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Case studies evaluation: ULTRASORBS™ AP Drypads for moisture management

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Case studies evaluation: Using ULTRASORBS™ AP Drypads for moisture management

INTRODUCTION

Moisture-associated skin damage (MASD) describes the spectrum of damage that occurs in response to the prolonged exposure of a patient's skin to perspiration, urine (Beeckman et al, 2015), faeces or wound exudate (Grey et al, 2011). When exposed to excessive amounts of moisture, the skin softens, swells and becomes wrinkled (Dowsett and Allen, 2013). Additionally, some individuals, such as the elderly, have been shown to have a reduced ability to dissipate excess heat, resulting in additional skin warming for a given stimulus (Nagashima et al, 2003). These changes to the microclimate of the skin, in addition to excess moisture, lead to a reduction in skin tensile strength and intracellular cohesion of the stratum corneum, and an increase the skin coefficient of friction. These cellular changes result in skin maceration (Reger et al, 2007).

If high levels of moisture are not managed appropriately, it can increase the risk of maceration and excoriation to the skin, leading to an increased risk of pressure ulcers (Beeckman et al, 2015). Additionally, moisture on the skin can have a negative impact on quality of life and patient comfort, can lead to a loss of dignity for the patient, and increase the risk of infection and odour (Adderley, 2010; Dowsett, 2011; Voegeli, 2012). To help prevent and manage MASD, it is important for caregivers to use products that absorb and hold moisture away from the skin to promote patient comfort (Dowsett and Allen, 2013). Using such a product can also lead to a reduction in bed linen changes and related costs (Lloyd-Jones, 2011), and reduce discomfort associated with bed linen changes.

INTRODUCING ULTRASORBS™ AP DRYPAD

ULTRASORBS™ AP Drypad (Medline) is an ultra-soft, non-woven, multi-layer breathable, disposable sheet designed for effective moisture management (Figure 1). ULTRASORBS AP Drypad has a super-absorbent polymer, which locks away wetness and odour, leaving the sheet dry to the touch and comfortable against the patient's skin. It can be placed on a variety of mattresses and bed configurations to provide waterproof protection, while the air-permeable, cloth-like backsheet ensures there is no strikethrough onto bed linen (Medline, 2015). The core of the drypad ensures the sheet remains flat when wet, without bunching, swelling or disintegrating.

The ULTRASORBS AP Drypad has been shown to withstand continuous, multiple insults, as demonstrated by the 10-minute "rewet" test (Medline, 2015) (Box 1).

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Box 1. The "rewet" test

A drypad's ability to withstand multiple insults is determined using the "rewet" test. The test is done by pouring 500 ml of water onto a drypad, waiting 10 minutes and then measuring how much water returns to the surface. The lower the number, the drier against patient skin (Medline, data on file)

