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Management of Bleeding Associated with Malignant Wounds

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Abstract

Bleeding malignant wounds in palliative care patients can be anxiety-provoking for patients, their caregivers, and healthcare providers, and can be difficult to manage. We present the case of a 60-year-old man with a bleeding neck wound due to squamous cell carcinoma of the hypopharynx admitted to our inpatient palliative care unit. Management of bleeding included local wound care measures and psychosocial support for the patient and his wife. We review therapeutic approaches to managing bleeding malignant wounds with the aim of providing clinically useful information.

Introduction

BLEEDING ASSOCIATED WITH MALIGNANT WOUNDS can be difficult to manage in all settings, but particularly in settings in which goals of care center on comfort and quality of life. We discuss a challenging case of a patient with a persistent bleeding malignant neck wound arising from a stage IV supraglottic squamous cell carcinoma.

Case Description

Mr. W., a 60-year-old man, was admitted to our palliative care unit for profound debility and persistent bleeding of a malignant neck wound due to stage IV supraglottic squamous cell carcinoma diagnosed one year prior. Initial treatment included radiation therapy and laryngectomy with bilateral neck dissection and flap reconstruction. He subsequently presented with a rapidly enlarging right pre-auricular mass and right facial paralysis. A computerized tomography (CT) scan of the head and neck revealed a large mass extending from his right styloid process to his right mid-clavicle. Otolaryngology (ENT) and Oncology services were not able to offer further palliative surgery or chemotherapy. There were no further anticancer treatments available and he was enrolled in home hospice.

Mr. W. had been declining rapidly in the two weeks prior to admission. He was unable to eat or drink due to increased throat pain and somnolence. His wife requested a transfer to the inpatient unit for unremitting wound bleeding. The wound had constant sanguinous oozing interspersed with episodes of more brisk bleeding. The patient's wife worried that her husband might bleed to death in their home.

On admission, physical examination revealed a cachectic man with a large ulcerated wound along the angle of his jaw from just below his left ear to his tracheostomy. The inferior aspect of the wound approached the left clavicle. The wound had multiple areas of punctuate hemorrhages and required frequent dressing changes to absorb the bleeding. There was no significant odor. His tracheostomy secretions were thick and dark reddish-brown with occasional bright red streaks of blood.

The plan of care focused on aggressive pain management and wound care as well as psychosocial and spiritual support of the patient and his wife. To decrease wound bleeding, the ENT service recommended oxymetazoline spray applied to the wound and a primary non-occlusive dressing overlaid with gauze. Wound manipulation was minimized with dressing changes only after blood was visible through the dressing. In addition, tracheostomy care was minimized, and glycopyrrolate was used in an attempt to decrease secretions. Both his wound and his tracheostomy bleeding slowed down after minimizing dressing changes to every other day. Mr. W. had periods of mild delirium throughout his hospitalization, but otherwise appeared comfortable. He became unresponsive on the fourth day of admission and died comfortably and without bleeding on the seventh day.

Discussion

Malignant wounds are caused by direct tumor invasion into the skin due to primary tumor growth or metastatic involvement. Fungating wounds occur fairly commonly in advanced cancer,¹ and one in ten patients with metastatic disease has cutaneous metastases.² Cancers that have been associated with an increased propensity to develop malignant

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wounds include breast cancer, head and neck cancer, and primary skin cancers.¹ Lung, kidney, and colon cancers also have a high prevalence of fungating wounds.^{1,3} The majority of malignant wounds are associated with at least one significant symptom, including pain, infection, odor, oozing, and bleeding, as well as consequences due to mass effect such as airway obstruction or major vessel erosion.^{1,4} Furthermore, malignant wounds are a significant source of psychological and social burden as they can affect self-esteem and socialization.^{3,5} They can be a source of spiritual and existential distress as wound-related symptoms, including odor and bleeding, can be anxiety-provoking and act as a constant reminder of incurable disease and shortened life expectancy.⁶ Patients often report fear of "bleeding to death."¹

Bleeding associated with malignant wounds can pose a significant challenge to patients, caregivers, and palliative care providers. Controlling bleeding in malignant wounds can be difficult due to underlying pathophysiology, and multiple factors associated with malignancy such as thrombocytopenia, disseminated intravascular coagulopathy (DIC), and malnutrition, which can further increase the risk of bleeding. Wounds are formed from cancer cells that stimulate angiogenesis. This new vasculature is abnormal, with haphazard connections and leaky, dilated vessels⁵ and has a propensity to ooze and bleed. Moreover, masses can become necrotic, resulting in further oozing and odor. The larger lesions are more susceptible to mechanical irritation and bleeding due to their increased size.

Wound assessment involves characterization of the wound itself, presence and degree of bleeding, and associated symptoms, including pain. Potential reversible factors contributing to the patient's wound-related symptoms should be sought and pain medication regimen optimized. An understanding of the patient's overall prognosis and goals of care is essential and will aid in implementing an appropriate plan for wound care. In addition to assessing the impact of the wound on the patient's quality of life, the clinician should assess for caregiver anxiety and distress related to the wound and wound care needs. Several nonvalidated tools address wound severity and clinical manifestations, impact of dressings and dressing changes on patients, and overall effects of the wound on patients' physical, social, and emotional well-being.^{4,7} To our knowledge, there are no current validated measures to assess the risk of bleeding in malignant wounds.

