odor. Frequent dressing changes by her grandson, up to six times per day, did little to help. The patient explained that their daily life was greatly affected, she was embarrassed because of her condition, and upset that her family had to assist her with such a difficult problem. The fear of leakage of the malodorous exudate caused her to consciously isolate herself from others.

Treatment considerations

The most urgent requirement for wound management from the patient and her family, and the nurses caring for her, was to achieve fewer

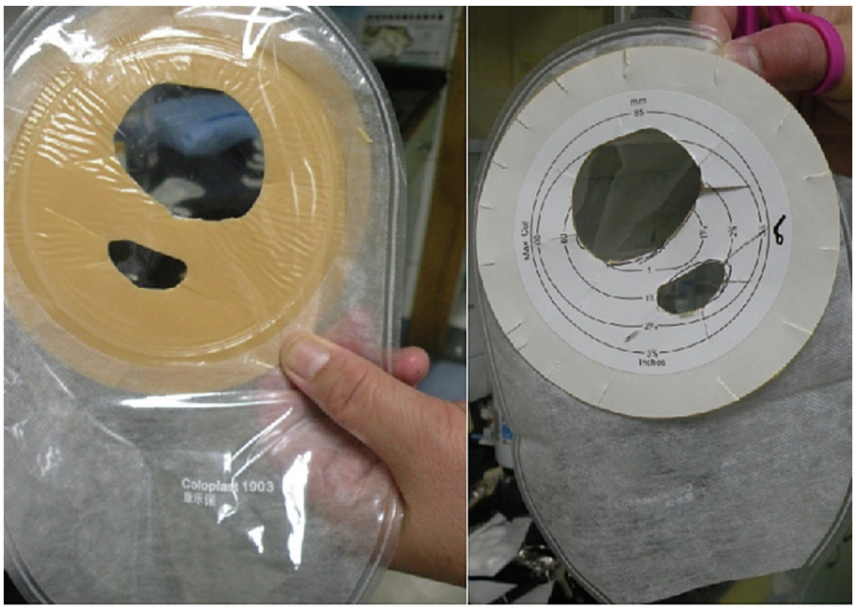

Figure 4. The shapes of the wounds were cut into the adhesive portion of the stoma pouch bag, and radial cuts were made along the edge for a better fit.

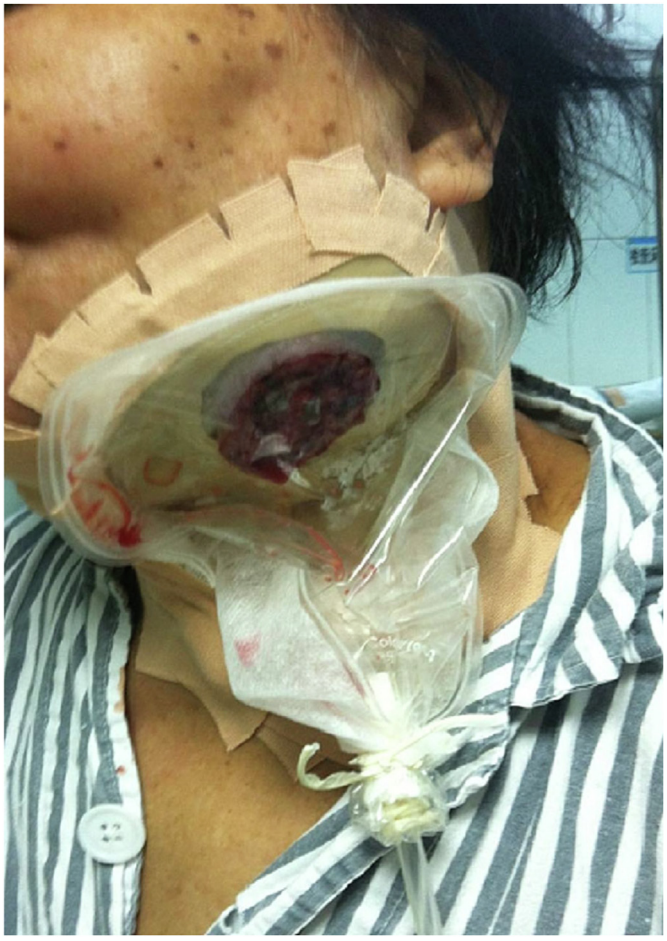

Figure 5. Tape was used along the outer edge of the pouch to improve adhesion.

dressing changes and better odor control. Since her wound was not curative, our goals of management were to effectively collect the massive amount of exudate, reduce the odor, and promote her comfort. Teaching her grandson the knowledge and skills for wound management at home was another important goal.

