WHEN THERE’S A NEED FOR EPIDERMIS
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As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient’s circumstances and condition.
Case Study 1: Crushed Left Foot Wound

Patient was a 23-year-old female who presented with a crushed left foot following a rock climbing accident, resulting in ischemic damage to the tips of all her toes and amputation of the tips of toes 2-3 and total amputation of toes 4-5. There was also extensive tissue loss over the dorsal surface of the lateral foot and chronic refractory osteomyelitis. Prior medical history was unremarkable, and there were no pre-existing comorbidities. She was on no medications and had no surgeries prior to the injury.

After prepping donor site with isopropyl alcohol, epidermal micrografts were harvested from the patient’s medial thigh area using the CelluTome™ Epidermal Harvesting System. No anesthesia was necessary before or during the procedure. After approximately 30 minutes, the microdomes were raised and the epidermal grafts were successfully captured onto an adhesive dressing (Tegaderm™ Film Dressing, 3M Company, Minneapolis, MN). The recipient site was debrided, and the epidermal grafts were immediately placed on the recipient site (Figure A). A foam dressing, plus Coban™ (3M Company) layer, was used to secure the dressing with appropriate bolster.

Epidermal grafts were still visible at one week following removal of film dressing (Figure B). At 2 and 3-week follow-up visits, hypergranulation was observed (Figure C and D). The wound was progressing at 5-week follow-up (Figure E) and was completely healed by 6-week follow-up visit (Figure F). Patient reported minimal to no pain associated with the harvesting procedure (described as a “slapped skin” sensation), and the donor site healed rapidly and without scarring. The CelluTome™ Epidermal Harvesting System allowed for epidermal skin grafts to be easily harvested as an outpatient procedure with no donor-site morbidity and without need for anesthesia. The goal to initiate epithelialization was achieved using the epidermal grafts.

Patient data and photos courtesy of Dr. Marc Robins
Case Study 2: Achilles Heel Wound

A 52-year-old female patient presented with a postoperative wound on her right leg following repair of an Achilles tendon tear (Figure A). The patient had a 50 pack per year smoking history. The wound had been present for 9 months, with no response from previous treatments that included negative pressure wound therapy, enzymatic and sharp debridement, and topical silver alginate and ORC/Collagen dressings. Patient was treated with Trimethoprim Sulfa and a topical silver dressing to control bacterial burden prior to the procedure.

The CelluTome™ Epidermal Harvesting System was used to harvest epidermal grafts from the patient’s right inner thigh. Hair was removed from the donor site using clippers, and the skin was prepped with isopropyl alcohol. No anesthesia was required before or during the procedure. After the harvesting procedure, epidermal grafts were placed on a Tegaderm™ Film Dressing (3M Company, Minneapolis, MN) and subsequently applied to the recipient site. A dressing using foam and a self-adherent wrap (Coban™, 3M Company) was used over the epidermal grafts as a bolster, and dressings were changed weekly. Patient was prescribed compression stockings.

One week following application of epidermal grafts, the film dressing was removed from the recipient site along with the dressings (Figure B). As demonstrated in the series of photos (Figures C-F), the wound continued to heal steadily with only a single application of epidermal micrografts. No complications were reported, and the wound was completely closed approximately 8 weeks after initial application of epidermal graft. Patient reported minimal pain during the procedure, and donor site healed within 1 week with no visible scarring.

The patient’s nonhealing wound had been present for 9 months with minimal response to previous treatments. The entire procedure, including harvesting the grafts, required 30 minutes. In this case, a single application of epidermal grafts and subsequent application of foam dressing and self adherent wrap healed this patient’s wound. Patient experienced minimal to no discomfort, and wound improvement was visible at each follow up. The use of CelluTome™ Epidermal Harvesting System allowed for epidermal skin grafts to be harvested easily in the outpatient setting with minimal discomfort.

