

Miscellaneous Surgical Dressings

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Introduction

Miscellaneous surgical dressings are addressed by this guideline.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Criteria

Miscellaneous Surgical Dressing(s) (HCPCS A4649) are indicated for an individual with a wound when **all** of the following apply:

- A specific HCPCS code does not exist for the requested items.
- No single material comprises greater than 50% of the dressing composition.
- The dressing type may be **any** of the following:
 - alginate.
 - collagen.
 - foam.
 - gauze.
 - hydrocolloid.
 - hydrogel
- The dressing type **may not be any** of the following:
 - balsam of Peru in castor oil.
 - iodine – other than iodoform gauze packing.
 - charcoal.
 - carbon fiber.
 - copper.

- honey.
- silver.

Definitions

- **Primary Dressings** are therapeutic or protective coverings applied directly to wounds or lesions either on the skin or caused by an opening to the skin.
- **Secondary Dressings** are materials that serve a therapeutic or protective function and that are needed to secure a primary dressing. Items such as adhesive tape, roll gauze, bandages, and disposable compression material are examples of secondary dressings.

Evidence Discussion

Purpose of technology/description of device

- Multi-component dressings that are not classified as composite dressings are categorized according to the clinically predominant component, which is defined based on the proportion of material(s) in the dressing. For example, a dressing that is 60% hydrocolloid and 40% alginates would be categorized as a hydrocolloid dressing.

Medical Background

- Most wound dressings and liquid wound washes are Class II devices according to the United States Food and Drug Administration (FDA), which calls for premarket notification under 510(k) requirements. However, as of November 2023, the FDA is evaluating the possibility of moving certain wound dressings and liquid wound washes containing antimicrobials with a high level of antimicrobial resistance concern to Class III (FDA, 2023), which would require manufacturers to undergo a more rigorous premarket approval process.

Literature Review

- Zhang et al. (2022) performed a systematic review and meta-analysis to investigate the effectiveness of different dressings on pressure injuries. The meta-analysis included 25 studies that reported data on moist dressings (hydrocolloidal, foam, silver ion, hydrogel, polymeric membrane, and biological wound dressings) and sterile gauze dressings (traditional gauze dressings). The authors concluded that moist dressings were superior to traditional gauze dressings in terms of cure rate, healing time, and number of dressing changes required. The authors noted that all included randomized controlled trials were at a medium to high risk of bias; and thus, additional large, multi-center randomized controlled trials were warranted to verify the conclusions of this study.

- A 2022 Cochrane review (Ribiero et al.) assessed the efficacy of hydrogel wound dressings on the healing of venous leg ulcers. Four randomized controlled trials (10 articles) were included in the analysis. The authors reported inconclusive evidence to determine the effectiveness of hydrogel dressings compared with gauze and saline, alginate dressing, Manuka honey or hydrocolloid on venous leg ulcer healing. The low level of evidence reported was related to risk of bias and imprecision for all comparisons and outcomes. Moreover, the included studies did not provide evidence for outcomes including recurrence of ulcer, health-related quality of life, pain, or costs. The authors suggested that practitioners consider other characteristics such as costs and symptom management when choosing between dressings.
- A 2023 randomized trial by Zhang and colleagues compared the efficacy and safety of silica gel fiber (SGF) dressing with alginate dressing in local treatment of venous leg ulcers. One hundred thirty participants with venous leg ulcers who previously underwent effective treatment of venous hypertension and debridement were randomized to receive wound care with either SGF dressing or alginate dressing. At four weeks, the efficacy rates were 89.6% (SGF group) and 84.1% (alginate group). In addition, no statistical difference between the two groups was observed in secondary endpoints, including: healing rate, ulcer area reduction rate, wound condition, overall pain score, or overall individual satisfaction. Thus, the authors concluded that for local treatment of venous leg ulcers, SGF dressings were not inferior to alginate dressings.
- Chen et al. (2023) conducted a systematic review and meta-analysis to assess the impact of oxidized regenerated cellulose/collagen dressings on the management of chronic skin wounds. The study included 1,521 participants with chronic skin wounds; 763 participants used oxidized regenerated cellulose/collagen dressings and 758 received standard of care (control group). The authors found that the oxidized regenerated cellulose/collagen dressings had significantly higher complete wound healing, higher wound relative reduction percent, and lower adverse events in wound healing compared with the control group in chronic skin wounds. However, the authors noted a low sample size in the included studies and a potential selection bias present in the meta-analysis.
- A Cochrane review reported by Dumville et al. (2016) assessed the effects of wound dressings, including alternative wound dressings, in preventing surgical site infection (SSI) in surgical wounds healing by primary intention. The study included 29 trials with 5,718 participants. Four trials compared wound dressings with no wound dressing (wound exposure), and the remaining 25 studies compared alternative dressing types, with the majority comparing a basic wound contact dressing with film dressings, silver dressings, or hydrocolloid dressings. The investigators reported that it was unclear whether any particular wound dressing was more effective than others in reducing the risk of SSI, improving scarring, reducing pain, improved acceptability to patients, or ease of removal. However, the investigators considered that most included studies were small in size, and at an unclear or high risk of bias.

