

POLYMERIC MEMBRANE DRESSINGS* IN COMBINATION WITH TOPICAL NEGATIVE PRESSURE – THE VIENNESE METHOD

Edda Skrinjar¹, Nikolaus Duschek¹, Gottfried Sebastian Bayer², Hans Kern¹, Afshin Assadian¹.

1. Wilhelminenspital / Department of Vascular Surgery (Wilhelminenspital, Vienna, AUSTRIA)

2. Plastic surgeon at the Department of Vascular Surgery (Wilhelminenspital, Vienna, AUSTRIA)

INTRODUCTION

At our department of vascular surgery we often use negative pressure wound therapy (NPWT) before-, and after certain procedures to facilitate healing. The recommended frequency of change is every 2-3 days, but-, due to our high workload and tight timeschedule with emergent acute operations, we sometimes lack the possibility to change the NPWT at the operating room (OR). Delayed dressing changes often allow in-growth of granulation tissue into the foam. This leads to traumatization of the newly formed granulation tissue during change thus causing increased pain and even bleeding which makes it even more difficult to perform this procedure on the ward or outpatient clinic. Therefore we tried to improve the dressing itself, thus enabling us to avoid these complications. Initially, we tried to combine NPWT with a soft silicone wound contact layer. However, the application was tricky and very time consuming as the silicone layer slipped out of the place most of the time. Consequently we searched for an alternative.

Aim

A pilot evaluation of PolyMem® WIC (with and without silver) as a primary wound contact layer in combination with the regular foam used in NPWT. The aim was to evaluate the impact of less frequent dressing changes on;

- the in-growth of granulation tissue into the dressing
- pain
- the healing process

We also assessed the difference in workload and costs associated with the use of PolyMem® WIC as an additional interface dressing layer.

METHOD

We chose PolyMem® WIC dressings as a direct wound contact layers as they are frequently used at our clinic instead of and after NPWT, in order to facilitate wound healing. PolyMem® WIC dressings do not have an occluding film layer on the upper side thus allowing wound fluid to pass through the dressing.

The dressing change frequency was extended to every 5-7 days depending on the appearance of a macroscopic colour change of the dressing (photo examples to the right) or the amount of fluid in the vacuum-pump collector. On the few occasions we used the silver version we always included a piece of the standard pink

PolyMem® WIC as a colour indicator. Initially we planned to try this method in 5 patients, however, the results were so promising that we finally included 15 patients.



PolyMem® WIC covers the wound surface to prevent in-growth of granulation tissue and facilitate faster, pain free dressing changes. Photo shows a part of the PolyMem® WIC showing through a slit in the black foam often used together with NPWT.

