

Treatment of fingertip injuries in an acute setting



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INTRODUCTION

Acute care of hand/tendon/fingertip injuries usually consists of surgery, debridement, reconstruction and prevention of infections. Crucial in all cases is to maintain the function of hand and fingers so early rehabilitation is also important.

AIM

Evaluate a new polymeric membrane finger dressing (PMFD) on acute finger injuries in regards to healing, pain, infection, function and ease of use.

METHOD

Nine patients with moderately exuding injuries were include. The wounds were treated with antibiotic ointment and Vaseline gauze for 5 days prior to applying PMFD. (This was due to the fact that PMDF's are not available at the operating theater). Hand bathing every other day was recommended to patients with severely soiled hands, this helped dissolve the dried blood and crust that was often too painful to remove. The finger dressings were changed by the patient every 4 days with weekly monitoring at the clinic.

RESULTS

The PMFD were easy to apply and change, and were non-adherent to the wound or nail bed. The wounds rapidly became cleaner which helped promote wound healing with exceptionally rapid granulation tissue formation. Most wounds healed within 4 weeks. Swelling of the fingers decreased enabling easier movement and rehabilitation. In some cases we splinted on top of the PMFD.

The patients found PMFD's comfortable and all of them reported pain relief while wearing the dressings. The close fit and shape of the finger dressing protected the fingertips from impact which led to an increase of mobility as the patients felt safe with the dressing in place.

DISCUSSION

For the past three years a reasonable experience had been build up with the use of PMFDs. We experience faster healing and less pain. With amputations the shape of the dressing promotes a rounded healing of the tip. PMDFs can also be used in combination with splinting. The only disadvantage of PMDFs was when the injuries were very wet as it necessitated frequent changes of the dressing to prevent maceration.

Male 71 years old. Lawn mower accident with traumatic amputation of distal phalanx dig 3 and 4 and amputation mid-phalanx of dig 5 of the right hand.



This is after 3 days of vaseline gauze. First application of PMFD today.



The patient has changed the dressing twice at home, this is 8 days after the initial application.



After 16 days of use Polymem. The wounds are closed but covered with slight crusting. Our advice was to continue the use of PMDF's whenever using the hands.

32 year old male with an old infected injury with exposed tendons on his ring finger. Treatment goal was to eliminate the infection and close the wound with a following tendon reconstruction.



Previously treated with topical antibiotics for 14 days, now first application of PMDF.



One week and two dressing changes later the swelling has reduced substantially and granulation tissue has covered the tendon.



After four weeks with PMDF the wound is completely closed.

41 year old male, injury caused by a sanding machine, which also ripped off the nail.



When the injury was two days old we started with PMFD.



We included a splint on day 4. There was no problem applying the PMDF on top of the splint.



After a total of 18 days, completely healed.

79 year old male with a relapse of Dupuytren's to dig 5 right hand. Problem with contractures and pain. After a new surgery with following hand therapy, the finger became swollen, this affected the circulation resulting in necrotic tissue on the fingertip. The patient was in a lot of pain and reluctant to use his hand. 10 days post-op we started to use PMFDs resulting in pain relief and more motivation for hand therapy.



16/10 as soon as the sutures were removed and the finger cleaned from crusts the first PMFD was applied.



PMFD in place.



After one weeks use of PMDF (two dressing changes) the finger is healing nicely. No pain any more



PMDF used in combination with splinting at night.



After 2 weeks use of PMFD.

Fingertip on dig 3, 4 and 5, caused by crush and de-gloving injury between the shift gear and seatbelt in a car.



The patient had been treated with antibiotic ointment. We did not start using PMFD until day 12 when we saw that healing had stalled.



Day 12 when we initiated the use of PMFD. The patient immediately reported pain relief.



After 6 days with PMFD. The wounds are cleaning up and beginning to show signs of healing.



After 8 days with PMFD the healings starts to speed up.



After 4 weeks with with PMDF, fingers now healed.. he continues to use the PMDF's whenever the fingers feel a bit sore.