Leading
competitor
4.27g

ULTRASORBS™
AP Drypad
0.38g

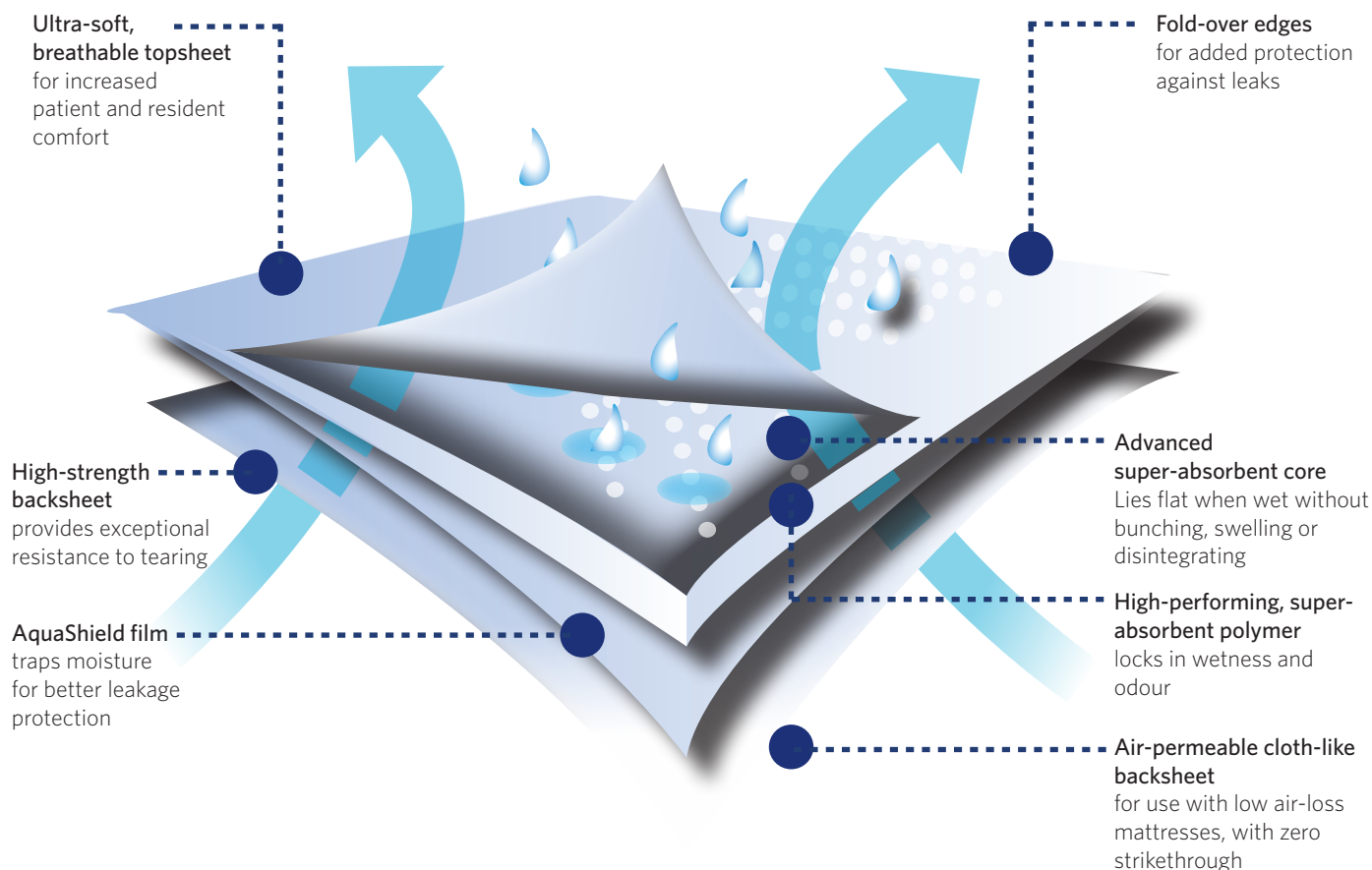


Figure 1: The multi-layered ULTRASORBS™ AP Drypad

The ULTRASORBS AP Drypad is designed for moisture management and may help reduce risk factors associated with skin breakdown. The drypad is indicated for absorbing fluid loss where dry skin is needed. In addition, the drypads are for:

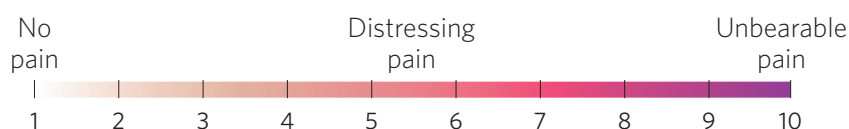
- Open-airing incontinence management
- ICU/CCU patients who should not be disrupted or moved more than necessary
- Accident and Emergency for absorbing significant or ongoing fluid loss
- Any other area where skin dryness is needed

CASE REPORTS: ULTRASORBS AP DRYPAD IN PRACTICE

This International Case Series Report describes use of ULTRASORBS AP Drypad in the management of heavy moisture. Five case studies are presented, from Germany and the United Kingdom, illustrating use of ULTRASORBS AP Drypad for a range of moisture management issues.

All of the patients presented herein had issues with moisture management, which led to pain, malodour and feelings of social isolation. Patients who required an absorbent under pad to manage fluid loss were selected. Where open wounds were present, clinicians were advised, according to manufacturer's instructions, that these were covered according to local protocol and open wounds did not come in to direct contact with the ULTRASORBS AP Drypad.