Figure 2. Wound on Right Foot

A. Initial wound at presentation  
B. Dressing removal at 1 week post grafting  
C. 2 weeks post grafting  
D. 3 weeks post grafting  
E. 6 weeks post grafting  
F. 7 weeks post grafting

Patient data and photos courtesy of Dr. Thomas Serena
Case Study 3: Lymphatic Filariasis of Dorsum Right Foot

The patient was a 20-year-old female with lymphatic filariasis involving the right leg who developed a wound on the dorsum of her right foot. Initial wound size was 8.5 cm x 4.5 cm x <0.5 cm (Figure A). Compression wrapping controlled her lymphedema, but despite the fact that the wound was clean and granulating, it was not progressing towards closure. In this type of population, past experience shows that wounds associated with this disease can take months to years to heal.

Epidermal microdomes were obtained from the patient’s thigh using the CelluTome™ Epidermal Harvesting System. After 35 minutes, the microdomes were raised using the Vacuum Head, and an adhesive foam dressing was inserted into the Harvester. The foam served to secure the microdomes and permit transfer to the wound site. By actuating the Harvester handle, the microdomes were harvested from the thigh, captured onto the foam, and then transferred to the recipient site (Figure B). The dressing was held in place using a two-layer compression wrap, 3M™ Coban™ 2 Layer Compression Therapy.

At one week, we observed nearly 100% take of the micrografts (Figure C). Over the next few weeks, the grafts continued to expand covering the wound area, as demonstrated in Figures D and E. In addition, the patient demonstrated repigmentation of the skin at the Day 30 follow up. Immediately after leaving the clinic at her one month follow-up visit, her right foot was run over by a motor bike. In the congested streets of Port-au-Prince, Haiti, this is not an uncommon occurrence. She returned to the clinic, and removal of the compression wrap revealed an intact graft (Figure F). Figure G shows the donor site (ie, thigh area) 30 days after harvesting with no visible signs of scarring.

Figure 3. Wound on the Dorsum of the Right Foot

Patient data and photos courtesy of Dr. Thomas E. Serena
Case Study 4: Foot I&D Abscess

Patient was a 66-year-old female who presented with a wound on dorsum left foot 5 days following drainage of an abscess. Medical history included diabetes, obesity, hypertension and congestive heart failure. While hospitalized, she was treated for 3 days with parenteral piperacillin/tazobactam. She was given oral cephalexin upon discharge and directed to follow up in the outpatient wound care center. The wound was initially treated with silver-hydrofiber dressings, followed by 3% NaCl for one month. Initial wound size before application of an epidermal graft was 1.5 cm x 2.3 cm x 0.1 cm (Figure A).

The CelluTome™ Epidermal Harvesting System was used to harvest an epidermal graft from the patient’s thigh after prepping the donor site with isopropyl alcohol. The recipient site was gently debrided of soft slough using a bone curette. No anesthesia was required before or during the harvesting procedure. The epidermal microdomes were secured to a Tegaderm™ Film (3M Company, Minneapolis, MN), harvested, and then placed over the wound (Figure B). A nonadherent dressing with gauze bolster was used over the micrografts for seven days. The film dressing was removed seven days following application of epidermal grafts. Subsequent dressings, which consisted of a nonadherent layer covered with dry gauze, were changed twice weekly.

By 3 weeks post epidermal grafting, there was a reduction in wound size to 0.6cm x 1.0cm x 0.0cm (Figure C). At 5 weeks, the wound was completely epithelialized (wound size: 0.2cm x 0.2cm x 0.0cm; Figure D). No scarring or loss of pigmentation was observed at the donor site, which healed completely after 7 days and required no further care. The procedure required 40-50 minutes, although total physician time in the room was approximately 15 minutes. Patient tolerance of the harvesting procedure was excellent. The CelluTome™ Epidermal Harvesting System offered an opportunity to produce autologous skin grafting in the office/clinic environment without need for anesthesia.

Figure 4. Wound on the Dorsum of the Left Foot

A. Initial presentation of wound
B. Application of epidermal grafts
C. Wound at 3 weeks post epidermal grafting
D. Wound completely epithelialized at 5 weeks post epidermal grafting

Patient data and photos courtesy of Dr. Randall Cook
**Case Study 5: Foot Wound Due to Spider Bite**

A 75-year-old female presented with a witnessed spider bite presumed to be a brown recluse spider due to the clinical progression of swelling, discoloration, necrosis, and subsequent wound formation (Figures A and B). Patient’s medical history included hypertension, hyperlipidemia, coronary artery disease, congestive heart failure, and a cardiac arrest event.

