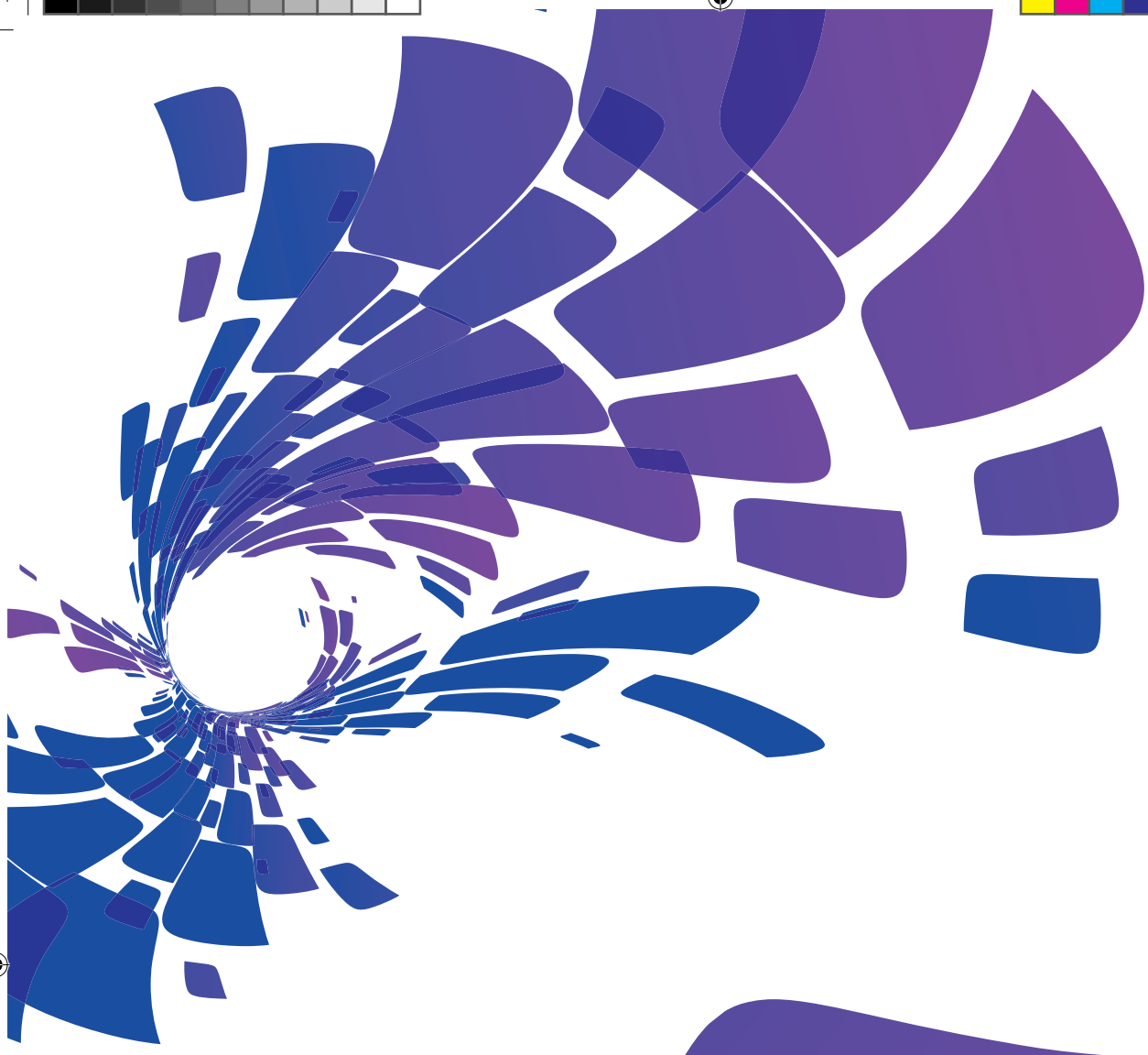

A multipurpose dressing

A clinical review of the absorption, debridement and healing properties of Aquacel Foam

An educational supplement in association with

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Contents

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Foreword

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Many dressing materials handle fluid by absorbing and/or allowing it to evaporate. Others, such as hydrocolloids and carboxymethylcellulose (CMC) fibres (Hydrofiber), retain a high proportion of absorbed fluid when compressed by enabling it to form a gel.[1]

Exudate contains electrolytes, nutrients, proteins, inflammatory mediators, protein-digesting enzymes (e.g. matrix metalloproteinases), growth factors and waste products, as well as various types of cells and water.[2] It keeps the wound bed moist and supplies it with proteins, growth factors, white blood cells, tissue-repairing cells and other essential nutrients.[3] Although exudate plays a central role in the wound healing process, it must be managed to prevent damage to the peri-wound skin, decrease the risk of infection and reduce dressing change frequency, which will, in turn, improve patients' health-related quality of life.

When choosing a dressing, consideration should be given to how well it can handle fluid, its ease of application/removal, patient comfort, length of wear time, its ability to avoid peri-wound maceration and its cost-effectiveness.

Foams are recommended as primary or secondary dressings for a range of wound types, including those with low, moderate and high exudate volumes. They aim to promote a warm, moist healing environment, can manage exudate and are available in adhesive and non-adhesive formats. However, are all foam dressings the same? Some traditional foam dressings are made from a polyurethane foam that allows exudate to be absorbed and retained, wicking either laterally or vertically. Aquacel Foam consists of a Hydrofiber wound contact layer that gels on contact with exudate and wound fluid, providing an optimal environment for wound healing. It is supplemented by a waterproof top layer, through which excess moisture can evaporate, and a soft absorbent pad, to enhance patient comfort. The silicone adhesive is skin-friendly, reducing the risk of skin damage during removal.

This supplement explores the clinical use of Aquacel Foam. It overviews the type and level of evidence available on this dressing, and explains how it differs from Aquacel primary dressings such as Aquacel Extra and Aquacel Ag+. The evidence review is supplemented by 10 case studies that help the reader link this evidence to real-life clinical situations.

Foams are one of the most commonly used dressings in clinical practice, with a range of brands available at various price ranges. In the current economic climate, practitioners must be aware of dressing cost and the recommended time they can be left in situ. Wet wounds often require more frequent dressing changes, and thus extra nurse hours, which increase costs. As such, it is important that practitioners are confident that the selected dressing will manage exudate; maintain a warm, moist healing environment; protect the surrounding skin; and reduce the need for frequent dressing changes. An algorithm designed to aid dressing selection is included in this document (see page S9).

I hope you enjoy reading this document and find it beneficial in clinical practice to support appropriate dressing choice and enhance outcomes for patients.

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A multipurpose dressing: role of a Hydrofiber foam dressing in managing wound exudate

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Chronic wound exudate is associated with stalled or delayed healing. Excess amounts will break down healthy tissue, increasing the production of slough and necrotic tissue. This will also create an ideal environment for microbial proliferation and place the surrounding skin at risk of maceration. It is vital, therefore, to select an absorbent dressing that can retain excessive exudate. This article describes how to achieve this. It introduces an absorbent dressing, Aquacel Foam, which not only retains exudate, but can also help remove devitalised tissue and promote healing

Managing wounds and choosing a suitable dressing can be challenging. It involves assessing the wound to determine the dressing requirements and then selecting the product most able to cost-effectively address these needs. This article describes dressing selection for exuding wounds. It emphasises that this requires an understanding of the role of exudate in the healing process, including why particular types of exudate are associated with stalled or delayed healing. This might make it easier to select a dressing with properties that enable it to counteract this. The article outlines the different types of absorbent dressings available and how this can influence selection. It also identifies the need for an absorbent dressing that can retain exudate, autolytically remove devitalised tissue and create a moisture balance that promotes healing.

The wound healing process

The wound healing cascade involves an overlapping, complex series of highly regulated and coordinated biological reactions. This takes place in four phases that are designed to achieve normal tissue repair.

Haemostasis/coagulation phase: this occurs when an injury is sustained or a surgical intervention is performed. Blood flow is restricted (vasoconstriction) and the clotting cascade is triggered, with platelets, fibrin and red blood cells forming the clot. This initial response is immediately followed by vasodilation and increased capillary permeability, during which the inflammatory phase is initiated.

Inflammatory phase: following localised swelling to the damaged area, white blood cells, growth factors and nutrients arrive at the injury site, along with enzymes to remove pathogens, damaged cells and infection. Histamine and prostaglandins, which are released from mast cells, are also drawn to the site and produce the signs of inflammation: redness, swelling, heat and pain.[1] This is a natural part of the healing process, but these signs can be mistaken for infection. Matrix metalloproteinases (MMPs), which are enzymes that play a pivotal role in the balance and regulation of this phase of wound healing, along with their inhibitors, tissue inhibitors of metalloproteinases (TIMPs), continue to promote wound re-epithelialisation and remodelling in the subsequent phases of the healing process.[2,3]

Proliferation phase: tissue repair takes place, with the production of collagen, elastin and the extracellular matrix. New blood vessels are formed (angiogenesis), and stimulation of fibroblasts, epithelial cells and keratinocytes, along with the supply of oxygen and nutrients to the area, lead to granulation tissue formation.

Maturation phase (also known as remodelling of the wound site): crucial players in this phase are fibroblasts, MMPs, TIMPs, growth factors and

macrophages, which remodel the collagen fibres to become more organised in their structure. Collagen is formed and becomes tense, toughening the skin/scarring at the affected area, although this skin generally has only up to 80% of the usual tensile strength of non-injured skin.[4]

Acute versus chronic wounds

In acute wounds, the healing process is succinct and each phase is progressive. In its inflammatory phase, proteases released are regulated and the wound quickly moves to the proliferative phase of healing.