RESULTS

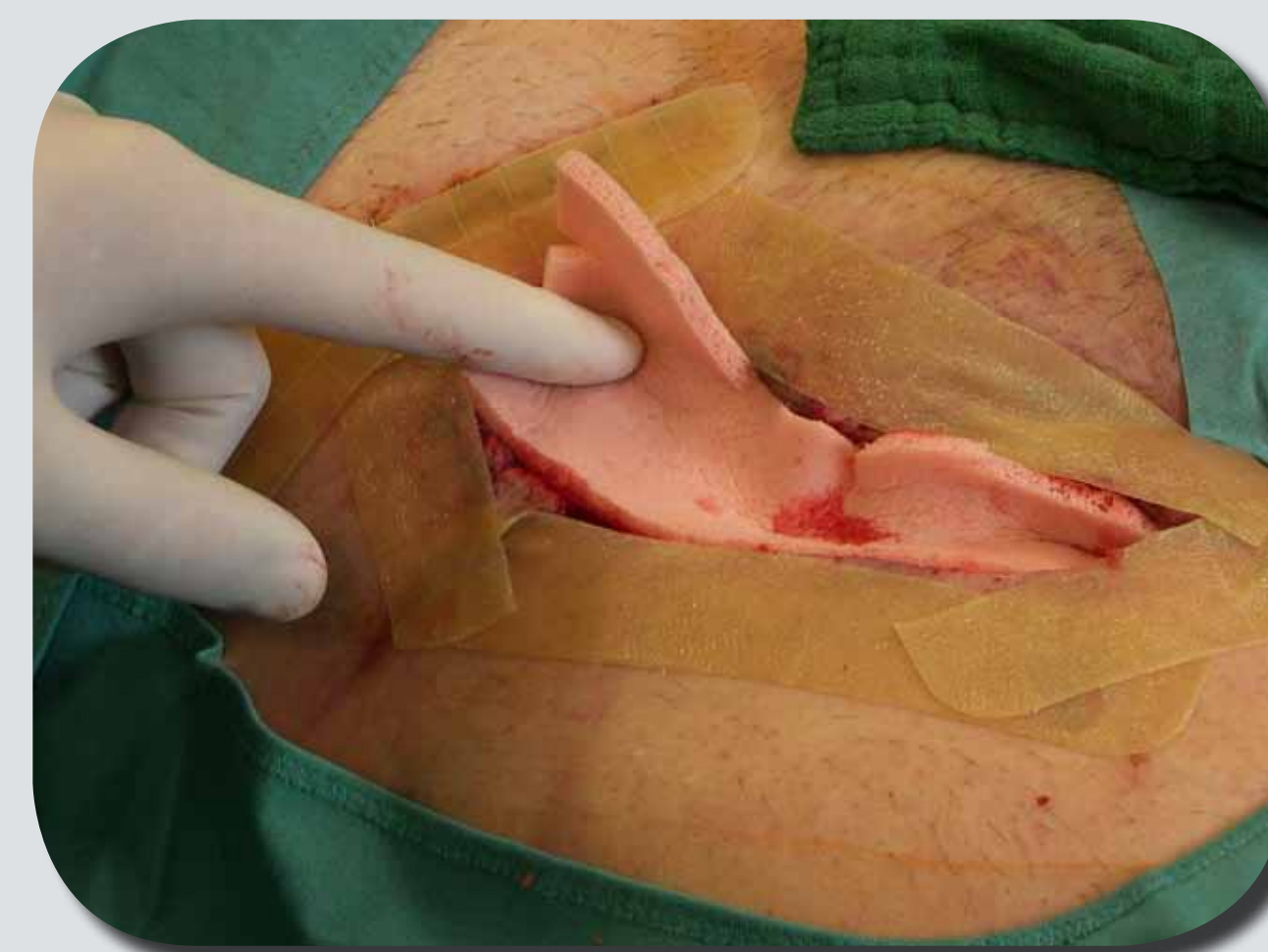
The application and removal of the combined PolyMem® WIC and NPWT dressing was very easy. The patients reported no or reduced pain with the dressing in place or when it was changed. No in-growth of tissue into the PolyMem® dressings was observed, not even after 7 days. In several patients only one changing has been sufficient until the woundbed was ready to be covered by a skin graft or local flap. Three patients only needed 3 dressings. Due to the absence of tissue in-growth and the consequent reduction of pain we were able to perform the changing on our wards instead of occupying an operation room (OR).

This poster is a summary of a pilot evaluation originally described in an unsponsored oral presentation, 27 May 2010, at EWMA, Geneva, Switzerland and 11 September 2010 at Dreiländertagung der DGG, ÖGG und SGG in Berlin, Germany.

*PolyMem® WIC. Reproduced with permission by Ferris Mfg. Corp.