When the necrotic area had demarcated, the eschar was thoroughly debrided (Figures B and C). V.A.C.® Therapy was used to facilitate the formation of granulation tissue (Figure D). After one month, the wound bed had filled with tissue adequate for grafting (Figure E). The patient’s right thigh was prepped with isopropyl alcohol. Then epidermal micrografts were obtained using the CelluTome™ Epidermal Harvesting System (KCI, San Antonio, TX). After approximately 45 minutes of negative pressure and heat, the resulting epidermal microdomes were successfully captured onto an adhesive film dressing (Tegaderm™, 3M Company, Minneapolis, MN) which was perforated to allow fluid drainage. The film with micrografts was placed on the wound bed and affixed with Steri Strips™ (3M Company). Vaselinated gauze was used as a bolster. One week later, the dressing and film were removed. The wound was redressed with a layer of vaselinated gauze and Steri Strips™, and changed weekly.

Visible islands of epithelial tissue were present two weeks after application. Patient reported minimal pain associated with the harvesting, and donor site healed without scarring (Figure F). Progressive healing was observed (Figure G), and complete epithelialization was achieved at six weeks. Over a month, further tissue thickening and remodeling was evident (Figure H).

The epithelial islands evident within the wound reflected the viability of the grafted tissue. This facilitated rapid epithelialization of the large, well-granulated wound. This unique wound with full-thickness dermal and subcutaneous tissue loss exhibited the value of micrografting onto traumatic-type wounds. The CelluTome™ Epidermal Harvesting System allowed for rapid and efficient harvesting of epidermal micrografts. There was decreased donor-site morbidity compared to conventional split-thickness skin grafting. Since analgesia, sedation or anesthesia are not necessary, this procedure can be safely performed in the outpatient clinic setting.

**Figure 5. Spider Bite Wound**

A. Wound at presentation  
B. Eschar on wound bed  
C. Wound after debridement  
D. After one week of V.A.C.® Therapy  
E. Wound after 4 weeks of V.A.C.® Therapy and day of application of epidermal micrografts.  
F. Donor site healed at 1 week follow-up  
G. Wound at 3 week follow-up  
H. Wound healed 2 months after micrograft application

Patient data and photos are courtesy of Dr. Thomas Edwin Bishofberger, Jr.


Case Study 6: Charcot Foot Deformity

Patient was a 48-year-old female with diabetes and a Charcot foot deformity. Patient had a non-healing wound, which after post-operative debridement of 5th metatarsal for osteomyelitis, had been treated with hyperbaric oxygen therapy (40 treatments) as well as V.A.C.® Therapy with no significant improvements in closure (Figure A). Patient’s past medical history included diabetes mellitus for 15 years (adequately controlled), fibromyalgia, hemorrhoids, pericarditis and endocarditis (resulting in heart valve replacement), sick sinus syndrome, Barrett’s esophagitis, and gastroesophageal reflux disease. Patient had several existing comorbidities including polyps, fibroids, hyperlipidemia, high blood pressure and spinal stenosis. The right foot osteomyelitis had been present for 2 years prior to her 5th ray amputation, and her foot had a severe varus deformity in addition to the Charcot.

The patient’s right medial thigh area was used as the donor site for the harvesting of autologous epidermal micrografts using the CelluTome™ Epidermal Harvesting System. Donor site was prepped using isopropyl alcohol and the harvesting device was applied, without the use of anesthesia. After approximately 30 minutes of application of the device, the epidermal microdomes were raised, captured onto an adhesive dressing (Tegaderm™ Film dressing, 3M Company, Minneapolis, MN), and subsequently placed onto the recipient site that had been debrided prior to epidermal micrograft application. A foam dressing (Mepilex®, Mölnlycke, Gothenburg, Sweden) was used as a bolster.

Seven days after application, the film dressing was removed (Figure B). At this point, the epidermal grafts were still visible over the wound bed. At 3-week follow up, we noticed that the patient had been ambulating on the foot. As a result, the dressing had been pushed off and rolled dorsally, and the distinct epidermal microdomes seen the week prior were no longer apparent (Figure C). However, the wound continued to show healing at week 4 (Figure D) and by 5-week follow up, the wound was fully healed after enforcing better offloading (Figure E).

