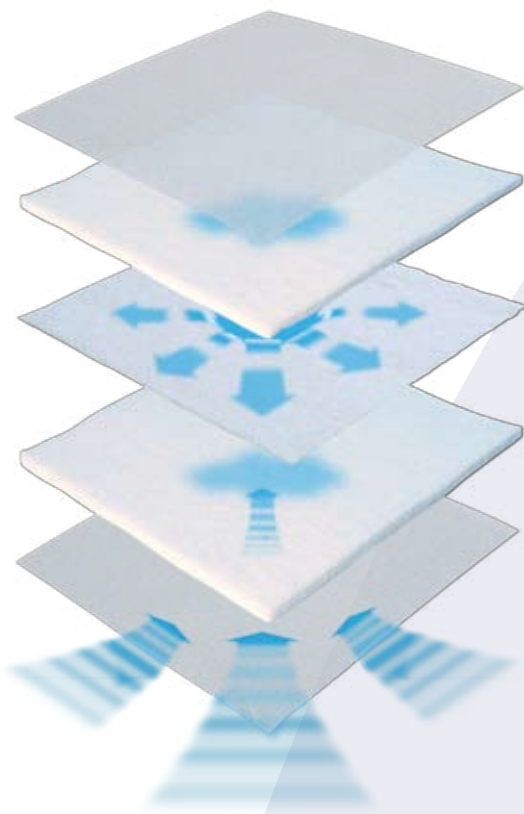
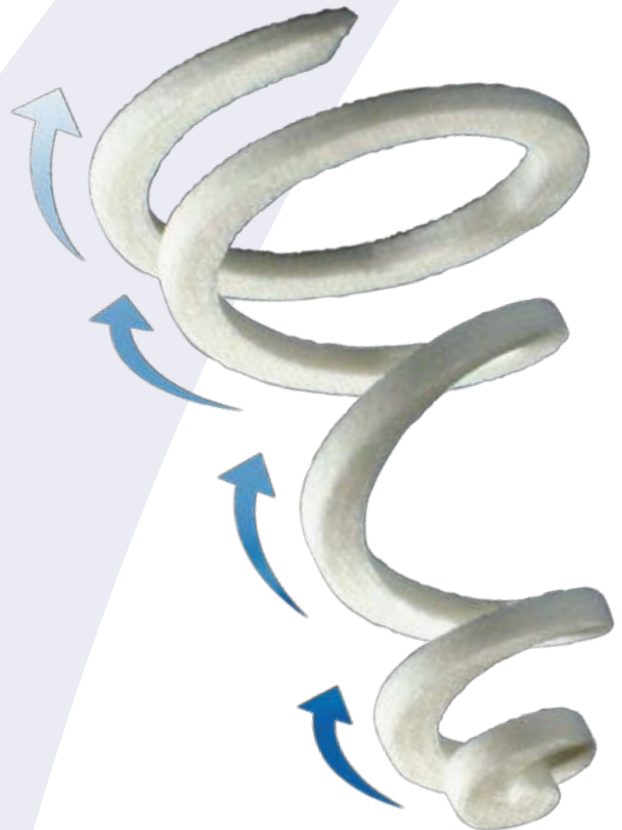


Rapid capillary action dressings



Advadraw



Advadraw Spiral

Rapid capillary action

This brochure will explain how the Advadraw dressings work and provide case studies and examples of how Advadraw technology can be used effectively in wound management.

Advadraw is a superb example of a improved wound management technology, a rapid capillary action dressing with non-adherent wound contact layers to manage exudate, deslough and debride a wound. Advadraw Spiral is proving a very effective way to manage deep wounds and sinuses.

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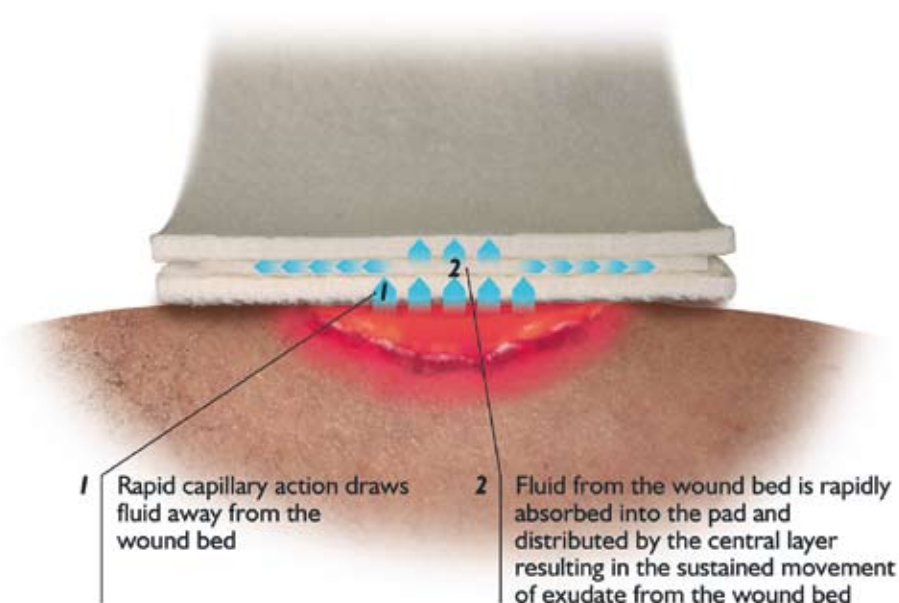
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Advadraw & Advadraw Spiral

What is a rapid capillary action dressing?

A three-layer dressing designed to rapidly absorb exudates and interstitial fluids and optimize conditions for healing at the wound-dressing interface. Rapid capillary action dressings have a central wicking layer that quickly distributes absorbed fluid throughout the dressing and create a sustained movement of fluid away from the wound bed.



What effect does Advadraw have?

Advadraw will effectively manage wound exudates and interstitial fluid levels and prevent maceration of the healthy tissue in and around the wound. It will maintain a moist wound healing environment known to be beneficial to wound healing. The drawing in of exudates and interstitial fluid will promote autolytic debridement of necrotic and sloughy tissue. Excessive cytokines and proteases and reduced growth factors can be the cause of chronic wounds and may be attributable to wound inflammation and resultant fluids, therefore optimizing the fluid levels within a wound bed is crucial to successful healing.

What is it made from?

Advadraw is made from a triple layer of polyester and viscose fibres with a perforated wound contact polymer film either side to prevent adhesion of newly formed tissue to the dressing. The non-adherent film will readily allow the passage of fluid but prevent granulating tissue adhering to the dressing. The method of manufacture is a trade secret as the properties are achieved through a unique combination of fibrous layers.

