Redefining Hidradenitis Suppurativa Treatment:

Integrating Hypochlorous Acid and Ovine Forestomach Matrix Grafts for Enhanced Outcomes

Supported by an educational grant from Aroa Biosurgery and Urgo Medical

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  Nothing to disclose in relation to this activity
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  Consultant: Kerecis; Acera; Research: Acera; Urgo Medical; Speakers Bureau: Kerecis; Acera

Disclosures

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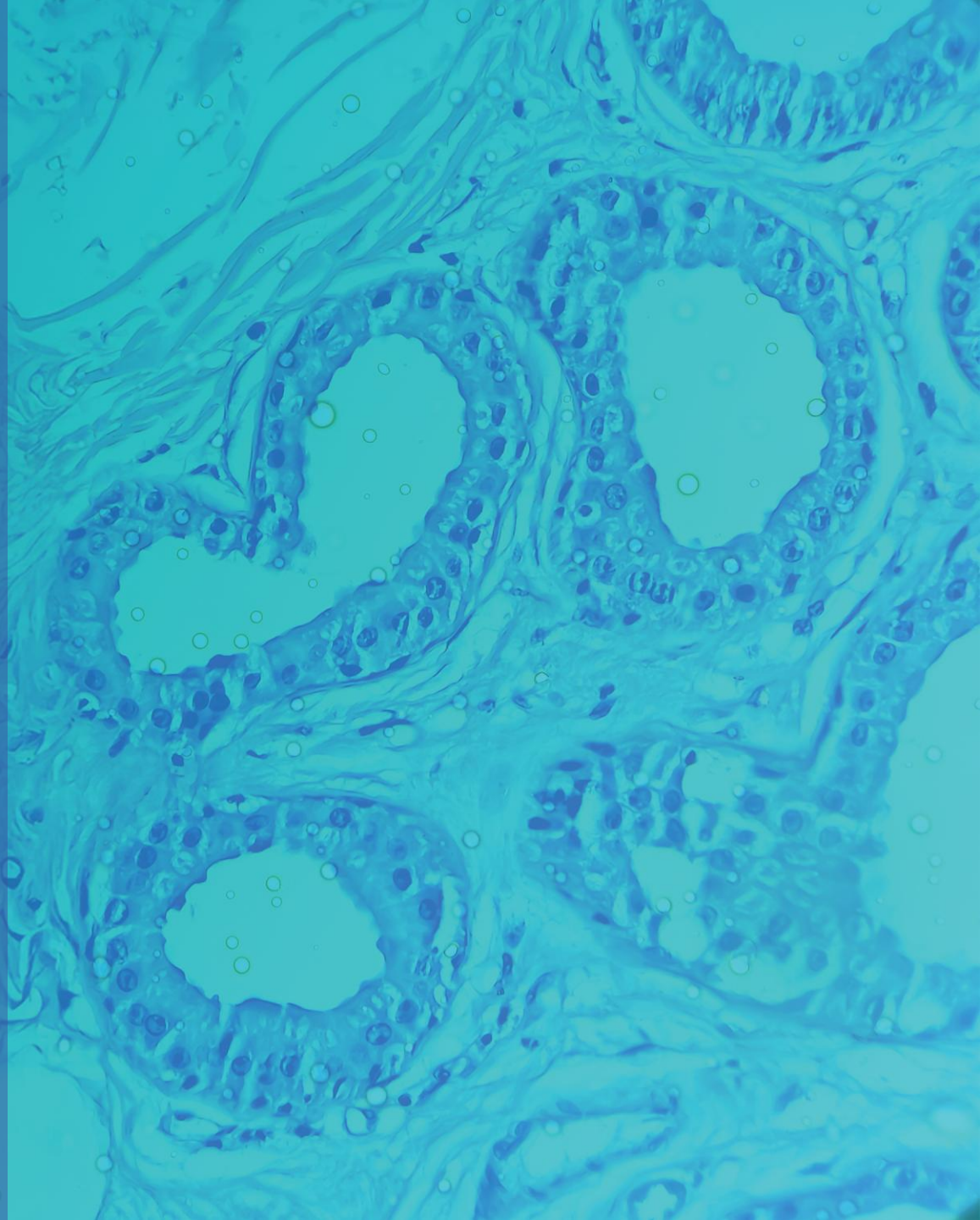
Please submit your questions at any time via the Question Box

We look forward to hearing from you!



Learning Objectives

1. Explore current treatment options aimed at managing hidradenitis suppurativa (HS) symptoms, reducing flare-ups, and improving patient quality of life
2. Examine the science behind hypochlorous acid (HOCl) preserved wound cleanser and its potential benefits in managing HS by removal of germs and necrotic debris mechanically
3. Describe surgical intervention for HS and the role of engineered extracellular matrix (ECM) in soft tissue repair, including how ECM-based therapies like ovine forestomach matrix (OFM) grafts promote healing, tissue regeneration, and reduce HS lesion recurrence
4. Explore clinical cases illustrating an algorithmic approach for managing HS with OFM grafts and HOCl-preserved wound cleansers

HS = hidradenitis suppurativa; HOCl = hypochlorous acid; ECM = extracellular matrix; OFM = ovine forestomach matrix.

An Innovative Approach to HS:

The MITHs (Minimally Invasive Tunneling Hidradenitis Surgery)

Thea P. Ang Price, MD, FACS
The Mayo Clinic | Jacksonville, FL

The First Appointment

- Survey to establish prior treatment
- In-depth exam
- Pictures and measurements for dressings
  - HidraWear (HS-specific wound dressing system)
- Interdry® (moisture-wicking fabric) for folds and sweating (provide)
- Vashe® hypochlorous acid (HOCl) wound solution for daily 5-min soaks (provide small bottle)

The Survey

- Age you first noticed symptoms
- Age of first HS diagnosis from doctor
- Family history (who)
- Body areas affected
  - Armpits/breasts/chest ○ Abdomen/trunk ○ Groin/ genitalia ○ Buttocks
- Lifestyle changes you have tried or noticed
  - Cotton or “breathable” clothing ○ Loose clothing ○ No/low dairy (cow’s milk: cheese, yogurt) ○ No/low gluten (flour: bread, pasta) ○ Low sugar (sweets) ○ Association with periods/menses ○ Other (please specify)
- Topical (skin) treatments
  - Hibiclens® (antimicrobial antiseptic skin cleanser) ○ Antibacterial soap ○ Antibiotic ointment/solution
- Medications tried (how many months?)
  - Doxycycline, clindamycin, rifampin, IV abx, other
- Immune modulators tried (dosage, how many months?)
  - Spironolactone, metformin, testosterone, GLP-1
- Immune suppression tried (how many months?)
  - Adalimumab, infliximab, secukinumab, bimekizumab-bkzx
- Surgery (type and yr)
- Pain 0/10

The Guide

- General lifestyle changes
  - Wear loose-fitting, breathable clothing to reduce friction on skin (cotton, modal, bamboo); **avoid rayon and polyester**
  - **Stop smoking;** cigarette smoking has been shown to be associated with worse disease
  - Weight loss can improve symptoms of HS, but sometimes rapid weight loss or gain can trigger HS
  - Bleach or vinegar baths
    - Add 1/4cup standard bleach or 1cup vinegar to full bathtub of water; adding salt can reduce stinging (1lb/tub)
    - Soak in bath for a few minutes 3x/wk; rinse afterward
    - If no bathtub at home, use a washcloth with solution

- Optimal soaps/body washes
  - Head & Shoulders (dandruff shampoo) as a body wash to hair-bearing areas
  - Hibiclens® (antimicrobial antiseptic skin cleanser)
  - Dial® or Dove® antibacterial body wash
  - *No evidence* for witch hazel or tea tree oil
  - Charcoal and magnesium deodorant
  - HOCl wound solution soaks for 5 min daily; available online

The Guide (continued)

- Diet
  1. No specific diet has been shown to cure HS, and further research is needed on how food choices affect the condition
  2. Limited evidence suggests that certain steps might be helpful
     - Eliminate/reduce **dairy** (cow's milk), such as milk, yogurt, ice cream, cheese
     - Eat less **sugar** (esp. white sugar and corn syrup) by limiting foods with added sugars and syrups, such as sodas, cereals, candy
     - Avoid whey protein; for supplementation, consider pea/rice protein
     - Eliminate gluten (flour products like bread, pasta), especially white bread and pasta
     - Start a food diary. If you notice an association with any of the above, cut it completely from your diet for 3 wks and see if improvement
     - You may find that you can tolerate some of the above in moderation, or you may find that you need to stay away completely

- Hair removal
  - Try to avoid waxing, plucking, and shaving HS areas
  - If you need to shave, use electric razors or trimmers
  - If you desire to remove hair completely, consider laser hair removal or OTC depilators

The Guide (continued)

- Hormonal birth control
  1. Progesterone-only birth control can worsen HS
  2. Speak with primary doctor or OB/GYN about changing to a different form of birth control if using one of these medications
     - Depo-Provera progestin injection, Nexplanon® implant
     - Progestin IUD (Mirena®, Skyla®)
     - Progestin-only pill (norgestimate, norethindrone, levonorgestrel), Jolivette, Micronor®
  3. Low-androgen OCPs (typically good for HS)
     - Ethinyl estradiol + drospirenone (Yasmin®, Yaz®)
     - Ethinyl estradiol + desogestrel (Apri®, Desogen®, Reclipsen™, Kariva®)
     - Ethinyl estradiol + norgestimate (Ortho Tri-Cyclen®, Estarylla™, TriNessa™)
     - Ethinyl estradiol + norethindrone (Estrostep®)

Footnotes

The Guide (continued)

Patients must stay on all medications at least 3 months to see the full benefits.

