**Efficient Reduction of Swelling and Bruising on Severe Sports Injuries when using Polymeric Membrane Dressings**

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**INTRODUCTION**

In the Swiss Alps we have several major sports events such as the Gigathlon and the Swiss Alpine Marathon. Every year several people are injured. Typical injuries are contusions, road rash, sprains etc. Our hospital takes care of a majority of these patients and since 2007 we use polymeric membrane* dressings to help reduce swelling and haematomas / bruising caused by these injuries. Based on the positive experiences we had with patients who suffered sports injuries, we started to use polymeric membrane dressings in post-op situations where we often get swelling and haematomas. The goal was to see if the polymeric membrane dressings would also reduce haematomas and swelling in these situations which would lead to both better and faster healing.

**AIM**

To evaluate the use of polymeric membrane wraps after 12 surgical procedures in regards to reduction of haematoma, oedema and pain as well as patient comfort and ease of handling. (The wraps are an unsterile version of polymeric membrane dressings).

**METHOD**

The dressings are wrapped or applied in strips onto the injured area without covering the suture line (request from surgeons who want to cover the suture line with dry sterile gauze). Everything was secured by an elastic bandage. The wounds were monitored and redressed daily.

**RESULTS**

The most impressive results of this treatment is the effect on the haematomas. After only 1-2 days we could see a dramatic change of the colour from blue to yellow in 10 of the 12 patients. The affected tissue became softer and the swelling and tension decreased. In the other two patients the responsible nurse reported no major difference in the resorption of haematoma and oedema. The evaluation of the pain was a little more difficult, since we treat most post-op patients with pain catheters. In spite of this, 8 patients answered that the dressing was comfortable and that they felt a substantial decrease of tension in the affected area. Two patients said there was no difference and 2 patients felt the warmth of the dressing was uncomfortable. The dressing was judged as simple to handle by 11 of the 12 patients. The patient who found it difficult to apply had surgery performed on his shoulder.

**Example 1**

54-year-old HIV-positive patient with l billar fracture complicated by a compartment syndrome after a ski accident. The swelling in the extremity caused postoperative blistering and haematoma of the lower leg. Massage for the purpose of lymphatic drainage was judged as simple to handle by 11 of the 12 patients. The patient who found it difficult to apply had surgery performed on his shoulder.

**Example 2**

A 79-year-old woman had a total knee replacement on her left knee. She also had a huge haematoma with subsequent swelling on her thigh due to a punctured vein as a result of placement of a post-op pain catheter. The entire leg was still due to the massive swelling.

**DISCUSSION**

Due to our close location to the annual sport events, our hospital is specialized to take care of sports injuries. We used polymeric membrane dressings with acute sports injuries such as haematomas, bruises, contusions and swellings. Due to our positive experience in managing sports injuries we extended the use to the post surgical phase, for the treatment of haematomas and swelling. The positive effects of the polymeric membrane dressings are:

- Faster resorption of haematomas,
- Measurable decrease of swelling, leading to:
  - Decrease of tension
  - Decrease of pain
  - Faster wound healing.

The only negative aspect we have encountered so far is that a few of our patients have reported the increased warmth under the dressing as uncomfortable, especially during physotherapy.

Our staff is also under time pressure, and therefore, filling out feedback forms and test protocol questions is not high on the list of priorities. With these dressings however, the nurses called me with requests of including their patients in the trial. According to them it would be absolutely necessary to treat their patient with polymeric membrane dressings because they have seen such outstanding results with other patients. Additionally, several nurses requested samples for the treatment of contusions or sports injuries for themselves or their relatives. This can only be due to the positive results of these dressings.

Our next plan is to trial the dressings immediately after surgery to see if we can avoid post surgical swelling.

*Presented at: European Wound Management Association (EWMA) Meeting – Poster #P218
May 26-28, 2010 – Geneva, Switzerland

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Manufactured by Ferns Mfg Corp, Bunn-Ridge, IL, 60520 USA. This case study was unsponsored. Ferns Mfg Corp. contributed to this poster design and presentation.