The use of CelluTome™ Epidermal Harvesting System in this case allowed for uniform epidermal microdomes to be harvested quickly and easily. The patient reported no pain associated with the procedure, and her donor site healed quickly. Although the epidermal grafts appeared to be accidentally wiped away by poor dressing maintenance, epithelialization had already been stimulated, and the wound was able to achieve full closure at a rate quicker than had been previously been demonstrated in this patient. As the patient refused another surgical procedure, STSG was not an option and epithelialization was achieved using the epidermal grafts in a clinic setting. Overall, the use of epidermal grafts showed to be a good alternative to using an STSG in this patient, with favorable results demonstrated by full healing without a second donor site wound.

Figure 6. Charcot Foot Deformity

A. Wound pre-debridement and prior to application of graft
B. Wound at 1-week follow up.
C. Wound at 3-week follow up.
D. Wound at 4-week follow up.
E. Wound healed at the 5-week follow up.

Patient data and photos courtesy of Dr. Marc Robins
Case Study 7: Pressure Ulcer on Heel

An 18-year-old female with a history of spina bifida presented with a pressure ulcer on her left heel (Figure A), which had failed to heal for 14 months. Previous treatments included offloading (heel protective boots and total contact casting), negative pressure wound therapy, topical growth factors, ORC/Collagen/Silver, Bioengineered skin (Apigraf®, Organogenesis, Inc., Canton, MA), and a dressing to control exudate (Drawtex®, Medline Inc., Mudelein, IL).

The CelluTome™ Epidermal Harvesting System was used to harvest epidermal grafts from the patient’s right inner thigh. Donor site was prepped with isopropyl alcohol. No anesthesia was required before or during the procedure. After the harvesting procedure, epidermal grafts were placed on a Tegaderm™ Film (3M Company, Minneapolis, MN) and subsequently applied to the recipient site. Epidermal grafts were bolstered using Drawtex®, followed by reapplication of a total contact cast.

At the time of the first dressing change (Day 3 post grafting, Figure B), the ulcer appeared clean with less depth. The film dressing was removed 7 days after application of epidermal grafts (Figure C). The dressings were changed twice weekly with application of a non-adherent dressing (Adaptic™, Systagenix, San Antonio, TX) covered by a silver alginate dressing. The wound healed steadily over the next 11 weeks, as demonstrated by a reduction in wound depth and surface area (Figures C, E-G). Complete closure was achieved in 12 weeks after a single application (Figure H). The treatment course was complicated by a superficial wound resulting from the total contact casting (Figure D), which healed within one week with application of a non-adherent dressing and additional cast padding. No other complications were observed. Donor site healed completely one week after harvesting with minimal scarring. The wound remained closed at follow-up one month later.

The single application of epidermal grafts and subsequent use of a non adherent dressing in combination with a silver alginate dressing resulted in expeditious closure (12 weeks) of a difficult-to-heal pressure ulcer, which had been present for over a year. The patient experienced minimal to no discomfort. The use of CelluTome™ Epidermal Harvesting System allowed for epidermal skin grafts to be harvested easily in the outpatient setting.

Figure 7. Wound on Left Heel

A. Initial wound at presentation
B. Wound at first dressing change
C. 1 week post grafting
D. Presentation of surrounding ulcer
E. 7 weeks post grafting
F. 10 weeks post grafting
G. 11 weeks post grafting
H. Wound closure

Patient data and photos courtesy of Dr. Thomas Serena
Case Study 8: Diabetic Foot Ulcer

Patient was a 58-year-old male with a non-healing diabetic foot ulcer (DFU) of 5 months duration located on the plantar 5th metatarsal area of the right foot (Figure A). Patient previously received collagen dressings and was interested in receiving an autologous epidermal graft. Along with Type-2 diabetes of 23-years duration, the patient also had hypertension.

