Donor site dressings: how much do they affect pain?

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Abstract:
Pain causes significant distress in burn patients and is both neuropathic and nociceptive in character. Background pain is usually managed with regular, long-acting medications whilst dressing changes require breakthrough analgesia. Dressing changes remain a substantial source of acute pain but are a necessary evil. This audit focuses on Suprathel® used specifically in donor sites and the effect it has on both analgesia and opiate requirements. Data was collected retrospectively over a three-month period at the Royal Brisbane and Women's Hospital Professor Stuart Pegg Adult Burns Centre. All patients who received Suprathel® (under the discretion of the consultant surgeon) and had small burns <5% TBSA were included in the audit. This data was then compared to previously collected data involving patients who had standard dressing care – Algisite. Pain scores and opiate requirements were then compared between the two. This audit demonstrates the importance of choosing appropriate dressings and the benefits of pain reducing dressings. Suprathel® is emerging as an alternative to standard dressings as both a way of reducing dressing changes and improving analgesia.

Introduction:
Suprathel® is a new dressing on the market that is indicated for burns, split skin graft sites and abrasions. Its advantages include pain reduction, easy removal once the wound has healed, it's permeable to water vapour but impermeable to bacteria and acidifies the wound making it unfavourable to micro-organisms, and its plasticity allows it to be moulded to the patient.[1] The main disadvantage is it is expensive and as it is new familiarity with the product can be lacking.

Aim:
The aims of this audit were to look at the total opiate requirements intra-operatively, in PACU and on days 1 to 7; the highest pain score in PACU; intra-operative time and recovery time in patients with <5% TBSA who received Suprathel® on their donor sites.

Method:
Data was collected retrospectively over a 3-month period utilising the electronic medical record system. All burns <5% TBSA that received Suprathel® dressing for the donor site were included.

Results:
A total of 19 patients received Suprathel® over the 3-month period with burns <5%. The vast majority of the burns were located on one or both legs (57%) and males outnumbered females 2:1 (13 vs 6). Length of stay averaged 4.05 days but was quite significantly increased by two patients: one initially had a trial of healing as most of his burns were superficial but by the time of surgery his burns totaled <5% and he was discharged home 4 days after surgery. Another patient had an infected wound and therefore underwent staged surgery: initial debridement and then SSG a week later, he was discharged the day of his second surgery.

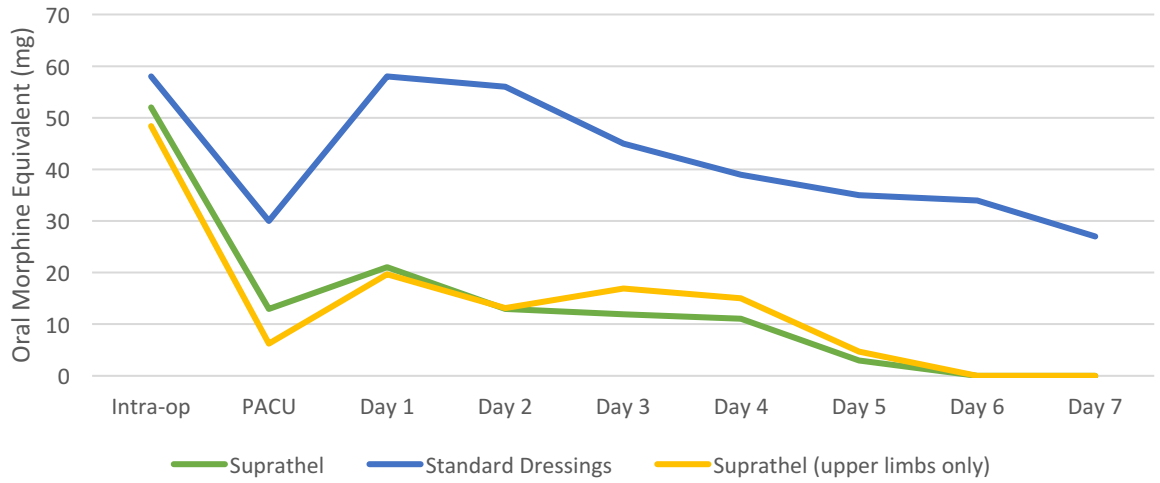
Opiates:
As a variety of opiates were used, the drugs were converted to the equivalent of oral morphine for better comparison.[2-4] Drugs that could not be converted were not included. Intra-operative morphine equivalent dose given was 52mg, whilst post-anaesthetic care units on average only provided 13mg of oral morphine equivalent. Average worst pain score in PACU was 4 (range 1 to 10). Opiate requirements on Day through to Day 7 post-operatively are shown in Figure 1.

Surgical and recovery times:
Average surgery time was 58 minutes and average recovery time was 88 minutes.

Comparing to standard dressings:
The above data alone means little as a standalone. Fortunately, previous data had been collected looking at standard dressings – Algisite. 37 patients were included over a 4-month period that had burns <5% TBSA. Percentage of male patients was similar with 65% suffering a burn (68% in the Suprathel® group). Intra-operative times were slightly longer for the standard dressing at 84 minutes compared to 58 minutes, whilst PACU recovery time was closer: 99 minutes vs 88 minutes. Average length of stay was 8.78 days, twice as long as the Suprathel® group.

The biggest difference between the two groups was the opiate requirements as seen in Figure 1. Intra-operative morphine provided was similar between the Suprathel® and Standard Dressings but from that point onwards, opiate requirements were significantly less in the Suprathel® group. Both groups demonstrated a reduction in opiate requirements as time progressed. Further, less patients were discharged home on opiates in the Suprathel® group (53% vs 78%).

Figure 1: Opiate Requirements with Different Donor Site Dressings



Discussion:
Donor site pain is just one component of pain in burns patients. However, looking at the above data it can be quite significant with large amounts of opiates being required to manage the pain of even small burns. The main disadvantage in this audit is that the data looking at standard dressings looked specifically at upper limb burns. To make the data comparative, it significantly reduced the number of patients in the Suprathel® group from 19 to 8. However, as can be seen in Figure 1 there was little difference in opiate requirements in the patients who were upper limbs only compared to all patients with burns <5% TBSA (yellow vs green). Therefore, it is clear to see that Suprathel® donor site dressings were associated with less opiate requirements compared to standard dressings. It was also associated with a much shorter length of stay. Other limitations include being unable to distinguish pain being secondary to the donor site as opposed to the burn. Further, there was insufficient information in the electronic notes to look at specific dressing changes and how the reductions from Suprathel® affected opiate requirements in this setting.

Conclusion:
It is evident above that Suprathel® dressings did significantly reduce opiate requirements predominantly in the post-operative setting compared to standard dressings. Limitations of this audit include small data size, especially in the Suprathel® group and lack of randomisation regarding the intervention as well as the inability to distinguish the pain caused by the donor site versus the burn/graft site. Further study into the different times of dressings would hopefully confirm the benefit of Suprathel®.

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