Why should I use Advadraw?

Wounds that are exuding, inflamed or necrotic/sloughy in appearance can be problematic and slow to heal. This can be an indication of bacteria in the wound which may delay wound healing. Sloughy and necrotic wounds particularly have the potential to harbor bacteria. Advadraw removes excess fluid together with any associated bacteria from the wound. The drawing of exudates and interstitial fluid into the dressing softens the necrotic and sloughy tissue helping to clean the wound bed of debris and allow healthy tissue to grow unhindered.

What results can I expect?

With the use of Advadraw the wound bed should quickly improve because the after initial dressing changes the wound should look cleaner and healthier. Necrotic and sloughy tissue should easily lift off the wound either on the dressing or with subsequent wound cleansing e.g. using saline solution.

When should I use Advadraw?

Use on any exuding wound, especially where there is some necrotic or sloughy tissue present. It is particularly useful where the wound is an irregular shape as Advadraw can be easily cut to the shape of the wound. As it draws fluid into the dressing an exact wound profile is not essential, it may be beneficial to overlap the peri-wound area with Advadraw. Fluid is drawn vertically into the dressing and there is no lateral movement of fluid at the wound interface which could cause maceration.

Advadraw or Advadraw Spiral?

Rapid capillary action technology is indicated for most exuding necrotic or sloughy wounds including pressure ulcers, leg ulcers, dehisced surgical wounds and diabetic foot ulcers. Advadraw and Advadraw Spiral can be used on the same wounds, select Advadraw Spiral if the increased conformability of the shape is desirable but is especially indicated for sinus cavities.

What will I gain by using it?

Wherever a point on the dressing is in contact with fluid it will be drawn into the dressing and distributed throughout the structure. This minimises disturbance of the wound as the dressing change intervals are prolonged. The frequency of change is reduced because the wound surface will not become quickly saturated as with conventional absorbent pads, a wet wound bed is detrimental to new tissue growth. Advadraw may be layered to fill larger open wound or sustain movement of fluid away from the wound bed. The fluid will transfer from one layer of the dressing to the next thus optimising conditions at the wound bed where healthy tissue can grow in a suitable environment. Using Advadraw will improve healing rates and reduce dressing changes.

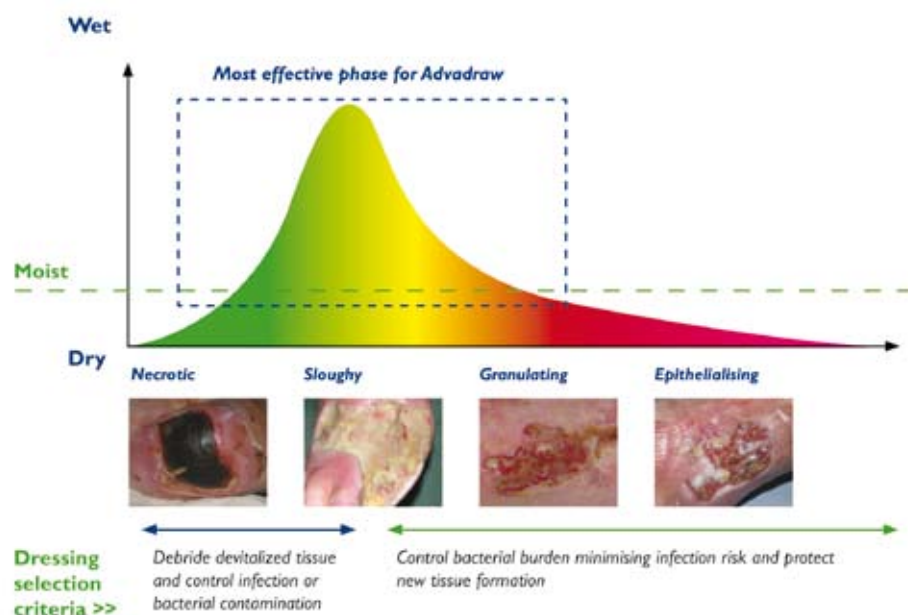
Is Advadraw cost effective?

Compared with many dressing regimens using Advadraw is very cost effective. Advadraw is manufactured with cost effectiveness in mind and is simple to use and versatile. Consider the following important aspects of wound management - ability to manage the wound environment e.g. exudate management, capacity of the dressing, maintaining a moist healing environment, non-adherence, conformability, minimal disturbance to wound bed, provide thermal insulation, debride necrotic and sloughy wounds, retain integrity on removal. How many other dressings can provide so much at such a competitive price?

When should I change the Advadraw dressings?

The dressing must be changed at least every seven days but this will depend on a number of factors e.g. the level of exudates and interstitial fluid, number of dressings that are layered, level of necrotic and sloughy tissue to be removed from the wound bed. Advadraw must either be changed or additional layers applied when exudate has reached the outer edges of the dressing.

The wound model showing the use of Advadraw dressings



More about Advadraw Spiral

Advadraw Spiral is the same dressing as Advadraw but conveniently cut into a narrow ribbon for easily inserting into a deep cavity wound or sinus tract. It will draw fluid into the dressing and remove it (and any bacteria) from the inserted portion to the portion outside the cavity. Here fluid can be collected in an Advadraw dressing which can act as a fluid reservoir. To achieve this simply make an incision in a suitable size Advadraw and insert the tail end of Advadraw Spiral into the incision (see illustration to the right), fluid will transfer from the Advadraw Spiral to the Advadraw. Because it is not gel forming it is very easy to remove in one piece from a cavity and does not require subsequent irrigation. Advadraw spiral may also be laid into convex wound beds as the spiral presentation is very conforming. It has the same absorbent capacity per square cm as Advadraw.

How should I secure the Advadraw dressings?

This will depend on the anatomical position, aetiology and size of the wound. This is a matter for clinical preference but Advadraw can simply be held in place with a bandage, film dressing, surgical tape or secondary dressing of choice e.g. an adhesive foam dressing. Advadraw can be used under compression as this does not affect the absorption or wicking properties.



An example shown above of Advadraw and Advadraw Spiral in use together.

The use of Advadraw rapid capillary action dressing within cavity wounds

Michelle Deeth - Tissue Viability Nurse, Natalie Cross - Staff Nurse, University Hospitals Coventry and Warwickshire NHS Trust.

