

INTERNATIONAL **CASE STUDIES**

Retrospective case series: Skin protection and wound management

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Introduction

A pressure injury occurs when persistent pressure, or a combination of pressure and shear, damages the skin and underlying tissue, typically over bony prominences. Injuries can range in severity from intact skin with non-blanchable erythema (Stage I) to full-thickness tissue loss with exposed bone, tendon or muscle (Stage IV). The severity of injury is influenced by both the intensity and duration of pressure, making early detection and intervention essential to prevent further damage (Neyt et al, 2024).

Current clinical guidelines recommend minimising pressure and shear through the use of appropriate support surfaces and regular repositioning. Multilayer foam dressings, originally developed for wound management, are increasingly used as an adjunct strategy for skin protection. These dressings help redistribute mechanical forces, reducing pressure and shear over high-risk areas such as the sacrum. Research by Sieracki et al (2020) supports their use, demonstrating that foam dressings significantly reduce tissue deformation and stress compared with no dressing use.

Selecting the right dressing is essential in wound management. This case series explores the use of advanced foam dressings, particularly Aquacel® Foam Pro, to maintain skin integrity. Aquacel® Foam Pro is designed to protect the skin from breakdown when used as part of a care protocol, minimising shear forces and friction before the onset of skin damage (Convatec, 2015; Steven et al, 2015). Its low-friction outer surface allows smooth movement across bed linens and other materials, reducing the risk of dressing displacement and associated skin trauma. The multi-layered structure includes a breathable, waterproof protective film to protect against external contaminants, a Hydrofiber® layer to absorb exudate and manage moisture and a perforated silicone adhesive contact layer for gentle application and atraumatic removal.

Healthcare professionals have a responsibility to assess wounds and periwound skin at each dressing change to determine the appropriate frequency of replacement (Wounds UK, 2012). Heavily exuding wounds, for example, require more frequent dressing changes to prevent maceration, exudate leakage and patient discomfort. The ability to lift and reposition Aquacel® Foam Pro dressings without full removal allows clinicians to monitor skin condition while maintaining dressing adherence and patient comfort.

Conclusion

This retrospective case series highlights the successful use of Aquacel® Foam Pro dressings and other products for skin protection and wound management by healthcare practitioners across the Asia-Pacific region. The cases demonstrate the versatility of these dressings in protecting at-risk anatomical areas and supporting the management of various wound types, from preserving skin integrity during prolonged prone positioning to treating established pressure injuries and skin tears.

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CASE 1: Protecting Skin Integrity in Prolonged Prone Surgery

Author details: **Junya Kawada**, Certified Nurse in Perioperative Nursing, Kyoto Renaiss Hospital, Japan

Clinical presentation

- A male patient in his 20s was identified as being at high risk of skin breakdown following spinal surgery, due to prolonged immobility.
- Medical history:** The patient underwent spinal surgery for screw insertion and was required to remain in the prone position for an extended period. This increased the risk of friction- and shear-related skin damage over vulnerable areas, including the cheeks, anterior chest, anterior iliac crests, and patellae.

Management plan

Treatment objectives: To protect the skin from breakdown caused by friction, shear forces and moisture during surgery. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan

Protective barrier	Esenta™ Sting-Free Skin Barrier Wipe was applied to the face [Figure 1], anterior chest, anterior iliac crests and patella region
Dressing	<ul style="list-style-type: none">Cheeks: Aquacel® Foam Pro [10cm x 10cm] was carefully applied, avoiding the eyes to protect delicate facial structures [Figure 2a]Anterior chest, anterior iliac crests and patella region: Aquacel® Foam Pro [15cm x 15cm; Figure 2b]
Adhesive remover	Esenta™ Sting-Free Adhesive Remover was used to remove dressings without skin trauma. The non-alcoholic, hypoallergenic solution was applied to weaken the adhesive bond [Figure 3a]. Dressings were then gently peeled back at a 180-degree angle, close to the skin surface [Figure 3b]

Clinical outcomes

Application of Aquacel® Foam Pro dressing maintained skin integrity throughout the period of prone positioning. The patient experienced no skin-related complications, and the dressing was tolerated well.