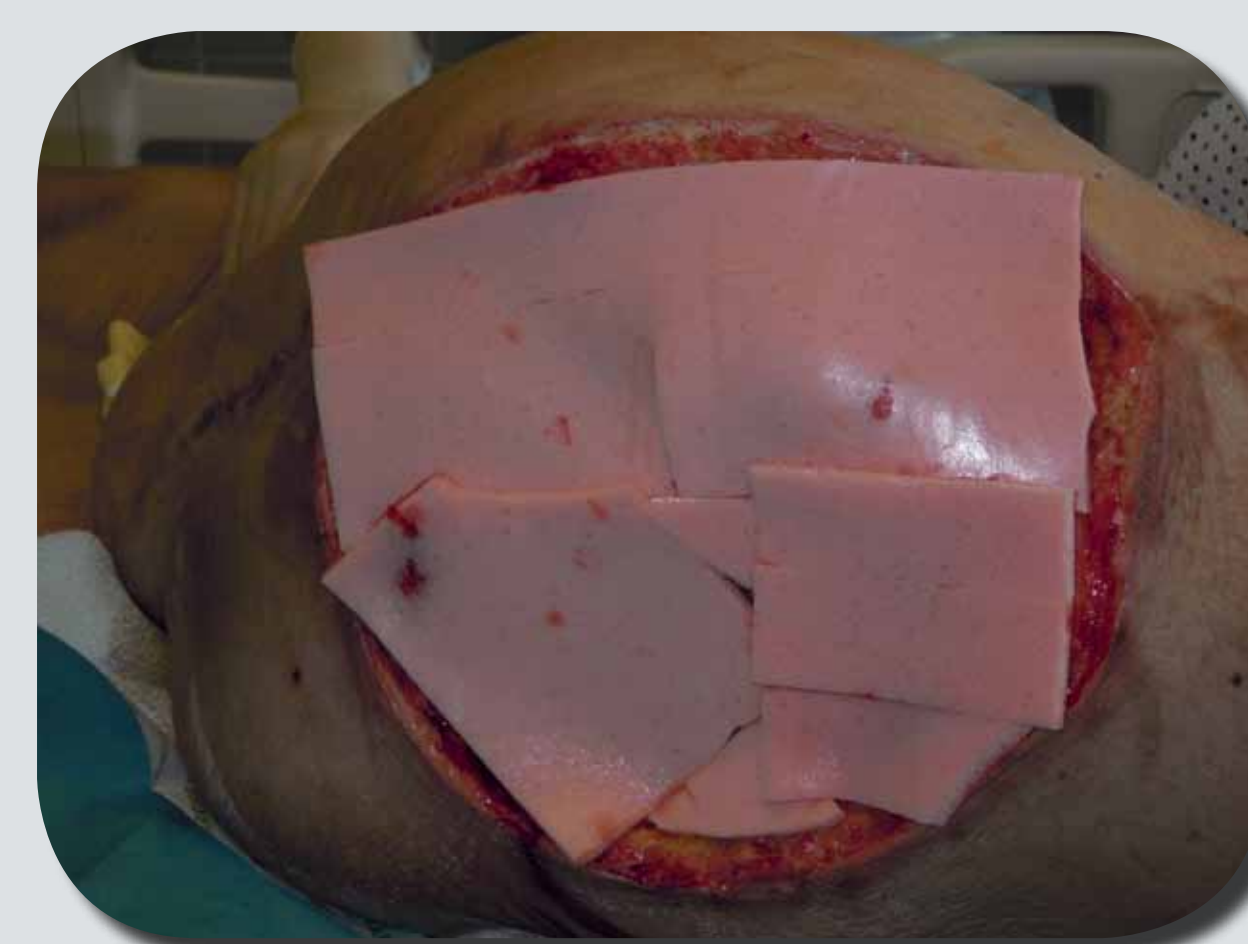
PolyMem® WIC covers the wound surface in the cavity to prevent in-growth of granulation tissue and facilitate pain free dressing changes, also saving a considerable amount of Operating Theatre time due to faster dressing changes.