Parameters monitored during the case series included how the ULTRASORBS AP Drypad managed fluid, and whether it bunched up, tore or separated. Reviews were carried out every few days for 1 week. Patient parameters such as patient comfort, pain and odour were also monitored. Pain measurements were provided on the visual analogue scale (VAS) between 1 and 10.



Overall, the clinicians and patients involved in this study were satisfied with use of the ULTRASORBS AP Drypad. Across these case reports, the ULTRASORBS AP Drypad was reported to be very good at absorbing moisture, while maintaining its integrity with no leakage, ripping or tearing. Moreover, all of the patients in the study reported high levels of comfort and the pads avoided the soiling of bed linen, suggesting the ULTRASORBS AP Drypad present a potential cost-effective strategy for hospitals and residential homes.

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CASE 1: EXCESS SKIN LEAKAGE DUE TO ERYSIPELAS OF THE LEFT LEG

Author: Astrid Probst, Nurse in Wound Management, Kreiskliniken Reutlingen GmbH, Reutlingen, Germany

INTRODUCTION

A 74-year-old woman was admitted to hospital due to erysipelas of the left leg. Erysipelas is an infected skin rash common in limbs with oedema where blistering can occur. She had obesity and had associated co-morbidities.

The condition of the patient's skin at initial review was poor. The lower leg was red, macerated and there were non-blanching erythema and multiple blisters that appeared full and likely to burst. The affected area had been present for 3 days, and the patient had recorded the pain at 5 on the VAS scale. She was prescribed antibiotics and bed rest, and the wounded area was dressed with gauze and a non-adherent, antibacterial dressing containing silver, covered with an appropriate secondary dressing.

Fluid leaking from the dressing on the lower left leg resulted in the bed linen being soiled, which made the patient uncomfortable and unhappy. To manage the moisture, absorbent gauze sheets were being used; however, this was ineffective at managing the excess moisture (Figure 1). The affected area was not odourous, and excess moisture was the main issue for this patient. The aim of care was to protect the wound; the management plan included the use of moist wound healing dressing where appropriate and the protection of surrounding skin from excess fluid.

The largest ULTRASORBS AP Drypad available was chosen to place under the leg to protect the bed linen from soiling. The clinician and patient found the ULTRASORBS AP Drypad to be more absorbent than the previous gauze sheet used.

Review 1:

The ULTRASORBS AP Drypad was first changed the following day. The ULTRASORBS AP Drypad held the excess fluid from the wound dressing, and, as such, the bed linen did not need changing. The patient was comfortable with the drypad and commented on its soft feeling, and she was pleased that the bedding did not feel wet. The ULTRASORBS AP Drypad had not separated, bunched up or adhered to the primary wound dressing. The drypad exhibited much improved fluid management compared with the previous fluid management product, and the skin was much improved. The patient commented that their quality of life and the dryness of the bedding were both improved, and the patient's dignity was well preserved.

Review 2:

The ULTRASORBS AP Drypad continued to be changed daily for 3 days, as was the bed linen in accordance with hospital protocol. The ULTRASORBS AP Drypad absorbed the excess fluid from the primary dressing, and there was no leakage or strikethrough observed (Figure 2). The patient was happy using the ULTRASORBS AP Drypad; she felt comfortable, and was pleased that the drypad prevented leakage on to the bed linen.



Figure 1: Initial review; use of absorbent gauze sheet prior to wound dressing application



Figure 2: Review 2; Use of ULTRASORB AP Drypad in between dressing change. Please note, this product is not indicated for use as a primary wound dressing



Figure 3: Review 4; Wound following debridement of necrotic tissue and prior to dressing change. Please note, this product is not indicated for use as a primary wound dressing

The care plan continued as before with the dressing regimen as described previously with the main goal to achieve effective moisture management using appropriate moist wound healing dressings and the ULTRASORB AP Drypad to avoid soiling of bed linen and protect the surrounding skin from exudate leakage. The patient's skin condition was improved, with the macerated skin resolving. The clinician commented that the drypad was good for moisture management and the patient continued to be pleased with the drypad's ability to keep the bed linen dry. Her quality of life and dignity continued to improve, as the bedding remained dry.

