PERI-WOUND SKIN BLISTERING:
AN EVALUATION OF AQUACEL™ SURGICAL POST ORTHOPAEDIC SURGERY
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Introduction
The observation of peri-wound skin blistering following a surgical procedure has continued to perplex wound care practitioners as to its actual cause for several years. This common post operative complication is particularly prevalent following orthopaedic surgery on hips and knees (Cosker et al, 2005, Ravenscroft et al, 2006), with blistering rates ranging from 6%-24%, depending on which surgical dressing was used (Cosker et al, 2005). Leal and Kirby (2008) also observed blistering at the margins of post operative dressings following abdominal gynaecological surgery where traditional Mepore dressings were used. Also, and more recently, Gregson (2011) found post operative complications, namely, surgical site infections (SSI) to be a common problem amongst women who had undergone caesarean sections.

There has been speculation that post operative blistering (Fig. 1) may be an inflammatory response, induced by the adhesive on the dressing (Dykes et al, 2001). Also, it has been suggested that a dressing’s lack of elasticity or those that have been applied under tension often cause localized trauma to the epidermis, as a result of post operative wound oedema and physical movement by the patient (Gupta et al, 2002, Lawrentschuk et al, Koval et al, 2003). If this occurs and the skins ‘protective barrier’ function is breached (i.e. the blister bursts or is de-roofed), the patient may be exposed to local bacterial contamination and potentially a SSI.

Background
After a series of post operative blistering incidents following orthopaedic surgery where film and pad surgical dressings were used, and in an attempt to reduce the incidence of this type of tissue trauma, BMI Healthcare trialed and audited a new and innovative surgical wound dressing (Fig. 2), namely Aquecel™ Surgical – ConvaTec Ltd. This poster illustrates the findings of that audit.

Method
A total of 20 patients admitted for elective orthopaedic surgery to the hips or knees took part in the audit (12 total knee arthroplasties and 8 total hip arthroplasties). A simple and short ‘questionnaire style’ audit tool was devised and the ward staff were shown how to complete it. The correct application and removal of the dressing was also demonstrated to the ward and theatre staff by the local ConvaTec representative.

The dressing was applied immediately after the incision was closed and the peri-wound skin cleaned and patted dry, to ensure that the dressing would stay in place. The site was inspected daily by the ward staff and any blistering was reported on the audit form. Dressings were only changed if clinically indicated, other wise they were changed and the wound inspected on the morning of discharge, as per local policy

Results
Of the 20 patients using Aquecel™ Surgical, none of them developed any post-operative blistering. After the series of post operative blistering incidents experienced, this was a marked improvement.

Discussion
The primary objectives of surgical wound management are to ensure adequate absorption of wound fluid, whilst maintaining an optimal wound healing environment without causing localised maceration (NICE, 2008). Reduce patient pain and discomfort (Baxter, 2003) and more importantly, prevent any peri-wound skin damage that may lead to bacterial contamination and/or wound infection (Gupta et al, 2002). Selecting a product that could satisfy all of these requisites was the aim to minimize the risk of post operative complications and in turn facilitate earlier patient discharge, reduce morbidity/mortality rates associated with post operative wound infection and at times where cost/efficiency savings are imperative, reduce dressing’s expense and maximise nursing time.

Conclusion
On this occasion and despite this being a relatively small audit, in terms of the number of patient’s trialling Aquecel™ Surgical, the outcome was conclusive. Aquecel™ Surgical successfully achieved the desired clinical outcome of reducing the incidence of post surgical blistering. After considering these findings BMI Healthcare, as an organization, felt the evidence was very strong and opted to recommend this dressing to surgeons for all major and complex orthopaedic procedures

References

Fig.1 illustrates post operative blistering

Fig.2 illustrates Aquecel ™ Surgical wound dressing