

Using Iodine based Dressings to Heal a Chronic Wound in a Pediatric Patient

Tracy Dowds MCIScWH BScN RN NSWOC WOCC(C) & Stephanie Furtado MCIScWH BScN RN NSWOC WOCC(C)

McMaster Children's Hospital, Hamilton, Ontario, Canada

INTRODUCTION

- Iodine based dressings are not often used in the pediatric setting due to concerns about iodine absorption and potential effect on thyroid function
- Literature on the use of topical povidone iodine in neonates has found elevated serum iodine levels for short periods, but no effect on TSH and T₄ (Pyati et al., 1977). Subsequent literature supports that topical use of iodine had no effect on thyroid function (Gordon et al., 1995)
- Important to consider iodine based dressings in challenging pediatric wounds



June 18th 2019

CASE

- 4 year old female who presented in March 2019 with multi-trauma following a motor vehicle injury
- She underwent multiple surgeries and split thickness skin graft (STSG) to the right forearm, right thigh and left arm.
- Subsequently, the left anterior thigh, the donor site for the STSG, opened and developed into a non-healing wound. Biofilm was suspected as the cause
- Numerous antimicrobial dressings were used including silver impregnated hydrofiber, silver-containing soft silicone foam, silver nitrate, a technology lipido-colloid (TLC)-Ag containing non-adherent mesh, gentian violet methylene blue polyvinyl alcohol (PVA) foam and a 0.057% antimicrobial sodium hypochlorite gel. Each dressing was used for 2-3 weeks and while improvement was often initially seen, the wound usually started to deteriorate after

TREATMENT PLAN

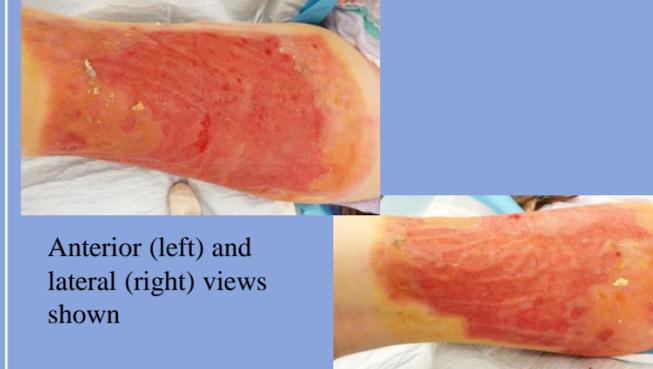
Switched to Iodine Based dressings including a cadexomer iodine powder and povidone iodine containing non-adherent dressing

August 1st Switched to a cadexomer iodine powder after consulting with Plastic Surgery and Infectious Diseases. Dressing changes done q1-2days initially



Anterior (left) and lateral (right) views shown

August 29th Wound has slightly improved to the anterior aspect, but the epithelial tissue does not appear to be robust. Wound to the lateral aspect appears improved



Anterior (left) and lateral (right) views shown

September 19th- Wound improved to the anterior aspect – healed epithelialized skin appears healthy. Similar observation to the lateral aspect



Anterior (left) and lateral (right) views shown

Oct 1st- Wound size smaller, decreased exudate. Some dry areas where povidone iodine non adherent dressing was leaving some residue behind on the skin



Anterior (left) and lateral (right) views shown

RESULTS

- Wound culture swabs taken to assess infection showed no bacterial or fungal growth after iodine based dressings were initiated
 - June 11th: Staphylococcus aureus, Acinetobacter Baumannii complex, Staph Species coagulase negative
 - July 26th: Staphylococcus epidermidis and Staphylococcus aureus
 - Aug 20th: no bacterial or fungal growth
 - Oct 15th: no bacterial or fungal growth
- The iodine containing dressings seemed to address the biofilm issues occurring in the wound and the wound achieved near complete closure by October 2019
- Thyroxine levels remained within normal levels during treatment with iodine based dressings

CONCLUSION

- This case describes the successful use of iodine based dressing for a pediatric use on an open wound to address issues of biofilm
- Clinicians should be open-minded to consider dressings not often used in the pediatric population for challenging wounds that can affect healing and quality of life
- Each patient will present with unique challenges and dressing selections should always be tailored to fit the patients' needs

REFERENCES

- Pyati, S.P., Ramamurthy, R. S., Krauss, M. T., & Pildes, R. S. (1977). Absorption of iodine in neonate following topical use of povidone iodine. *The Journal of Pediatrics*, 91(5), 825–828.
- Gordon, C. M., David H. Rowitch, Marvin L Mitchell, & Issac S Kohane. (1995). Topical Iodine and Neonatal Hypothyroidism. *Arch Pediatr Adolesc Med*, 149, 1336-1339.