Wound management

Because there was too much exudate for any type of absorbent dressing to soak up, we believed that an ostomy bag might be a good method to collect the exudate and reduce the odor. Based on the locations of the two wounds and the sizes of osteotomy bags available, a large size, one-piece stoma pouch bag with a wide clipping range and soft pouch barrier was the best fit for the patient (#1903, Coloplast, Denmark) (Figure 2). The wounds and surrounding skin were cleaned with 0.9% normal saline and necrotic tissue was carefully debrided with a scissor and forceps. A hydrocolloid dressing (DuoDerm extra thin, ConvaTec, UK) was used to protect peri-wound skin from maceration after cutting out the shape of the wounds from the dressing (Figure 3). Similarly, the shape of the two wounds was drawn on the pouch barrier and then cut out (Figure 4). Radial lines were cut on the inner and outer edges of the pouch barrier to make it fit the wounds better (Figure 4), and the adhesive on the back of the pouch barrier was cut into two halves, and then replaced. Care was taken to make certain the opening of the pouch was downward, and pouch barrier was pasted along the cheek after removing the adhesive backing. Pieces of adhesive tape cut in a radial manner were applied to the outer edge of the pouch barrier to be certain it was firmly adhered to the skin (Figure 5). The pouch barrier edge near the neck was compressed with gauze rolled into strips, and fixed with tape to avoid leakage when the patient turned her neck (Figure 6). The opening of the pouch bag was connected to a large bedside drainage bag (Figure 7), and the whole system was fixed to the patient's clothes with tape and pins (Figure 8).

The patient and her family members were educated to avoid placing excessive tension on the pouch and components, and to discharge the exudate collected in a timely manner. No leaking of exudate was observed over the next 3 days.

Over the next two weeks of admission, 400–500 mL of exudate was collected per day, and the wound draining system was changed every 3–5 days, which was a significant reduction in the frequency of dressing changes. In addition, the total cost of dressing changes was significantly reduced. Since the exudate was collected into a closed drainage system and the peri-wound skin was protected, there was no odor and no skin

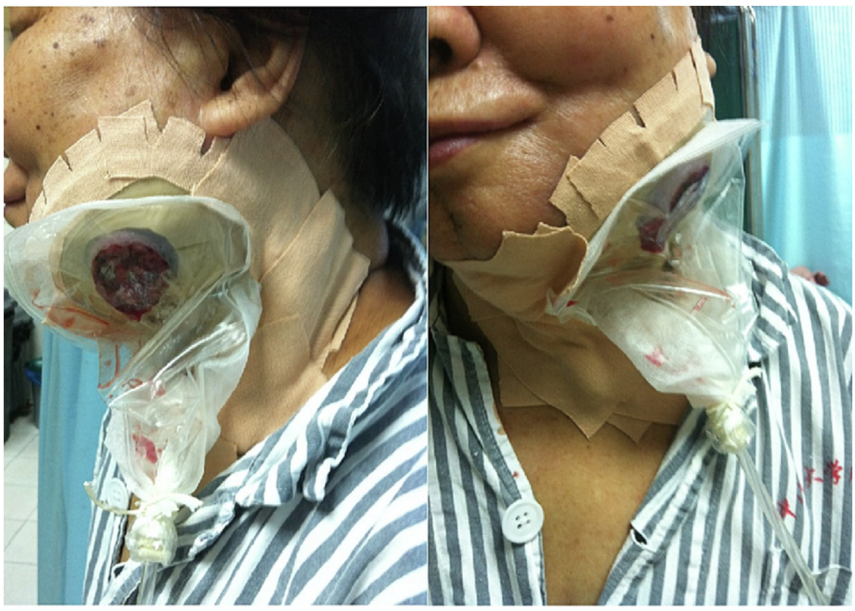

Figure 6. Gauze rolled into strips was used to compress and fixe the pouch barrier edge near the neck to avoid leaking when the neck turning.