Conclusion

Aquacel® Foam Pro was applied to high-risk areas to protect the skin from friction, shear and moisture during prolonged prone positioning. Its silicone adhesive layer allowed gentle repositioning without trauma and could be removed atraumatically once additional protection was no longer required.



Figure 1. Use of Esenta™ Sting-Free Skin Barrier Wipe on cheek

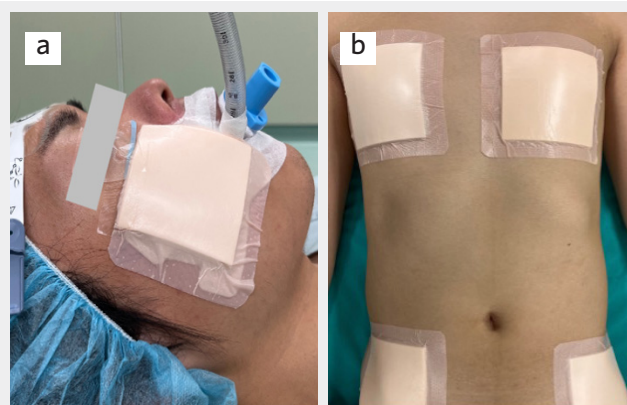


Figure 2. Application of Aquacel® Foam Pro to (a) cheek and (b) anterior chest and anterior iliac crests

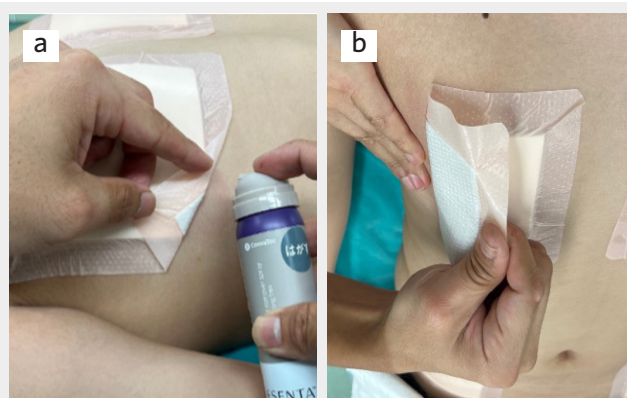


Figure 3. (a) Application of Esenta™ Sting-Free Adhesive Remover and (b) removal of Aquacel® Foam Pro at a 180-degree angle from the anterior chest

CASE 2: Protecting Skin Integrity during Surgical Procedures

Author details: **Koichi Kono**, Certified Nurse in Perioperative Nursing, Hyogo Medical University Hospital, Japan

Case 2a: Sacral protection during tibial nail fixation

A male patient underwent tibial intramedullary nail fixation while in the supine position. Aquacel® Foam Pro was applied to the sacral region to protect the skin from pressure, friction and shear forces during the procedure.

Clinical outcomes

Throughout the surgery, the dressing remained intact and adhered well to the application site, effectively protecting the skin [Figure 1]. The clinician noted that the dressing was easy to remove and reapply, allowing for continuous skin protection in the ward setting, and could be peeled back at a 180-degree angle close to the skin surface without trauma.

Conclusion

Aquacel® Foam Pro was effective in protecting the sacral region during surgery by minimising friction and shear. Its easy removal and reapplication make it a suitable option for continuous skin protection in the ward setting.

Case 2b: Iliac protection during fracture repair

A male patient with calcaneal and humerus fractures underwent observational osteosynthesis while in the prone position for approximately three hours. Aquacel® Foam Pro was applied to the iliac region [Figure 2] to protect the skin during the procedure.