- Spironolactone
  - Medication for blood pressure that lowers testosterone levels. It should not be taken with other medications that raise potassium levels and should not be taken in patients with kidney disease. Otherwise, it is generally very safe and well tolerated. Other medications include finasteride and dutasteride.
- Metformin
  - Medication for diabetes that helps with hidradenitis. It is generally very safe and well tolerated. There is data that taking spironolactone and metformin may work together better than they do apart (synergistically).
- Antibiotics
  - All antibiotics should be trialed for at least 3mos to see the full benefit. There are >35 different antibiotics that may be tried. IV antibiotics can be used for 1mo during severe flares.
- Antibiotic regimens include
  - Doxycycline
    - Take with food to avoid nausea, wear sunscreen, and limit direct sun contact
  - Clindamycin
  - Rifampin
    - Can be added to clindamycin to work better
  - IV ertapenem

The Guide (continued)

- Irrigation of tracts
  - HOCl
  - Syringe and angiocatheter (14ga) given
  - Sterilized with betadine between uses

- Hidradenitis Resources: Support groups, information websites, downloadable apps
- HS Foundation | hs-foundation.org
- Hope for HS | hopeforhs.org
- No BS About HS | nobsabouths.com
- HS Symptom Tracker and Patient Support App | hspapaya.com
- HS Patient Guide | hspatientguide.com

Surgical Intervention and the Role of ECM in Soft Tissue Repair

Minimally Invasive Tunneling Hidradenitis Surgery (MITHs)

1. **Tunneling "deroofing" debridement:** I use a small pen-sized water debriding tool to surgically excise each infected "pore" back to healthy dermis or adipose. This allows inflammation to calm and antibiotics and interventions to work. This is not curative, but it is similar to deroofing and deals with individual tracts.
   a) Lacrimal probes and marking
   b) Skin "bridges" and "caves"
   c) Risk of squamous cell carcinoma (SCC)

2. **Laser, Botox®, steroid injections:** Often combined with #1. Can make a single "pore" scar and become inactive. Botox decreases sweat production and closes the "pores." Steroids encourage scarring and decrease inflammation. This is not curative, but can get one into remission.

3. **Outpatient, sedation, minimal/no pain, <1wk recovery**

SCC = squamous cell carcinoma.

Why Lasers and Intradermal Botox®?

- Laser ablation in HS
  - distributes the laser energy circumferentially and uniformly, facilitating efficient thermal ablation with minimal risk to the underlying muscle structure
  - Williams MD, et al. *Dis Colon Rectum*. 2023;66(5):e224-e227.
- Botox® in HS
  - Geoghegan L, et al. *Plast Reconstr Surg Glob Open*. 2022;10(11):e4660.
  - Ravi M, Trinidad J. *J Drugs Dermatol*. 2022;21(4):408-412.
  - Grimstad Ø, et al. *Am J Clin Dermatol*. 2020;21(5):741-748.
  - Qu H, Gao L. *Am J Transl Res*. 2021;13(12):14115-14120.

26-Year History

- Failed
  - Antibiotics
  - Biologics
  - Radical excision
- 3 MITHs over 6mos
  - Minimal pain and recovery
- Maintenance
  - Every 6-12mos

49y Male with HS for 1yr showing preop and postop bilateral axillary lesions




33y Male with HS for 1yr showing preop and postop para gluteal cleft lesions

Add title

Pt ID #	Recurrence of HS at any location	Recurrence of HS at MITHS surgical site	Length of remission	Recommend MITHS?	Greatest Percieved Benefit of MITHS	Greatest Percieved Drawback of MITHS	Preference for MITHS versus DR
1	Y	N	6 months	Yes	control flares, aesthetics	Post-op pain	n/a
2	Y	Y	3 weeks	No	control flares, pain improvement	Inadequate flare control	n/a
3	Y	Y	3 weeks	No	pain	Inadequate flare control	DR
4	Y	N	16 months	No	control flares	Post-op pain, recovery time	MITHS
5	Y	N	34 months	Yes	control flares	Post-op pain	DR
6	N	N/A	none	Yes	control flares	none	MITHS
7	Y	N	7 months	Yes	control flares, pain improvement	postop complications	MITHS
8	N	N/A	none	Yes	control flares	post-op pain	n/a
9	N	N/A	none	Yes	control flares	Post-op pain	n/a
10	N	N/A	none	Yes	control flares, pain improvement	none	n/a
11	Y	Y	1 week	Yes	aesthetics	Inadequate flare control	n/a
12	Y	N	10 months	yes	control flares, pain improvement	none	n/a
13	Y	Y	14 months	Yes	control flares, pain improvement	none	n/a
14	Y	Y	12 months	yes	control flares	none	no preference
	Any Recurrence 71.4% None 28.6%	Recurrence at surgical site 50% Recurrence at other site 50%		Recommend MITHS 78.6% Do not recommend 21.4%	Control Flares 85.7% Pain Improvement 35.7% Aesthetics 14.3%	Inadequate flare control 21.4% Post-op pain 28.6% Recovery time 7.1% None 35.7%	No Prefererence 7.1% DR Preference 14.3% MITHS Preference 21.4% N/A 57.1%

Gutierrez Gonzalez A, Laskowski T, Thiyagarajan SK, Price T. *Diode Laser Therapy as an Adjunct to Minimally Invasive Therapy for Hidradenitis Suppurativa.* Unpublished data. June 2025.

Demographics of 55 HS patients undergoing 62 MITHs with diode laser procedures from Jan. 2022-24

S.No	AGE	SEX	RACE	SMOKING	OBESITY	T2DM	If T2DM → PREOP A1c	HURLEY STAGE	SYMPTOM RESOLUTION (%)
1	43	Male	NA	N (Never)	N	N	NA	III	50
	--	--	--	--	--	--	--	--	100
2	45	Female	White	N (Never)	N	N	-	III	100
	--	--	--	--	--	--	--	--	100
	--	--	--	--	--	--	--	--	75
3	34	Female	White	N (Never)	N	N	-	III	100
4	47	Male	Black or African-American	N (Never)	N	Y	6	III	100
5	30	Female	Black or African-American	N (Never)	Y	N	-	III	100
	--	--	--	--	--	--	--	--	100
6	60	Female	NA	N (Past)	Y	N	-	III	90
7	28	Female	Black or African-American	N (Never)	Y	N	-	III	NA
8	24	Female	Black or African-American	N (Never)	Y	N	-	III	100
9	31	Female	Black or African-American	N (Past)	Y	N	-	III	100
	--	--	--	--	--	--	--	--	100
10	20	Female	Black or African-American	N (Never)	N	N	-	III	100
11	28	Female	White	N (Never)	Y	N	-	III	100
12	23	Male	American Indian or Alaska Native	N (Never)	Y	N	-	III	100
13	41	Female	Black or African-American	Y (Current)	N	Y	6.5	III	33
14	30	Female	Other (Hispanic/Latino)	N (Past)	N	N	-	III	NA
15	46	Female	Black or African-American	N (Never)	N	N	-	III	100
16	50	Female	Black or African-American	N (Never)	Y	Y	7.5	III	90
17	42	Female	Black or African-American	Y (Current)	Y	Y	8.6	III	80
18	57	Male	Black or African-American	N (Past)	N	Y	7.1	III	90
19	43	Female	Black or African-American	N (Past)	Y	N	-	II	80
20	42	Female	Other (Hispanic/Latino)	N (Never)	Y	N	-	III	100
21	40	Female	Black or African-American	N (Past)	N	N	-	III	80
22	31	Male	Asian	N (Never)	N	N	-	III	90
	--	--	--	--	--	--	--	--	100