Review 3:

After 1 week, daily changes of the ULTRASORBS AP Drypads and bed linen continued as per the hospital protocol and the drypads continued to hold excess fluid without strikethrough. The patient felt comfortable and the pad did not bunch up, separate or adhere to the primary wound dressing (or liquid from the wound dressing). The patient and clinician continued to be pleased with the effectiveness of the ULTRASORBS AP Drypad to keep the bed linen dry and improve the patient's quality of life.

Review 4:

Two weeks from initial use, the clinician and patient were pleased with the efficiency of the ULTRASORBS AP Drypad to manage excess fluid from the primary wound dressing. The patient required mechanical debridement on the wounded area. ULTRASORBS AP Drypad continued to be used, and changed daily, and provide good performance (Figure 3). The wound began to improve, and an appropriate moist wound dressing was used as an antimicrobial dressing was no longer required. The drypad was changed daily, and so too was the bed linen in accordance with hospital protocol. The patient was very comfortable, and there was much improved fluid management.

FINAL COMMENTS

The clinician commented that the ULTRASORBS AP Drypad worked well to absorb excess moisture that had leaked from the wound dressing. The ULTRASORBS AP Drypad improved the comfort to the patient, through its softness, and its ability to keep the bed linen dry and promote an environment where excess fluid could be managed more effectively.

CASE 2: BILATERAL, CIRCUMFERENTIAL VENOUS LEG ULCERS IN A HOSPITAL SETTING

Author: Astrid Probst, Nurse in Wound Management, Kreiskliniken Reutlingen GmbH, Reutlingen, Germany

INTRODUCTION

A 78-year-old male patient had venous leg ulcers (VLUs) on the complete circumference of both lower legs, which had been present for a year, and was being cared for in a general hospital. He had diabetes mellitus and was on oxycodone for the pain.

At initial assessment, the patient's VLUs were inflamed and macerated, and very wet with exudate. The ulcer comprised 40% granulating tissue and 60% sloughy tissue (Figure 1). The surrounding skin was inflamed and the wound was painful (7 out of 10 on VAS scale). The VLUs were dressed with an activated charcoal dressing encased in a nylon sleeve with a highly absorbent dressing under compression therapy.

The patient's bed linen was frequently wet with excess exudate and needed to be changed twice a day. The previous moisture management products (hospital gauze sheets) proved ineffective in keeping the bed linen dry and were uncomfortable for the patient. The ULTRASORBS AP Drypad was chosen to be placed under each leg in order to absorb excess liquid leaking from the dressings of the VLUs. The clinician hoped the drypad would provide comfort for the patient and be effective at moisture absorption.

Review 1:

At first review the next day, the ULTRASORBS AP Drypads displayed much improved fluid management compared to previous fluid management products. The patient commented that the ULTRASORBS AP Drypads felt soft and the clinician commented that the drypads provided good performance overall as the bed linen remained dry. The bedding was changed as per the hygiene protocol of the ward. The condition of the patient's skin was improved, and the patient's level of comfort improved with no signs of odour, bunching up or separating of the drypad.

Wound management continued as before with the treatment plan as described above with the main goal to achieve effective moisture management using appropriate moist wound healing dressings and the ULTRASORB AP Drypad to avoid soiling of bed linen and protect the surrounding skin from exudate leakage.

Review 2:

After 3 days, the ULTRASORBS AP Drypads remained *in situ* with no adherence, leakage or strikethrough (Figure 2). The bed linen continued to be changed daily for this patient according to the ward protocol.

The patient was very comfortable as the drypad was soft and absorbed excess fluid from the dressing, ensuring the bed linen remained dry. As a result, the patient commented that the drypad helped preserve his dignity and improved his quality of life.



Figure 1: Initial review; VLUs on both lower legs on existing absorbent gauze sheets between dressing change



Figure 2: Review 2; Use of ULTRASORBS AP Drypad prior to dressing change. Please note, this product is not indicated for use as a primary wound dressing

Review 3:

A week after baseline, the ULTRASORBS AP Drypads were being changed daily. The drypads continued to hold the excess fluid and there was no sign of odour, leaking or strikethrough on the bed linen. The clinician noted that ULTRASORBS AP Drypads were a good option to ensure patient comfort and excess moisture management.