A disturbance in these synchronised reactions, predominantly during the inflammatory phase, results in a chronic wound. In essence, the wound becomes non-healing (static) or slow to heal.[5] Excess levels of MMPs[2] and inflammatory cytokines, which prolong the inflammatory phase,[6,7] are found in chronic wounds. Specific types and high levels of MMPs are related to a wound's severity and chronicity.[8] The increase in MMPs keeps the wound in a static, inflamed and hypoxic state. This can result in increased exudate production, malodour and pain, along with the clinical signs of inflammation.[1] The accumulation of slough and/or necrosis is an indicator of persistent chronicity and requires debridement to prepare the wound bed for healing.[9]

There are differing views as to when a wound can be considered to have become chronic, ranging from 2 weeks to 3 months. However, chronic wounds are mainly categorised as those that fail to progress and heal.[10-12] By the time a wound has been reported by a patient, referred and seen by a practitioner, it may well be labelled as chronic, particularly if the patient has several comorbidities.

There is a correlation between the duration of a chronic wound and the time it will take to heal.[13] Chronic wounds are often considered complex, but is it the wound, or the patient, that is complex? Many patients with chronic wounds have underlying medical conditions and comorbidities that can disturb the wound healing cascade and impair healing. Comorbidities include diabetes, peripheral vascular disease (venous and ischaemic), cardiovascular disease, obesity, psychological issues and other chronic medical conditions. Managing the combination of chronic wounds with these underlying complications brings about the complexity. Addressing these underlying issues is key. Suboptimal management of patients and their wounds will delay healing, waste resources and can pose unnecessary risks to the patient.[14,15]

Understanding the differences between acute and chronic wounds will help practitioners provide the right treatment. It is essential, therefore, to be able to recognise which phase of the healing process a wound is in, through comprehensive assessment, and to monitor its progression.

The management of chronic wounds imposes a huge financial burden on health services. In the UK, this is estimated to be £4.5–5.3 billion.[16] In the US, the estimate is $25 billion per year.[1]

Wound assessment

Wound assessment, including aetiology and diagnosis of the wound type (neuropathic, ischaemic, pressure), is crucial.[17] This aids appropriate treatment planning, including the selection of dressings and other therapeutic options. The location, size, exudate level, state of the wound bed and edges, the presence of malodour, pain, colonisation, infection (local and spreading), biofilm status and the condition of the peri-wound skin all influence wound management.[18] If clinical signs of infection are present and spreading, a wound swab culture or tissue culture may be considered, to identify the microorganisms present and give guidance for appropriate antibiotic therapy.

At each patient consultation, the wound should be assessed, rather than the dressing just being changed.[17] Comprehensive and accurate documentation on a wound assessment chart and in the clinical notes each time a patient is treated will enable progression to be monitored. The information recorded should include the wound size; this should be a three-dimensional measurement (length x width x depth, recorded consistently in either mm or cm) that captures the wound's progression as the base fills with granulation tissue and the edges contract during the proliferation phase. This can indicate the healing trajectory and effectiveness of the treatment plan.

Expertise is required to help the patient accept and understand that they have a wound. Listening to the patient, taking note of their concerns, explaining their treatment options and agreeing a management plan with them is vital to achieving concordance. A good relationship between the practitioner and

patient has been shown to produce better healing outcomes.[19,20] It is important that patients understand that dressings alone will not heal the wound, but rather play an important role in the overall treatment plan.

Pain, malodour and exudate level can be debilitating for patients and cause psychological stress, social isolation and even clinical depression,[21] affecting the quality of their everyday life. A patient's treatment plan should reflect all their anxieties and psychological issues, which should be noted in their records.[22] These issues and stresses can be alleviated when patients who are involved in dressing selection and the decisions about treatment subsequently observe their wound progress towards healing.

Pain can be a serious complication for some patients and is known to interfere with healing.[23] As pain is subjective, it is difficult to measure. Pain receptors become sensitised when cells are injured or inflammation occurs. Trauma at dressing change can trigger stress responses and increase pain. Some patients require analgesia in a formula to suit them. In some parts of the world, the US in particular, the trend towards providing continual prescriptions for pain relief is becoming a dilemma, as the incidence of dependency is increasing. This highlights the need to choose a dressing that decreases pain and trauma at dressing changes.[24]

Assessment of exudate

Wound exudate can be either a positive or negative factor, depending on the circumstances. In acute wounds, exudate production is a normal biological function: it diffuses growth and immune factors, promotes cell proliferation, provides nutrition and helps clear devitalised or unwanted tissue. The exudate volume will decrease as the wound heals.[25]

Exudate can vary in consistency, colour, odour and volume, all of which, if disproportionate, can delay healing (*Table 1*). Increased or excess amounts of exudate can be indicative of a high bioburden, which will increase the risk of infection, due to promotion of bacterial proliferation, maceration, excoriation and malodour. Leakage caused by the use of inappropriate dressings and/or an unsuitable dressing change frequency can cause healthy peri-wound skin to break down and become infected.[26]

The cause of the excess exudate must be assessed.[27] *Table 2* lists possible causes. Increased exudate in a chronic wound can damage the wound, stall or delay healing and affect peri-wound tissue, resulting in maceration and excoriation. Excess exudate, along with devitalised tissue, provides an ideal environment for bacterial proliferation both in the wound bed and surrounding skin. Debridement of devitalised tissue and biofilm will help reduce the volume of exudate and help the wound progress towards healing.[28]

Following dressing removal, observation of the colour, consistency and amount of exudate absorbed, as well as the presence of any malodour, can aid wound management. Describing this in the clinical notes can be challenging, and there is often a tendency for subjectivity. Clinicians use the symbols +, ++, +++ or the terms low, moderate and high to denote the exudate level,[29] but what do these actually mean? *Table 3* offers explanations that may help alleviate

Table 1. Types of exudate[32,40]

Type of exudate	Consistency	Colour	Indications
Serous	Thin, watery serum	Clear/pale yellow/ straw	Small amounts are normal in inflammatory phase Increased bioburden with higher exudate level
Sanguineous	Signs of red blood cells, often fresh blood	Pink/red	Can be normal at low level Indicates trauma to wound bed at increased levels
Serosanguineous	Thin, watery with blood	Pink/red	Normal at lower levels
Seropurulent	Thin, watery, cloudy Contains some pus	Yellow/tan	Can suggest infection
Purulent	Thick, opaque. Contains pus	Tan/yellow/green/ green-blue/brown	Not normal at any level Associated with increased bioburden and infection
Haemorrhagic	Viscous	Dark red	Bleeding due to infection and/or trauma

Table 2. Causes of excess wound exudate[41]

Causes of high exudate	Interventions required
Wound infection[42]	Topical antimicrobials (local infection), antibiotic therapy (spreading infection)
Biofilm[43,44]	Cleansing products and debridement (sharp), debridement pad, specialist primary dressings
Devitalised tissue[45]	Debridement (sharp, surgical, autolytic, mechanical, enzymatic, biological)
Venous disease[46,47]	Vascular surgery interventions. Compression therapy or garments/hosiery
Lymphoedema[48]	Compression garments/hosiery
Heart failure[49]	Elevation, prescribed diuretics, light compression
Chronic inflammation[50]	Management with absorbent dressings

some of the subjectivity. It is important that all clinicians involved with a patient understand and use the same descriptions consistently, and record their findings in the wound assessment documentation at each dressing change. The exudate level will determine the dressing change frequency required each week.

Malodour is not always a sign of wound infection as it can be due to an increase in the volume or change in the type of exudate, and so requires careful monitoring. Foul, pungent, musty malodour, however, can be a sign of microbial colonisation and infection.[30]

Exudate management

It is essential that chronic wound exudate is managed to reduce its potential detrimental effects on the wound and peri-wound skin. The treatment and/or dressing chosen should be able to absorb and retain the exudate, thereby avoiding maceration.[26] The dressing should be comfortable and not cause pain during application and removal. It should also create a moist environment and act as a barrier, thereby reducing the risk of infection. It is a bonus if the dressing can aid desloughing and the removal of unwanted exudate and tissue debris.

Table 3. Quantification of the terms used to describe exudate levels

Describing exudate (amount)	How to quantify
None	None found on dressing removed or dried old exudate
Low, scant, minimal (+)	Less than 25% of the dressing removed is covered with exudate
Moderate (++)	25–75% of the dressing removed is covered
High, copious, heavy (+++)	More than 75% of the dressing removed is covered

Dressing selection

There is a drive towards considering the cost of dressings,[16] as well as their suitability and effectiveness. A dressing's ability to save clinicians' time also needs to be factored in: infection, maceration, delayed healing and its associated complications, as well as any associated pain and anxiety, all add to the overall treatment costs.[31] Choosing a dressing for the patient, based on individual needs, can help reduce some of these costs. A vast array of dressings is available, all with substantial marketing claims. The evidence supporting their use therefore needs to be analysed critically.

An evidence-based understanding of each dressing's mechanism of action is important. The dressing should be suitable for the wound location and size, and be able to cope with the exudate level. In essence, the decision is based on what the practitioner needs the dressing to do for a particular wound and patient. The dressing should be appropriate for the tissue type and able to manage the exudate volume and viscosity, protect the peri-wound skin and suit the patient's lifestyle, activity level and social needs—hence, the importance of ongoing wound assessment.[32]

Absorbent dressings

Absorbent dressings are predominantly available as foams or superabsorbents. They can be used as primary or secondary dressings, depending on the amount of exudate present and the nature and location of the wound. The idea is to absorb and retain the exudate, particularly if it is excessive. Dressing costs vary, as do their absorption and retention properties. Other functions also differ, including the mechanism by which it absorbs exudate, how it interacts with the wound bed and its fluid-handling ability.

In the case of a cavity or deep wounds, the appropriate primary dressing can be used underneath the secondary dressing to enable contact with the wound bed. Ideally, any slough or debris on a wound bed should be removed to facilitate healing. In clinical practice, alginates or Hydrofibers are often used as primary dressings to assist with autolytic debridement and manage slough and exudate, with foam or superabsorbents applied as secondary dressings. In addition, hydrogels can be applied to rehydrate dry wounds to debride eschar and necrosis.[32] Various combinations of primary and secondary dressings are available.