Clinical outcomes

The dressing maintained adhesion throughout the procedure. The smooth top layer of Aquacel® Foam Pro prevented wrinkling or detachment, even during intraoperative pressure relief manoeuvres.

Conclusion

Aquacel® Foam Pro effectively maintained skin integrity in the iliac region during surgery. Its ability to remain in place and be reapplied allows ongoing skin protection.

Case 2c: Facial protection during prone surgery

A male patient undergoing surgery in the prone position had Aquacel® Foam Pro applied to the forehead and mandible [Figure 3a]. These areas are particularly prone to friction and shear during prolonged procedures. A 15cm x 15cm foam dressing was cut in half and applied to the forehead and mandible [Figure 3b], ensuring anatomical conformity while protecting the skin.

Clinical outcomes

On removal of Aquacel® Foam Pro, no signs of skin damage were observed. The clinician noted the dressing's versatility in size and adaptability to different anatomical areas, making it suitable for protecting sensitive facial skin during surgery.

Conclusion

Across multiple surgeries, Aquacel® Foam Pro was effective in protecting high-risk areas by reducing friction, shear forces and pressure. Its ability to be repositioned and reapplied postoperatively supports continuous skin protection.



Figure 1. Post-application of Aquacel® Foam Pro to the sacrum



Scan QR code to view dressing removal at the sacrum (1.5x)



Figure 2. Post-application of Aquacel® Foam Pro to the iliac region



Scan QR code to view dressing removal and reapplication to the iliac region (2x)



Figure 3. (a) Pre- and (b) post-application of Aquacel® Foam Pro to the forehead and mandible



Scan QR code to view how the smooth top film prevented dressing wrinkling or detachment during intraoperative pressure-relieving procedures

CASE 3: Protecting Skin Integrity in Orthopaedic Spine Surgery

Author details: **Jaraspas Wongviseskarn**, APN, ET Nurse, Head of Urodynamic and Advance Wound Care Clinic, Division of Physical Medicine and Rehabilitation, Phramongkutklao Hospital, Bangkok, Thailand

Clinical presentation

- A 57-year-old male patient required skin protection during surgical intervention for orthopaedic spinal fixation. This procedure was a reoperation due to prior fixation failure. The patient had previously undergone revision surgery at the T10 to S2 level for post-discectomy syndrome. The upper chest region was identified as vulnerable to pressure while the patient was positioned on a Jackson Table
- **Risk factor assessment:** Braden Scale score of 8.

Management plan

Treatment objectives: To protect the skin from friction and shear forces during surgery and to maintain skin integrity. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan

Dressing	Aquacel® Foam Pro was applied to high-risk areas, specifically the left [10cm x 10cm] and right upper chest [15cm x 15cm]. The dressings were applied preoperatively and remained in place for the duration of the procedure to provide continuous protection [Figure 1]
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Clinical outcomes

Postoperatively, mild erythema was observed in the upper chest areas where pressure had been exerted during the procedure. The redness was classified as a Stage 1 pressure injury [Figure 2], measuring 10cm (length) x 4cm (width) on the left and 10cm (length) x 1cm (width) on the right upper chest region. These areas resolved after approximately eight hours in the supine position, relieving pressure on the affected regions.

The clinician found Aquacel® Foam Pro to be 'good' in protecting the skin during surgery. The silicone adhesive layer remained secure throughout the procedure, with no complications such as skin irritation or breakdown observed. The dressing was described as 'easy' to apply and remove, and the patient reported no discomfort during or after the procedure.

Conclusion

The use of Aquacel® Foam Pro was successful in protecting the skin from breakdown when implemented as part of a care protocol. The rapid resolution of mild erythema demonstrated the dressing's effectiveness in managing the microclimate and redistributing pressure.

The clinician suggested that using a larger dressing (e.g. 15cm x 15cm sacral foam pad) may have further supported skin protection over a wider area.



