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Background

My client Samuel is an 18 year old man. During his holidays with his family in Singapore on April 9th 2012, he was injured riding on a Segway (see image 1). He sustained a long and wide (approx. 30cm by 6.5cm/ 12 by 2.5 inches) skin graze to the outer aspect of his right lower leg. Although the wound was relatively superficial, with no excessive bleeding, there was soft tissue trauma under the wound and around the ankle. He required crutches to mobilise.

Samuel sought help immediately from his General Practitioner after the accident and was prescribed antibiotics for two weeks due to the high risk of infection given the size of his wound. He was also given Inadine dressing patches (low adherent wound dressings impregnated with antimicrobial povidone-iodine that are often used prophylactically in superficial skin loss injuries) to cover the wound and to help with disinfection.

Ten days following Samuel’s accident, I was given a photo of his wound (see image 2) and requested to offer some essential oils and related products to help promote healing and minimise his pain. As can be seen in the photo, certain parts of the wound were still wet and ‘open’ although healing had already begun around the wound borders. As Samuel himself described it, it was quite ‘inflamed and unsettled’.

This case report concerns a male teenage client who, due to a bike accident, sustained a large and wide wound (approximately 30cm by 6.5 cm/ 12inches by 2.5 inches) on the outer side of his right calf, with a significant amount of soft tissue damage both underneath the wound and around the ankle. After ten days of treatment with antibiotics, his wound remained wet, red, inflamed and painful. I was approached by his parents to offer him an essential oil based formulation with aims as follows: 1) anti-inflammatory; 2) soothing and analgesic; 3) cell regeneration; 4) antimicrobial. After several days of use, his parents reported that his wound was greatly soothed and the pain reduced and so they ordered one more bottle of the preparation. Upon continued use of the same formula on a regular basis as well as with careful wound dressing, full healing was smooth and extremely rapid. Fifteen days later, the wound was healed completely. Over this period, scabs formed and sloughed off without any itching, discomfort or infection. In view of the size of the wound and its condition prior to the first oil application, the contribution of essential oils in achieving our healing goals is quite evident.
Formulation of Samuel’s wound healing oil

Given Samuel’s background history and the status of his wound, I prepared a blend of essential oils and vegetable oils with the following goals. This formulation reached him on April 21 2012 (12 days after his accident). I instructed him to apply the oil at least twice a day after cleaning the wound, and then cover it with a low adherence wound pad for protection purpose afterwards.

Formulation goals

1. anti-inflammatory
2. analgesic and soothing
3. cell regeneration
4. antimicrobial (Samuel had been prescribed antibiotics, but given the size of the wound, I would still make this one of the goals as bacterial infection is one of the challenges of any wound)

Essential oils chosen (2% concentration)

Matricaria chamomilla (German chamomile) 35%
Lavandula latifolia (spike lavender) 40%
Helichrysum italicum (immortelle) 25%

Vegetable oils chosen

Rosa rubiginosa (rosehip seed) 50%
Simmondsia chinensis (jojoba) 50%

Formulation rationale

Dose

Essential oil concentrations in a vegetable oil medium vary greatly and can be as high as 5% to 10% for topical and localised applications (Guba, 2011) but in this case, I used only a 2% concentration. This is in consideration of the fact that part of the wound was still wet and ‘open’. Too high a concentration might be damaging to the exposed tissue. Also as this is the first time that Samuel tried aromatherapy, we were not sure if he was allergic to any particular oils. Besides, I expected him to apply the formulation at least twice per day for a minimum two week period and so a lower concentration would be sufficient in terms of cumulative power.

Essential oil choices

German Chamomile: With a significant presence of chamazulene and alpha-bisabolol, German chamomile is a confirmed anti-allergic, antioxidant, anti-inflammatory and cicatrisant agent (Harris, 2006; Sheppard-Hanger, 2000). To many, it is very soothing, and is revered by some as an instant analgesic, probably partly due to its anti-inflammatory activity. In my experience, it is excellent for any inflamed conditions, such as burns, allergic rashes, wounds, ulcers and such like and thus was appropriate in this case.

Spike lavender: Spike lavender is used here instead of Lavandula angustifolia (true lavender) because of its antimicrobial, cicatrisant and analgesic activity (Harris, 2006; Harris, 2010; Sheppard-Hanger, 2000). I also had to bear in mind the importance of tissue tolerance along with product efficacy. Spike lavender is a good choice because it contains mainly linalool (up to 40%), cineole and camphor (up to 40% combined), providing tissue-friendly, antimicrobial, analgesic, and cicatrisant properties similar to true lavender.

Corsican immortelle: Despite little published research, the anti-inflammatory, analgesic, anti-allergic and cell regenerating properties of immortelle are so powerful and unique that it is always among the top aromatherapy choices for skin conditions that involves wounds, tissue damage
or trauma (Harris, 2010; Baudoux & Zhiri, 2003; Franchomme & Penoel, 2001; Sheppard-Hanger, 2000). The content of sesquiterpene hydrocarbons and esters contributes to the oils calming and anti-inflammatory properties, while the presence of specific ketones (italidiones) is thought to contribute to the oil’s cell regenerating effects. Immortelle is often used for burns, scars, ulcers, open wounds, bruises, and is included in many anti-aging preparations (Baudoux & Zhiri, 2003), and so it was included in the blend for Samuel.