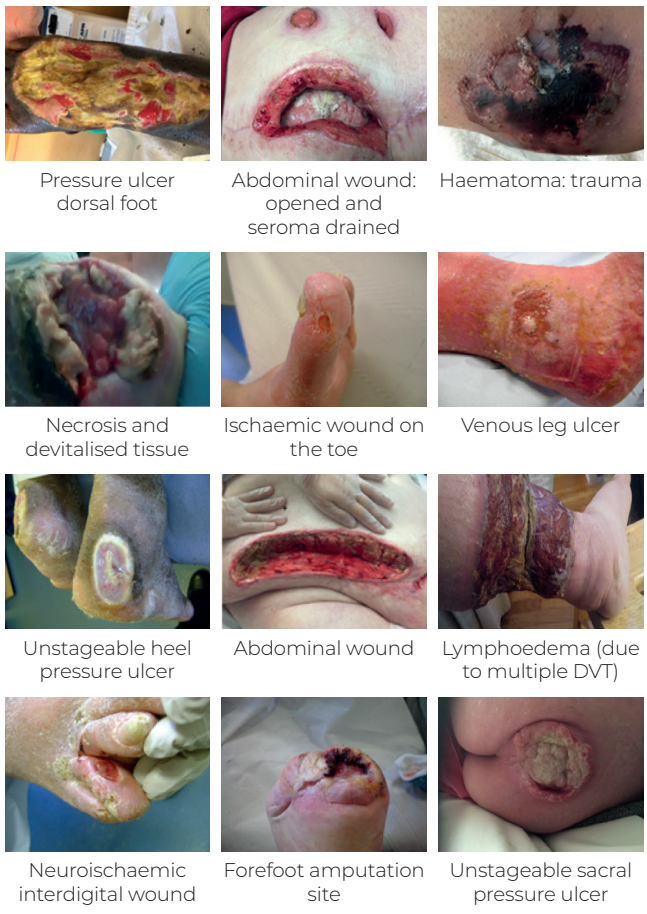

Figure 1. Examples of indications for Aquacel Foam
DVT = deep vein thrombosis

Introducing Aquacel Foam

Like other foam dressings, Aquacel Foam is a multilayered absorbent foam pad that absorbs and retains fluid. However, it also has an interactive contact layer (Hydrofiber), which not only helps manage the exudate, but also assists with desloughing and the removal of wound debris.

Aquacel Foam contours to the wound surface, forming a gel when in contact with wound fluid.[33] The gel prevents lateral movement of fluid and then 'locks in' and removes excess exudate by vertical wicking, creating a moisture balance on the wound bed.[34] This mechanism also enables it to trap bacteria and protect the peri-wound skin.[33,35] The outer layer is a waterproof viral and bacterial barrier.[34,36]

The gel-forming Hydrofiber stops the dressing sticking to the wound, thereby supporting non-traumatic dressing removal, with minimal pain to the patient.[37] In a multicentre evaluation on Aquacel Foam dressings involving 75 patients, 84% reported no pain during dressing removal, and patient comfort was generally rated as excellent.[38]

Aquacel Foam is categorised as a foam dressing with additional benefits, and it is designed for use in every phase of the wound healing process.[34]

Examples of the use of Aquacel Foam (both the non-adhesive and adhesive versions) alone or in combination with Aquacel Extra or Aquacel Ag+ Extra are demonstrated in *Figure 1*.

Aquacel Foam can be used on a range of wounds, from skin tears and abrasions, to moderately to highly exuding wounds on any site of the body, as demonstrated in *Figure 1*. It can also be used to protect against friction and potential skin breakdown of vulnerable areas, such as the heels or elbows. The range of shapes and sizes available, along with adhesive bordered or non-adhesive versions, are

designed to ensure that hard-to-dress areas can be covered securely, with good conformability to body contours, to allow the dressing to remain in place. The decision of whether to use an adhesive or non-adhesive version should be based on clinical judgement. For example, an adhesive version may not be suitable for areas that are prone to sweating, as prolonged use can cause maceration or irritate the skin.

Unlike other foam dressings, Aquacel Foam can also be used under compression.[34] It can be cut to shape,[34] and its ease of application and removal, whether by clinicians or patients, has been reported as excellent.

A clinical evaluation has suggested that the use of Aquacel Foam resulted in increased wear time, reduced dressing change frequency and improved exudate management,[37] with noticeable changes reported in the maintenance of peri-wound skin integrity. The evaluation suggested that, where appropriate, Aquacel Foam can be used as a single dressing, where previously a primary and secondary dressing were applied, thereby saving costs.

For wounds with depth or a cavity, Aquacel Extra/Aquacel Ag+ Extra can be used as a standalone Hydrofiber, as a primary dressing under a secondary dressing, to make contact with the wound bed, to aid desloughing, remove debris and absorb excess exudate.

In the authors' clinical experience, using Aquacel Foam as a secondary dressing over a Hydrofiber dressing has managed highly exuding wounds more effectively than other silicone foam secondary dressings, particularly in terms of protecting the peri-wound skin. This is because Aquacel Extra and Aquacel Foam dressings are designed to work together (*Figure 2*). If an incompatible dressing is used in combination with a Hydrofiber, this can compromise exudate retention.[39]

Company claims that are based on laboratory studies about a dressing's mode of action and outcomes need to be verified in clinical practice, with feedback from both practitioners and patients. Evidence on the efficacy of the Aquacel Foam dressing range comes from both *in vitro* and clinical evaluations, with the latter including positive feedback from both patients and clinicians.

In summary, understanding and treating the underlying causes of non-healing wounds and managing wound exudate and any increased bioburden are essential to facilitate healing. Selecting the right dressing is crucial to wound management. Aquacel Foam has been shown to be an effective and reliable product for all wound types when used as part of the treatment plan. Its ability to manage wound slough and debris, as well as to absorb and retain excess exudate and protect the peri-wound skin, are key benefits.

The rest of this supplement comprises case studies describing the use of Aquacel Foam in clinical practice, giving an insight into its use in the real world with real patients.

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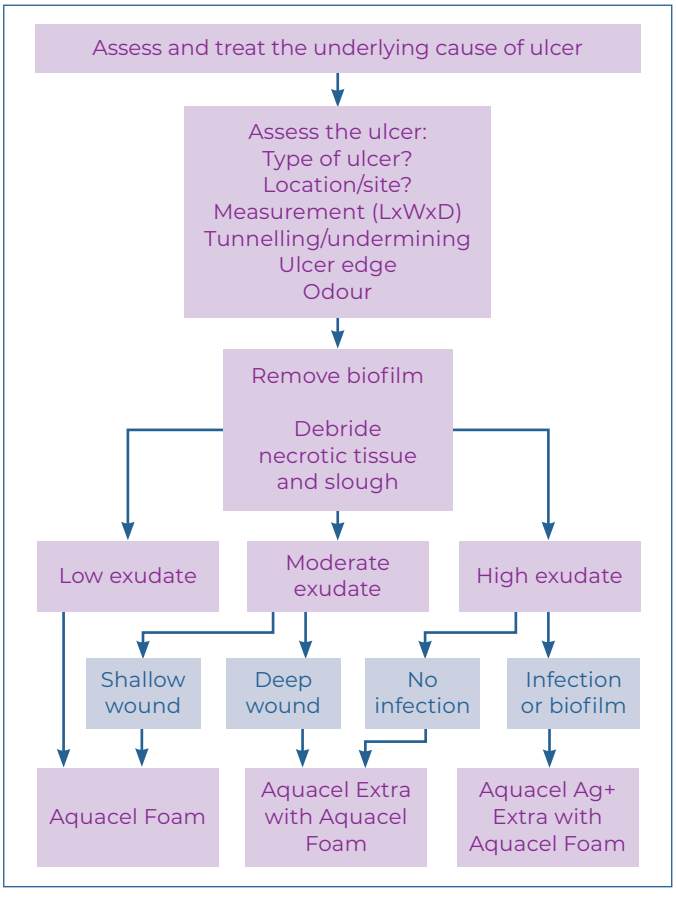

Figure 2: Algorithm for choosing Aquacel Foam

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Case 1: burn scar on the armpit

Franck Duteille, MD, Professor of Plastic Surgery, Burn Centre, Centre Hospitalier Universitaire (CHU) de Nantes, France

This 23-year-old patient was left with a burn scar on his armpit following a road traffic accident. Two years later, the scar re-opened. The patient had no morbidities and was not taking any medication. He smoked five cigarettes a day.

Four months later, the patient presented with a chronic wound that measured 4x2 cm and was mostly covered with poor granulation tissue (*Figure 1.1*). It was producing a high volume of exudate. There was a small area of maceration around the wound edges and the peri-wound skin was inflamed.

Frightened that any movement would increase the flow of exudate, the patient was reluctant to move his arm. In addition, due to the high exudate volume, he had to change his clothes regularly, which affected his quality of life.

Initial treatment comprised paraffin-impregnated gauze and then a calcium alginate fibre pad. Daily dressing changes were required, which the patient found very painful. Even when he did not move his arm, his self-reported pain score for both ongoing pain and pain at dressing change was 4.5 on a scale ranging from 1 to 8. A nurse mechanically debrided the wound with a simple compress when washing the patient in the shower.

One week later, Aquacel Foam was applied as the primary dressing (*Figure 1.2*). It absorbed the exudate well. Dressing change frequency reduced to every 3 days and the peri-wound inflammation decreased. The patient stated he was experiencing less pain, possibly because the dressing changes were now less frequent.

Due to the reduction in pain and use of a less bulky dressing, the patient was able to move his arm more and could soon shower independently. He commented, 'I was able to, again, have a normal life.'

The wound healed in 2 weeks. Initially, it contracted slowly, but then reduced by 25% and 75% on days 8 and 12, respectively. *Figure 1.3* shows the healed wound.

What were your primary reasons for using Aquacel Foam?

To promote healing in a heavily exuding chronic wound.

Describe its effects on slough and peri-wound maceration

There was no slough or maceration on this wound.

How did it promote wound healing and patient wellbeing?

The patient no longer had to endure daily dressing changes, or to keep changing his clothes because of the exudate.

What types of wounds will you use it on in the future?

I will use it on heavily exuding wounds. I will also use it to help prepare exuding granulating wounds for skin grafting.