Figure 1. Application of Aquacel® Foam Pro to the upper chest region



Figure 2. Stage 1 Pressure injury following surgical intervention

CASE 4: Protecting Skin Integrity Post-Thyroidectomy

Author details: **Jaraspas Wongviseskarn**, APN, ET Nurse, Head of Urodynamic and Advance Wound Care Clinic, Division of Physical Medicine and Rehabilitation, Phramongkutklao Hospital, Bangkok, Thailand

Clinical presentation

- A 49-year-old female patient undergoing thyroidectomy was nursed in the supine position with neck extension for several hours during surgery, placing her at risk of skin damage. No visible wounds were present at the time of assessment, but prolonged immobility placed the sacral area vulnerable
- **Medical history:** Hypertension; multinodular toxic goitre with compressive symptoms
- **Risk factor assessment:** Braden Scale score of 10.

Management plan

Treatment objectives: To protect the sacral skin from friction and shear forces during prolonged surgery and maintain skin integrity. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan

Dressing	Aquacel® Foam Pro was applied to the at-risk area (sacrum) before surgery and remained in place postoperatively [Figure 1]
Additional measures	Nurses conducted regular skin assessments to monitor for skin damage development

Clinical outcomes

The patient remained in the same position for 12 hours without repositioning. Aquacel® Foam Pro remained intact throughout surgery, recovery and ward admission.

Postoperatively, mild erythema was observed in the sacral area [Figure 2], which did not progress to a Stage 1 pressure injury. The redness resolved within 24 hours without intervention [Figure 3]. The clinician reported that Aquacel® Foam Pro 'very easy' to apply and remove, rating its overall performance as 'good'.

Conclusion

Aquacel® Foam Pro effectively maintained skin integrity in a high-risk surgical patient. Minor post-operative erythema resolved within 24 hours without complications. The use of preventive dressings in high-risk surgical cases may contribute to cost-efficient management of skin integrity in clinical settings.

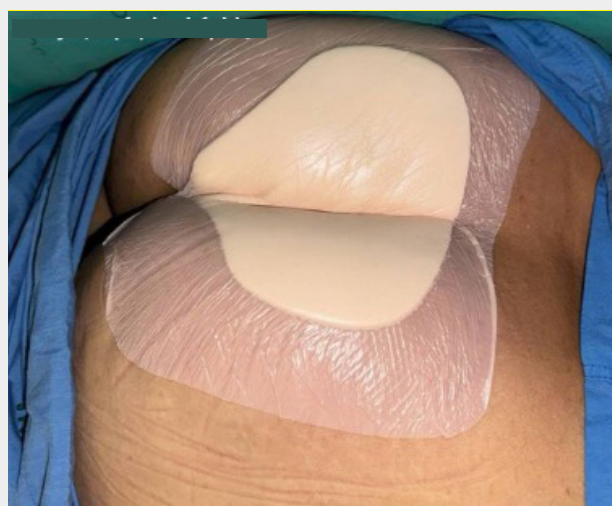


Figure 1. Prophylactic application of Aquacel® Foam Pro to the sacral region prior to surgical procedure



Figure 2. Post-operative redness of the sacral region



Figure 3. Resolution of post-operative redness after 24 hours

CASE 5: Protecting Skin Integrity in Prolonged Prone Ventilation

Author details: **Liqiong Li**, Intensive Care Unit, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China

Clinical presentation

- A 50-year-old male patient with oedema in all four limbs and sporadic bruising [Figure 1] was admitted with liver failure and underwent an allogenic liver transplant. He remained in intensive care and required 24 hours of ventilation in a prone position, placing him at high risk of skin damage
- **Medical history:** Intracranial infection, postoperative cerebral haemorrhage in the right basal ganglia, hypertension, pulmonary infection, coagulation dysfunction
- **Risk factor assessment:** Braden Scale score of 8.