✓ Case Study One

An 80 year old lady admitted to hospital with diagnosis of extended cva. On admission to the ward she was found to have a severe infected pressure ulcer.

Previous dressings used had not successfully contained the exudate and odour and therefore Advadraw was recommended.



The dressing was changed daily and within 8 days an improvement could be seen to the wound.



The patient described the wound as less painful and family members noted the reduction of odour. Nursing staff stated that the dressing was containing the purulent exudate to allow daily dressing changes and were surprised by the progress of the ulcer despite the many

patient factors that would normally delay wound healing.

Conclusion

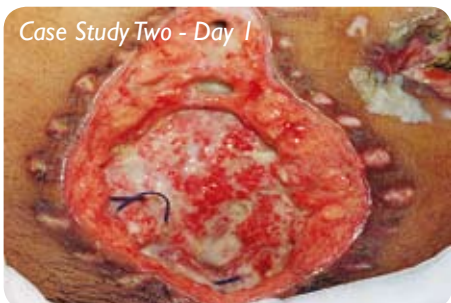
All aspects of wound care and management were met by the dressing. Exudate was managed and dressing changes were reduced, odour was controlled and debridement of slough and necrotic tissue achieved.

Its unique non-adherent bonded outer layers prevented adhesion to the wound and the newly formed granulation tissue.

The above features combined with the benefits of the capillary action make this dressing a useful addition to any wound care formulary.

✓ Case Study Two

A 34 year old lady admitted for emergency surgery and developed a dehisced abdominal surgical wound.



The main wound care objectives with this lady were exudate management, debridement of slough and odour control. The newly sited stoma was in close proximity to the wound and therefore isolating the wound exudate away from the stoma needed to be achieved. The photographs were taken

at weekly intervals. The wound care objectives were met and this lady was able to have day trips home with the reassurance that wound leakage was comfortably contained.

Method

All patients were referred to the Tissue Viability Team via nursing or medical staff. The patients had cavity wounds that had previously been difficult to manage, due to exudate or odour control and were therefore deemed appropriate to enter into this small scale product evaluation.

The dressing was explained to the patient and consent gained to take weekly photographs. Photographs were taken for as long as the patient remained in hospital. Along with the visual nursing assessment the photographs were used as a means of monitoring the condition of the wound.

Results

The dressing was used on a variety of wounds to include surgical and pressure ulcers. The results demonstrated that the



dressing was excellent in assisting wound debridement, exudate management and odour control, whilst being easy to cut and shape to fit the wound and promote patient comfort. Its non-stick bonded contact layer prevented adherence to the wound bed and assisted in the healing process.

Advancis
Medical

Managing wound sinuses using Advadraw Spiral

Wound sinuses are notoriously difficult to dress due to their depth and narrow width, and present the practitioner with a challenge in terms of dressing selection. Advadraw Spiral is a rapid capillary action dressing that is supplied in a pre-cut ribbon shape. It has a double-sided wound contact layer that makes it convenient and easy to use in patients with sinuses. An evaluation of this dressing was carried out using a wide selection of wound types, and the results indicate that Advadraw Spiral handles exudate well, promotes healing, and is comfortable to wear.

Amy Oldfield - Tissue Viability Nurse & Fiona Burton - Nurse Consultant in Tissue Viability,
University Hospitals Coventry and Warwickshire NHS Trust, Coventry.

A sinus in a wound bed is a track that extends from the surface to an underlying area or cavity (Butcher, 1999). Due to their depth and narrow width, wound sinuses can be difficult to dress and this can cause anxiety among practitioners when trying to choose a suitable dressing product.

Capillary action dressings have been used on infected, moderate to heavily exuding wounds, cavity wounds (Russell and Evans 1999; Deeth and Pain 2001), leg ulcers (Goldman et al 2003) and dry necrotic wounds (Lisle 2002). Their use is contraindicated in wounds that are fungating or likely to bleed heavily. However, they can be used to effectively manage wound sinuses (Russell and Evans, 1999; Deeth and Pain 2001).

Capillary action dressings are multilayered absorbent dressings covered with a low adherent wound contact layer (Joint Formulary Committee, 2006). Their ability to draw or wick exudate and therefore bacteria out of the wound track and retain it in the dressing make them particularly useful when managing this type of wound.

When dressing a sinus, because of their small size, it is usual practice to cut a capillary action dressing into disks or

ribbons to individually fit the cavity. Care must be taken to ensure the dressing material follows the wound bed contours, and that the wound contact layer is placed against the wound bed. However, this practice has a number of risks:

- Cutting the dressing may result in dressing fibres contaminating the wound bed, which may result in delayed healing

- Dressing adherence to the wound bed may result in discomfort or pain or tissue damage on removal
- Dressings are often cut to an irregular or inappropriate shape/size, which can cause discomfort to the patient and possible delayed healing
- Cross-contamination of the dressing may occur during the cutting process (when using scissors) and the sterility of the dressing may be reduced
- Sharps injury may occur when using a scalpel to cut a dressing.

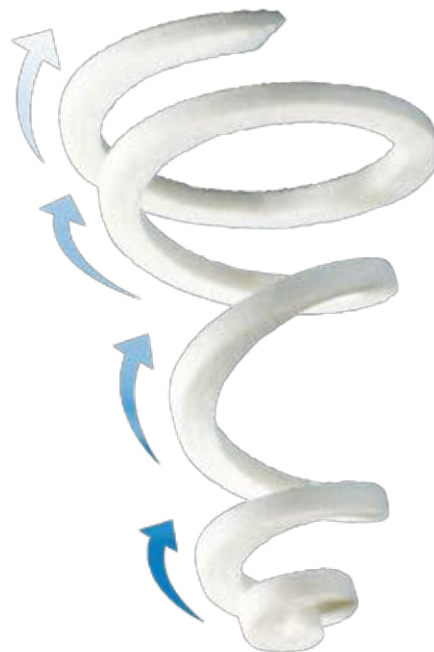


Figure 1 - Advadraw Spiral

Advadraw Spiral (Advancis Medical, Nottingham) is a rapid capillary action dressing that is supplied in a pre-cut ribbon shape (Figure 1). The unique spiral shape allows the dressing to be cut to the most appropriate length while still maintaining a uniform width. It is an absorbent, non-adherent primary wound contact layer that can wick exudate, which is rapidly absorbed into the dressing via capillary action (Advancis Medical, 2007). Each side of the dressing is backed with a perforated permeable wound contact layer. Advadraw (Advancis Medical, Nottingham) is an absorbent, nonadherent primary wound contact layer which has the same rapid capillary action as Advadraw Spiral (Figure 2), but is

