Thermal Wounds Following Heating Pad Use

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Patient History

Ms. C, a 59-year-old female, was diagnosed with breast cancer in 1986 and underwent a right-sided, modified radical mastectomy with axillary lymph node dissection. The exact number of lymph nodes sampled is unknown; however, those sampled were negative for disease and adjuvant treatment was not necessary.

In 1999, Ms. C developed recurrent disease that had metastasized to the sternum. She was referred to a radiation oncologist for a palliative radiation therapy evaluation. Upon physical examination, the patient appeared to have two burn sites on the lateral aspect of the right scapular area. According to Ms. C, the injury resulted from falling asleep on a heating pad. She complained of patchy numbness and decreased sensation in the burn area and her right arm, which had been present since her modified radical mastectomy. She reported occasional pain in the surgical area that she "learned to live with." When interviewing Ms. C, it became evident that she was unaware that she should not use a heating pad on an area of patchy numbness and decreased sensation.

Discussion

Figure 1, from February 5, 2001, shows Ms. C with two burn sites. Site one measured 4 cm x 3 cm, and site two measured 1.5 cm x 1.5 cm. Both sites had pink granulation tissue with eschar in the center, and no signs of infection were present. Ms. C was instructed to cleanse both sites each morning in the shower and apply a nonadhering gauze dressing. After her daily radiation treatment, each site was cleansed with normal saline and redressed. On February 19, site one measured 2 cm x 1.5 cm and site two measured 0.5 cm x 0.5 cm. On March 1, site one measured 1 cm x 1 cm and site two had completely healed. By March 12, site one measured 0.5 cm x 0.5 cm and was healed by the patient’s follow-up visit on March 26.

What patient population is at risk for developing injury to this area of the body?

Women who undergo a modified radical mastectomy have their nipple, breast, and most or all of the lymph nodes removed from under the affected arm. These women, as well as those women who have breast-conserving treatment, are at risk for developing postsurgical neuropathy. Patients may experience a variety of sensory alterations after breast cancer surgery because of injury or resection of the nerves. These sensations may not only be distressing and complex, but also may have a serious impact on quality of life.

During surgery, the nerve supply to the inside of the arm is affected. The intercostobrachial nerve can be stretched, injured, or severed. This nerve supplies the sensory innervation to the axilla and the skin on the upper half of the medial and posterior aspect of the arm. Resection or injury of this nerve often results in sensations such as numbness of the axillary skin and the skin of the upper inner ipsilateral arm (Baron, 1998). This is commonly referred to in the literature as postsurgical pain (PMP) or PMP syndrome and is experienced by women who undergo a mastectomy or lumpectomy with axillary lymph node dissection. With PMP, pain is felt specifically along the distribution of the intercostobrachial nerve, starting with the area over the incision on the chest and radiating into the arm on that side of the patient’s body (Randal, 1998). The pain typically is described as numbness, a pins-and-needles sensation, burning, or stabbing. Classified as neuropathic pain, PMP usually exceeds the normal postoperative recovery period of three months (Smith, Bourne, Squair, Phillips, & Chambers, 1999).

Researchers have found that women undergoing surgery for treatment of breast cancer experience short- and long-term effects. In a retrospective study, 330 women who underwent axillary lymph node dissection two to five years earlier completed a questionnaire about sensations experienced in the axilla, breast, or chest during the previous two weeks (Warmuth et al., 1998). The researchers found that 35% of the women reported numbness and 30% described some amount of axillary, breast, or chest pain. Younger patients reported pain more frequently (Warmuth et al.). In another study, 43% of women surveyed reported...
PMP syndrome. PMP decreased from 65% in the youngest age group to 26% in the over 70 age group (Smith et al., 1999). In fact, Smith et al. identified age as a risk factor and determined that younger patients were at greater risk for PMP. Further research of younger patients is needed; this finding could be related to a greater level of activity or sensitivity to body changes (Warmuth et al.). Lastly, to determine the prevalence of PMP, Carpenter et al. (1998) surveyed 134 breast cancer survivors who completed primary treatment three months or more prior to the survey and found that 27% experienced PMP.

What education should be provided to patients at risk for PMP?

The incidence of PMP ranges from 27%–43% in women who have undergone surgery for breast cancer (Carpenter et al., 1998; Smith et al., 1999; Warmuth et al., 1998). As the length of hospitalization for breast surgery continues to decrease, healthcare providers must provide education to patients across the continuum of care and not just at the time of diagnosis. Nurses can assist in reducing the distress experienced by women undergoing breast surgery by helping them to understand the different types of pain they may experience and the causes of the pain (Kwekkeboom, 1996). Patients must be educated early in the postoperative course about altered sensations that may occur as a result of surgery. Patients may think that the numbness relates to the disease; therefore, education will help to reduce fears about the etiology of the sensations (Baron, 1998). Nurses should assure patients that symptom management is a priority in their care.

Some basic postoperative instructions may help patients to prevent or alleviate further complications. These include using an electric razor when shaving the axilla, cautiously applying heat to the affected area (e.g., with heating pads), avoiding trauma to the area, avoiding temperature extremes (e.g., hot tubs, saunas), performing range-of-motion exercises, and consulting with a physical therapist when indicated to maintain shoulder mobility.

Symptom Management

Symptom management for patients who experience PMP is essential to their well-being. PMP can be managed with nonprescription medicines such as acetaminophen, aspirin, or ibuprofen. For symptoms that are nonresponsive to nonprescription medications, prescription medications such as tricyclic antidepressants (e.g., amitriptyline), anticonvulsants (e.g., gabapentin), or an opioid (e.g., oxycodone hydrochloride) may be required. The success of medications to manage PMP varies by patient and depends on age, dosage, and the severity of the symptoms.

Kaslo, Tasmuth, and Neuvonen (1995) found that amitriptyline effectively relieved PMP in the breast scar region and the ipsilateral arm. However, healthcare providers may find that medications for PMP may need to be used in combination with one another. For example, a patient may take amitriptyline at bedtime and also use oxycodone hydrochloride every 12 hours. Another regimen may include amitriptyline at bedtime with gabapentin prescribed up to three times per day. Medications may need to be titrated to reach a therapeutic effect. Both tricyclic antidepressants and anticonvulsants are known for their sedative effect and, therefore, bedtime administration often is recommended. Finally, topical capsaicin cream is an over-the-counter pharmacologic intervention that may be used by patients to relieve PMP (Huebscher, 2000).

Healthcare providers and patients may want to use a variety of nonpharmacologic treatments to manage PMP. Patients may choose to have a nerve block performed at the second and third thoracic vertebral levels that usually provides relief of the discomfort, or they may want to try water therapy. Physical therapy and biofeedback may be useful treatments for some patients (Kaslo et al., 1995).

By educating patients early in their treatment process, nurses may be able to decrease the ambiguity and anxiety that patients often experience; the need for early assessment and management of treatment-related side effects should be stressed. Early identification and intervention can assist patients in maintaining activities of daily living. Appropriate self-care strategies, the use of prescriptive and nonprescriptive medications, as well as the use of nonpharmacologic treatments should be incorporated into the treatment plan. These will assist patients and practitioners in establishing a plan to optimize patients’ quality of life.

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References