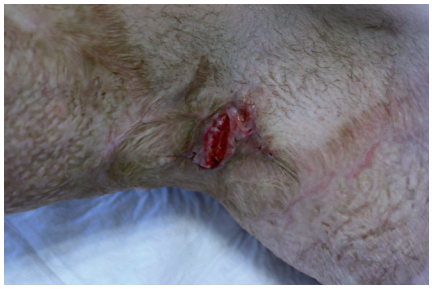

Figure 1.1. The wound at presentation after treatment with paraffin-impregnated gauze and a calcium alginate fibre pad

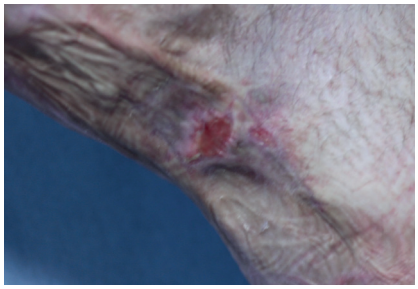

Figure 1.2. The wound after 7 days of treatment with Aquacel Foam

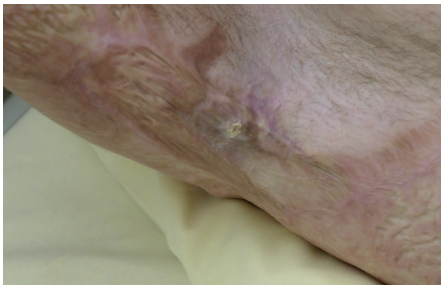

Figure 1.3. The wound 30 days after initiation of treatment with Aquacel Foam (approximately 2 weeks after full healing)

Case 2: deformed, ulcerating toe

Angela Walker, Podiatry Lead Clinical Specialist, Birmingham Community Healthcare NHS Foundation Trust, UK

A 59-year-old self-employed engineer, whose work involves physical, manual labour, was referred to podiatry with an apical wound on the first toe on his left foot. The patient had felt pain and discomfort in his toe, but attributed it to the kneeling required for a particular job and only became concerned when he noticed the skin had broken down. The toe had been treated by his practice nurse with adhesive foam dressings for the previous 4 weeks.

The patient has diabetes, which is controlled with oral medication. His comorbidities include hypertension and hypercholesterolaemia, and he has a history of deep vein thrombosis, for which he is taking warfarin. His neuropathic and vascular status is satisfactory. He attends clinic 'dressed for work,' with oil-stained clothes and shoes. His personal hygiene is poor. Due to his work commitments, he has a tendency to miss clinic appointments.

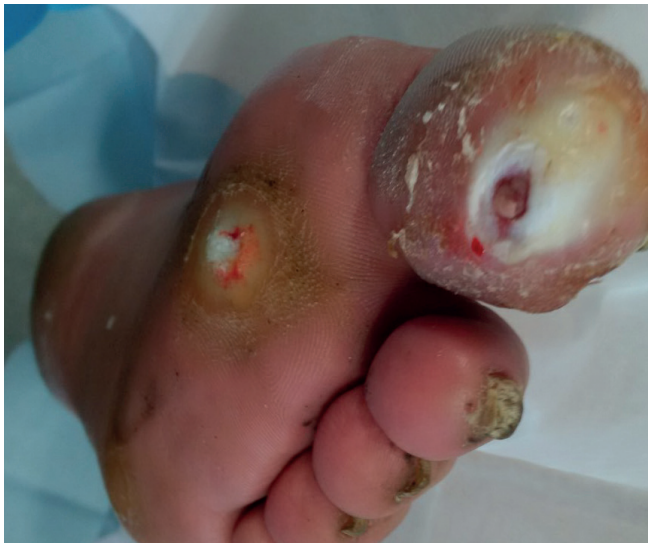

Figure 2.1. Wound at presentation

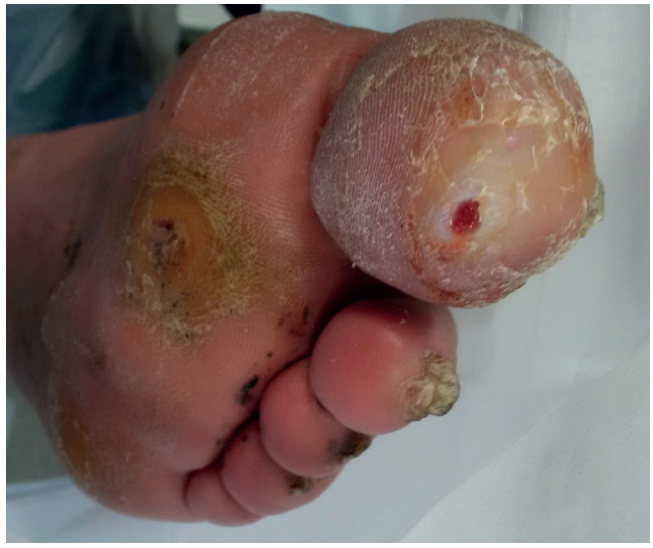

Figure 2.2. Wound after 1 week of treatment

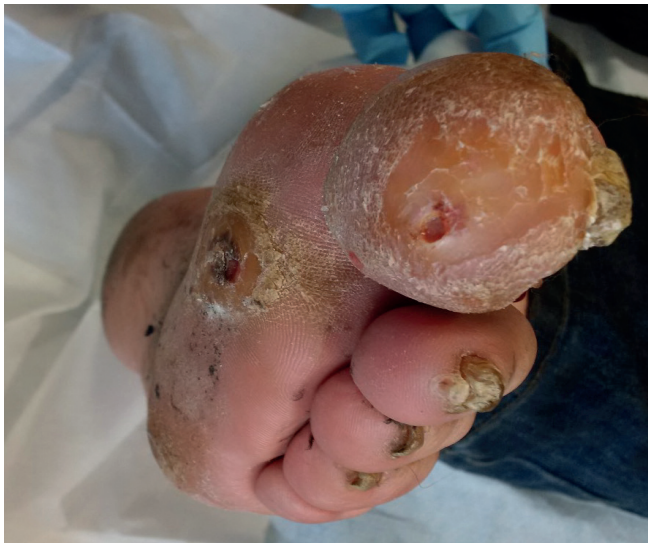

Figure 2.3. Wound after 2 weeks of treatment

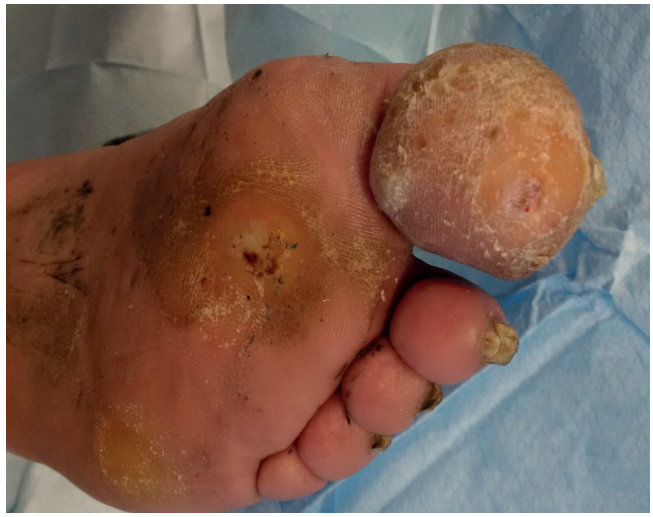

Figure 2.4. Wound after 4 weeks of treatment with 90% epithelial tissue

At the initial assessment, the patient reported that the toe had recently become deformed and was ulcerating. There were clinical signs of infection (inflammation, malodour and a moderate level of exudate) and possible osteomyelitis.

Debridement revealed a 7x7 mm wound (*Figure 2.1*). When probed, it was 10 mm deep, with the medial side extending down to the bone. The wound bed was granulating, with a very thin layer of slough. The peri-wound skin was heavily callused and macerated.

Aquacel Foam (non-adhesive) was applied as a primary dressing. The dressing was secured with an elasticated tubular bandage. The patient was referred for an X-ray to confirm osteomyelitis and, based on the clinical findings, started on a 2-week course of antibiotics (flucloxacillin 1g four times daily).

The patient took on board advice, given at the outset, to buy new work boots (his old ones were very worn and oily). Due to other foot problems, he was also given new insoles. He was also prescribed a waterproof protector to wear when showering. The patient adhered to the treatment regimen, keeping the dressing in place and dry.

At the first follow-up appointment after 1 week of treatment, the wound measured 5x5 mm and the peri-wound maceration had greatly reduced (*Figure 2.2*). Following a diagnosis of osteomyelitis, the antibiotics continued to be prescribed.

After 2 weeks, the wound measured 4x4x7 mm and little maceration was evident (*Figure 2.3*). The dressing had stayed in place well, and was durable, particularly considering the active, physical nature of the patient's work.

By week 4, the wound had healed, but the toe was still deformed. It was explained to the patient that, even though the wound had healed, the bone was still infected, and he was encouraged to complete the whole course of antibiotics (now flucloxacillin 1g four times daily) (*Figure 2.4*).

The patient was delighted that the wound healed so quickly. He could see the progress for himself at each dressing change, and was particularly pleased that the maceration, which initially had been so prevalent, had resolved and the toe looked much better. The pain he had initially experienced disappeared and he remarked how comfortable the dressings were, especially given that he was so busy at work.

Aquacel Foam was exactly the right dressing for the exudate and slough present in this wound, and it was also able to protect the peri-wound area. It was durable and stayed in place, despite the patient's active job and the missed appointments. The osteomyelitis resolved within a few weeks and the toe assumed a more normal shape.

What were your primary reasons for using Aquacel Foam?

The wound presented with a low-to-moderate volume of exudate: Aquacel Foam, used as a primary dressing, was sufficient to handle and retain it.

Describe its effects on slough and peri-wound maceration

It resolved the maceration quickly: it not only absorbed and retained the exudate, but also allowed the peri-wound skin to dry out during this process.

How did it promote wound healing and patient wellbeing?