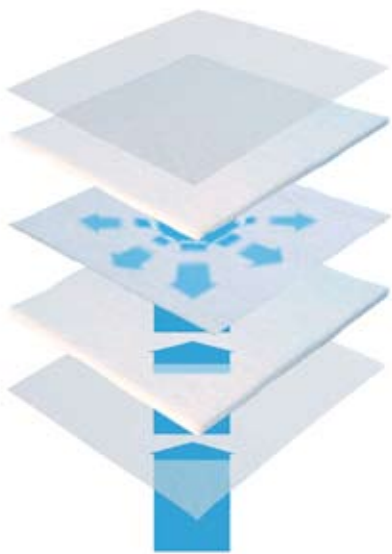


Figure 2 - Advadraw

supplied as a flat dressing. Both dressings can be applied directly to the wound bed, either side down, because both sides are non-adherent. Advadraw Spiral can be packed into the wound bed and Advadraw applied over the top of the wound to increase the absorbency of the dressing and, therefore, the wear time. Advadraw and Advadraw Spiral can also be layered to give increased exudate capacity.

Both dressings need to be secured in place with a secondary dressing, i.e. a film, adhesive tape or a bandage. The dressings can be changed daily if exudate levels are high, though they can be left in place for up to a week, where appropriate. Advadraw Spiral maintains its integrity on removal therefore reducing the risk of shed fibres being left in the wound bed.

Both dressings are indicated for use in all acute and chronic wound types including sloughy wounds, post-operative or dehiscent wounds, abrasions, and medium to heavily exuding wounds, and are now available on the drug tariff as well as through NHS logistics.

This article will now present nine case studies which evaluated the use of Advadraw Spiral in clinical practice.

Method

An evaluation was conducted over a 6-month period across University Hospitals Coventry and Warwickshire NHS Trust, to compare the performance of Advadraw

Spiral with Vacutex, a capillary action dressing that was used within the trust at the time. Patients with small cavity wounds, particularly with sinuses, were chosen by the Tissue Viability Team (TVT) to participate in the study. All patients recruited (n=9) were informed of the evaluation process, and gave verbal consent.

Wound assessments were conducted at the beginning of the evaluation and then periodically to assess:

- **Wound aetiology**
- **Wound size, including the depth of any sinuses present**
- **The patient's satisfaction and comfort**
- **Exudate control**
- **Ease of application and removal of dressing**
- **Adverse effects of the dressing.**

In each case, the initial wound assessment was carried out by the TVT. Subsequent assessments and dressing changes were usually completed by the nursing staff in the respective clinical area. Education on dressing application and removal was provided by a member of the TVT to all of the staff responsible for the wound care of the participants.

Results

Of the 9 patients recruited into this small evaluation, wound aetiologies included:

- **A dehiscent, spinal, surgical wound**
- **A dehiscent, cardiac, surgical wound**
- **Diabetic foot ulcers**
- **An infected amputation site**
- **An infected angioplasty site**
- **A traumatic, abdominal crush injury**
- **A pilonidal sinus.**

The authors will now present each of these case studies.

Patient one

Mr.W was referred to the TVT to establish if his dehiscent laminectomy wound was suitable for Vacuum Assisted Closure (VAC) therapy. The ward staff had previously used an alginate ribbon dressing

to pack the wound, but it remained hard to heal. Initial assessment revealed a wound of approximately 5x2cm with two small sinuses at each end, both of which were approximately 3cm in depth. The wound bed was covered in 30% slough, and was producing high levels of exudate. The TVT decided it would be difficult to apply VAC therapy to this wound due to its narrow width and the presence of the undermining sinuses. One piece of Advadraw Spiral was cut in half and used to pack each of the sinuses individually. The remaining spare dressing was packed into the shallow cavity and then a flat piece of Advadraw was applied over the top. This was held in place with a film dressing. The dressings were changed when they had become saturated with exudate.

The wound made good progress with Advadraw Spiral; the depth of the sinuses reduced and the wound became shallower in depth by 1cm after two weeks of treatment. The exudate was managed well, and the slough had completely debrided when the patient was discharged into the community, approximately three weeks later. At this point, the TVT provided enough dressings for one week as per local protocol for patient discharge. The patient stated the dressings were comfortable when in place and was happy with the progress of the wound.

Patient two

Mr.J underwent cardiac surgery, and approximately three weeks postoperatively, his sternal wound dehiscent due to the presence of an underlying infection. He presented with two small sinuses at the base of the wound; both were approximately 1x1x2cm. On first assessment the wound had erythema spreading approximately 5cm from the wound edges (Figure 3). There was a moderate amount of serous exudate and some slough on the wound bed.

Advadraw Spiral was used to pack the sinuses. The rationale behind this choice was to control the exudate, draw any bacterial contamination from the wound bed and prevent the wound from closing over and developing into an abscess.



Figure 3. Sternal sinus with spreading erythema.



Figure 4. Post-debridement of neuropathic ulcers with Advadraw Spiral in place.



Figure 5. Amputation site on the left foot.



Figure 6. Neuropathic ulcers with sinus measuring 0.5cm.

At this point, the Advadraw Spiral was cut to length, packed loosely into the sinuses and held in place with an adhesive island dressing. The dressings were changed daily to allow the wound to be irrigated thoroughly with saline and its progress to be monitored. The use of Advadraw Spiral in these two small areas worked well. The exudate was effectively controlled, the infection, in conjunction with antibiotic therapy, was resolved and the depth of the sinuses reduced by 50% over the following two weeks. Once the wounds were shallower, the dressing product was changed to an alginate because the risk of the dressing material being left in the wound bed had reduced.

This patient did experience discomfort on application and removal of Advadraw Spiral during the initial dressing changes, particularly when the dressing rubbed against the edges of the wound. However, this was effectively controlled with pre-dressing analgesia, and treatment of the infection. Once this pain was effectively controlled, the patient was satisfied with the dressing regimen used.

Patient three

Mr. F was a middle-aged man with diabetes, who was referred to hospital with deteriorating neuropathic foot ulcers. He underwent surgical debridement of the wounds to the plantar

surface of his left foot (Figure 4) and amputation of his three remaining toes.

When he was first referred to the TVT the wounds to his plantar surface and amputation site were all heavily colonized with bacteria, sloughy and producing moderate amounts of exudate. The two wounds to the plantar surface were approximately 3x3cm each, both were shallow in depth but one of the wounds had a sinus, which was approximately 2cm deep. The amputation site was approximately 6x3x1cm deep.

