Trauma, Lacerations and Fractures (ORIF)
ORIF ankle fracture

- HEMIGARD can manage postoperative tension

- Placement at areas of anticipated maximum swelling
High risk (obesity) ORIF ankle fracture

- Placement at areas of dynamic stress (swelling, ROM)

- HEMIGARD stretched to accommodate increased swollen volume while protecting the incision
Calcaneal fracture – lateral extensile approach ORIF

- 66 yo construction worker, Fell on job, closed fx
- Unna boot preop to reduce edema
- HEMIGARDs brace closure, allow immediate ROM postop
Calcaneal fracture – lateral extensile approach ORIF

- Case of P. Klutts, (Elizabethtown, KY)

- Surgeon stated the quality of healing was the best he had seen for that incision in 15 years.
Ankle fracture with medial and lateral approach (at 2 and 11 weeks)

- Lateral no ORIF, Medial required more dissection and ORIF plating
- Lateral looks worse and is not fully healed 11 weeks out in spite of less surgery
- Tension free medial incision heals calmly with minimal inflammation
Lower extremity laceration closed without tearing skin

No deeps needed

No trailing edge blisters
Dorsal foot laceration from lawnmower

- Debridement of damaged distal skin to fresh edge

- Advancement closure with HEMIGARD

- HEMIGARD will protect against dynamic stress and allow ROM postop
Fasciotomy closure

- High tension closure for skin that has retracted

- Faster closure, with postop mechanical support of closure for 2-6 weeks as needed
CRUSH INJURY
(case of AS, Cedar Park, Tex)

- 3 ton crush industrial injury
- 3 months wound care until demarcated fully
- 1st stage - debridement to stable wound bed
- 2nd stage - delayed partial closure wound fully healed in 3 wk
DEHISCENCE/
CHRONIC WOUND CLOSURE
Miscellaneous uses:

- Non-healing wound 4 months after ankle ganglion excision (case of AJ, Ann Arbor, MI)

- Scar polarity switched 90 degrees
Treating complications:

- Can repair/revise closures post wound dehiscence
- Prevent a surgical dehiscence from becoming a chronic wound
Hematoma causing necrosis

- Posterior calf wound demarcated

- HEMIGARD used to close after sharp debridement of full thickness skin loss

- Case of BL Detroit, MI
Achilles Dehiscence

- HEMIGARD reclosure provides weeks of mechanical support with incision offloading.

- HEMIGARD can stop an early dehiscence and prevent progression to a worse situation.
Achilles tendon wound dehiscence

- HIGH tension closure

- Leave in place up to 6 wks to manage postoperative tension

- Case of Dr K. Legel, Dallas, TX
Calcaneal Osteomyelitis (case of AM, Itasca, Ill)

- Stroke victim with Stage IV heel pressure sore
- Debridement, partial calcanectomy and HEMIGARD closure
- Primary healing Postop
Diabetic heel ulcer (case of MJ, Kansas City, Mo)

- Deep ulcer with osteomyelitis, failed initial debridement and closure (Upper R image)

- Partial calcanectomy and placement of antibiotic cement

- Later cement removal and primary closure with HEMIGARD, healed primarily
Large pressure sore with heel osteonecrosis

- Asensate, vasculopathy ABI 0.36, so fem-fem bypass done preop

- Debridement of necrotic soft tissue and bone (partial calcanectomy)

- Primary closure with HEMIGARD
Sub metatarsal head ulcers are common in diabetic patients.

Excisional debridement, closure under local anesthesia.

HEMIGARD provides the prolonged mechanical support required for healing.
Chronic heel ulcer (case of LK, Carrollton, TX)

- Prior TMA, nonhealed surgical wound in DM pt
- Debridement and closure over MTF biological, vanco bioabsorbable beads
- HEMIGARD ensures adequate duration support for healing of plantar skin
4th 5th Ray Amputation wound

- 2 prior attempts at closure

- HEMIGARD high tension closure without undermining
EXCISIONAL SKIN CLOSURES
Excision of plantar fibromatosis – incisonal closure with HEMIGARD

- HEMIGARD can stay in place for weeks as the patient gradually returns to full weight bearing activity.

- HEMIGARD can protect against the dynamic stress from weight bearing/ROM.
Shin wound with thin skin under high tension

- HEMIGARD™ with 0 nylon retention suture and vertical mattress pattern
- Layered closure with 4-0 Polysorb and superficial adhesive/strips
- Excellent six week cosmesis (at left)
HEMIGARD® ARS reduces wound DEHISCENCE

- HEMIGARD® ARS versus standard closures on lower extremity post-excisional wounds (n=54 total)

- Reduced wound dehiscence from 24% to 2.3% (p=0.05)
Large calf wound in thin skin

- HEMIGARD™ and 0 nylon retention suture
- Layered closure with 4-0 Polysorb and 4-0 nylon
Lower leg excisional primary closure rates in two US dermatology groups

Rate of primary closure prior to adoption of HEMIGARD® ARS = 48%

Rate of primary closure after HEMIGARD® ARS = 90% (88% increase!)
Closure of pretibial wound after excision of SCCA

- Cycles of skin stress relaxation done to achieve maximal skin creep

- This case was done under local in the office setting

- No undermining was performed
ELECTIVE RECON/
JOINT REPLACEMENT/
FUSION
TTC Fusion

- with radiolucent carbon fiber TTC nail

- (case of NG Kokomo, IN)
AVN – Total Talus

- High value high risk reconstruction after AVN

Quote from surgeon: “Anterior incision covered with Hemigard, good application, zero issues with incisional wound healing.”