Review 4:

After 2 weeks, the patient continued to feel very comfortable using the ULTRASORBS AP Drypads. The bed linen was still changed daily but the ULTRASORBS AP Drypad did not adhere to the patient, or separate or bunch up. By this stage, the patient's surrounding skin had greatly improved and there was no more maceration to the skin.

FINAL COMMENTS

Throughout the use of the ULTRASORBS AP Drypads, excess moisture and leakage was no longer a main issue for this patient. The patient felt comfortable and commented that ULTRASORBS AP Drypads were soft to the skin. There was an improvement to the surrounding skin as a result of the treatment regimen described previously.

CASE 3: HIGH-EXUDING VENOUS LEG ULCER TO THE ANTERIOR SHIN

Author: Rosie Callaghan, Tissue Viability Specialist Nurse in Nursing Homes, Worcestershire PCT, UK

INTRODUCTION

A 74-year-old female nursing home resident had a venous leg ulcer (VLU) to the right leg, which had been present for over a year. She had diabetes, previous heart failure, and was on medication to treat pain and swelling.

At initial assessment, the VLU was weepy, infected and macerated, and very wet with exudate. However, the patient did not want to wear bulky dressings and could not tolerate compression. The ulcer measured 8cm (length) x 1cm (depth) x 4cm (width), and comprised 50% granulating tissue, 45% sloughy tissue and 5% necrotic tissue (Figure 1). The surrounding skin was inflamed and the wound was painful (6 out of 10 on VAS scale). As the patient could not tolerate compression therapy, an antimicrobial silver dressing was used to cover the open wound areas to treat the underlying infection. However, the dressing could not manage the high level of exudate, which meant the patient was unable to sit on the residential home's soft furnishings in case of leakage, which posed a potential hazard to other residents.



Figure 1: Initial review, before dressing change

Bed linen was frequently soiled and required changing 2 to 3 times a night. The frequent bed linen changes caused discomfort for the patient, and the team was concerned about laundry usage. During the day, to avoid her chair being soiled, a towel was used on the floor to absorb exudate when her legs were elevated.

The ULTRASORBS AP Drypad was selected to absorb the excess exudate leaking from the wound dressing, along with the wound management regimen described above, and staff were instructed regarding its use. The clinician commented that although the drypad did not look thick or absorbent, it would be very beneficial if it could absorb the excess fluid leakage.

Review 1:

Twelve hours after first placement, the ULTRASORBS AP Drypad was holding fluid well and the bed was dry, so did not need changing. The ULTRASORBS AP Drypad had moved somewhat as the patient moved in bed, but overall it stayed *in situ* and the patient remained very comfortable. She commented that there was less odour in the room in the morning and that the ULTRASORBS AP Drypad allowed her to sleep through the night and wake up in a dry bed. The patient looked forward to using the ULTRASORBS AP Drypad in a chair.

The surrounding skin condition improved with the new regimen involving antimicrobial treatment and leg elevation, and as such was continued. The patient was happy with the results and was able to socialise in the day room.

Review 2:

After 3 days' use, the ULTRASORBS AP Drypad continued to hold excess fluid from the antimicrobial dressing with no strikethrough or leakage, and the bed linen was not changed beyond routine changes. Odour had been contained, and although the patient's skin condition was unchanged, the ULTRASORBS AP Drypad had been very effective at managing excess fluid from the wound dressings. On average, the ULTRASORBS AP Drypad was changed 3 times a day. The patient continued to comment that using ULTRASORBS AP Drypad made her life more comfortable and she could socialise in the day room.

Review 3:

After a week using ULTRASORBS AP Drypads, the drypads continued to hold fluid with no strikethrough or leakage, maintaining patient comfort and containing malodour. The patient's skin condition had now improved due to the ongoing antimicrobial and antibiotic treatment. Also, not having wet skin improved the patient's dignity and comfort.

Review 4:

A week later, the ULTRASORBS AP Drypad was now changed daily, as the underlying cause of moisture was resolving. The clinician wanted to ensure the residential home kept a supply of ULTRASORBS AP Drypads in case of potential deterioration of the patient's condition. The patient remained comfortable, with improved quality of life and dignity.