- A randomized trial performed by Chen et al. (2007) examined the water absorption rate of four dressings (carbon fiber dressing, hydrogel dressing, silver nanoparticle dressing, and Vaseline gauze). One hundred twenty participants with 10% superficial partial-thickness burn wounds were randomly assigned to four groups. Carbon fiber dressing, hydrogel dressing, and silver nanoparticle dressing were used in groups A, B, and C as the primary dressing, and traditional Vaseline gauze was used in group D as the control. Multi-spot evaporation was measured post-burn on days one, three, five, and seven. Of note, the results of the study demonstrated the absorption rates of the four dressings were 98% with carbon fiber, 96% with silver nanoparticle, 41% with Vaseline gauze, and 6% with hydrogel. Thus, the investigators concluded that all four dressings had water retention capacity; however, carbon fiber dressing had the highest absorption rate and showed the best containment and evaporation from the burn wound. However, the authors noted that additional research was needed to provide a better understanding of these findings.
- A 2022 randomized controlled trial performed by Probst et al. compared the effectiveness of the reduction of wound area with a sterile polyacrylate wound pad with activated carbon cloth treatment to that of a standard non-adhesive hydrocellular foam dressing with silver. Seventy-seven individuals were randomized to receive either a sterile polyacrylate wound pad with activated carbon cloth treatment (n=38) or the standard non-adhesive hydrocellular foam dressing with silver (n=39). The primary outcome was the reduction in wound area. The secondary outcomes were the application period of the dressing, odor, maceration, and pain. The results of the study demonstrated that the sterile polyacrylate wound pad dressings with activated carbon cloth reduced the wound area, as well as the maceration area, faster than the non-adhesive hydrocellular foam dressing with silver. However, odor, pain, and infection were similar in both groups.
- Dias et al. (2022) performed a systematic review with meta-analysis to identify the most effective dressing for application to surgical wounds with primary closure to prevent surgical site infection (SSI) in adults with cancer undergoing elective surgeries. Eleven randomized clinical trials were conducted to compare different types of dressings, some of which included silver dressings and honey-based dressings. Of note, compared with absorbent dressing, silver dressings did not reduce the risk of developing any type of SSI in 894 clinical trial participants. In conclusion, the authors reported insufficient evidence regarding which dressing was the most effective in preventing SSI in adults with cancer.
- A randomized trial performed by Kumarasamy et al. (2020) compared the effect of Tualang honey-impregnated nasal dressing with steroid-impregnated nasal dressing on wound healing and surgical outcomes in post endoscopic sinus surgery patients. Thirty-two patients diagnosed with chronic rhinosinusitis who underwent endoscopic sinus surgery were randomized to receive 2 mL of Tualang honey nasal dressing or nasal dressing with 2 mL of triamcinolone 20 mg/mL as positive control. Postoperative healing assessments of edema, crusting, secretions, scarring,

and symptoms were performed at postoperative day seven, 14, 28, and at three months using Sinonasal Outcome Test 22 questionnaire and modified Lund-Kennedy scoring system. There were no significant differences noted in the scores of Sinonasal Outcome Test 22 and modified Lund-Kennedy at day seven, 14, and 28 for either group. After three months, individuals in the triamcinolone group had lesser symptoms and better endoscopic findings. The investigators concluded that Tualang honey was not as effective as steroid in achieving good wound healing and surgical outcomes in post endoscopic sinus surgery individuals.

- Gwilym et al. (2021) conducted a systematic review and meta-analysis to evaluate interventions and adjuncts delivered immediately before, during, or after skin closure, to prevent surgical site infections (SSIs) in patients undergoing arterial interventions involving a groin incision. Seventeen randomized controlled trials and seven observational studies, reporting on 3,747 individuals undergoing 4,130 groin incisions were included. The authors reported one randomized controlled trial by Ozaki et al. (2015) which evaluated the use of a silver alginate dressing versus standard dressing in 493 groin incisions (493 patients). There was no significant difference in SSI rates between the two groups. Thus, the authors concluded that silver alginate dressings did not show any significant effect on SSI rates.

Professional Societies/Organizations

- The 2023 Update of the Wound Healing Society (WHS) guidelines for the treatment of pressure ulcers (Gould et al.) does not recommend particular dressing types for the treatment of pressure ulcers. The authors noted that little evidence exists supporting the use of one type of wound cleansing solution or technique for pressure ulcers.
- The 2023 Update of the Wound Healing Society (WHS) guidelines update: Diabetic foot ulcer treatment guidelines reported that there are many topical therapies available for diabetic foot ulcers (DFUs). Moreover, most dressings are used in combination with off-loading, debridement, and infection control. The authors noted that several criteria should be considered in the selection of a dressing for the treatment of DFUs, including: potential for iatrogenic injury, cost effectiveness, and wound exudate management. Of note, the authors reported that continuously moist saline gauze dressings are as effective as other types of moist wound healing in terms of healing rate. In addition, because of their low unit cost, moist saline gauze dressings are often viewed as the least expensive and, therefore, the most cost-effective dressing. In summary, the authors did not recommend one particular type of dressing for the treatment of DFUs.
- The 2019 Wound, Ostomy and Continence Nurses Society™ (WOCN®) Venous, Arterial, and Neuropathic Lower-Extremity Wounds: Clinical Resource Guide provided an overview of provides an overview of common assessment findings and key characteristics of the three most common types of lower-extremity wounds (i.e., venous, arterial, neuropathic). The authors do not provide a recommendation for

a particular wound dressing product or component for each of the three types of wounds addressed in the guideline.

Codes

Codes addressed in this guideline

HCPSC Code	Description
A4649	Surgical supply; miscellaneous

References

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