Involving the patient in his management plan and allowing him to see the wound progress towards healing helped relieve the anxieties associated with having a wound. For this patient, use of Aquacel Foam was a real positive.

What types of wounds will you use it on in the future?

I will use it to manage exudate and protect vulnerable areas, particularly when a durable and conforming dressing is required.

Case 3: multiple open and closed blisters

Astrid Probst, Advanced Nurse Practitioner, Kreiskliniken Reutlingen, Germany

In January 2019, a 70-year-old male patient presented at the diabetic foot clinic with two swollen lower limbs, with the right one having multiple open and closed blisters (*Figure 3.1a and b*). The patient is a smoker with a history of type 2 diabetes mellitus since 1999, and his HbA1c level is 10.6%. Comorbidities include arterial hypertension and paroxysmal atrial fibrillation. The patient has a history of diabetic foot ulceration. Prior to attending the diabetic foot clinic, the blisters had been treated with a microbial-binding dressing, a superabsorbent and short-stretch compression therapy.

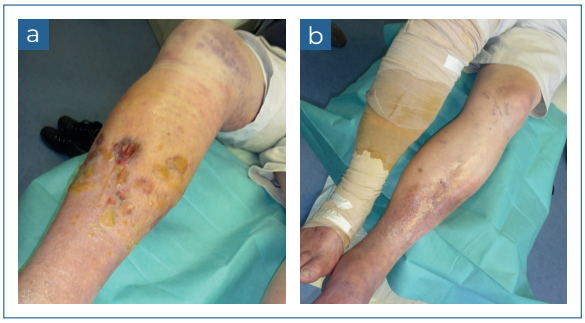

Figure 3.1. The two legs at presentation: the right leg had multiple blisters

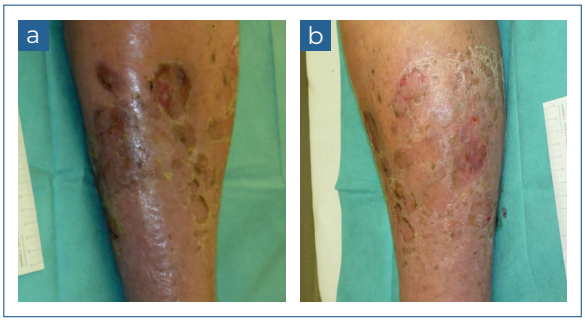

Figure 3.2. The blisters after 4 days of treatment with a lipidocolloid primary dressing and a superabsorbent secondary dressing

Following the presentation on day 0, a dressing containing lipidocolloid technology was applied to autolytically remove the blisters. A superabsorbent secondary dressing was also used, and reduced compression in the form of elasticated viscose stockinette was applied to both legs. As wound swab culture showed very sparse growth of Staphylococcus spp., no antibiotics were applied. The patient, who was 115.5 kg and 200 cm tall at presentation, had gained more than 14 kg of weight in the previous 14 days. He was therefore admitted to the cardiovascular department, where intravenous diuretics were applied.

At the next follow-up visit, on day 4, three blisters were still present, measuring 2x1 cm and 5x3 cm. The other blisters were healing (*Figure 3.2a and b*). The right leg was still swollen, but had not increased in size. The patient had lost 1.5 kg.

The oedema in both lower limbs was assessed using the Tivita tissue camera (Diaspective Vision).

Aquacel Foam was applied to the right limb only. The rationale for selection was to protect the skin under compression therapy. The nurses were told to check the temperature of the toes regularly and to remove the bandages if the patient complained of pain.

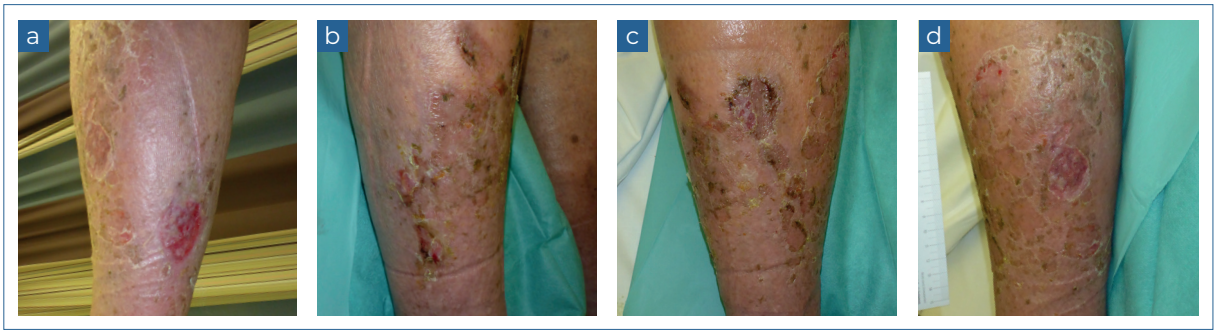

Figure 3.3. The right leg after 1 day's treatment with Aquacel Foam

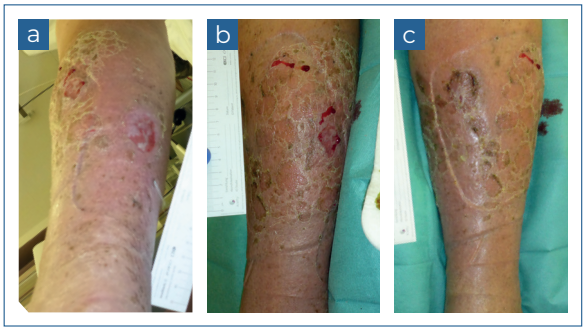

Figure 3.4. After 3 days' treatment with Aquacel Foam, there is more epithelial tissue on the blisters

The dressing was removed on day 5, so that the effect of the compression on the oedema could be assessed with the tissue camera and, bearing in mind the patient's diabetes, the skin observed for any signs of breakdown. The camera showed that the oedema had reduced, which was attributed to the compression and diuretics. There was no skin damage, and both legs and feet were warm. The open blisters had not increased in size, and there appeared to be some epithelial tissue (*Figure 3.3*). The dressing had absorbed and retained the exudate well.

Aquacel Foam continued to be applied, but the elasticated viscose stockinette was replaced with a two-layer reduced compression bandage system. We set out to determine whether this thin dressing could protect the skin from pressure damage under compression therapy. The patient had lost a further 1.2 kg.

At the next assessment, on day 7, the swelling in both legs had reduced and there was more epithelial tissue on the three blisters (*Figure 3.4*). The patient had lost a further 3.4 kg.

On day 9, assessment revealed that one blister (on the upper side of the lower leg) had closed and the other two blisters (on the calf) were progressing well, both now measuring 2x1 cm (*Figure 3.5*). The patient had lost 2.2 kg, and weighed 109.4 kg. The tissue camera showed that the oedema in both legs had completely disappeared and there was no pressure damage to the skin. As this was now dry, a panthenol-containing ointment was applied.

Dressing change frequency reduced to 3–4 days. The nurses were told to check the temperature at the toes every shift, and to remove the compression if a change in temperature or pain occurred. The patient was discharged before complete healing occurred.

What were your primary reasons for using Aquacel Foam?

The primary reason was to protect the skin under adhesive compression bandaging. No pressure or skin damage occurred. We also wanted a dressing that could handle moisture and promote granulation tissue formation and epithelialisation. Aquacel Foam did exactly that.

Describe its effects on slough and peri-wound maceration

There was no maceration. As the peri-wound skin was dry, we applied a panthenol ointment.

How did it promote wound healing and patient wellbeing?

Used in combination with compression, it helped promote wound healing, as can be seen in the figures.

What types of wounds will you use it on in the future?

In the past, finding a dressing that can prevent pressure damage under compression therapy, particularly in patients with peripheral arterial disease and/or diabetes, has been a challenge. Such a dressing should also be able to prevent maceration. Aquacel Foam achieved both objectives in this case. For this reason, we will consider it for this indication in our daily practice.

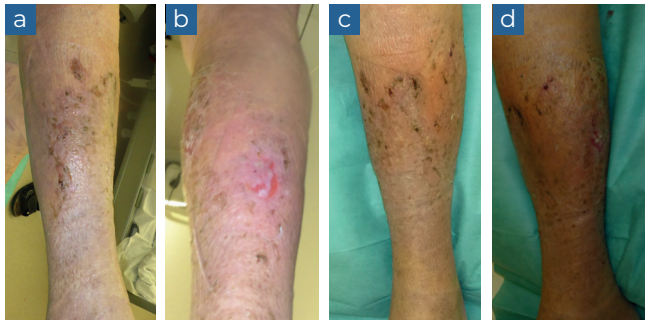

Figure 3.5. After 5 days' treatment with Aquacel Foam: one blister has closed and the other blisters are progressing well

Case 4: wounds associated with chronic progressive multiple sclerosis

Astrid Probst, Advanced Nurse Practitioner, Kreiskliniken Reutlingen, Germany

In November 2018, a 58-year-old male patient was admitted to hospital because of a deterioration in his primary chronic progressive multiple sclerosis (MS). He had a history of non-healing wounds on the lower left leg, for which he had sporadically attended the hospital, mainly for surgical debridement. He was in severe pain, which made it difficult to undertake manual lymphatic drainage and precluded the use of compression therapy, including wraps. Unfortunately, the primary chronic progressive MS made it extremely challenging to provide effective pain relief, even with support from the pain team. He also had hypertension and was a cigarette smoker (40 pack years). He had no known history of venous disease.

On day 0, there were two wounds on the lower left leg: one on the lateral side measuring 9x8 cm (*Figure 4.1a*) and another on the medial side measuring 9.5x7 cm (*Figure 4.1b*). Both were mostly covered with slough, and the peri-wound skin was macerated and red. A third wound was located on the right lower leg. It measured 5.5x3.5 cm, and was also mostly covered with slough tissue, although some granulation tissue was visible (*Figure 4.2*). All wounds were producing a high volume of exudate. The patient said the wound pain had been progressively increasing**,** rating it as 8/10. This, combined with the deterioration in the primary chronic progressive MS, had reduced his quality of life.

Routine wound swab cultures of all three wounds showed sparse growth of *Proteus mirabilis*, moderate growth of *Escherichia coli* and Enterococcus spp., and plentiful growth of *Staphylococcus aureus*.