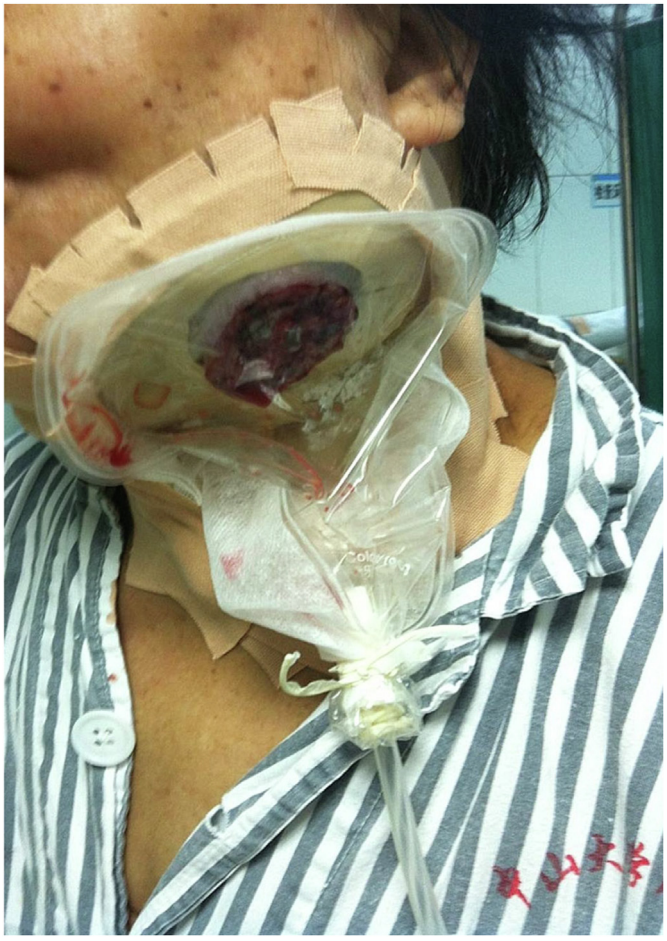

Figure 7. The opening of the pouch bag was connected to a large bedside drainage bag.

maceration occurred. According to Grocott's description of the smell of cancer wounds, the odor was level 5 (no odor).[2] The patient and her family members were pleased with the outcome.

During her hospitalization her grandson was taught step-by-step how to change the drainage bag and care for the system. Prior to discharge we confirmed that he was able to manage the system without problems.

Follow-up

One week after discharge, the patient was contacted by telephone. Her grandson told us that he had changed the drainage system once without problems, and the replacement he had used was adhered well and there was not leakage. The patient was much more comfortable, and because no dressing changes were needed at night she was able to sleep better and her quality of life was improved.

Discussion

For patients with MFWs, odor and exudate are the most distressing symptoms.[17] Patients may experience social isolation, shame, embarrassment, depression, and lack of appetite.[4,18] It has been reported that patients would rather endure pain than face the exudate and odor associated with MFWs.[19] Heavy exudate may also cause peri-wound skin moisture-related injury leading to pain, itching, and skin lesions, and it has been reported that as high as 58% of patients with MFWs have wound exudate-related skin damage.[20]Malodor has been reported in 12% of patients with MFWs.[16]

Research on controlling the symptoms of MFWs is scarce. It is agreed that healing of MFWs is not realistic because they are chronic and incurable.[20] Patients must be aware that they will have the wound for the rest of their life, and that wound care has to become part of their daily routine.[13] Therefore, finding methods to make wound care simpler and more effective is important, and can help improve a patient's quality of life.

Dressings with high absorbency and/or anti-bacterial effects that have been used to manage the exudate and odor of MFWs include hydrofiber silver dressing, iodide-impregnated dressing, and honey.[21,22] However, research with large sample sizes examining these methods is lacking. The primary concern of patients is collection of the exudate and reduction of the odor, and we supposed that a stoma pouch bag would be successful at collecting the wound exudate and reducing the odor. A stoma pouch bag has a large capacity and seals airtight, and thus can collect the exudate and contain the odor.[23] Moreover, a pouch bag is far less expensive than the materials needed for very frequent wound dressing changes.

Figure 8. The wound drainage system was fixed to the patient's clothes with tape and pins.

A literature review found no reports of applying a pouch bag for managing MFWs. This is likely because adhering the pouch bag firmly to the breast or head and neck, where most MFWs occur, is difficult. However, benefits of being able to collect the exudate and contain the odor far outweigh any difficulties associated with fixing the pouch to the skin.

Managing symptoms and maximizing comfort are the goals of treatment of MFWs. Comprehensive assessment of the wound, including location, the amount of exudate, and the degree of odor are essential for determining an appropriate treatment. Heavy exudate and malodor are the main problems for people who have a terminal condition. Application of a sealed one-piece stoma pouch bag connected to a large capacity drainage bag allows collection of the exudate and prevents malodor from escaping, which results in an improved quality of life. We believe this is a new and economical way for managing MFWs.

The main limitation of this case was the imperfect choice of the stoma pouch bag. A one-piece pouch bag with a carbon sheet that was not transparent may have been a better choice. It would have provided better aesthetics, and may have improved odor absorption. Another limitation of this report is that the follow-up period was short; long-term follow-up of patients using this method is necessary.

Declaration of patient consent

The authors certify that they have obtained the appropriate patient consent form. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Author contributions

Conceived and designed the analysis: M Zheng.
Collected the data: B Luo, M Jiang, L Wang and Y Ge.
Wrote the article: B Luo and Y Xiao.

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Declaration of competing interest

None declared.

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