Management plan

Treatment objectives: To offload pressure from affected areas (tibia, fibula, ribs, hips and mandible) and protect the skin from breakdown. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan	
Protective barrier	Esenta™ Sting-Free Skin Barrier was applied to saline-cleansed skin to create a protective layer between the skin and dressing. The skin was allowed to dry completely before the application of the adhesive dressing
Dressing	Aquacel® Foam Pro and Foam Lite™ were applied to minimise pressure on affected areas
Adhesive remover	Esenta™ Sting-Free Adhesive Remover was used to remove dressings without skin trauma. The non-alcoholic, hypoallergenic remover was applied to weaken the adhesive bond, and dressings were peeled back at a 180-degree angle, close to the skin surface [Figure 2a and 2b]
Additional measures	Offloading cushions, sedation and analgesia

Dressings were replaced if their integrity was compromised (e.g. loose edges or peeling). Skin condition was monitored daily during prone-position ventilation.

Clinical outcomes

The skin remained intact throughout the period of prone ventilation. The clinician reported that the dressings performed 'excellently', noting that they were 'very easy' to apply and 'easy' to remove, making them suitable for use by nurses of all experience levels. The dressings adhered well and could be reapplied to facilitate ongoing skin monitoring. On waking from sedation, the patient reported no discomfort with the dressings.

Conclusion

In high-risk patients, preventive measures, including the use of appropriate dressings, are important. In this case, Aquacel® Foam Pro effectively maintained skin integrity over key areas, including the tibia, fibula, ribs, hips and mandible, during 24 hours of prone ventilation. Its performance in adhesion, reapplication and patient comfort supports its use as part of a care protocol in intensive care settings.

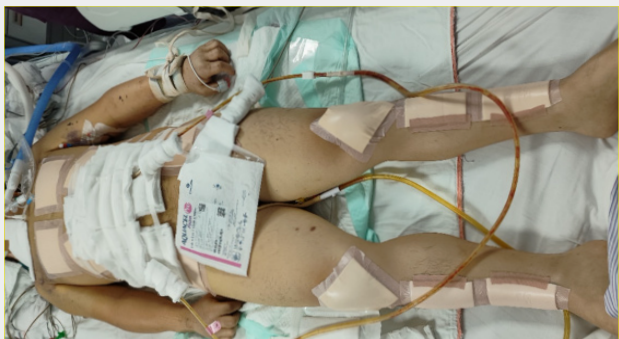


Figure 1. Application of Aquacel® Foam Pro on the patient's tibia, fibula, ribs and hips in preparation for 24 hours of prone positioning

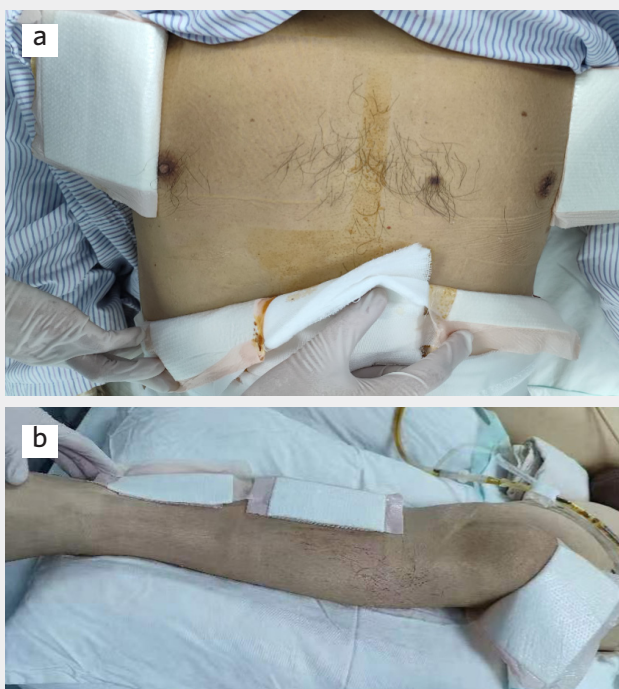


Figure 2. Removal of Aquacel® Foam Pro from the patient's (a) chest and (b) tibia and fibula following 24 hours of prone positioning