The patient was unable to tolerate sharp debridement to remove the slough, despite the prior (one hour) application of Emla and oral analgesia. The pain unit at the hospital advised that the MS might have neutralised the medication. A hydro-responsive dressing (HydroClean, Hartmann) had effectively cleansed the

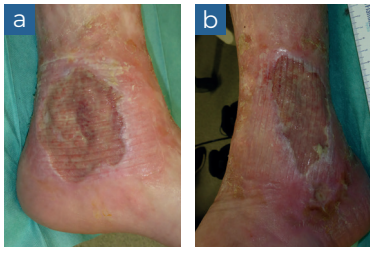

Figure 4.1. The two wounds on the left leg: lateral (a) and medial (b) sides

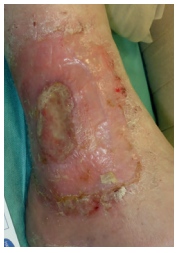

Figure 4.2. The third wound on right leg

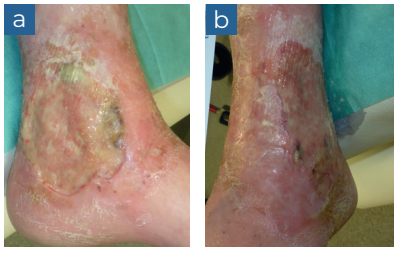

Figure 4.3. The left leg after 12 days' treatment with a hydro-responsive dressing

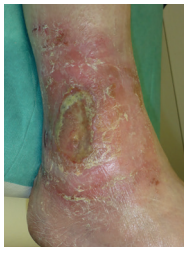

Figure 4.4. Wound on the right leg

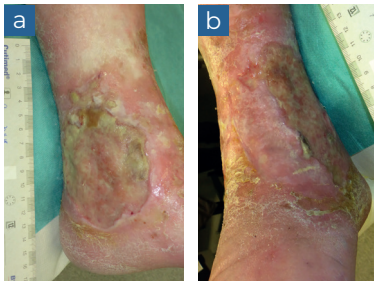

Figure 4.5. The wounds on the left leg after 4 days' treatment with Aquacel Foam

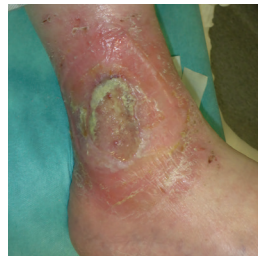

Figure 4.6. The wound on the right leg after 4 days' treatment with Aquacel Foam

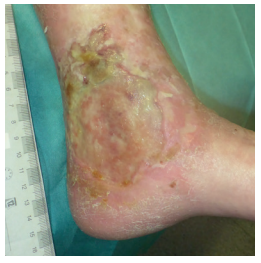

Figure 4.7. The wounds on the left leg after 8 days' treatment with Aquacel Foam

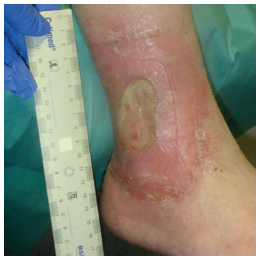

Figure 4.8. The wounds on the left leg after 8 days' treatment with Aquacel Foam

wound, but some maceration occurred as the dressing used was too big and so hydrated the surrounding skin. We did succeed in applying reduced compression or elasticated viscose stockinette (10mmHg) to the limbs.

Following this appointment, the district nursing team undertook mechanical debridement with saline solution and gauze, changing the dressings every second day.

The next follow-up visit with the hospital's advanced nurse practitioner for wound care took place on day 12. There was little change in the wounds on the left leg, but there was wet necrotic tissue on the edges of the medial wound (*Figures 4.3a and b*). The wound on the right leg was still mostly covered with slough and had some wet necrotic tissue on its edges (*Figure 4.4*). The maceration had disappeared and the erythema was reducing.

Following discussion with the patient, due to the maceration of the wound edges and the peri-wound skin, we decided to use Aquacel Foam on all three wounds, along with the reduced compression. Although the dressing changes were not painful, it was still not possible to sharp debride the wound. Instead, the wounds were mechanically debrided with Lavanox wound irrigation solution (Serrag-Wiessner).

The next assessment took place on day 16. The wound on the lateral side of the lower left leg was now producing a low volume of exudate, but as a result some necrotic tissue was visible, indicating it is beneficial to moisten this dressing with saline solution in such circumstances. The peri-wound maceration and redness were improving (*Figure 4.5a*). As the skin was dry, it was treated with a panthenol-containing ointment.

The wound on the medial side of the left leg still had some slough, and the edges and surrounding skin were macerated (*Figure 4.5b*). A small area of necrotic tissue was present on the peri-wound skin not covered by the dressing, which was removed with sharp debridement.

The wound on the right leg had more slough, but the maceration had disappeared and there was no dry skin (*Figure 4.6*). We continued using Aquacel Foam as the patient found it comfortable and did not report any pain.

The next assessment took place on day 20. The exudate level in the lateral wound on the left leg had reduced,

What were your primary reasons for using Aquacel Foam?

Our primary reason for using Aquacel Foam was to treat the maceration of the surrounding skin. We also wanted to see if the dressing could handle exudate and promote a moist wound environment.

Describe its effects on slough and peri-wound maceration

It handled the maceration well, but some parts of the wound clearly got too dry, resulting in necrosis. There was no improvement in wound size during the 3-week follow-up period.

How did it promote wound healing and patient wellbeing?

The patient did not feel any pain. He said the dressing was comfortable under the reduced compression therapy.

What types of wounds will you use it on in the future?

We will use it under compression therapy.

but again necrotic tissue was visible as the dressing had not been moistened with saline gauze (*Figure 4.7*). This was removed with sharp debridement. The maceration and the redness was improving; the peri-wound skin was dry, and so was treated with the same ointment.

The medial wound on the left leg still had some slough, and the wound edges and surrounding skin remained macerated as the dressing was too small. No necrotic tissue was present.

The wound on the right leg had more slough, but the maceration had disappeared (*Figure 4.8*).

The dry surrounding skin on all wounds continued to be treated with the panthenol-containing ointment. There was no change in the method of mechanical debridement or use of reduced compression. We continued using Aquacel Foam as the patient found it comfortable, reporting it did not cause him any pain.

Unfortunately, the patient was admitted to hospital because of a deterioration in his primary condition, so there was no further follow-up.

Case 5: non-healing traumatic wound

Maria Hughes, Independent Tissue Viability Consultant; Head of Medical Services and Wellbeing, and Queens Nurse, North Wales Police, UK

A local residential home referred a 75-year-old man to the tissue viability service for a specialist assessment of a 4-week-old wound on the lower leg that had failed to respond to treatment comprising daily application of a honey alginate adhesive foam dressing secured with a retention bandage. He had multiple comorbidities: multiple sclerosis, diabetes, stage 2 chronic kidney disease and peripheral vascular disease. The pain in his leg was such that he slept in his chair. Although this symptom is suggestive of claudication, this condition was not diagnosed.

Assessment revealed that the patient had developed an ulcer on the lateral aspect of his right leg as a result of a knock while being hoisted. He also had superficial blistering on his left foot due to a reaction to the adhesive dressings. There was gross oedema in both legs and feet, as well as dry skin. The increasing pain had been causing him distress, affecting his quality of life.

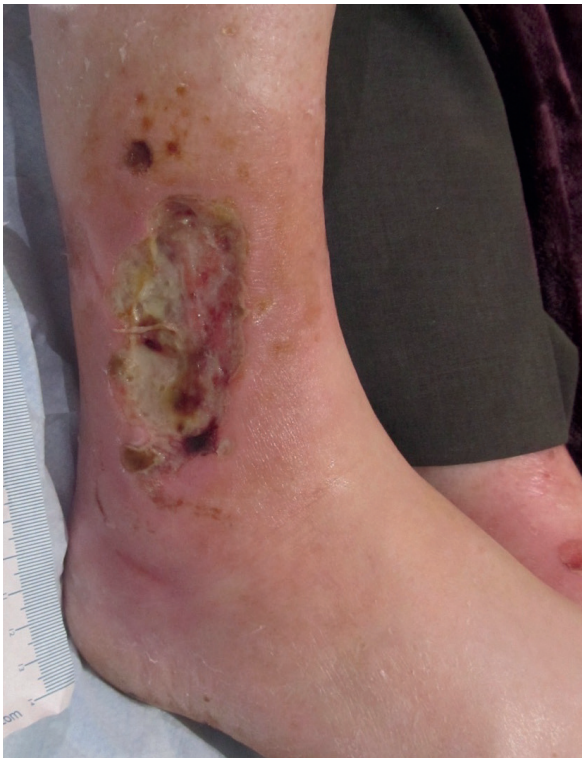

Figure 5.1. The wound at presentation

On presentation, the wound measured 7.5x3.6 cm; the wound bed was covered with 80% slough and 10% granulation tissue; tendon was visible in the remaining 10% (*Figure 5.1*). The exudate levels were moderate and predominantly serous. The patient's self-reported pain score was 10/10,[1] and he required opiate analgesia. The peri-wound skin was particularly painful on palpation, with small areas of hyperkeratotic plaques. In addition, the patient had a fear of dressing changes due to the pain he had experienced when the adhesive dressing was changed each day. There was no rationale for these daily dressing changes in the patient's medical notes; due to the patient's anxiety and distress, the community nurses had used an adhesive remover spray. The wound was not considered to be infected.

A full holistic leg ulcer assessment was undertaken, including a handheld Doppler ultrasound to determine the vascular status of the foot. The ankle brachial pressure index (ABPI) was 0.58, which is indicative of mild-to-moderate peripheral arterial disease. The patient was referred to the vascular team, but declined to attend the appointment. Following a discussion with the vascular team, the tissue viability nurse negotiated with the patient, who agreed to try a new wound care regimen along with the opioid analgesia for 4 weeks, and to attend the vascular clinic if there was no improvement. The patient also had a full nutritional assessment, after which supplementary drinks were commenced.