Before recruitment into the study, the wounds were dressed with Vacutex. However, this dressing needed to be cut to fit the wound and so a decision was made to change to Advadraw Spiral to avoid this. Additionally, the previous dressing had been adhering to the wound bed, and it was hoped that the use of Advadraw Spiral would overcome this problem.

Mr. F commented that, compared to Vacutex, Advadraw felt much more comfortable when in place due to the pre-cut shape of the spiral, and the reduced adherence to the wound. It was also noted that dressing changes were quicker, and there was a reduced risk of cross infection or sharps injury because the dressing no longer needed cutting. After 2 weeks of treatment, Advadraw Spiral had controlled the exudate, reduced the depth of the sinus to 0.5cm and debrided the slough present (Figure 5 and 6).

Mr. F was discharged home with his wounds improving with the continued use of Advadraw. Advadraw Spiral was discontinued, because the sinuses were healing well and no longer needed packing.

Patient four

Mr. S was initially assessed in the outpatient department with a longstanding wound following a symes amputation approximately three years earlier. The surface area of the wound had been dressed by district nurses for a number of weeks with no improvement (Figure 7). However, on referral to the TVT, initial assessment revealed a deep



Figure 7. Symes amputation with sinus present, measuring 6cm deep.



Figure 8. Transmetatarsal amputation post-initial debridement.



Figure 9. Transmetatarsal amputation, post-VAC therapy, with a 5cm deep sinus identified.



Figure 10. Transmetatarsal amputation, with Advadraw Spiral in place.

sinus which extended approximately 6cm from the surface towards the centre of his stump. The level of exudate was very heavy and the patient had been experiencing recurring infections. This wound therefore required a dressing that could be pushed into the base of the sinus to draw the exudate and bacterial contamination out of the wound.

Advadraw Spiral was chosen and successfully controlled the exudate, was easy to apply and helped to reduce the depth of the sinus to approximately 4cm in 6 weeks. The patient also commented how comfortable the dressing was. In fact, Mr. S was so happy with the progress of the wound, that despite the dressings not being available on FPI0 at that time, he decided to purchase the dressings himself directly from the supplier so that his treatment could be continued at home.

This patient did, however, go on to have a below knee amputation because the long-term infection could not be overcome and this was hugely affecting his quality of life.

Patient five

Mr. A, a patient with diabetes, was admitted with cellulitis of his foot. Due to the extent of the cellulitis he underwent a transmetatarsal amputation (Figure 8).

He subsequently underwent a further debridement of the wound three days later to remove further necrotic and sloughy tissue. He was then referred to the TWT to commence VAC therapy. The treatment was used for 7 days, but as it facilitated further debridement of the wound, a 5cm deep sinus was revealed (Figure 9). VAC Therapy was discontinued and Advadraw Spiral applied (Figure 10). The aim of this was to facilitate healing from the wound base up and to prevent abscess formation in the sinus. Advadraw Spiral successfully controlled the exudate and reduced colonisation (evident by the reduction in purulent, green exudate) and therefore promoted healing. The thin width of the spiral shape was ideal for the shape of the wound.

Key Points

- **Advadraw Spiral is a low adherent wound contact layer that can wick exudate. This is rapidly absorbed by capillary action.**
- **The pre-cut shape of Advadraw Spiral is a perfect choice for difficult to dress sinuses.**
- **Advadraw can be used on a range of different acute and chronic wound aetiologies.**
- **Advadraw Spiral controls exudate well, is low adherent and is more comfortable than its competitor due to the pre-cut shape of the dressing.**
- **Advadraw is a cost effective alternative to the other capillary action dressing available and previously used in the authors' NHS Trust.**

The patient was discharged home approximately three weeks later; once he had pressure-relieving foot wear made and fitted to protect the remaining part of his foot. At discharge, the wound bed was covered in granulation tissue and the sinus had reduced in length by 2cm. The wound went on to completely heal over the following 6 months.

Patient six

Mr. L was an elderly gentleman with diabetes who had his left hallux amputated after it became infected and ischaemic. The TWT initially assessed Mr. L 3 days post-operatively and discovered that the surgeon had debrided a deep cavity approximately 3x3x3cm deep down to the metatarsal head. The ward staff had previously been using an alginate dressing to control high exudate levels and provide a moist wound healing environment. Unfortunately, this had resulted in maceration on the plantar surface of the foot and the skin surrounding the wound (Figure 11)

because the alginate was not able to control the amount of exudate being produced. Advadraw Spiral was applied into the full depth and shape of this cavity wound (Figure 12). Advadraw was then placed over the top and secured in place with an absorbent pad and tubular retention bandage.

Advadraw Spiral successfully controlled the exudate, and reduced the maceration of the surrounding skin. The deep cavity had reduced in length to 2cm, and the wound bed consisted of 50% granulation tissue and 50% superficial slough when the patient was discharged from hospital after 10 days.

Patient seven

Mrs. H was admitted to the cardiothoracic unit for management of an infected cavity wound to her thigh that had developed following an angioplasty. The ward staff had previously been applying VAC therapy, but when there was little improvement in her wound, she was referred to the TVT.

On first assessment, the wound appeared to be very small, measuring 4x5cm on the surface but when the depth was accurately measured it was found to have a cavity that tracked distally down her thigh by 13cm at the deepest point. VAC therapy was discontinued as it had been very difficult to apply without causing discomfort because of the width of the foam compared to the diameter of the wound opening. This was thought to be the reason why the wound had not been improving.

Three Advadraw Spiral dressings were used to pack the wound, which was then covered with two pieces of flat Advadraw and secured with adhesive tape. This dressing regimen was comfortable for the patient because the Advadraw Spiral was thin enough to be inserted easily into her wound. It also appeared to help initiate healing because the exudate and bacteria were successfully drawn from the wound base. The wound had reduced in depth by 3cm when the patient was discharged home three weeks later.



Figure 11. Hallux amputation with surrounding skin macerated.

The TVT did note that for this patient a longer length spiral would have been useful to overcome concerns about losing the dressings in such a deep wound where the wound base could not be seen.

Patient eight

Mr. D was an emergency admission with a crush injury to his abdomen, following an accident at work. He underwent bowel surgery and a stoma formation; however, his wound dehisced due to infection. On first assessment the wound measured 20x20x2cm deep. However, there were two sinuses present at the distal edge of the wound. The larger sinus measured 6cm deep and was intermittently producing faecal fluid from part of the defunctioned bowel. The presence of the fistula, the opening of which could not be seen, meant that the VAC therapy had to be discontinued.