CASE 6: Skin Protection and Wound Management

Author details: **Lingjun Liu**, Nanjing Hospital of Traditional Chinese Medicine, Jiangsu, China

Clinical presentation

- A 90-year-old male patient with fragile skin developed a Stage 1 pressure injury on the posterior spinal eminence, present for 15 days [Figure 1a]. Sustained pressure on the spine increased the risk of wound progression
- **Medical history:** Paraplegia, diabetes, hypoproteinaemia
- **Risk factor assessment:** Braden Scale score of 10.

Wound presentation

- **Wound size:** 4cm (length) x 1cm (width)
- **Surrounding skin:** Healthy, dry and erythematous.

Management plan

Treatment objectives: To offload pressure, prevent further skin damage and promote wound healing. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan

Protective barrier	Esenta™ Sting-Free Skin Barrier was applied to create a protective layer. The skin was allowed to dry completely before the adhesive dressing was applied
Dressing	Aquacel® Foam Pro was applied to the posterior spinal eminence to protect skin integrity around the spine [Figure 1b]
Adhesive remover	Esenta™ Sting-Free Adhesive Remover was used to remove dressings without skin trauma. This non-alcoholic, hypoallergenic remover was applied to weaken the adhesive bond, and dressings were peeled back at a 180-degree angle, close to the skin surface

The patient was transferred to a nursing facility where staff were instructed to inspect the dressing daily and implement pressure offloading during repositioning. Dressing changes were performed every 3–5 days based on skin assessment.

Clinical outcomes

By day 3, the pressure injury showed signs of improvement, and by day 8, the perispinal skin had healed [Figure 2]. The clinician found the dressings 'very easy' to apply and remove [Figure 3], reporting overall performance as 'good'. The patient was satisfied and found the dressing comfortable. The dressings were effective in supporting and maintaining skin integrity. They allowed for easy monitoring of the skin, could be reapplied when needed, and contributed to reduced costs.

Conclusion

Aquacel® Foam Pro effectively supported the maintenance of skin integrity and helped reduce further deterioration in a high-risk patient.

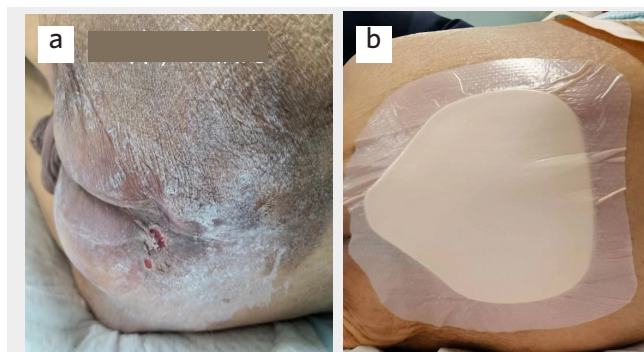


Figure 1. Spinal pressure injury on (a) initial presentation and (b) after application of Aquacel® Foam Pro



Figure 2. Skin condition at the skin damage site, showing improvement 8 days after application of Aquacel® Foam Pro



Figure 3. Removal of Aquacel® Foam Pro at a 180-degree angle

CASE 7: Skin Protection and Wound Management (Sacral)

Author details: **Jaraspas Wongviseskarn**, APN, ET Nurse, Head of Urodynamic and Advance Wound Care Clinic, Division of Physical Medicine and Rehabilitation, Phramongkutklo Hospital, Bangkok, Thailand

Clinical presentation

- A 101-year-old male patient presented with a recurrent Stage 2 sacral pressure injury [Figure 1]
- **Medical history:** Hypertension, dyslipidaemia, type 2 diabetes mellitus, Alzheimer’s disease, dementia, benign prostatic hyperplasia, Stage 3 chronic kidney disease and neurogenic bladder with incontinence.