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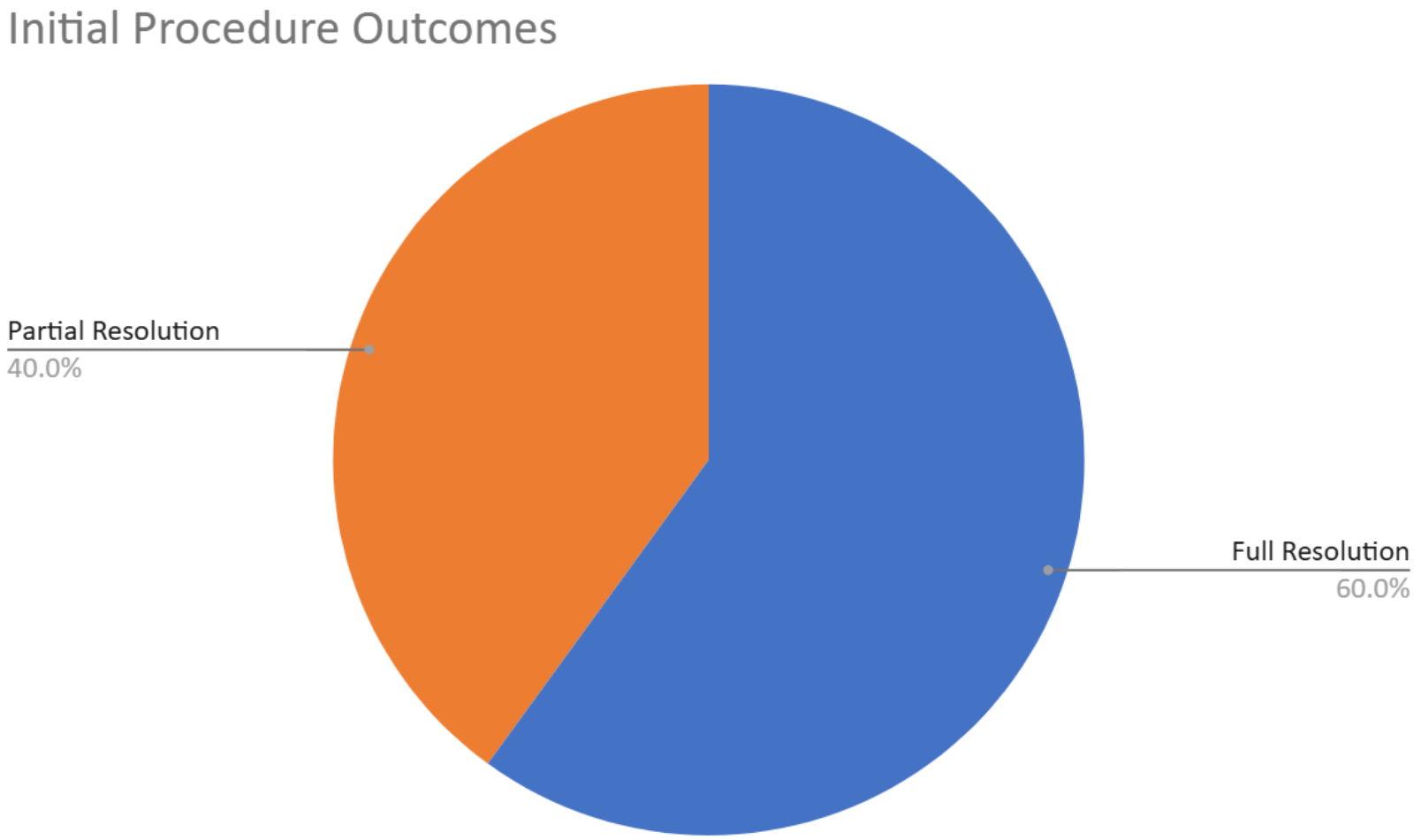
S.No	AGE	SEX	RACE	SMOKING	OBESITY	T2DM	If T2DM → PREOP A1c	HURLEY STAGE	SYMPTOM RESOLUTION (%)
23	39	Male	White	N (Past)	N	N	-	NA	100
24	20	Female	Black or African-American	N (Never)	Y	N	-	III	90
25	40	Female	White	N (Never)	N	N	-	III	100
26	32	Male	White	N (Past)	Y	N	-	III	90
27	70	Female	Black or African-American	N (Never)	Y	N	-	III	100
28	41	Female	Black or African-American	N (Never)	N	Y	8.6	III	100
29	48	Male	Black or African-American	Y (Current)	N	N	-	III	90
30	68	Female	Black or African-American	Y (Current)	N	N	-	III	90
31	65	Female	Black or African-American	N (Never)	N	N	-	NA	100
32	33	Female	Other (Hispanic/Latino)	N (Never)	N	N	-	III	100
33	45	Female	White	N (Never)	Y	N	-	III	100
34	54	Male	Other (Hispanic/Latino)	N (Never)	N	N	-	III	100
35	45	Female	White	N (Past)	Y	Y	6.9	III	100
36	34	Male	White	N (Past)	N	N	-	III	100
37	39	Male	Black or African-American	N (Never)	Y	Y	6.4	III	NA
38	26	Female	Black or African-American	N (Never)	N	N	-	NA	NA
39	37	Female	Black or African-American	N (Never)	Y	N	-	III	100
40	41	Female	Black or African-American	N (Never)	N	N	-	III	100
41	25	Male	Black or African-American	N (Never)	N	N	-	III	50
42	61	Female	Black or African-American	Y (Current)	N	N	-	III	Lost to F/U
43	29	Female	Black or African-American	N (Never)	N	N	-	II	100
44	38	Female	Black or African American	N (Never)	N	N	-	III	100
45	28	Female	White	N (Never)	N	N	-	III	80
46	32	Male	Asian Filipino	N (Past)	Y	N	-	III	90
47	66	Female	White	N (Past)	Y	Y	7	II	NA
48	49	Male	Black or African-American	N (Never)	Y	Y	5.8	III	NA
	--	--	--	--	--		--	--	NA
49	37	Female	White	N (Never)	Y	N	-	NA	100
50	43	Female	Black or African-American	N (Never)	Y	N	-	NA	100
51	33	Female	White	Y (Current)	N	N	-	III	66
52	28	Female	White	N (Past)	Y	N	-	III	100
53	39	Female	Black or African-American	N (Never)	Y	Y	8.8	III	86
54	38	Female	White	N (Never)	Y	N	-	III	NA
55	24	Male	White	N (Never)	N	N	-	III	NA

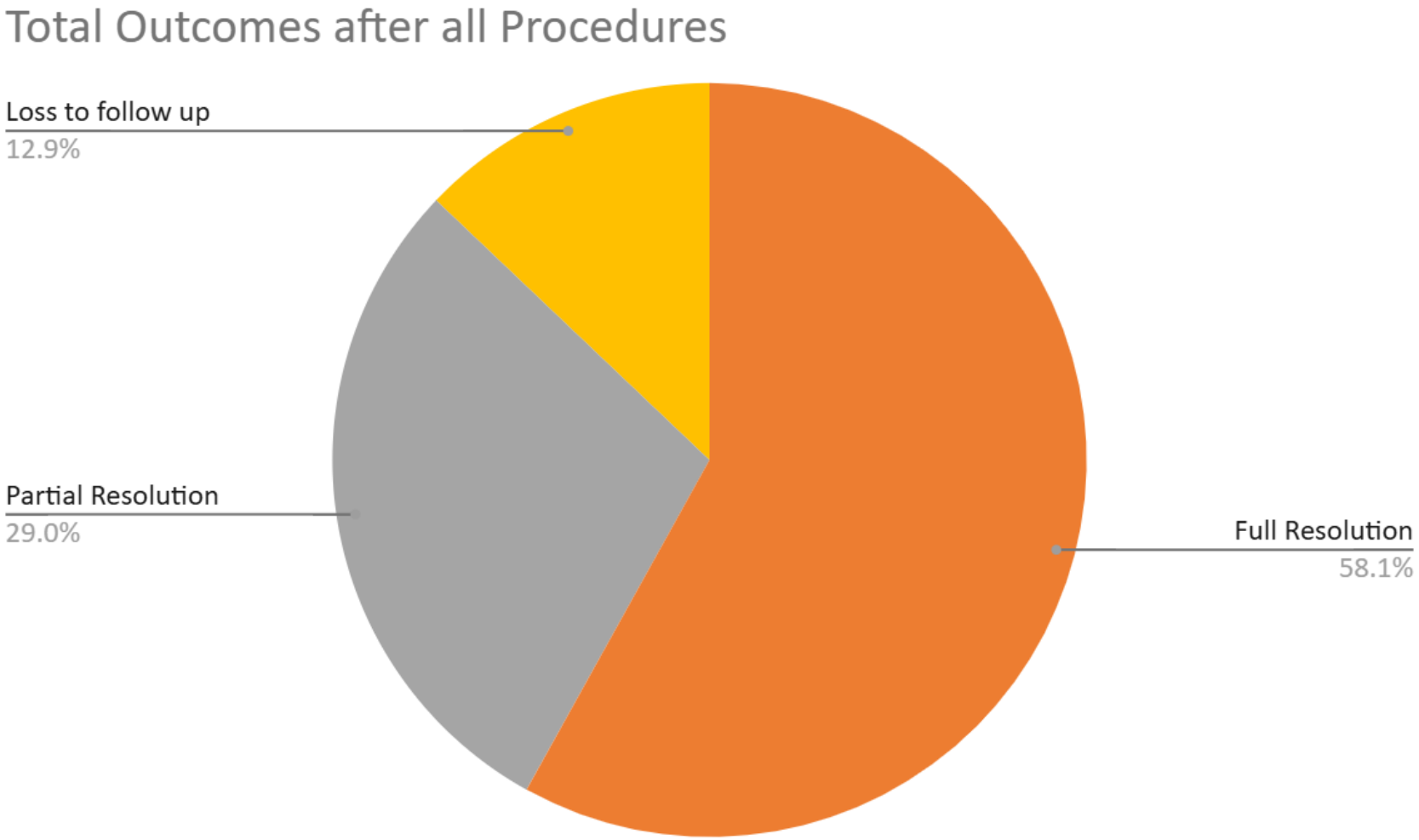
Gutierrez Gonzalez A, Laskowski T, Thiyagarajan SK, Price T. *Diode Laser Therapy as an Adjunct to Minimally Invasive Therapy for Hidradenitis Suppurativa.* Unpublished data. June 2025.