The patient was advised to elevate his legs and agreed to stay on bedrest, just getting out of bed for meals. He adhered to this treatment plan. Aquacel Foam (adhesive) was commenced, which avoided the need for retention bandages. An emollient was used to improve the overall condition of the feet and legs. The Aquacel Foam enabled autolytic debridement without the need for multiple products. The product contained the wound exudate, and the wound improved. The slough reduced and there was granulation tissue over the visible tendon, which progressed over 4 weeks to complete epithelialisation (*Figure 5.2*). Initially, the dressing was changed on alternate days; after 2 days it was changed every 3 days and then weekly. After the second dressing

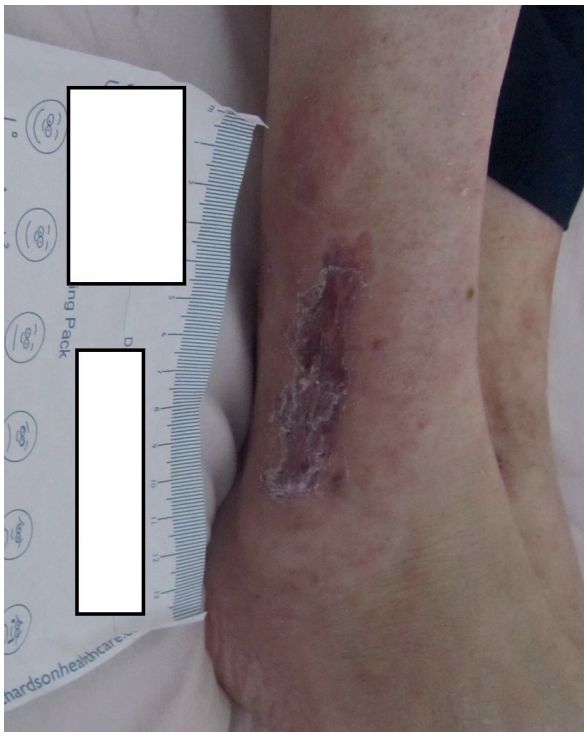

Figure 5.2. The wound at 4 weeks

change, the peri-wound skin condition resolved and the patient's pain score reduced to 3/10; the opiate analgesia was therefore discontinued.

Due to the predominant bedrest, the gross oedema resolved (the patient had previously been unable to elevate his legs because of the pain). Following implementation of Aquacel Foam adhesive dressing, the patient started sleeping in bed.

The staff reported that the dressing was easy to apply, finding it soft and conformable. The patient reported that it was comfortable and did not leak. He no longer experienced anxiety and distress during dressing changes, and there was no need to use an adhesive remover spray.

Exudate levels decreased, due to a combination of leg elevation and the ability of the Aquacel Foam adhesive to lock it into the dressing. There was also an improvement in the condition of the peri-wound skin. The leg now only requires maintenance emollient applications and monitoring. Using one product to absorb, debride and contain the wound exudate also proved cost-effective. An added benefit was its ability to reduce the patient's pain. The product is now readily available on the wound care formulary.

What were your primary reasons for using Aquacel Foam?

It was chosen because of its ability to debride devitalised tissue and manage exudate. Other reasons are that it is cost-effective and readily available in a number of different sizes. It can also be used on a variety of different wound types.

Describe its effects on slough and peri-wound maceration

It aided autolytic debridement. As the wound fluid is locked into the dressing, this prevents maceration to the peri-wound skin, which can often occur when using a standard foam product in the presence of heavy exudate.

How did it promote wound healing and patient wellbeing?

The product promoted a moist healing wound environment and avoided peri-wound skin damage. As the dressing has a low profile, the patient felt that he was able to lead a normal life with it on. It was not bulky and he was able to shower. The reduction in wound pain aided his wellbeing. As removal is atraumatic, the patient did not feel anxious about or fearful of dressing changes. The skin-friendly adhesive also enabled the adhesive removal sprays to be discontinued.

What types of wounds will you use it on in the future?

Pressure ulcers and moderately exuding acute wounds. For leg ulcers under compression, I would select the non-adhesive version, particularly when emollients are being used. I have also used the dressing on fungating lesions and following debridement of necrotising fasciitis.

1 Abbey J, Piller N, De Bellis A et al. The Abbey pain scale: a 1-minute numerical indicator for people with end-stage dementia. Int J Palliat Nurs 2004; 10: 6–13

Case 6: ureteral cutaneous fistula

Cathy Milne, Advanced Practitioner, Wound Ostomy and Continence Nursing, Connecticut Clinical Nursing Associates, US

Following a ruptured diverticula, a 76-year-old man underwent an end-to-end descending colon resection. Unfortunately, he developed an anastomotic leak resulting in peritonitis and severe sepsis, and required an ileostomy. Other postoperative complications included respiratory problems, renal failure and a midline entereocutaneous and an ureteral-colic fistula. The entereocutaneous fistula resolved spontaneously after 6 weeks. However, he developed an ureteral cutaneous (UC) fistula and underwent ureteral stenting to minimise urinary drainage at the midline abdominal fistula area.

Due to its high output, the UC fistula was originally treated with a fistula/wound pouch. The patient was concerned about the need to use both an ileostomy appliance and a pouch, as their close proximity made pouch/ostomy appliance changes more complicated. He also often stated that having 'two bags' was emotionally overwhelming. The clinician and patient therefore agreed that the care goal should be to transition from the traditional pouching technique when the fistula's output lessened.

Two months after the ureteral stenting, the UC fistula output had reduced to <20 cc/day, and so the patient was transitioned to Aquacel Foam as a primary dressing (*Figures 6.1–3*). He was able to self-manage the fistula by changing the dressing when required—a task he had been unable to do with the pouch. He reported that the dressing was more comfortable than the pouch and did not interfere with the ileostomy appliance. In addition, as the dressing caused virtually no pain during removal, he no longer needed to shave or clip his abdominal hair.

What were your primary reasons for using Aquacel Foam?

This patient wanted a simple, but effective, way of absorbing output from an ureteral cutaneous (UC) fistula without interfering with his ileostomy appliance. He also needed to self-manage the fistula, with painless dressing changes. Aquacel Foam was chosen for its vertical wicking ability and silicone adhesive.

Describe its effects on slough and peri-wound maceration

Due to the dressing's vertical wicking action, the fistula output was drawn away from the peri-wound skin. Maceration did not occur.

How did it promote wound healing and patient wellbeing?

The patient was able to perform dressing changes at his convenience and no longer had to wear a bulky pouch to collect drainage.

What types of wounds will you use it on in the future?

As well as using it on patients with unusual aetiologies requiring an absorbent dressing, I will use it on any wound with or at risk of peri-wound maceration.

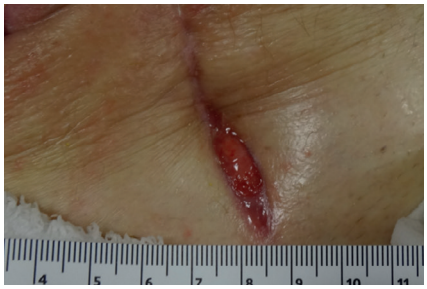

Figure 6.1. The wound on the first day of treatment with Aquacel Foam

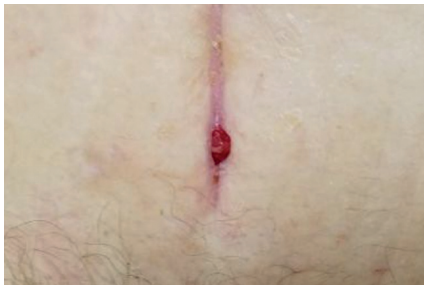

Figure 6.2. The wound following 3 weeks' treatment with Aquacel Foam

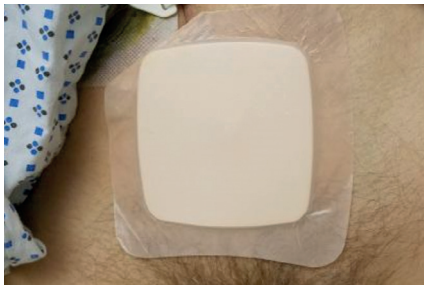

Figure 6.3. The dressing in place on the wound

Cases 7–10:* non-complex wounds on the lower limb

Windy Cole, Adjunct Professor and Director of Wound Care, Medical Director, UH Ahuja Wound Center, US

Case study 7

An 82-year-old woman with a history of peripheral vascular disease, hypertension and diabetes mellitus type 2 self-presented at an outpatient wound centre with a leg ulcer of 5 weeks' duration. She had been self-treating with an over-the-counter antibiotic ointment; no compression had been applied. Ultrasound confirmed that the ulcer had a venous aetiology: there was venous reflux but no clots.

On presentation, the wound, which measured 3.4x2.1 cm and had a depth of 0.1 cm, was producing a moderate volume of mildly malodorous serosanguinous exudate (*Figure 7.1*). The wound bed was entirely covered with granulation tissue, the edges were healthy, with no signs of inflammation, and there was no maceration. There was mild non-pitting oedema on the limb. The patient did not complain of any wound-related pain.

Treatment comprised Aquacel Foam, which was used as a primary dressing to absorb the exudate, and multi-layer compression bandaging. The dressing was changed every 7 days. At the first assessment on day 7, the wound surface area had reduced and measured 2.8x1.7 cm, with a depth of 0.1 cm, but the wound was more superficial in places. There was new evidence of epithelial tissue at the wound edges, and the exudate was well controlled, with no maceration and strikethrough. The oedema had decreased markedly and the malodour had disappeared. The patient's quality of life had improved, mainly due to the exudate management and odour control.