The exudate level in this wound was very difficult to control particularly when it also produced faecal fluid. Advadraw Spiral was used to lightly pack the sinuses and Advadraw was then layered over the remaining wound area to increase absorbency, and this controlled the exudate relatively well. Dressings were changed daily so the wound could be irrigated with saline and reassessed. The patient did experience some problems



Figure 12. Hallux amputation with Advadraw Spiral in place.

initially with exudate leakage, particularly when he got out of bed to sit in the chair. However, these were overcome by applying more layers of Advadraw at the base of the wound.

When Mr. D was discharged home several weeks later he was still using the dressing regimen. The fistula had healed; the surface area of his wound had reduced to 15x7cm and was now flat. The sinus cavity that had led to the fistula was approximately 4cm in depth.

Due to the frequency of dressing changes and issues related to availability of Advadraw Spiral at the time of this evaluation, the ward stock ran out on two occasions and Vacutex was used as an alternative. This provided an opportunity for the patient to give his opinion of the two dressings. Mr. D

commented that Advadraw Spiral was less painful to pack into the wound than Vacutex, had not adhered to the wound bed as much and was more flexible and so more comfortable to use when sitting upright. In fact, Mr. D was so happy with the progress of the wound and the dressing regimen, that despite the dressings not being available on FPI0 at that time, he decided to purchase the dressings himself directly from the company so that the treatment could be continued at home. This difficult to manage wound did heal after approximately nine months of treatment.

Patient nine

Mr. T was an outpatient who had been referred for a non-healing pilonidal sinus. This wound had previously been surgically debrided and had been healing well, but had become static with dimensions of 3x2x1 cm. A wound assessment showed that it had become macerated and was becoming repeatedly infected because of the position of the wound. The TVT decided to use Advadraw Spiral in an attempt to better control the exudate and therefore the maceration. The patient was taught to perform his own dressing changes and chose to do these every day after a daily shower. The wound quickly started healing again and went on to completely heal within 6 weeks of starting treatment, allowing this young man to get back to his previously active life.

Discussion

The findings of this small evaluation demonstrate the efficacy of Advadraw Spiral across a wide spectrum of wounds encountered in clinical practice. The dressing was particularly effective in the management of thin, tracking sinuses, where it was found to be better than the alternative capillary action dressing available (Vacutex) because of its pre-cut shape and non-adherent properties. Advadraw Spiral also proved to be an effective alternative to VAC therapy and some of the hydrofibre dressings that are also often used for these difficult to heal wounds.

The use of Advadraw Spiral reduced the risk of leaving fibres in the wound bed, which can occur when cutting dressings to fit, and which can act as a foreign body and possibly delay healing. By reducing the need to cut the dressing, the sterility of the dressing process was maintained, reducing the risk of cross contamination and sharps injuries. This also led to a reduction in the cost of purchasing sterile single use equipment and nursing time required at dressing change. In all patients included in the evaluation, Advadraw and Advadraw Spiral controlled exudate well, therefore resolving maceration and helping to facilitate wound healing.

In addition to these clinical benefits, the patients' opinion was also sort during this evaluation and all but one of them found Advadraw Spiral comfortable to wear. The one patient that complained of discomfort had a very narrow wound opening and the pain was being caused when the dressing material rubbed against the edge of his wound. However the authors' believe that this would probably have also occurred with different dressing materials.

The efficacy of Advadraw and Advadraw Spiral, in combination with predicted cost savings for the Trust led to their inclusion in the authors' local formulary. By including Advadraw Spiral and Advadraw, the authors predict a cost saving for the trust based on a simple cost comparison between the price of Vacutex (10cm x 10cm; £16.12 x 10 dressings) and Advadraw (10cm x 10cm; £9.85 x 10 dressings) (NHS Logistics, 2006). As a unique dressing, the cost of Advadraw Spiral (£9.72 x 10 dressings) can only be compared to Vacutex (10cm x 10cm; £16.12 x 10 dressings) NHS Logistics, 2006), since the authors would have previously cut a Vacutex dressing (10cm x 10cm) into a spiral shape to pack into these wounds. Advadraw and Advadraw Spiral are now both available on FPI0 and so can be used in both primary and secondary care sectors.

Conclusion

Sinuses can be difficult to heal and Advadraw Spiral gives the wound care practitioner an effective alternative to the commonly used capillary action and alginate dressings.

Advadraw Spiral controls exudate well, helps to heal sinuses and is comfortable because of its pliability and low adherent proper ties. As a result of this evaluation, Advadraw and Advadraw Spiral were included on the authors' wound care product formulary and have since been used in other wounds such as grade three and four pressure ulcers, and continue to be widely used in the management of dehiscent surgical wounds, pilonidal sinuses and diabetic foot ulcers.

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Treating sinus wounds

Sylvie Hampton, Dr Steve Young and Andy Kerr discuss the treatment of sinus wounds

Wound healing represents a well orchestrated reparative response that is induced by injuries. However, for many reasons, a wound can change its dynamics from a healing wound to a non-healing wound, which can sometimes lead to the formation of a sinus. A wound sinus is a discharging blind-ended track that extends from the surface of an organ to an underlying area or abscess cavity (Everett, 1985) and most tissue viability nurses would have treated a sinus wound at some point in their career. Yet, even though they are commonly found, there is little information available on the management of these difficult to heal wounds.

Recurrence rates remain high, often as a result of incomplete assessment or the use of inappropriate dressing techniques that prevent the drainage of exudate and allow the formation of epidermal bridges (Butcher, 1999) or complete closure of the surface of the sinus. Complete closure permits the exudate to collect in a pocket below the surface until suddenly, it will become painful and force the surface open to allow discharge onto the surface.

An understanding of wound aetiology and the conditions required to effect successful management and resolution will aid treatment and this article will examine a revolutionary method of combining high frequency ultrasound and capillary drainage that is successfully used in the Wound Healing Centre in Eastbourne.

Sinus formation & assessment

Although abscess cavities most frequently arise from cutaneous pathogens, they may also result from infections in deeper structures, such as chronic osteomyelitis (Butcher, 1999) and it is important to rule out potential of infection in the bone before treating. Other causes could be a foreign body, trauma or pressure damage which produces formation of localised haematoma leading to tissue ischaemia which creates a blind sinus or can be related to or poor wound management..