Graphical representation of outcomes of 55 HS patients after 45 initial procedures of MITHs with diode laser from Jan. 2022-24



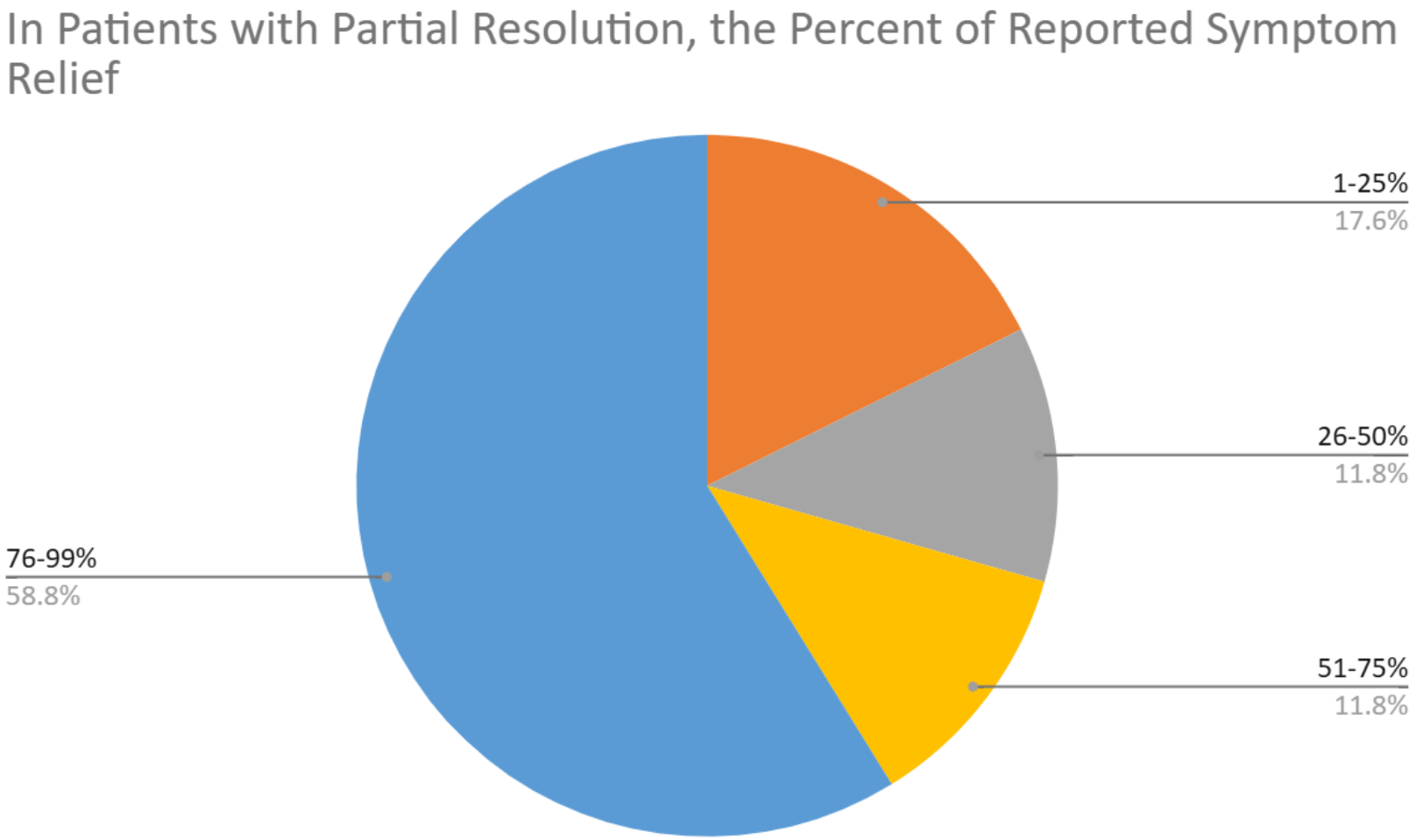
Gutierrez Gonzalez A, Laskowski T, Thiyagarajan SK, Price T. *Diode Laser Therapy as an Adjunct to Minimally Invasive Therapy for Hidradenitis Suppurativa.* Unpublished data. June 2025.

Graphical representation of total outcomes of 55 HS patients after 62 procedures of MITHS with diode laser from Jan. 2022-24



Gutierrez Gonzalez A, Laskowski T, Thiyagarajan SK, Price T. *Diode Laser Therapy as an Adjunct to Minimally Invasive Therapy for Hidradenitis Suppurativa.* Unpublished data. June 2025.

Graphical representation of symptom resolution status of 55 HS patients after all 62 procedures of MITHS with diode laser from Jan. 2022-24



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Notes on Radical Excision

- Methylene blue
- Follow the tunnels! They go deep; sometimes into muscle
- If you can eradicate the fold, close it
- Use skin subs and skin grafts

27-Year History of HS

- 60y Female with 27-yr history of stage III HS
  - 5 total applications: 2/3 – 5/19
  - Operative debridements: Radical excision 2/3/21 of labia, groins, buttocks
  - Secondary dressings: NPWT

2/28

NPWT = negative pressure wound therapy.

Confidential

Confidential

HOCl-Preserved Cleanser In Managing HS:

Potential Benefits

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Hidradenitis Surgical Management

Plastic Surgical Management of Hidradenitis Suppurativa

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PATIENT SAFETY

Learning Objectives: After studying this article, the participant should be able to: 1. Describe the pathogenesis of hidradenitis suppurativa. 2. Discuss perioperative multimodal therapy of hidradenitis suppurativa, including medical optimization. 3. Determine an appropriate surgical plan with excision and reconstruction based on hidradenitis suppurativa severity, size, and anatomical location.

Summary: Successful treatment of hidradenitis suppurativa requires a multidisciplinary team approach and multimodal therapy. (*Plast. Reconstr. Surg.* 147: 479e, 2021.)

Hidradenitis suppurativa, or acne inversa, is a debilitating inflammatory disease of the folliculopilosebaceous units, often resulting in malodorous drainage, physical discomfort, and psychological distress. This disease frequently manifests as nodules, abscesses, scars, and sinus tracts in the axillae, groins, perineum, buttocks, and inframammary areas. Because areas affected by hidradenitis suppurativa are often covered with clothes, the disabling social stigma may contribute to the variability in the reported incidence of the disease, which ranges from 0.05 to 4.1 percent of the population in the literature.[1] Recent work and increasing expert consensus suggest the prevalence is likely to be approximately 1 percent.[2] Hidradenitis suppurativa presents most often in the third and fourth decades of life, with epidemiologic prevalence in women (3:1 female-to-male ratio) and in those of African descent.[1,3,4]

Recent advances in treatment modalities, understanding of pathophysiology, and an increasing presence of organized patient groups with this disease have given new hope to patients suffering from hidradenitis suppurativa.[3,5] This review focuses on the current landscape of multimodal treatment of hidradenitis suppurativa, with specific emphasis on the surgical management of acute and chronic lesions, reconstructive options, and anatomical considerations to guide surgical decision-making.