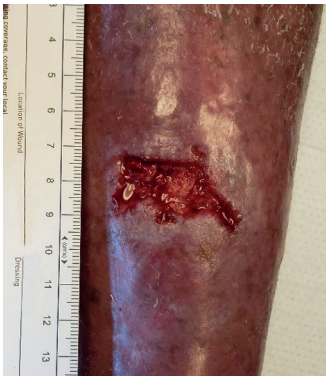

Figure 7.1. The wound at presentation

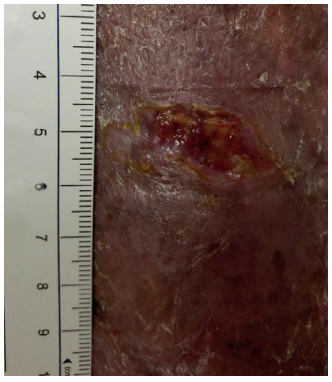

Figure 7.2. The wound on day 32

On day 14, there was healthy granulation tissue on the wound bed, and the measurements were stable (2.7x1.8x0.1 cm). The peri-wound area remained healthy and there was no increase in the oedema. There was no pain at dressing change.

At day 32, the wound had decreased to 1.2x0.8x0.0 cm. Epithelial tissue was advancing from the wound edges (*Figure 7.2*). The dressing had managed the exudate well.

Case study 8

A 65-year-old woman with a history of minor traumatic injuries self-presented at an outpatient wound care centre with a 3-week-old wound caused by a knock to the lower leg. She had previously self-treated the wound with an over-the-counter antibiotic ointment. Her medical history included breast cancer, hyperlipidaemia and hypertension. A Doppler assessment excluded arterial disease.

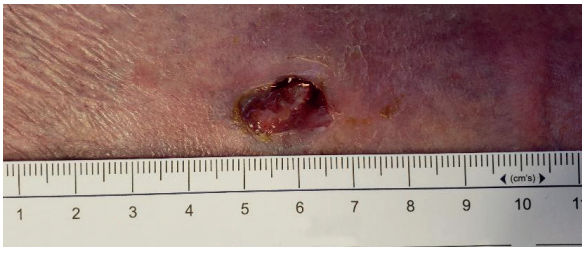

Figure 8.1. The wound at presentation

*In cases 7–10, for logistical reasons, Aquacel Foam was used for 4 weeks only

The wound measured 1.6x1.7 cm and was 0.1 cm deep. The wound bed was covered with granulation tissue and was producing a moderate volume of serosanguinous exudate (*Figure 8.1*). No devitalised tissue or malodour was present, and there was no peri-wound maceration. The patient did not report any wound-related pain.

Aquacel Foam (adhesive version) was applied and changed every other day. After 1 week, the wound size had reduced to 1.5x1.3 cm. The depth was also more superficial in places. More granulation tissue was visible and the volume of sanguineous exudate was now low. The dressing change was atraumatic.

At week 2, the wound had continued to decrease in size and had almost no depth (1.3x1.2x0.1 cm). There was healthy granulation tissue on the wound bed and epithelial tissue was spreading inwards from the wound edges (*Figure 8.2*). The dressing was absorbing the exudate well. Dressing change frequency had reduced to twice weekly. The patient changed the dressing at home, and reported that this was atraumatic.

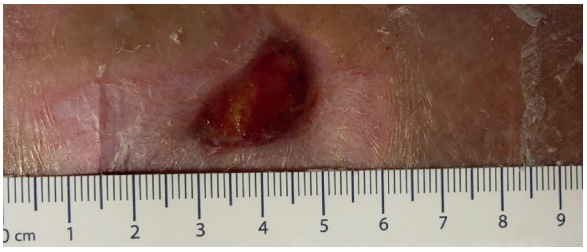

Figure 8.2. The wound after 2 weeks' treatment

Case study 9

A 94-year-old man self-presented at an outpatient wound centre with a 3-month-old, partial-thickness pressure injury on his posterior lower leg that he had been self-treating with gauze and tape. The injury had occurred when the patient, who had dementia and neuropathy, sat on a recliner for a prolonged period. His comorbidities included type 2 diabetes mellitus and coronary artery disease. Doppler assessment excluded arterial disease.

The wound measured 3.5x2.0 cm, and had a depth of 0.1 cm. The wound bed was covered with clean granulation tissue but was producing a moderate volume of slightly malodourous serous exudate (*Figure 9.1*). Based on clinical observation, the wound was not considered to be infected. There was no peri-wound maceration and minimal oedema. Aquacel Foam was used as a primary dressing under a reduced compression bandaging system applied to treat the oedema. The bandages and dressing were changed every 7 days.

The patient was not able to attend the clinic until 2 weeks later. On day 14, the wound had progressed well, reducing to 2.5x2.0x0.0 cm. There were signs of epithelial tissue on the wound edges (*Figure 9.2*). The exudate volume was low. The dressing change was painless and atraumatic.

On day 21, the wound measured 1.7x0.9 cm; a thin layer of epithelial tissue was covering the entire wound bed. The exudate volume was low.

On day 32, when the patient next attended the clinic, the wound measured 1.5x0.7 cm (*Figure 9.3*). The exudate level was very low. The dressing change was atraumatic. The oedema had reduced due to the compression therapy.

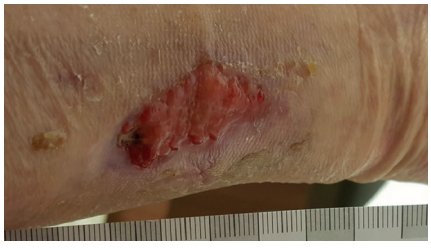
Figure 9.1. The wound at presentation

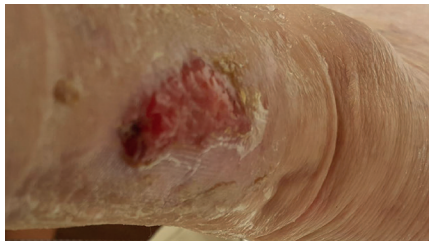
Figure 9.2. The wound after 2 weeks of treatment

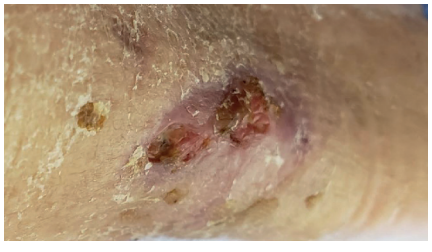
Figure 9.3. The wound at final assessment after 4.5 weeks of treatment

Case study 10

A 52-year-old man underwent surgery at an outpatient wound care centre for a complete excision of a plantar fibromatosis (non-malignant mass of fibrous tissue on the arch of the foot). His postoperative care comprised a surgical dressing (Adaptic, Acelity), an ABD abdominal pad, an antimicrobial bandage roll and a self-adherent dressing. He had a medical history of hypertension.

The patient had not presented the postoperative wound to any other practitioners and had not attempted to self-treat it. The wound, which measured 2.6x3.2 cm and had a depth of 0.1 cm, was completely covered with healthy granulation tissue, but was producing a moderate volume of serosanguinous exudate (*Figure 10.1*). There was a slight maceration on the surrounding skin. It was considered to be free of infection. The patient self-reported a moderate visual analogue scale score of 5/10, which would be expected for a recent postoperative wound. The patient wore a surgical shoe, which limited his mobility.

Aquacel Foam was applied as a primary dressing and secured with the antimicrobial bandage roll and a self-adherent dressing. The patient changed the dressing himself at home every other day. He chose to attend the clinic for his first follow-up assessment on day 14. At this time, the wound had reduced in size to 2.2x3.0 cm and was more superficial in places, but was otherwise unchanged (*Figure 10.2*). The patient reported that the dressing changes were atraumatic.

What were your primary reasons for using Aquacel Foam on cases 7–10?

To manage exudate, prevent or reduce maceration, and promote healing.

Describe its effects on slough and peri-wound maceration

Exudate management was a key performance of this dressing. Minimal maceration was observed at dressing changes.

How did it promote wound healing and patient wellbeing?

In all four cases, the wounds progressed towards healing. Dressing changes were atraumatic. Patients were able to perform their activities of daily living with the dressing in place.

What types of wounds will you use it on in the future?

I was impressed with the outcome and will continue to use this dressing in the future.

The patient next presented at the clinic on day 35. He said he had continued to change the dressing every alternate day. The wound now measured 1.5x1.7x0.0 cm. The exudate volume was low and the maceration had improved. The wound bed was still covered with clean granulation tissue (*Figure 10.3*).

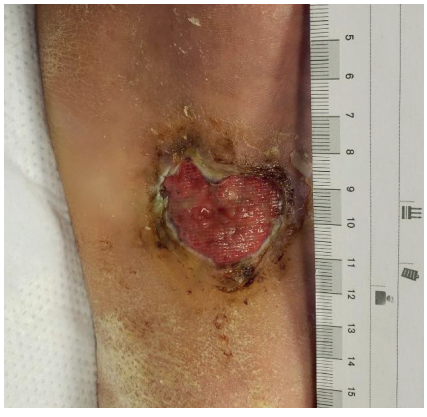

Figure 10.1. The wound at presentation

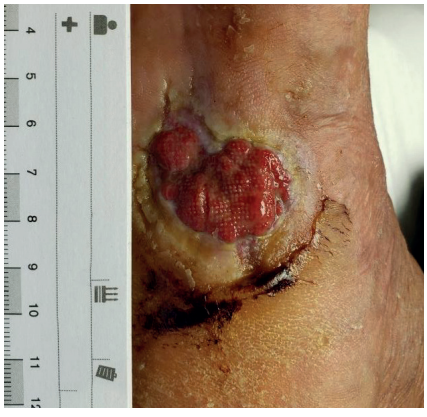

Figure 10.2. The wound after 2 weeks treatment with Aquacel Foam

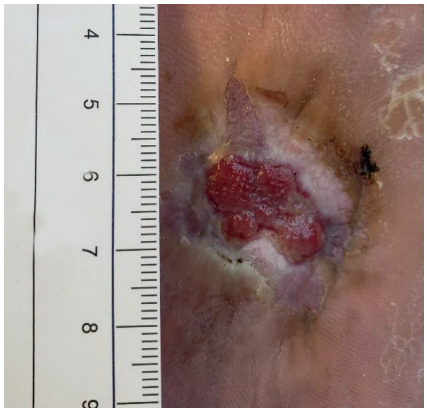

Figure 10.3. The wound after 6 weeks of treatment with Aquacel Foam