If a sinus is blocked by a dressing, no matter how absorptive that dressing may be, the fluid cannot drain out of the cavity and this leads to a collection of fluid in the base of the sinus which enlarges even further as it fills to excess creating an abscess. The abscess cavity

therefore fills with serous exudate, debris and pus, providing an ideal area for bacterial proliferation (Vickery, 1997).

The sinus should be gently explored with a fine malleable probe to assess depth, direction and multiplicity of the tracts present is always useful in the case of sinus wounds (Butcher, 1999) as it provides the easiest method for assessment of size and depth. The Eastbourne Wound Healing Centre always uses high frequency ultrasound to assess depth and direction of any sinus wound as this not only provides a baseline measurement, but also provides accurate scientific measurements of any healing that occurs over a period of time.

Where bony involvement or infection is possible, plain X-ray examination is recommended and this is of particular importance in foot sinuses in diabetic patients, where underlying osteo-myelitis is a risk. When high definition ultrasound is unavailable, the instillation of radio-opaque dye (sinogram) may sometimes be necessary to assess the extent of the sinus, particularly in deep wounds (Butcher, 1999).

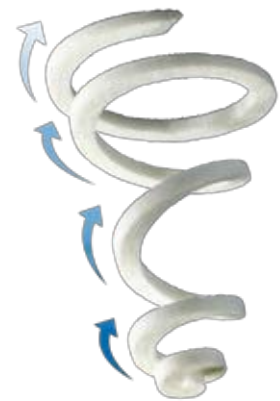
A thorough examination of the wound is essential to observe the condition of the surrounding tissue for signs of maceration, excoriation and cellulitis. The nature of the exudate, its volume, colour and consistency should also be noted (Butcher, 1999).

Management of a sinus wound

The management of a sinus will very much depend on its underlying aetiology and a full patient history will be of great

assistance in determining the likely cause of the sinus. (Butcher, 1999). There are many different types of wound dressings available and it is important that nurses know what sort of dressing is appropriate for a highly exuding wound as using the wrong dressing can lead to repeated dressing changes and soiling of clothes and bedding and will undermine the patient's faith in care (Anderson, 2002).

The wound sinus dressing aims to prevent adherence of the wound edges and therefore stop premature closure. Although used for many years to pack sinuses, ribbon gauze is now not recommended, as tight gauze acts as a bung that prevents free drainage of exudate (Everett, 1985) and Eastbourne Wound Healing Centre advises that dressings that absorb will not necessarily effectively drain a sinus.



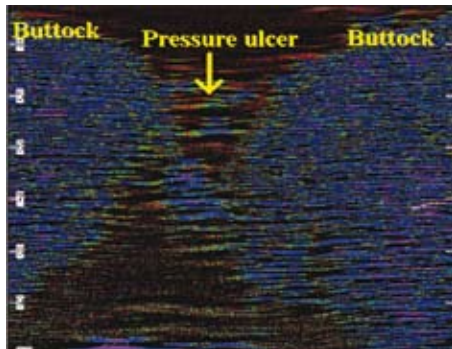
Treatment regimes must be based around removal or treatment of the causative factor with simple acute sinuses being treated conservatively with dressings, such as Advadraw, that encourage the granulation of the cavity and track (Butcher, 1999). Advadraw also provides

an alternative to drainage tubes as the unique action of this dressing transports exudate either into a secondary dressing or (as used in Eastbourne Wound Healing Centre) a drainage bag.

High-pressure irrigation can cause pain, bacterial spread (Lawrence, 1997) and may damage body defenses (Wheeler, 1976). Therefore, the Eastbourne Wound Healing Centre uses the capillary dressing Advadraw to cleanse the sinus.

Advadraw

Advadraw is a highly absorbent dressing (has the ability to absorb exudate 30 times its own weight), low adherent rapid capillary action dressing with a unique method of removing excessive fluid from a wound bed. The dressing has three components: a central wicking layer sandwiched between highly absorbent, soft viscose/polyester pads and an outer non-adherent contact layer. The action of this dressing is to actively draw fluid from the wound bed into the central wicking layer from where it is rapidly redistributed into the absorbent pads. This capillary action results in excellent



fluid management while retaining a moist wound healing environment. Fluid can be transferred from one Advadraw to another and cutting into any shape will not impair its function. Wound sinuses are notoriously difficult to dress due to their depth and narrow width, and present the practitioner with a challenge in terms of dressing selection. Advadraw Spiral (Figure 1) is a rapid capillary action dressing that is supplied in a pre-cut ribbon shape. It has a double-sided wound contact layer that makes it convenient and easy to use in patients with sinuses.

Placed into a sinus, it 'suctions' up the fluid and deposits it into a wound bag. A paediatric stoma bag is quite suitable

Occasionally, if the wound fluid is likely to come back onto the skin because of the position of the patient, then it is simple to place a small amount of Advadraw within the wound bag to absorb the fluid away from the site.

A case study using capillary action on a sinus wound

This gentleman had developed a sinus five years previously following surgery for an anterior and posterior resection. Following the resection, he developed pressure damage over the surgical incision.

The Wound Healing Centre took over his care and undertook high frequency ultrasound assessment. This showed a wound that tracked toward the spine (Figure 2) and then changed direction and tracked until it became a reservoir for wound fluid.

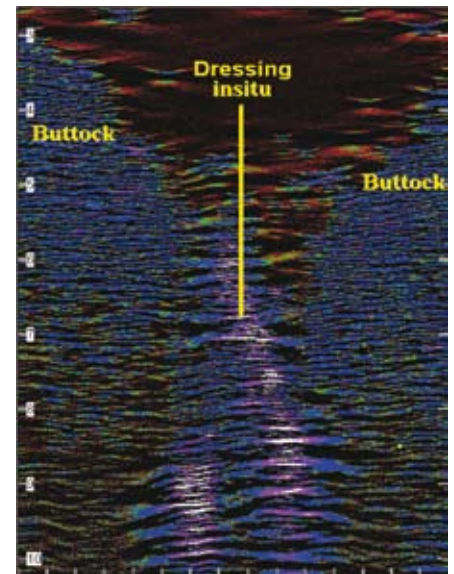
The blue areas represent healthy tissue and the dark areas represent fluid or oedema. The capillary dressing was placed inside the sinus and ultrasound was used to demonstrate the position of the dressing in the sinus (Figure 3). This allowed the practitioners to guide the dressing into an optimum position with the end of the dressing into the reservoir. The end of the dressing was then placed into a small stoma bag, permitting free drainage of the fluid into the bag.