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PATHOGENESIS

Occlusion of the folliculopilosebaceous unit, which includes the hair follicle, sebaceous glands, and apocrine glands, leads to rupture of the sebofollicular canal, which leads to perifollicular lymphohistiocytic inflammation.[6] Anatomical regions affected by hidradenitis are regions with high concentration of folliculopilosebaceous units, including axillary, inguinal, perineal, gluteal, inframammary, and lower abdominal regions. Axillary hidradenitis is a common anatomical site, seen in approximately 61 percent of patients undergoing surgical excision.[4,7] Of patients with axillary hidradenitis, approximately one-third have bilateral axillary disease and 8 percent have extra-axillary involvement.[8] The inguinal region is the most commonly affected area,

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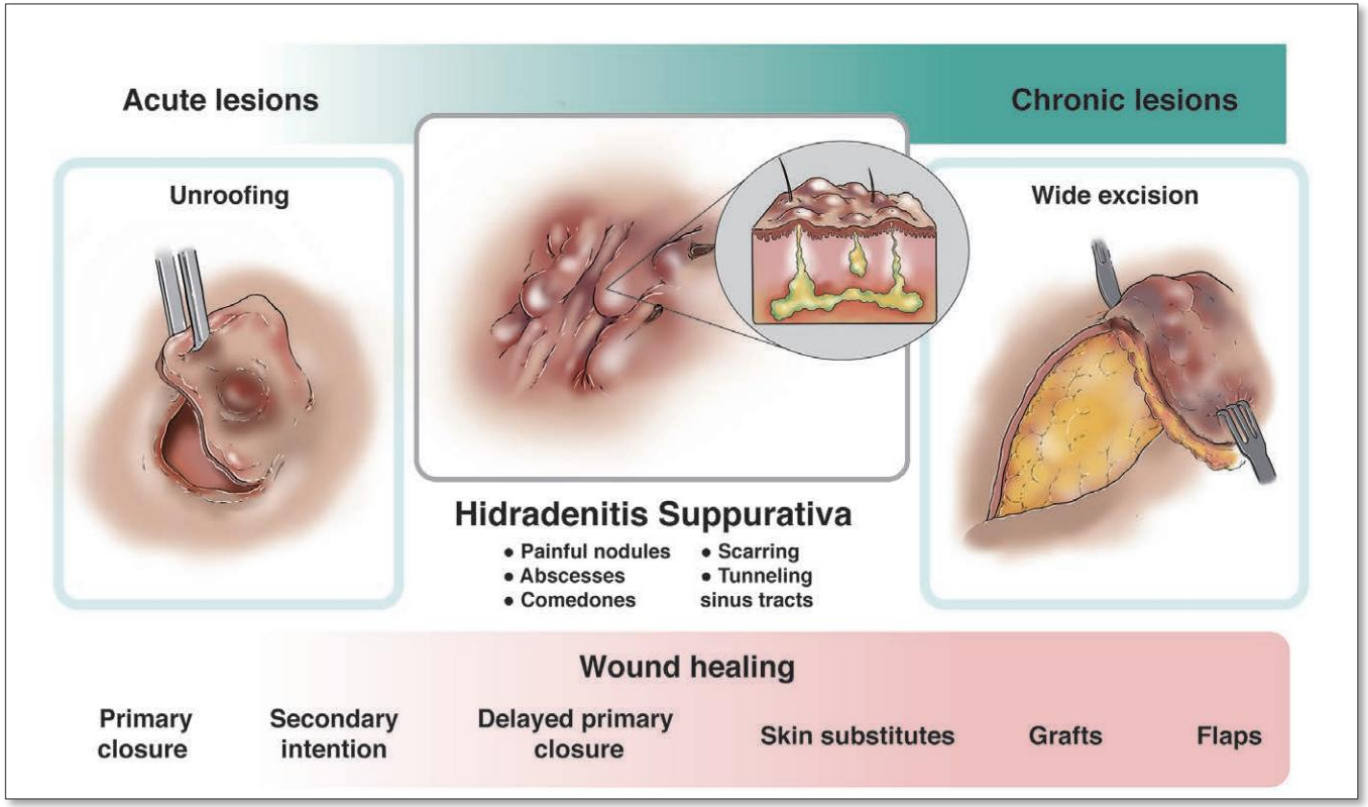

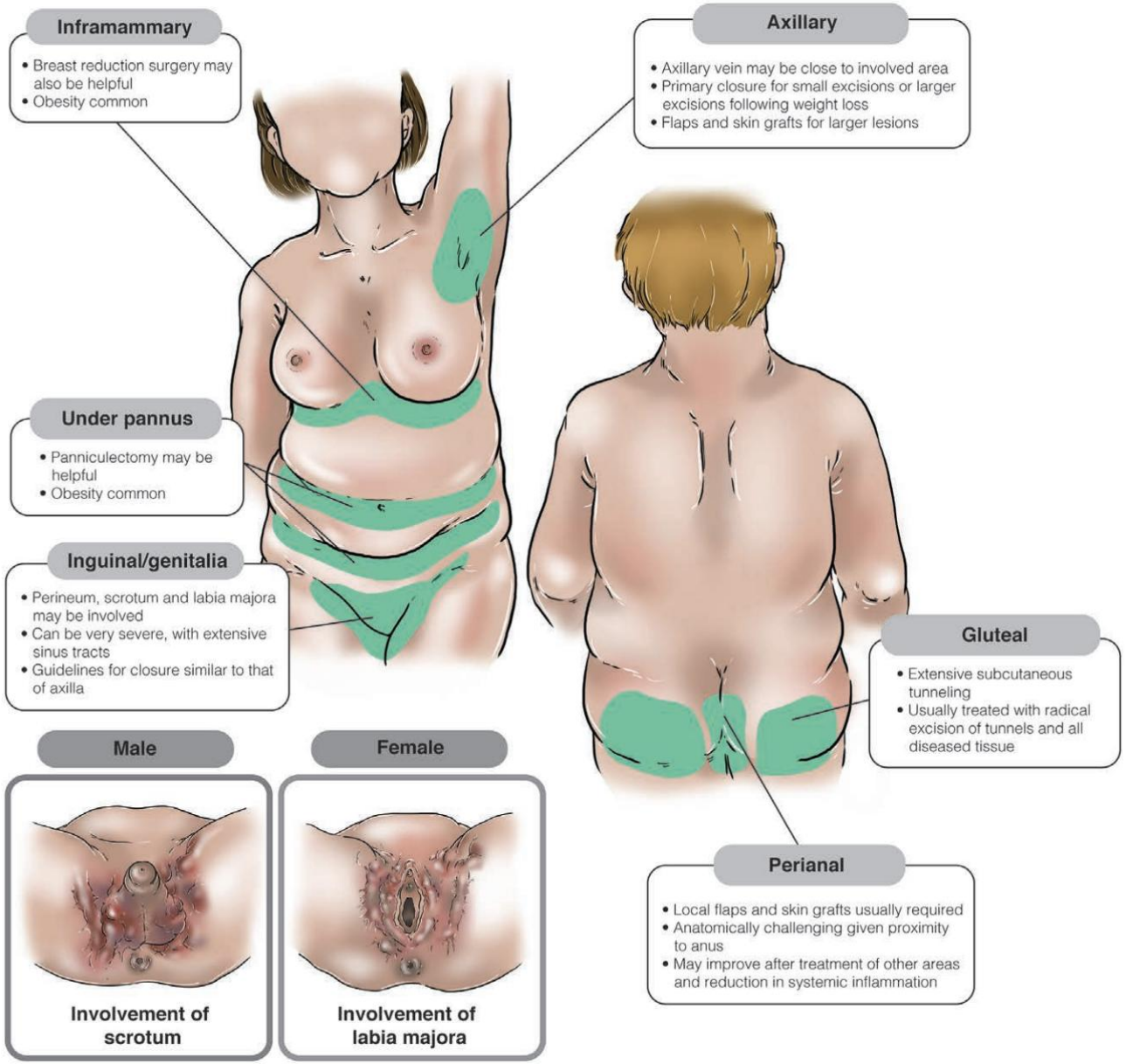

Taylor EM, et al. *Plast Reconstr Surg*. 2021;147(3):479-491.

Surgical Management of Hidradenitis Suppurativa: A Two-Center Retrospective Study

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Background: Hidradenitis suppurativa is a chronic inflammatory condition that presents a challenging reconstructive problem for plastic surgeons.
Methods: The authors performed a retrospective chart review of hidradenitis suppurativa patients managed with surgical excision between 2005 and 2020 at Brigham and Women's Hospital and Tulane University Medical Center. Operative cases associated with the same hospitalization were organized into treatment episodes and assessed for patient demographics, operative techniques, and outcomes.
Results: A total of 181 patients, 435 cases and 316 treatment episodes (Brigham and Women's Hospital, n = 269; Tulane University Medical Center, n = 47), were identified across two diverse institutions. Their respective series showed comparable patient demographics, and 94 percent of the combined episodes achieved wound closure and healing during the study period. Several techniques of closure were identified, including immediate closure and site-specific methods, such as an expedited staged closure using internal negative-pressure wound therapy as a temporary bridge, "recycled" skin grafting, and repurposing iodoform wicks as an adjunct wound healing therapy to immediate closure.
Conclusions: This large multi-institutional retrospective chart review on the plastic surgical management of hidradenitis suppurativa demonstrates that surgery is an effective therapy for hidradenitis suppurativa and captures a diversity of site-specific techniques that may serve as a foundation for future prospective studies and evidence-based guidelines for the use of various techniques to optimize patients' surgical outcomes. (*Plast. Reconstr. Surg.* 150: 1115, 2022.)
CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, IV.