- HEMIGARDs support closure, early ROM postop
1st MTPJ arthroplasty, reduces risk of postop complication which can be severe due to implant
Achilles tendon repair (case of AM, Itasca, ILL)

- No need for dermal sutures = faster
- Can manage postoperative tension
Gouty Tophus/Exostosis (case of Craig Lareau, MD)

- Poor quality skin in with chronic inflammation
- Primary healing without complication
Achilles Allograft Recon (case of DP, Yorkville, ILL)

- Secure coverage over allograft which may not granulate well if exposed
- Can manage postoperative ROM and tension
Achilles tendon repair (case of NG, Kokoma, IN)

- Combined with Strayer Gastroc release

- Regeneten bovine patch applied on top of repair
Left foot
Charcot reconstruction with HEMIGARD

- Same patient had wound dehiscence on right foot
  Charcot reconstructions performed without HEMIGARD

Swelling on postop day 5
Removal postop day 19
Delayed Onset Incisional Ischemia – CHARCOT closure (case of V Saysoukha)

- Suture becomes a tourniquet with swelling

Best results where suture tension offloaded by HEMIGARD (small arrow)

- Partial necrosis/dehiscence where high tension suture only (large arrow)
Chronic valgus deformity
TAR with Stryker Infinity

Lower R photo 4 week postop, patient has been walking for two weeks – HEMIGARD supported healing through considerable edema postop
Total Ankle Replacement – intraop, after one week, after 3 weeks (with magnified view)

- Note superior healing without epidermolysis in the HEMIGARD areas
Amputation/Infection Cases
Increased scope under local (case of GD, Lakeland, FL)

- Admitted for I and D of foot and dx w cardiac ischemia
- CABG done acutely, pt at risk for general anaesthetic
- HEMIGARD allowed full closure to be done under local anesthesia, during high risk period
Foot gangrene - transmetatarsal amputation

- HEMIGARD closure
- No dermal sutures
- Reduced closure time 6-10 minutes
- Less foreign body in subcutaneous tissues reduces risk postop infection
Healed Toe Amputation equals *Limb Salvage*

Current literature: 80% healing complication rate in toe amputations
(Exp Clin Endocrinol Diabetes Jun 2021 I. Vassalo 129(6):438-442)

IN our recent study:
• 2/10 healed with standard suture
• 16/17 healed with HEMIGARD

- Many diabetics first present with an infected toe ulcer
- Successful treatment allows diabetic education, footwear and prevention of tissue loss
VASCULAR SURGERY
(case of AA, Toledo, OH)

- Chronic ischemia/necrosis

- Below Knee Amputation

- NO edge necrosis postop
1st Ray Amp (case of KP, Detroit, Michigan)

- Requested hemigard, not approved
- 1st ray amp with a lot of dead space, packed open
- Approx 2 weeks necrotic and dehiscence noted
- Debridement, DPC with hemigard*, placed on 2 weeks of oral Abx
- 7 weeks, healed, Hemigard* still intact
CRUSH INJURY
(case of AS, Cedar Park, TX)

- 3 ton crush industrial injury
- 3 months wound care until demarcated fully
- 1st stage - debridement to stable wound bed
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Three weeks after closure
Toe soft tissue infection

- Gas forming infection from puncture wound in diabetic

- Images at time of initial debridement, then at 2 wk when closure done

- Closure with HEMIGARD left in place 3 wk, result shown at bottom
TMA Wound dehiscence ~ 2 weeks post op

- Removed sutures in the area under tension, debridement and delayed primary closure with HEMIGARD*

- Couldn’t use on original surgery due to availability at hospital

- Had incisional wound vac but dehisced on original closure

Immediately following DPC

Approx 3 weeks later

Approx 5 weeks s/p delayed primary closure, healed
HEMIGARD making wound smaller- amenable to smaller flap (Case of Suhail Masedah, DPM)

- Large defect after debridement of infection.
- Previous partial 1st ray amp.
- HEMIGARD high tension closure makes for smaller defect that can be closed by FHB muscle flap transposed medially.
- Then installation VAC, then skin graft when granulated. Additional HEMIGARD used for support.
HEMIGARD and Wound VAC Infected hematoma I & D (Case of Nathan Graves, DPM, Kokomo, IN)

- Acute infected hematoma drained
- Application of CellerateRx + vancomycin powder
- HEMIGARD placed for bedside progressive closure with VAC for drainage and edema reduction
- Reduced # trips to OR, sped up time to hospital discharge by days
Lateral foot wound with bone infection (case of NG, Kokomo, IN)

- Initial soft tissue and bone debridement
- Progressive closure at bedside with VAC changes
Non Foot and Ankle Clinical Cases (arm, leg, spine)
90 yo man w thin skin

- No undermining
- Single layer closure with HEMIGARD
- Immediate ROM allowed
- No splint required
"My 92 year old patient with a 1.5 cm squamous cell carcinoma on atrophic, damaged forearm skin closed beautifully. I don’t think I could have closed the defect without use of the HEMIGARD®. The skin would have torn with traditional suturing methods."

- Dr. James Polo, MD, Dermatologist, Dermatology Associates of Coastal Carolinalon retention
Unable to close at first

Stress relaxation cycles in process

Now able to achieve primary closure
Other orthopaedic uses

- Revision of hip Dehiscence
- Treatment of lumbar spine dehiscence in nutritionally compromised bariatric patient
Massive weight loss patient with nutritional deficits

Had dehiscence after open L/S spine surgery, successful healing with HEMIGARD closure

Pt required seroma care postop as well after the successful skin closure
C-spine surgical repair

- Able to support during flexion, extension and twisting motions
- Can manage postoperative tension