Epidermal grafts were obtained from the medial thigh area using the CelluTome™ Epidermal Harvesting System (Figure B). No anesthesia was required before or during the procedure. The patient felt a little warmth, but reported no pain during the procedure. Epidermal skin grafts were placed on a Tegaderm™ Film (3M Company, Minneapolis, MN) following the 30-minute harvesting procedure with the CelluTome™ Epidermal Harvesting System. No bleeding was noted on the donor site after removal of the device (Figure C). The donor site was covered with Tegaderm™ Film, and the patient was instructed not to remove the dressing. During the time it took to harvest the epidermal skin grafts, the chronic wound was sharply debrided and copiously irrigated with normal sterile saline. The wound measured 1.5cm x 1.5cm x 0.3cm following debridement. Immediately following lifting of the epidermal skin grafts from the harvesting device, the Tegaderm™ Film was perforated with an 18 gauge needle to allow for drainage of potential transudate (Figure D), and the epidermal grafts were applied to the wound, followed by a non-adherent layer, a modified bolster dressing, and an instant total contact cast. The patient was instructed to leave the dressing intact and to return to clinic in five to seven days.

Five days following application of epidermal skin grafts, the patient scheduled a return visit, and the film dressing was removed. The wound was significantly smaller, measuring 0.5cm x 0.5cm x 0.2cm (Figure E). Closer examination of the wound revealed adherence of epidermal skin grafts on the base of the wound (Figure F). A non-adherent layer followed by a dry sterile dressing and an instant total contact cast were re-applied, and the patient was instructed to return for follow-up evaluations every one to two weeks. The wound measured 0.3cm x 0.3cm x 0.1cm one week later (12 days following epidermal grafting: Figure G) and was completely closed at 24 days post-epidermal skin-grafting (Figure H).

The CelluTome™ Epidermal Harvesting System allowed epidermal skin grafts to be harvested easily in the outpatient setting without requiring anesthesia. Because only the epidermal skin layer was removed from the donor site, there was no bleeding, scarring or donor site pain.

Figure 8. Wound on 5th Metatarsal Head Area of Right Foot

A. Non-healing DFU plantar 5th metatarsal head area of right foot
B. Microdomes of epidermal grafts formation noted after 30 minutes
C. Donor site following harvesting procedure
D. Perforation of Tegaderm™ Film with 18 gauge needle
E. Wound 5 days following epidermal grafting
F. Close-up of wound at 5 day follow-up
G. Wound at 12 days post epidermal grafting
H. Wound closed at 24 days post epidermal skin graft application

Patient data and photos courtesy of Dr. Stephanie Wu
Case Study 9: Venous Leg Ulcer

Patient was a 50-year-old male with a recurrent venous leg ulcer of six-weeks duration on the medial left ankle area (Figure A). The ulcer had previously healed using a bio-engineered skin replacement, but the wound re-opened six weeks later. In addition to venous insufficiency, the patient also had gastroesophageal reflux disease and type 2 diabetes for 16 years.

Epidermal grafts were obtained from the medial thigh area using the CelluTome™ Epidermal Harvesting System. No anesthesia was required before or during the harvesting procedure. The patient felt a little tingling and warmth, but he reported no pain during the procedure. Epidermal skin grafts were placed on a Tegaderm™ Film (3M Company, Minneapolis, MN) following the 30-minute harvesting procedure with the CelluTome™ Epidermal Harvesting System. No bleeding was noted at the donor site after removal of the device. The donor site was covered with Tegaderm™ Film, and the patient was instructed not to remove the dressing. During the time it took to harvest the epidermal skin grafts, the chronic wound was sharply debrided and copiously irrigated with normal sterile saline. The wound measured 1.0cm x 1.5cm x 0.2cm following debridement. Immediately following lifting of the epidermal skin grafts from the harvesting device, the Tegaderm™ Film was perforated with an 18 gauge needle to allow for drainage of potential transudate, and the epidermal grafts were applied to the wound (Figure B). This was followed by a non-adherent layer, a modified bolster dressing, and four-layer compression. The patient was instructed to leave the dressing intact and to return to the clinic in five-to-seven days.

Five days following application of epidermal skin grafts, the patient scheduled a return, and the film dressing was removed. The wound was significantly smaller, measuring 0.8cm x 0.5cm x 0.1cm (Figure C). A non-adherent layer followed by a dry sterile dressing and four-layer compression was re-applied, and the patient was instructed to return for follow-up evaluations every one to two weeks. The wound was 90% epithelialized one week later at 12 days post-epidermal grafting and completely closed at 17 days post-epidermal skin grafting (Figures D and E).