FINAL COMMENTS

The clinician found the ULTRASORBS AP Drypad easy to use and would use the drypad again in the future. The drypad kept its integrity with no leakage, and no ripping or tearing on removal. For this patient, who declined compression therapy, the use of an antimicrobial silver dressing with an ULTRASORBS AP Drypad, allowed the patient to socialise comfortably, while also protecting the furniture and carpet from excess fluid.

CASE 4: EXCESS FLUID ABSORPTION FOR A FEMALE PATIENT WITH PHEMPHIGUS VULGARIS

Authors: Rosie Callaghan, Tissue Viability Specialist Nurse in Nursing Homes, Worcestershire PCT, UK
Jacqui Stephens-Haynes, Professor in Tissue Viability, Wound Healing Unit, Birmingham City University and Consultant Nurse, Worcestershire Health and Care Trust, UK

INTRODUCTION

A 94-year-old female patient had diabetes, Parkinson's disease and Phephigus vulgaris (Box 1), a dermatological condition that causes painful blisters to develop on the skin.

The patient had blisters of varying sizes of at least 2 weeks' duration on the arms, legs, abdomen and buttocks (Figure 1). During this time, she had been in bed for a week, and the staff were unable to move her. The blisters were macerated, inflamed and comprised 100% granulating tissue. Where open, wounds were covered according to local protocol, but the condition led to a situation where there was constant leakage. The wounds could not be dressed due to the number present and the pain the patient was experiencing (8 out of 10 on a VAS scale). The surrounding skin condition was also very poor.



Figure 1: Initial review; Phephigus vulgaris on the patient's leg

The patient's bed linen was frequently soiled and changed every 2 hours, suggesting that moisture management was an issue for this patient. Previously, towels and incontinence pads were used to absorb moisture, but these proved ineffective and difficult to use, and changing bed linen caused pain and trauma to the patient. This patient was very frail and at the end stage of her life, so it was important to ensure her comfort. Oral steroids were given for phephigus vulgaris and morphine was given for the pain. The ULTRASORBS AP Drypad was selected to make the patient more comfortable and to promote an environment where excess fluid could be managed more effectively. Two sizes of the ULTRASORBS AP Drypads were placed on the bed.

Review 1:

Two hours later, the ULTRASORBS AP Drypads were holding fluid very well with no strikethrough, and the patient was already more comfortable and relaxed. The ULTRASORBS AP Drypads had moved with the patient's movements, but they did not stick, separate or bunch up. They were easier to use and more absorbent than the incontinence pads or towels previously used to manage moisture issues, so the bed linen did not need to be changed. Use of ULTRASORBS AP Drypads was continued with daily reviews.

Review 2:

After 3 days, the ULTRASORBS AP Drypads were changed every 4 hours. Both quality of life and dryness of the surrounding skin, and the patient's dignity, were greatly improved. The patient's relatives commented that they were relieved as she seemed happier and more comfortable. Although the blisters were still present due to the underlying skin condition, the ULTRASORBS AP Drypads saved time and resources with reduced bed linen changes.

Review 3:

After 1 week, the ULTRASORBS AP Drypads continued to be changed every 4 hours. An ULTRASORBS AP Drypad had also been used while the patient sat in a soft-furnished chair to protect it from leakage. The clinician commented that the ULTRASORBS AP Drypads were providing a much better option than the previously used products.

Review 4:

After 2 weeks, the ULTRASORBS AP Drypads continued to absorb excess fluid and were changed twice daily, and bed linen was changed as per the local protocol. The patient was very comfortable and the patient's relatives were very happy that she appeared peaceful and in less pain. It was decided that the ULTRASORBS AP Drypads would be continued for this patient due to improved surrounding skin, quality of life and dignity.

FINAL COMMENTS

ULTRASORBS AP Drypads prevented the patient's bed from being soiled, which would require the linen to be changed, causing additional pain and discomfort to the patient. The ULTRASORBS AP Drypad allowed the patient to move from her bed and use a soft chair. Her visitors commented that she was more alert and appeared to be happier and more comfortable as a result of the change in management regimen with ULTRASORBS AP Drypads.

Box 1. Pemphigus vulgaris

Pemphigus vulgaris is a rare autoimmune condition that causes painful blisters within the epidermis to develop on the skin and lining of the mouth, nose, throat and genitals. Once the blisters burst, it leaves patches of open sores and leaves the skin vulnerable to infection. It is life-threatening and most commonly affects people between the ages of 50 and 60 years (Venugopal and Murrell, 2011).