Hidradenitis suppurativa is a debilitating chronic inflammatory condition of the follicular pilosebaceous units, characterized by nodules, scars, abscesses, and sinus tracts in areas such as the axillae, groin, perineum, and gluteal and pannicular areas.[1] Studies have demonstrated the condition's devastating impact on the patient's quality of life, sometimes leading to clinical depression. Hidradenitis suppurativa is associated with lifestyle factors such as smoking and medical comorbidities such as obesity, diabetes, polycystic ovarian syndrome, and inflammatory bowel disease.[2]

The Hurley staging system describes hidradenitis suppurativa disease severity, ranging from mild disease with nodules and abscesses (stage I) to severe disease with widespread scars and sinus tract formation (stage III).[3] Despite the availability of pharmacologic agents for hidradenitis suppurativa—including antibiotics, steroids, and

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DOI: 10.1097/PRS.0000000000009658

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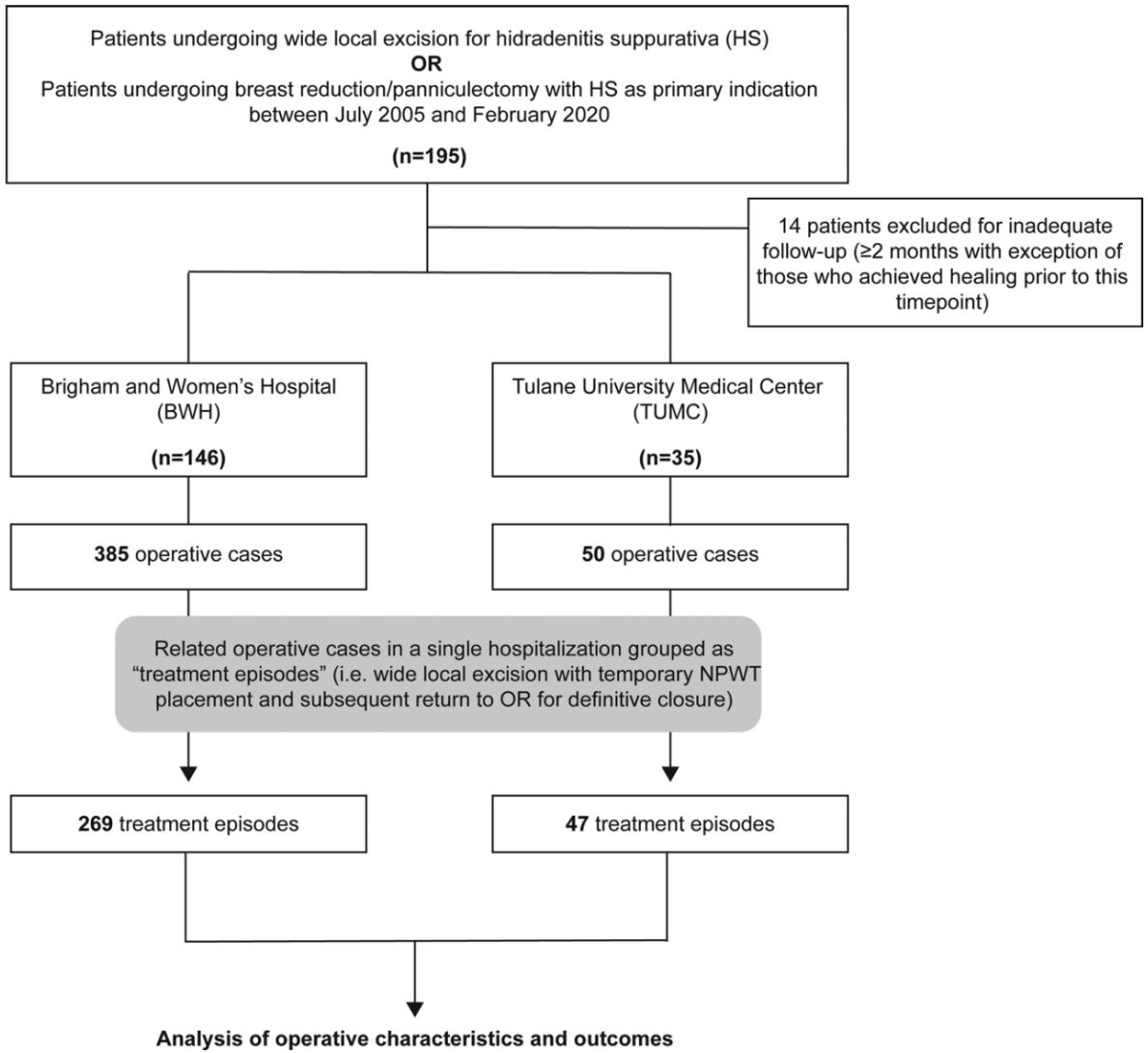
Related digital media are available in the full-text version of the article on www.PRSJournal.com.



Taylor EM, et al. *Plast Reconstr Surg*. 2021;147(3):479-491. Hamaguchi R… Chaffin AE, et al. *Plast Reconstr Surg*. 2022;150(5):1115-1127.

Ideal Antimicrobial Preservative Cleanser Properties

BOX 4 | Properties of an ideal antiseptic agent (To et al, 2016; Kramer et al, 2018; Babalska et al, 2021)

- Possess germ removal activity at the site of action against a broad spectrum of microorganisms, including Gram-positive and Gram-negative bacteria, fungi, and viruses
- Ability to penetrate microbes
- Does not cause resistance of cross-resistance
- Is fast-acting in acute wounds
- Can handle excess wound exudate (if it is a dressing)
- Cost-effective
- Non-traumatic
- Easy and safe to use
- Does not cause allergic reactions or pain
- Is not toxic, carcinogenic, or mutagenic
- Tolerability should be equal to Ringer solution physiological saline, or an inert hydrogel
- Suitable chemical and physical properties – eg, in regard to colour (does not colour the skin), smell, and consistency

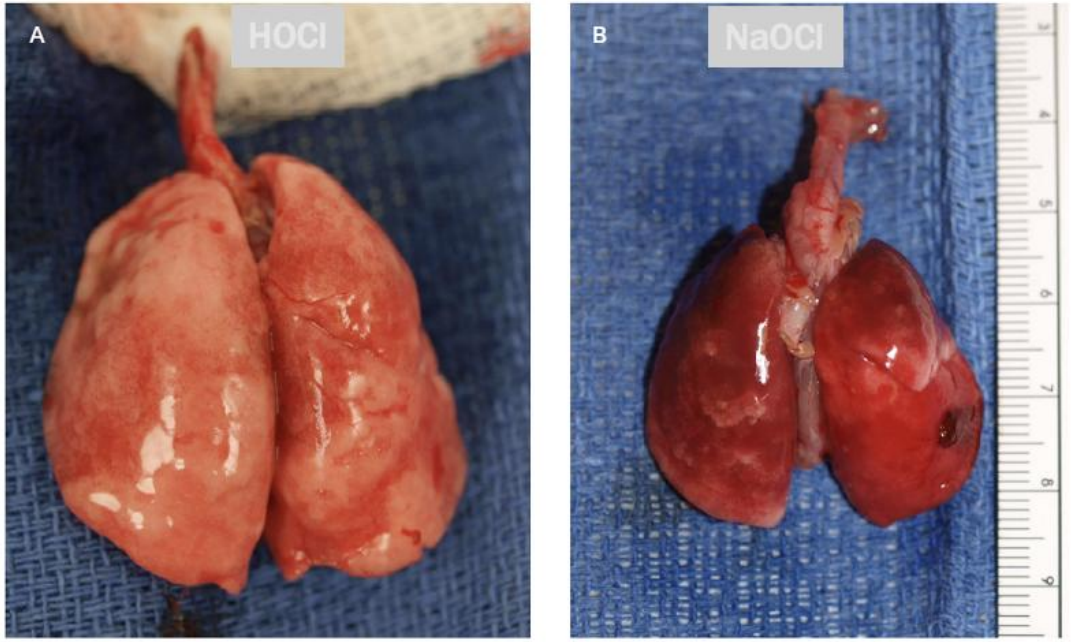
Mrozikiewicz-Rakowska B, Sanches Pinto D, Stuermer EK, Nair HKR, Sander J, Matiasek J, Lázaro-Martínez JL, Ousey K, Assadian O, Kim PJ, Percival SL. *Wounds Int.* 2023.

HOCl and Dakin's Exposure to Delicate Tissue Shows Visible Differences

In vitro cytotoxicity

Representative images of fibroblasts from the neutral red dye assay. The presence of many stained cells indicates that the treatments to those cells were minimally cytotoxic.