The CelluTome™ Epidermal Harvesting System allowed epidermal skin grafts to be harvested easily in the outpatient setting without requiring anesthesia. Because only the epidermal skin layer was removed from the donor site, there was no bleeding, scarring or donor site pain.

Figure 9. Wound on Medial Left Ankle Area

A. Presentation of venous leg ulcer on medial left ankle area
B. Application of epidermal grafts to recipient site
C. Wound 5 days following application of epidermal skin grafts
D. Wound 12 days post-epidermal grafting
E. Wound completely closed 17 days post-epidermal skin graft

Patient data and photos courtesy of Dr. Stephanie Wu
Case Study 10: Pressure Ulcer on Sacrum

Patient was a 48-year-old paraplegic male who presented with two Stage 1 pressure ulcers (PU) to the sacrum (Figure A). Medical history included paraplegia secondary to gun shot wound with bullet fragments lodged near his spine, chronic nerve pain, chronic renal failure, Stage V on hemodialysis, chronic anemia, hypertension, and urinary retention with urinary catheterization. The patient is wheelchair bound, sleeps on an air mattress, and turns himself every two hours per offloading protocol.

The CelluTome™ Epidermal Harvesting System was used to harvest epidermal grafts from the patient’s right inner thigh. Hair was removed from the donor site using a razor, and the skin was prepped with isopropyl alcohol. No anesthesia was required before or during the procedure. After the harvesting procedure, the epidermal grafts were placed on Mepitel® One (Mölndlycke Healthcare, Göteborg, Sweden) and subsequently applied to recipient site. A dressing using foam and a gauze bolster was used over the epidermal grafts, and dressings were changed weekly.

One week following application of epidermal grafts, the dressing was removed from the recipient site (Figure B). As demonstrated in the series of photos (Figures C-E), the wound continued to heal steadily with only one application of epidermal micrografts. No complications were reported, and the wound was completely closed at 6 weeks (Figure F). Patient reported minimal pain during the procedure, and the donor site healed within 1 week with no visible scarring.

The patient’s wound had been present for 2 weeks prior to the application of the epidermal grafts. Concurrently, the patient also has a Stage 4 pressure ulcer on the right ischium. Therefore, once the superficial ulcers did not respond to local wound care, the need to close these recent wounds was essential. The use of epidermal micrografts harvested with the CelluTome™ Epidermal Harvesting System was successfully used to close superficial pressure ulcers in this patient.

Figure 10. Wound on Buttock

A. Initial presentation on 1/21/14 with two superficial wounds on the buttock. (2.5x2.0x0.1cm inferior buttock PU and 1.0x0.2x0.1cm inferior lateral buttock PU).

B. At postgraft week one, patient’s two wounds merged into one wound (2.5x2.5x0.1cm).

C. Wound at 2 week postgraft follow up.

D. Wound at 3 week postgraft follow up.

E. Wound at 5 week postgraft follow up.

F. Wound completely closed at 6 week postgraft follow up.

Patient data and photos are courtesy of Dr. Elizabeth Kunda
Case Study 11: Right Breast Burn Wound

A 56-year-old obese female presented with a third-degree burn on her right radiated breast, sustained from a heating pad 6 weeks prior. Patient was obese with a medical history of bilateral mastectomy followed by right chest wall radiation and delayed reconstruction (tissue extender, implant, and latissimus flap) 3 years prior. At presentation, area of necrosis was debrided, and silver sulfadiazine 1% cream was applied (Figure A).

After two debridements and treatment with silver sulfadiazine cream (at 2 months), the CelluTome™ Epidermal Harvesting system was used to harvest an epidermal graft from the patient’s right medial thigh after prepping the donor site with alcohol. The epidermal microdomes were secured to a Tegaderm™ Film Dressing (3M™, Minneapolis, MN), harvested, and then placed over a well-granulated wound (Figure B). One month after epidermal grafting, wound was 100% reepithelialized (Figure C). At 5-month follow up, wound remained closed and demonstrated excellent aesthetic results (Figure D). There was full graft take with no complications, and donor site healed completely.

The use of epidermal grafting on this patient proved to be an effective treatment on a wound that had not responded to previous treatment. Epidermal grafting was a good alternative for this recipient site needing epidermal coverage.