The wound was then assessed with ultrasound every 2nd week. The sinus is filling in with the 'blue' healthy tissue and the darker area is reducing in size.

Attendance at the Wound Healing Centre for this gentleman were quickly reduced from alternate days to weekly and this wound went on to successfully heal after 16 weeks.

For five years the sinus had been packed with expensive dressings and had cost approximately £200 per week. Within one week of using a capillary dressing, the cost of treatment reduced to £6 per week and the quality of life for this

gentleman increased to the same level as prior to his operation.



Conclusion

Since this case study was undertaken, the Wound Healing Centre has developed a protocol for treatment of sinus wounds that consistently uses capillary dressings and stoma bags and the success rate of sinus healing is reliable, cost effective and simple to achieve.

Therefore, the Wound Healing Centre would recommend the use of capillary dressing such as Advadraw Spiral in the treatment of sinus wounds.

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The use of Advadraw to remove necrotic tissue from a grade 3 pressure ulcer

Lynne Goodwin - RGN, Tissue Viability Support Nurse, North Bristol NHS Trust.

The patient

Mr S, an 86-year-old gentleman was admitted into hospital after being found in bed by his family unconscious. He was diagnosed as having had a CVA causing a dense left sided weakness with pneumonia. At the time of admission it was identified that he had pressure damage to his right buttock.

Background

His past medical history was that he had a previous CVA, hypertension, high cholesterol and prostate cancer. Mr S was living independently up until this admission into hospital.



Once on the ward it was assessed that he had a grade 3-pressure ulcer (EPUAP) to his right buttock. The length was 6cm with a width of 5cm; depth was not assessed due to necrotic tissue, however there was evidence of pink tissue. Margins were oedematous with extensive surrounding blanching erythema, a slight malodour was present with moderate levels of exudate. It was decided that he was too unwell for surgical debridement,



so he was recruited into the evaluation of Advadraw. Advadraw and Advadraw Spiral were commenced with tegaderm as the secondary dressing, redressed every 48 hours.

Sixteen days later it was identified that most of the necrotic tissue had been removed. The wound could now be assessed for depth, which was 2.5cm, no sinuses or undermining were evident. Exudate was managed successfully as there was no evidence of maceration. However, this gentleman did have an episode of confusion and agitation, which dislodged the dressing causing slight damage to the surrounding skin. This therefore indicates that the dressing needs to reflect the shape of the wound and should not be placed on healthy skin.

A further ten days later, significant improvement could be seen as the depth was now 1.5cm with the width being 3.5cm and the length remaining at 6cm. The granulating tissue appeared healthy with obvious epithelialisation to the margins, surrounding erythema and oedema had reduced.



Results

At this point he had commenced rehabilitation and was starting to sit out for periods of up to 45 minutes.

- **Surgical debridement had been avoided**
- **Pain levels had significantly reduced.**
- **The granulating tissue was of good quality and significant healing was evident.**
- **Exudate management had been successful.**

Nursing Intervention

- **Tissue Viability had given advice and supported staff with the application of Advadraw.**
- **TV assessed the wound on a weekly basis with ward staff redressing every 48 hours.**
- **It was commented by staff that the product was easy to apply once trained and aware of how it worked.**

Advadraw

Rapid capillary action dressing

Product description

An absorbent, non-adherent dressing with a rapid wicking effect. Advadraw has a unique integrated central wicking layer between absorbent polyester/viscose fibres lined with perforated non-adherent film.

Fluid from the wound bed is rapidly absorbed into the dressing and distributed by the central layer resulting in sustained movement of exudate from a wound bed.

The wicking of fluid from the wound bed will promote autolytic debridement, deslough and debride wounds and help remove bacteria in the exudate.

Use

Advadraw is placed (either side down) onto the wound surface. Dressings can be placed side by side to cover large wound areas and layered to optimise absorbency. Advadraw can be cut to size ensuring that sharp scissors are used.

Secure with a secondary dressing of choice. Advadraw may initially require changing daily but can be left in place for up to seven days.

Features

- ✓ **Rapid absorption**
- ✓ **Draws in exudate**
- ✓ **Capillary action**
- ✓ **Non-adherence**
- ✓ **Easy to cut**
- ✓ **Soft and conformable**
- ✓ **Highly absorbent**



Indications

All acute and chronic wounds, especially sloughy, necrotic or exuding wounds including:

- ✓ **Leg ulcers**
- ✓ **Post operative or dehiscent surgical wounds**
- ✓ **Pressure ulcers**

Advadraw Spiral

Rapid capillary action ribbon

Product description

An absorbent, low adherent dressing with a wicking effect, presented in a spiral ribbon form. The dressing comprises of a soft viscose and polyester fibres with a central wicking layer with a perforated permeable wound contact layer. The unique spiral shape allows the dressing to be easily cut to length for insertion into cavity wounds or conform to deep wound beds.

Fluid from the wound bed is rapidly absorbed into the ribbon and distributed by the central layer, resulting in sustained movement of exudate from a wound bed. This helps to manage exudate levels and promote autolytic debridement.

Use

Advadraw Spiral can be inserted into a wound or placed (either side down) onto the wound surface. The end of Advadraw Spiral can be inserted into a standard Advadraw dressing which will act as a reservoir for exudate collection. Advadraw Spiral can be cut to length.

Secure with a secondary dressing e.g. a film dressing, bandage and/or tape. Advadraw Spiral may initially require changing daily but can be left in place for up to seven days.

Features

- ✓ **Rapid absorption**
- ✓ **Draws in exudate**
- ✓ **Capillary action**
- ✓ **Can be used directly on wound bed**



Indications

All acute and chronic wounds, especially sloughy, necrotic or exuding wounds including:

- ✓ **Leg ulcers**
- ✓ **Post operative or dehiscent surgical wounds**
- ✓ **Pressure ulcers**
- ✓ **Cavity wounds**

Name	Stock Code	Description	Size	PIP code	NHS code	Pack size
✓ Advadraw	CR3746	Rapid capillary action dressing	5 x 7.5cm	304-3759	ELY174	10
✓ Advadraw	CR3747	Rapid capillary action dressing	10 x 10cm	304-3783	ELY175	10
✓ Advadraw	CR3748	Rapid capillary action dressing	10 x 15cm	304-3809	ELY176	10
✓ Advadraw	CR3822	Rapid capillary action dressing	15 x 20cm	329-5961	ELY177	10
✓ Advadraw Spiral	CR3799	Rapid capillary action ribbon	0.5 x 40cm	314-8640	ELY198	10



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