Gross examination of organs after lavage



Gross specimens of lungs treated with (A) pH=5 HOCl and (B) Dakin's solution (NaOCl). The Dakin's-treated lungs show increased fibrosis and hemorrhage compared with pH=5 HOCl

HOCl cleanser not indicated for use on lung tissue.
Slide courtesy of Dr. Greg Schultz.
Keyloun JW, Shupp JW. *Wounds*. Supplement, October 2019.

Microscopic Examination of Lungs after Lavage

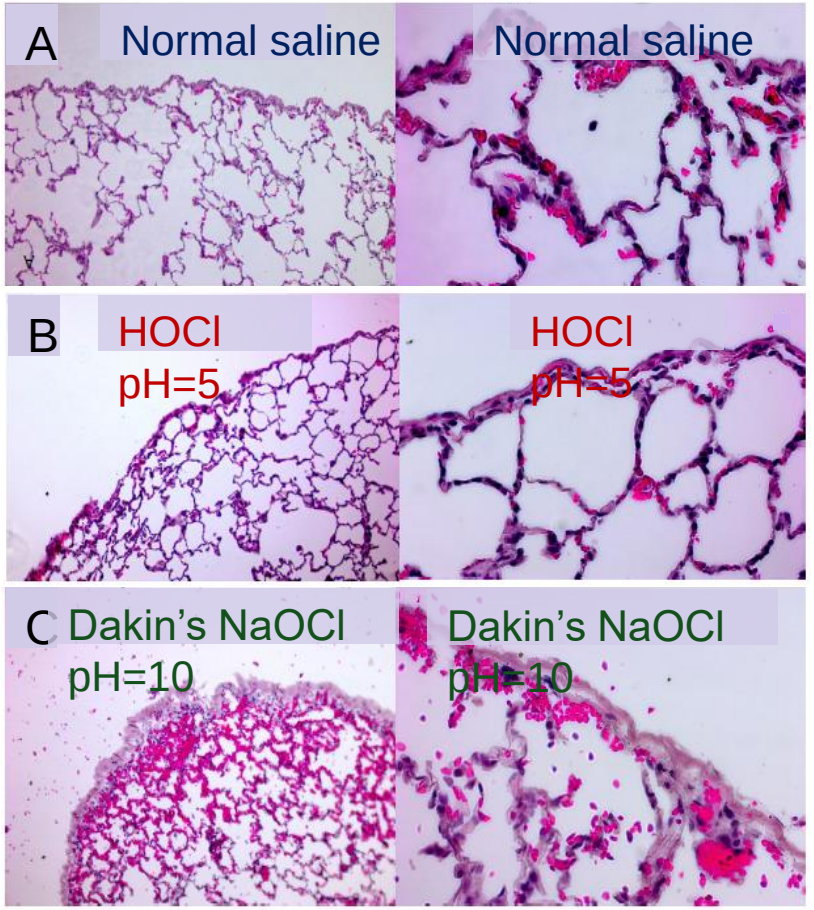
- Representative hematoxylin and eosin-stained images of lung tissue treated with

  (A) Normal saline

  (B) HOCl pH=5

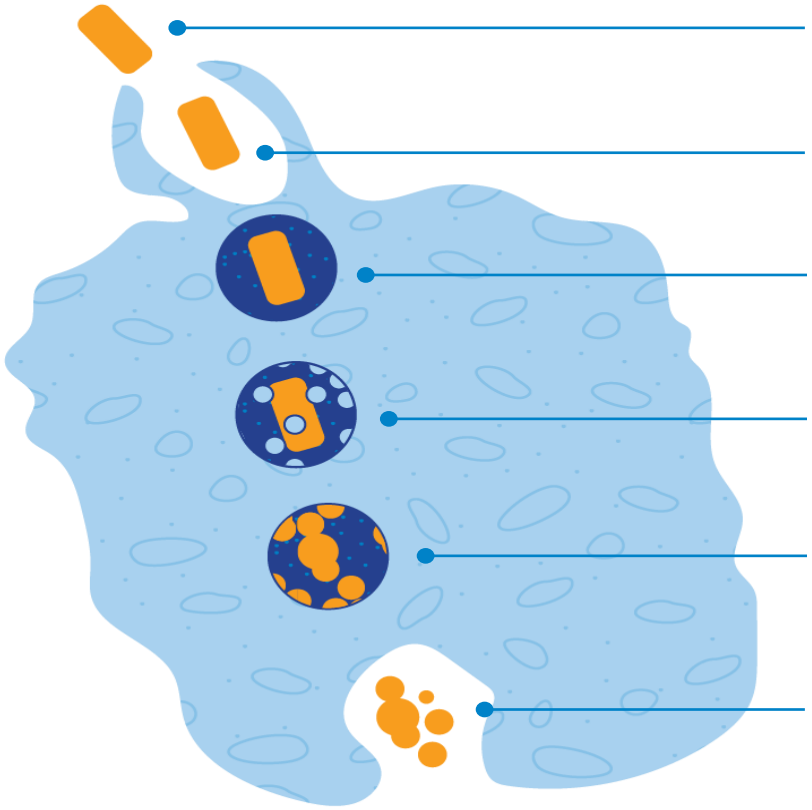
  (C) Dakin's solution

- Increased fibrosis and hemorrhage are appreciated in the Dakin's-treated tissue



Slide courtesy of Dr. Greg Schultz.
Keyloun JW, Shupp JW. *Wounds*. Supplement, October 2019.

Replicating the Body's Natural Response to Invading Pathogens



1 Pathogen is targeted by chemotaxis

2 Neutrophil forms pseudopods to engulf pathogen

3 Neutrophil then forms a phagosome, which surrounds pathogen

4 HOCl is generated

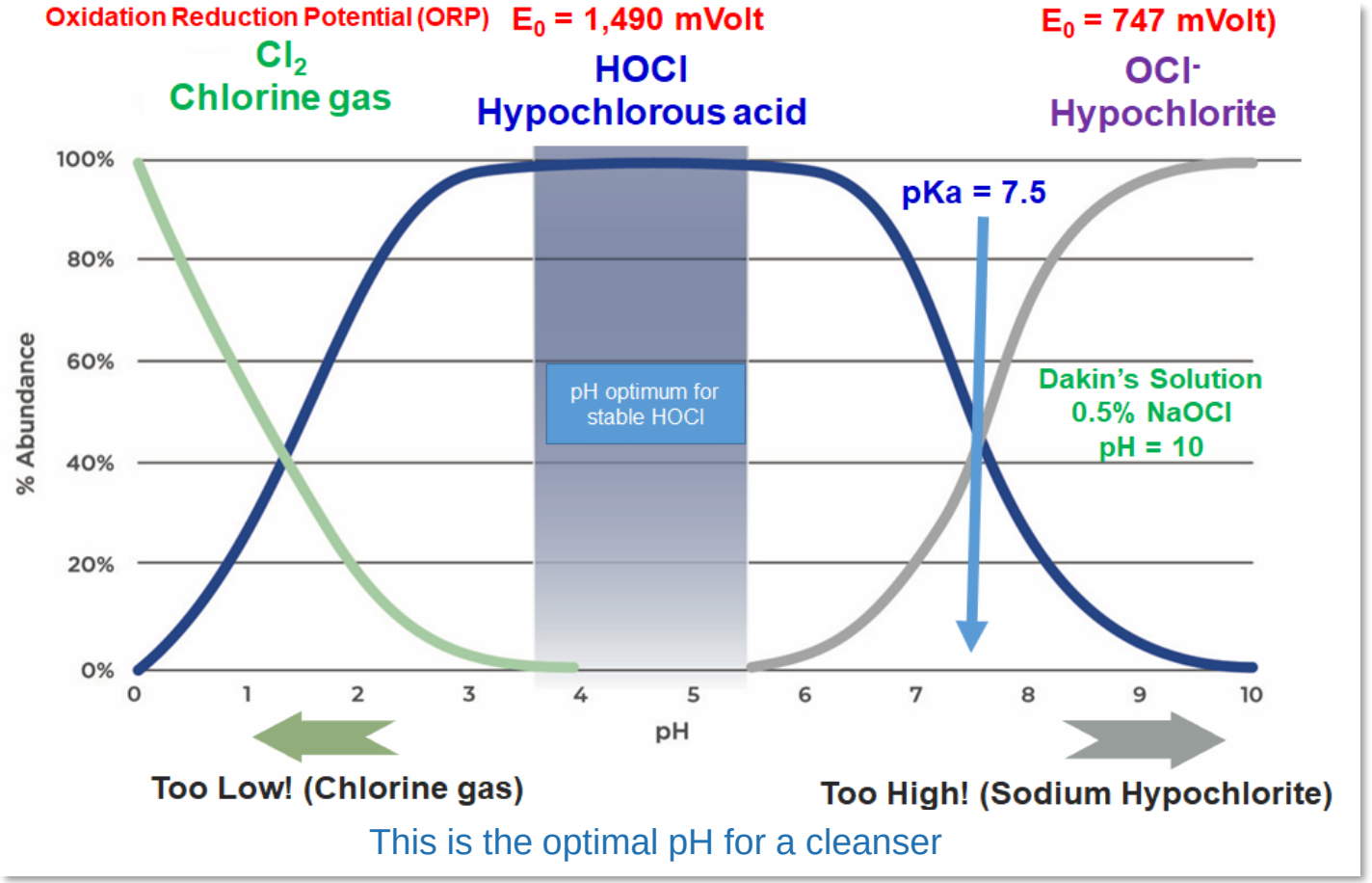
5 The pathogen is destroyed by HOCl action

6 Residual material is removed by exocytosis

Couch KS, et al. www. steadmed.com/wp-content/uploads/2016/11/Vashe-Wound-Cleansing-Final-final.pdf. Niezgoda JA, et al. *Adv Skin Wound Care*. 2010;23(8):352-357.