Figure 11. Wound on Right Breast

A. Necrosis was debrided, and silver sulfadiazine was applied
B. At 2 months after two debridements and treatment with silver sulfadiazine cream, epidermal graft is applied to well-granulated wound
C. One month after epidermal grafting, wound was 100% reepithelialized
D. At 5-month follow-up, wound remained closed with excellent aesthetic results

Patient data and photos courtesy of Dr. Allen Gabriel
Case Study 12: Scalp Wound

A 42-year-old male patient presented with a right scalp defect following wide local excision of melanoma (Clark’s level V with Breslow’s depth 4.5 mm). Wound had been present for 4 weeks and covered with a dry dressing and bilaminated skin substitute. The silicone layer of the bilaminated skin substitute remained on the wound for 4 to 5 weeks and was removed on the day of grafting (Figure A).

The CelluTome™ Epidermal Harvesting system was used to harvest an epidermal graft from the patient’s right medial thigh after prepping the donor site with alcohol (Figures B and C). The epidermal microdomes were secured to a Tegaderm™ Film Dressing (3M™, Minneapolis, MN) (Figure D), harvested, and then placed over the recipient site. A reticulated open-cell foam was used as a bolster followed by an occlusive dressing to cover the recipient site. Dressings were changed twice. Seven days after placement of epidermal grafts, wound epithelialization was present (Figure E). There were no complications, and there was full graft take. Donor site completely healed with no scarring or loss of pigmentation. Scalp wound remained closed at 6-month follow-up with minimal defect (Figure F). The use of epidermal grafting provided an effective therapy treatment in this patient’s wound.

The use of epidermal harvesting for epidermal grafting was a minimally invasive procedure that did not require the use of anesthesia at the donor site. The technique for epidermal grafting was simple, convenient and effective in treating this patient’s scalp wound.

Figure 12. Right Scalp Defect

A. Silicone layer of the bilaminated artificial skin substitute was removed on the day of grafting
B. 4 weeks following initial surgery, epidermal grafts were harvested from right thigh
C. Donor site after harvesting of epidermal grafts
D. A film dressing was used to transfer epidermal grafts to the recipient site
E. 7 days post-placement of epidermal grafts
F. At 6-month follow-up, wound remained closed with minimal defect

Patient data and photos are courtesy of Dr. Allen Gabriel
Case Study 13: Post Mohs Surgery Ear Defect

An 80-year-old male presented with a squamous cell carcinoma in situ on the helical rim of the ear. Patient was an ex-smoker on 81mg aspirin daily. Mohs surgery was performed on the lesion (0.7cm), and clear margins were confirmed after one stage (Figure A). Traditional repair options included second intention healing or full-thickness skin grafting.

Epidermal micrografts were obtained from the patient’s thigh using the CelluTome™ Epidermal Harvesting System without use of anesthesia at the donor site. After approximately 40 minutes, the micrografts were raised using the Vacuum Head, and a film dressing was inserted into the Harvester, which was used to secure the tops of the micrografts. By actuating the Harvester handle, the micrografts were harvested from the thigh, captured onto the film dressing, and then placed on the recipient site. In order to facilitate drainage of any potential transudate, perforations were made in the film dressing using an 18g needle. The recipient site containing the micrografts/film dressing was covered with pressure bandaging for 1 week. A new film dressing was applied to cover and protect the donor site (Figure D) after removing the Harvester.

Follow up occurred at 2 (Figure B), 4 (Figures C and E), and 6 (Figure F) weeks post micrograft placement. Reepithelialization of the donor site was seen at two weeks, and pain scores provided evidence of minimal discomfort associated with harvesting of these grafts.

Figure 13. Post Mohs Surgery Defect

A. 3 days post surgery  B. 2 weeks post micrograft  C. 4 weeks post micrograft

D. Donor site on day of treatment  E. Donor site at 4 weeks post micrograft  F. Donor site at 6 weeks post micrograft

Patient data and photos courtesy of Dr. Ashish Bhatia
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NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for all KCI and Systagenix products and therapies. Prior to the use of any medical device, it is important for the provider to consult the treating physician and read and understand all Instructions for Use, including Safety Information, Dressing Application Instructions, and Therapy Device Instructions. Rx only.

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