Use of honey to treat a necrotic wound after laryngectomy and neck radiotherapy

Treatment of laryngeal cancer by laryngectomy requires effective management to diminish wound infection and accelerate healing. This case report outlines the use of a honey-based ointment to manage the supra-tracheostomy necrosis that occurred post-laryngectomy. This resulted in successful healing; honey-based products may accelerate healing as a result of anti-inflammatory and antibacterial action and fibroblast stimulation.

This patient was diagnosed with a laryngeal tumour (T2N0M0). As he represented a serious surgical risk, he was treated with radiotherapy in November 2010. Failure of the primary treatment led to laryngectomy and bilateral selective neck dissection in June 2011.

Ten days later, extensive supra-tracheostomy necrosis developed. This is common in patients with head and neck cancer because of the aforementioned ‘bad condition of the skin’. The risk increases in patients submitted to radiotherapy before surgery, since radiotherapy itself can cause severe lesions to the skin. Mechanical debridement and daily silver dressings (Atrauman®, Hartmann) were performed. One week after this, no significant improvement had occurred.

METHOD

After receiving the patient’s consent, the authors introduced a honey-based ointment (L-Mesitran®; Triticum) on 11 July 2011. The surgical wound was cleaned with saline, and L-Mesitran was applied daily in a thin layer, then covered with an absorbent hydrofiber dressing (Aquacel®; Convatec). The surrounding skin was treated with a hypoallergenic, semi-permeable barrier cream (Cavilon®; 3M) to avoid friction and the development of lesions on the healthy skin. The primary dressing was covered and fixed with a self-adherent dressing made of apertured, non-woven polyester fabric coated with a layer of an acrylic adhesive (Mefix®; Mölnlycke Health Care). The patient did not experience any pain during dressing changes. There were no fetid odours and no antibiotics were prescribed.

Sonia Pereira is Otolaryngology resident of the CHLC — Hospital de São José, Lisbon, Portugal, and a Navy physician working with hyperbaric oxygen at Centro de Medicina Subaquática e Hiperbárica, Lisbon; Pedro Ângelo is Otolaryngology resident at the CHLN — Hospital Pulido Valente, Lisbon; and Ligia Ferreira is Otolaryngologist at the Portuguese Oncology Institute, Lisbon.
RESULTS

Three days after the application of L-Mesitran, the wound started to improve and a skin graft was considered. Seven days after, granulation tissue covered more than 80% of the surgical wound. The wound closed on 8 September 2011, in approximately 2 months and without requiring surgical procedures, such as skin graft or flap coverage (see Figures 1–6).

DISCUSSION

Laryngeal cancer is the second most common type of head and neck cancer and makes up 1–2% of all malignancies worldwide[1,2]. Approximately 12,500 new cases of laryngeal carcinoma are diagnosed each year in the USA, and the incidence is higher in certain European countries (Spain, France, Italy and Poland)[2].

Tobacco and alcohol are recognised as the major risk factors for developing malignant tumours of the larynx, but others are gaining importance, such as infection with human papilloma virus (in younger patients, with higher social status)[3,4]. This is relevant as the authors believe there will be a change in the demographics of patients, who will not be as old, or educationally and economically disadvantaged as current patients.
The treatment of such a condition relies on the stage of the tumour. Earlier stages (I–II) can be treated with less invasive laser surgery or radiotherapy, whereas more advanced stages (III–IV) are treated with chemo-radiotherapy or aggressive surgery, such as total laryngectomy(5).

This patient was at stage II on referral, but failed to respond to radiotherapy, which led to a total laryngectomy salvage. Early complications following this procedure are haematoma formation, wound infection, wound dehiscence and pharyngocutaneous fistula(1,2,5).

Previously irradiated patients have a higher risk of postoperative complications, such as wound dehiscence and/or infection, as a result of poor wound healing and soft tissue fibrosis, frequently worsened by poor nutritional status and other comorbidities. The treatment of such wounds requires local care with daily dressings and, sometimes, surgical closure, along with a longer length of stay in hospital(1,2,5).

In this case, the patient developed an extensive wound dehiscence, which did not respond to standard local wound care. Silver dressings had been tried and were not considered suitable in this case, because of the need for prolonged use.(6,7,8) Honey-based products may accelerate healing as a result of their anti-inflammatory(9) and debriding action(10), antibacterial activity(11,12) and fibroblast stimulation effect(8,13). In this case, the regeneration of tissue was evident and was completed within 2 months.

CONCLUSION
In this case, honey-based dressings showed significantly better results over other dressings that had been previously used, achieving full healing of an extensive necrotic wound in a few weeks, with no adverse events and without the need for extra surgery and grafting. Honey dressings appear to be a cost-efficient, non-invasive and safe therapy in irradiated, laryngectomised patients who develop postoperative wound dehiscence and/or infection.

References


This case study was conducted with the patient’s consent. It was part of a preliminary study carried out to evaluate the effectiveness of honey as a topical therapy in the treatment of complicated wounds. The purpose was to gather clinical data about this product’s benefits and risks, in order to ascertain the utility of its incorporation in standard hospital treatment protocol. The authors declare no conflicting interests.