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CASE 5: FEMALE PATIENT WITH PURPURA FULMINANS

Author: Astrid Probst, Nurse in Wound Management, Kreiskliniken Reutlingen GmbH, Reutlingen, Germany

INTRODUCTION

A 55-year-old woman was admitted to an intensive care unit (ICU) with confirmed *Purpura fulminans* (Box 1), which may have been as a result of having shingles 3 weeks before.

The patient had depression, arterial hypertension and hypothyroidism, and was taking the antibiotic meropenem for the *Purpura fulminans* infection, and was on a pain relief morphine pump. At initial assessment there were multiple blisters and some necrotic skin on the legs and buttocks but no open wounds. The surrounding skin was macerated and inflamed and the patient rated the pain at 9 on the VAS pain scale.

The patient's skin was generally in a poor state, and in addition to the blistering on the legs, there were early signs of bruising and blistering on the patient's arms. At this stage, moisture management was only an issue on the legs and buttocks. As a result of the *Purpura fulminans* diagnosis, extensive and widespread blisters were expected to form on the skin over the next 24–48 hours.

Hospital incontinence absorbent sheets were being used under the leg (Figure 1), as moisture management had been very difficult due to the patient's condition. Multiple ULTRASORBS AP Drypads were placed under the leg, and the patient and clinician were pleased with the soft feeling of the drypads on the skin.

Review 1:

The ULTRASORBS AP Drypads were left in place for one day, and there was no strikethrough or leakage on removal. The bed linen was also changed daily, which is the routine protocol of the ICU. The patient found the ULTRASORBS AP Drypads very comfortable, as they did not bunch up or separate. The areas of blistering were extending and beginning to become odorous; however, the clinician commented that the ULTRASORBS AP Drypads contained the odour. The ULTRASORBS AP Drypads provided much improved fluid management compared to the previous product (Figure 2). Given the diagnosis, the patient commented that she was reasonably comfortable, that her skin felt cared for, and that her dignity was preserved.

Review 2:

Three days later, the patient's condition continued to deteriorate, with extensive blisters occurring. There was no strikethrough or leakage on the ULTRASORBS AP Drypads, unlike previous products. The ULTRASORBS AP Drypads contained the fluid and odour seemed reduced. The drypads and the bed linen required changing twice a day.



Figure 1: Use of incontinence absorbent sheet placed under leg

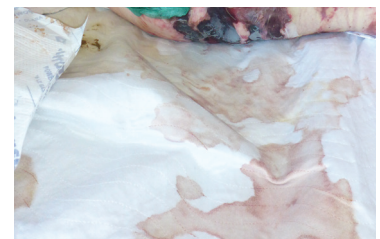


Figure 2: Review 1. Excess moisture from vulnerable areas. Please note, this product is not indicated for use as a primary wound dressing

Review 3:

One week later, the ULTRASORBS AP Drypads continued to be changed 2–3 times a day and the bed linen was changed twice a day as per hospital protocol. The patient commented the ULTRASORBS AP Drypad felt soft on the skin and that her skin felt dry.

The patient was transferred to a hospital with a plastic surgery department for the removal of necrotic tissue.

FINAL COMMENTS

The clinician commented that the ULTRASORBS AP Drypads were easy to use, and that they performed well at handling excess fluid. The clinician would use the ULTRASORBS AP Drypads again for a similar situation, especially as the patient felt it was soft on the skin and generally promoted patient comfort.

Box 1. *Purpura fulminans*

Purpura fulminans is a rare, acute, rapidly progressing, often fatal disorder, which presents as blood spots, bruising and discoloration of the skin caused by blockages in the small blood vessels of the skin. Purpura fulminans lesions, once established, often progress within 24 to 48 hours to full-thickness skin necrosis or soft-tissue necrosis (Chalmers et al, 2011). Once at this stage, healing takes between 4–8 weeks and leaves large scars. Without treatment, necrotic soft tissue may become gangrenous, leading to loss of limbs.

It is most common in babies and small children (Edlich et al, 2008), where it is often caused by genetic defects in the protein C anticoagulant pathway, but it is associated with sepsis and infection.

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