Wound presentation

- **Wound size:** 3.72cm (length) x 2.41cm (width)
- **Tissue composition:** 75% granulation tissue, 25% epithelising tissue
- **Consistency and exudate level:** Clear and low.

Management plan

Treatment objectives: To offload pressure and shear forces, manage wound moisture balance and promote wound healing. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan	
Dressing	Aquacel® Foam Pro was applied to minimise pressure on the sacrum

The wound was inspected daily by gently removing the dressing, examining the wound and reapplying the same dressing. Throughout this process, the adhesive properties of Aquacel® Foam Pro remained intact. A complete dressing change, where old dressings were discarded and replaced with entirely new ones, was performed once a week.

Clinical outcomes

By day 11, a noticeable reduction in redness was observed. The patient was discharged and continued as an outpatient under the care of his 70-year-old daughter. By day 52 [Figure 2], the wound showed continued to show positive progression.

The clinician reported that Aquacel® Foam Pro was ‘very easy’ to use, available in various sizes, well-suited for sacral and heel areas and ideal for fragile elderly skin. The silicone adhesive was gentle and remained effective for 5–7 days, even with periodic inspections. The dressing conformed well to the body and provided comfort without pain during removal, reducing the need for frequent changes. No secondary dressings were necessary, and both the caregiver and clinician expressed high satisfaction.

Conclusion

At a follow-up appointment on day 348 [Figure 3], the wound had healed. To prevent further skin damage, the author provided the patient and his family advice relating to pressure relief for vulnerable areas and monitoring of chronic conditions to promote optimal health and quality of life.



Figure 1. Wound on presentation



Figure 2. Wound on day 52, showing reduced redness



Figure 3. Wound on day 348, showing complete healing

CASE 8: Wound Management: Skin Tears

Author details: **Shun Chung Chang**, Emergency Department, Chiayi Christian Hospital, Chiayi, Taiwan

Clinical presentation

- An 85-year-old male patient presented with a traumatic skin tear on the right dorsal foot following a fall-related blunt force injury [Figure 1].

Wound presentation

- **Wound size:** 3cm (length) x 5cm (width).

Management plan

Treatment objectives: To manage exudate, protect the skin from further breakdown, and promote wound healing. The following interventions were implemented [Table 1].

Table 1. Skin protection and wound management plan

Dressing	Foam Lite™ [6cm x 10cm] was applied to the skin tear
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Clinical outcomes

The skin tear was sutured [Figure 2]. Post-suturing, Foam Lite™ [Figure 3] was applied. The dressing remained in place for four days before the first dressing change.

At the Outpatient Department visit on day 4, the wound appeared dry, with no discharge, and the skin flap was intact. The dressing was subsequently changed.

By day 7, a topical antibiotic was prescribed and continued until day 14 to support epithelialisation and reduce the risk of infection. By day 24, the wound had fully epithelialised [Figure 4], and sutures were removed during the scheduled follow-up.

The clinician reported that the dressings performed 'excellently', noting that they were 'very easy' to apply and 'easy' to remove. The dressing effectively promoted the wound healing trajectory, required minimal care and prevented drainage retention. Throughout the treatment, the patient found the dressing 'comfortable' and easy to apply.

Conclusion

Foam Lite™ effectively protected tissue and supported healing in an older adult with a traumatic skin tear post-suturing. The dressing's thin profile and conformability made it particularly suitable for wounds on contoured areas such as the dorsal foot.



Figure 1. Traumatic skin tear on initial presentation



Figure 2. Skin tear post-suturing, showing wound approximation



Figure 3. Application of Foam Lite™ [6cm x 10cm] to the sutured skin tear



Figure 4. Healed skin tear on day 24, post-suture removal