Management

The management of bleeding wounds involves proper wound care, control of symptoms such as pain and anxiety, and patient and family support and education. Opioids and benzodiazepines can be used to control pain and anxiety.^{3,7,8} In home hospice settings, caregivers should be educated on how to manage brisk bleeding, in the event this occurs, by applying steady pressure with dark linens.⁸

Local wound care

Multiple authors recommend a combination of a non-adherent layer with an absorptive dressing.⁹⁻¹¹ However there is insufficient evidence as to which dressings offer the best benefit.¹² Soft silicones (e.g., Mepitel® and Mepilex® dressings); hydrogels (e.g., Kendall Aquaflo™, Medline Derma-Gel®); petroleum jelly gauze; and foam dressings have minimal adherence, while calcium alginate, sucralfate and hydrocolloid

dressings are absorptive and hemostatic. The softer, non-adherent dressing layer should minimize pain and local trauma with dressing changes while the absorptive and hemostatic layer on top should control exudates and bleeding. Dressings should be long lasting to minimize dressing changes.⁹⁻¹¹ For minimal bleeding, compressive dressings are appropriate. For brisk bleeding or exudates not controlled with occlusive dressings, management with an ostomy bag has been suggested.¹³

Topical vasoconstriction and local cauterization can be achieved through the use of epinephrine, cocaine, and silver nitrate for minimal local bleeding.^{8,11} Oxymetazoline, a local vasoconstrictor and decongestant that works via stimulation of alpha-adrenergic receptors, can also be utilized for local hemostasis, although this off-label use is an area in need of further study. Oxymetazoline has been used to control epistaxis and to achieve hemostasis perioperatively in nasal surgery.¹⁴⁻¹⁶ In addition, aerosolized vasopressin has been used for treatment of hemoptysis and may also be beneficial as a topical vasoconstrictor.¹⁷ Thromboplastin is a natural clotting agent that comes as a powder and can be used under dressings.¹⁸ Sucralfate is another readily available paste, and can be applied directly to wounds to help control widespread oozing.³

While specific dressings can minimize oozing and odor, bleeding remains a problem especially during dressing changes. A recent case series of five patients showed good hemostasis after application of Mohs paste, a chemical fixative containing zinc chloride used for micrographic skin cancer resection and first described in 1941. The paste is thought to work through local chemical infiltration resulting in decreased superficial blood flow to the area.¹⁹ The case series used Mohs paste for hemostasis without resection; bleeding was stopped after the first application, lasting from three weeks up to three months. Odor and exudates were also improved. The main complication was pain while applying the paste.¹⁹

Systemic therapy

In malignant fungating wounds, bleeding may be exacerbated by coagulopathy from bone marrow suppression or invasion, poor nutrition, or DIC. Depending on the etiology and goals of care, patients may benefit from Vitamin K, fresh frozen plasma, red blood cells, or platelets. Aminocaproic acid and tranexamic acid are oral synthetic antifibrinolytic agents.^{20,21} A case series in 1997 studied the use of aminocaproic acid and tranexamic acid for low pressure oozing in the setting of hemoptysis, hematuria, and fungating wounds. In this series, 14 of the 16 patients experienced a total cessation of bleeding. The main side effects of treatment were nausea and vomiting, and no patients had thrombotic events, a theoretical risk.²⁰ A more recent study found two thirds of patients with thrombocytopenic hemorrhage had complete relief of bleeding after administration of aminocaproic acid.²¹

If radiation therapy to the area has not been exhausted, it can be considered for tumor bulk reduction. It should be noted, however, that although radiation therapy as a palliative treatment for bleeding has been studied in hemoptysis, gastrointestinal bleeds, and hematuria, it has been only minimally studied for bleeding associated with malignant cutaneous wounds.⁵

Interventional radiologic approaches

Radiologic interventions to control bleeding include transcatheter embolization of the main tumor arteries or direct

puncture (transcutaneous) embolization. Both transcatheter and direct embolization may also help shrink the tumor and decrease mass effect.^{22–23} Although these procedures are more invasive, they may be helpful in controlling brisk bleeding.

Surgery

Large bulky tumors may be amenable to surgical resection when chemotherapy and radiation options have been exhausted. Surgery can help alleviate mass effect with the goal of preventing emergencies such as tracheostomy invasion or threatened carotid rupture. Argon Plasma Coagulation (APC) is a noncontact electrosurgery under an argon plasma atmosphere that directs energy flow to tissues with low conductivity (like a bleeding tumor). It is thought to cause dessication and dissection of tumor with sparing of normal, viable tissue. In one case series of eight patients with recurrent head and neck cancer, APC was associated with hemostasis and good cosmetic outcomes.²⁴

Summary

Our case illustrates management of a bleeding wound in a patient with terminal cancer. Our patient had a malignant fungating wound arising from a supraglottic squamous cell carcinoma. He had constant oozing interspersed with brisk bleeding from his wound that caused substantial caregiver anxiety. His wound was successfully managed by applying a topical vasoconstrictor and minimizing wound manipulation. The interdisciplinary palliative care team also addressed the wife's worries about her husband "bleeding to death" by providing close monitoring and educating her about their plan to prevent his suffering in the event of a catastrophic bleed. In our patient's case, more invasive means of controlling bleeding, such as oral anti-fibrinolytic agents, radiation, surgery, and embolization procedures were not necessary. Palliative care clinicians should understand both minimal and more aggressive options to control bleeding from malignant fungating wounds.

Author Disclosure Statement

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