**Vegetable oil choices**

*Rosehip seed oil:* Containing mostly essential fatty acids including alpha-linolenic acid and linoleic acid which are required by the body, especially for cell membrane synthesis, rosehip seed oil is anti-oxidant, cell regenerating and reputed to help with the micro-circulation and hydration of the skin. It is excellent for dry, cracked skin, slow healing wounds, scars, ulcers, and eczema and therefore very appropriate in this case (Guba, 2012; Furukawa, 2006; Guba 2004; Moreno Gimenez, 1990; Marchini et al., 1998).

*Jojoba oil:* As the wax ester constituents of jojoba oil are similar to those found in human skin sebum, I thought it would be a good complement to the other selected oils to make an overall blend that close to our normal skin makeup. Besides, it offers great moisturising effect, and has a long shelf life and is considered non-irritant and non-allergenic (Guba, 2012).

**Results**

On April 24th (three days after Samuel first applied the formulation to his wound), I received an email from Samuel’s father who thanked me for the wonderful effect of the oil:

*‘Many thanks Dawn for your miracle oil! Samuel was telling me how effective it was to his wound. He is not feeling as much pain after applying the oil generously to his leg...’*

His father also asked me to prepare more oil for Samuel’s continued use.

Concerning the healing process since April 21st, I learned that overall, it was very smooth and extremely rapid. According to Samuel, he found the oil very soothing from the first instant he applied it. In Samuel’s words,

*’the smell of the ointment was very pleasant and has a somewhat soothing effect to it’.*

After just a few days of use, the wound had settled down with more scab formation and signs of repair. By the time the second batch of oils arrived (one week after the first batch), Samuel was already walking around without crutches. Additionally, the scabs had started to fall off by themselves and surprisingly ‘there was little itch when the scab was coming off. It came off naturally during the day and in the shower...’

On May 5th (15 days after Samuel first applied the oil to his wound), he sent me another email of thanks:

*‘Many thanks again for your magic potions. I have attached a photo of my newly healed wound. I am so very blessed to have such a speedy recovery!’*

I asked Samuel to comment on the healing process as well as the contribution of the wound healing oil, and he said in two different emails the following:

*‘Thanks to the ointment (Samuel’s term for the oils I gave him), and of course with sufficient rest and careful treatment to the wound, the healing process*
only took a little more than 2 weeks. Soon I was able to walk again...

‘I think the ointment helps promote healing and helps the wound to ‘settle down’, it definitely speeded up the healing process. But with good dressing, enough rest and application of the ointment to the wound about twice or three times a day, the healing process was surprisingly quick! I would certainly recommend the ointment to my friends...’

By ‘careful treatment’, Samuel means the use of adequate dressings (the Inadine dressing given by his doctor) to protect the wound. During the same period, he had also used a moisturising cream (E45) containing light liquid paraffin. I believe the antibiotics helped in combating bacterial and preventing infections prior to the use of oils.

**Conclusion and Reflection**

I would say the formulation of the blend for Samuel was effective. Almost all of our goals set in the beginning were achieved. 1) The wound ‘settled down’ quickly from its inflamed condition; 2) Samuel found the oil very soothing, and his pain was gone just few days after beginning the applications; 3) the healing and cell regeneration took place smoothly and quickly, the scabs formed and fell off naturally without creating discomfort or itch; 4) the wound healed with no signs of infection.

The use of antibiotics was of course also significant in the process, but I do not think this minimises the contribution of the oils. As evident from the wound’s condition (wet, inflamed and painful) 10 days following the accident, antibiotics did not really help on this level. The sudden acceleration of the healing process appears to be due at least in part to the oils; something beyond what antibiotics can do. Besides, it is not impossible that the oils had also exerted their antimicrobial and disinfecting actions on the wound even under the influence of antibiotics, though it is not something that we can prove.

As an additional comment, just to be safe, apart from giving Samuel the original blend as described above, I had also prepared one more bottle of oil in which the same formulation was added to Calophyllum inophyllum (Calophyllum) vegetable oil and *Melaleuca alternifolia* (tea tree) essential oil. The intention here was to use calophyllum for its phagocytosis-stimulating and cicatrization quality (Kilham, 2004; Schnaubelt K, 1998) and tea tree as a well known antimicrobial (Carson et al., 2006). I was concerned that, due to the large size of the wound, infection could happen any time, and there might even be pus building up during the long healing process. So I asked Samuel to keep this second blend as a ‘stand-by’. I was told later that this bottle of oil was not really needed and he used only a little once the second bottle of the original formulation was finished.

One other factor that is however worthy of mention is that of age. As a healthy young man, Samuel is full of life and energy, and so it is not surprising that his rate of recovery is much faster than those who are older. As a result, we should not expect/assume the same result if we applied the same oil formulation on another client who is in a different stage of life and with a different health or medical background. With all this in mind, after all, the client knows his own body well, and how he felt about the oil blend is the most important. I believe Samuel has given a very good conclusion for his own case. Everything he did (taking antibiotics, careful treatment with dressing, using the oils and even the moisturiser) contributed to the speedy recovery. But it was the oil that really soothed his pain, reduced the inflammation and triggered cell regeneration, and I think it is for these very important points that we should give credit to the essential oils and base oils involved.

**References**