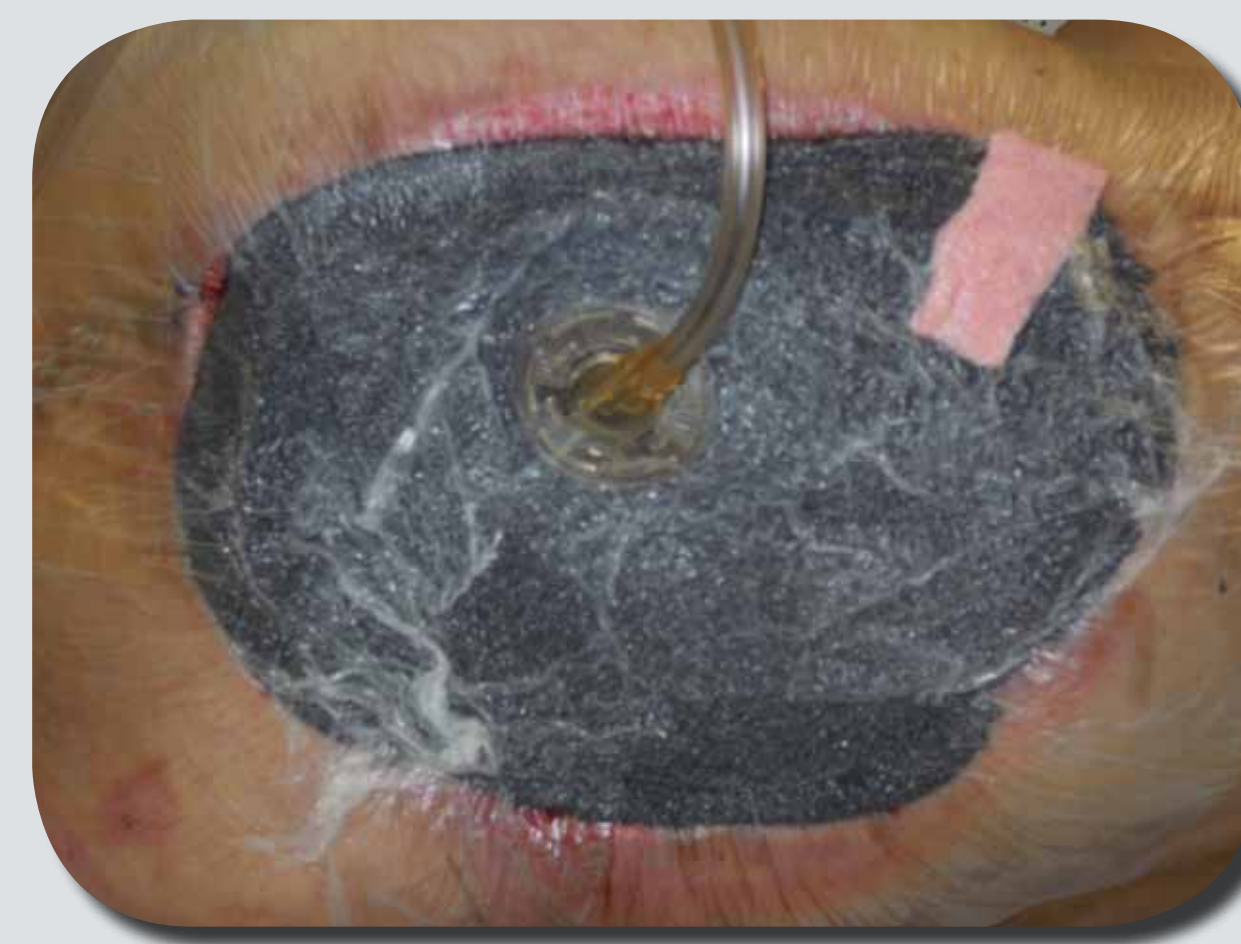
PolyMem® WIC is covered by the black foam often used together with NPWT. Note that a portion of the PolyMem® WIC is exposed, this is used as a colour indicator (explained in photos below).



Newly debrided exposed wound surface on pressure ulcer. NPWT initiated to speed up granulation formation prior to grafting.



The entire wound surface is covered with PolyMem® WIC which in turn is covered with the black foam used together with NPWT.



Initial application. Notice the colour of the piece of PolyMem® WIC sticking out on top of the back foam.



Five days later PolyMem® WIC has turned pale, indicating that it is time to change the dressings.

DISCUSSION

Our impression is that we achieved faster healing, less infection/pain and increased patient comfort with the combination of PolyMem® WIC and NPTW. We noted that fewer dressing changes were needed until final wound closure with skin grafts or flaps. Extended wear time of this dressing did neither have a negative impact on wound healing nor allowed it adhesion to the wound surface. When comparing NPWT versus PolyMem® WIC + NPWT we found that;

- We could extend the wear time from 2-4 days to 5-7 days (extended to 9 days in one patient)
- Pain scores were reduced from 3-5 to 0-2,5 (VAS Scale)
- Whereas sedation was needed for most dressing changes with NPWT only, it became completely unnecessary when the combination with PolyMem® WIC was employed.

The combination of PolyMem® WIC + NPWT allowed a 33% cost reduction in comparison to a patient with NPWT only. (The cost calculations were based on the material used and saved OR time). However, these are preliminary findings limited by a small sample-size. More trials are required to obtain robust data.