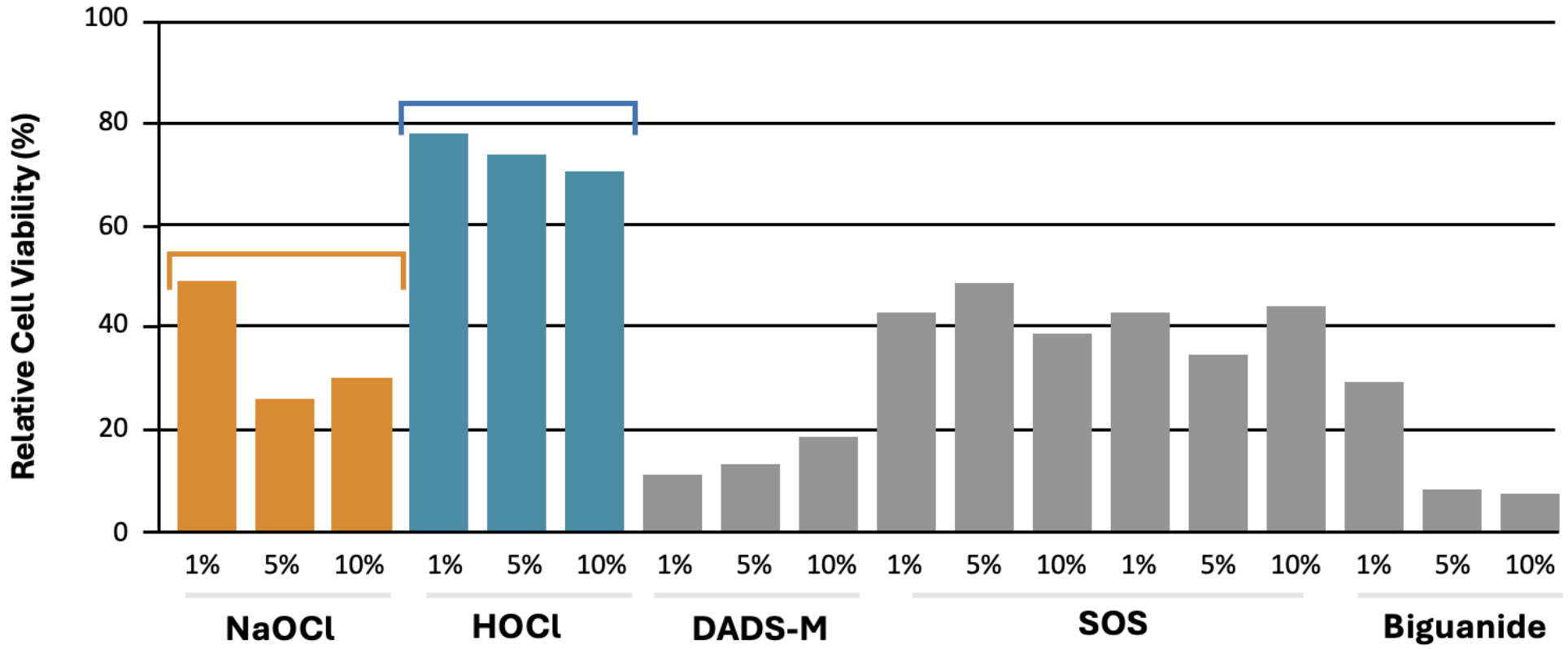
HOCl Dissociation Curve

- Stabilized HOCl solution has the highest concentration of HOCl ≈300ppm
- Mimics normal pH of healthy human skin
- Electrochemical manufacturing process allows for shelf stability in PET plastic



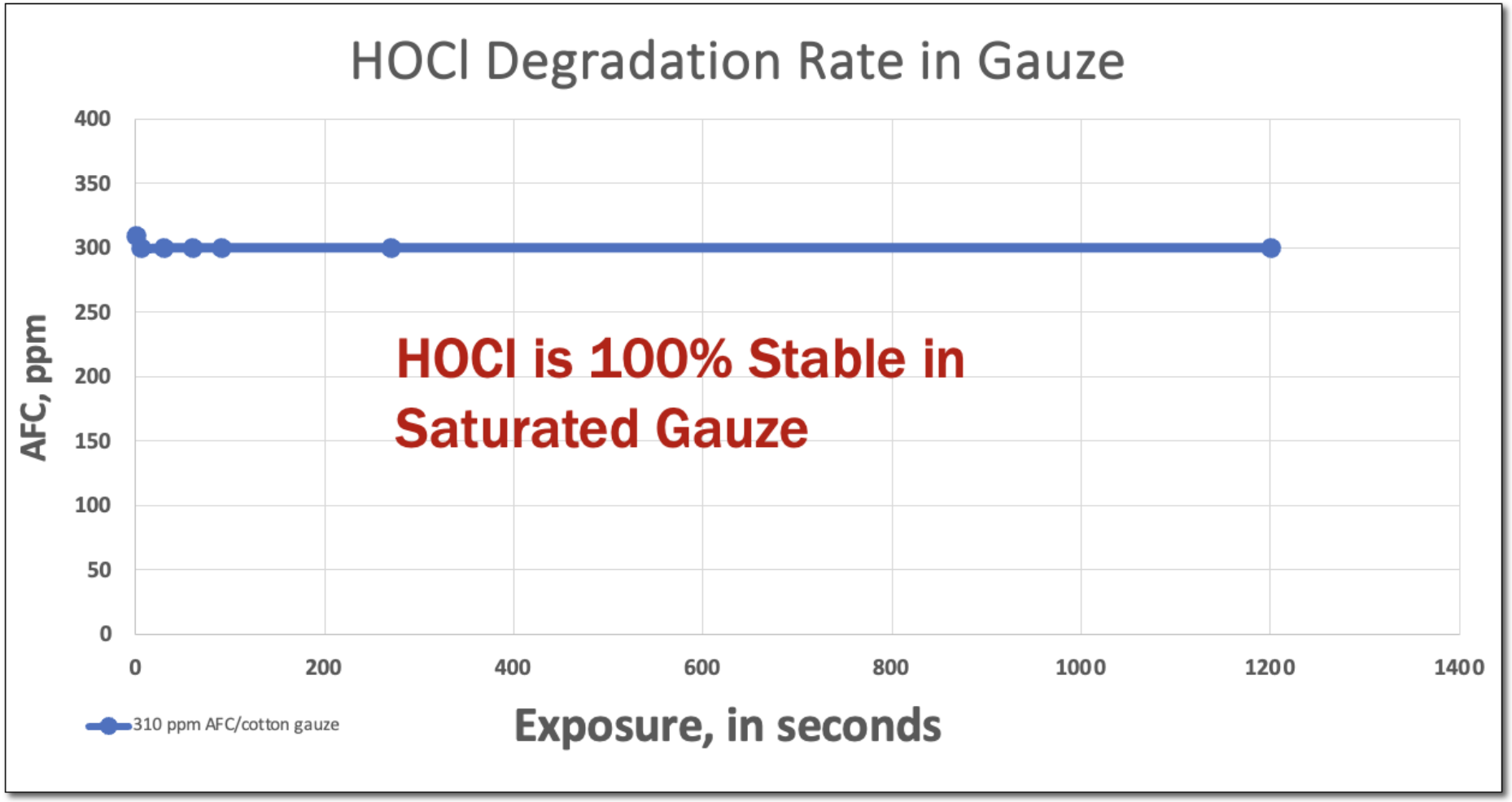
Slide courtesy of Dr. Greg Schultz
Modified from Robson M. The Scientific Bases for the Use of Hypochlorous Acid to Avoid Pitfalls. *Wounds*. 2019;Suppl.

Cytotoxicity of Various Liquid Antiseptic Formulations Against Human Fibroblast Cultures after 6 Hours



Slide courtesy of Dr. Greg Schultz.
DADS-M = modified diallyl disulfide-oxide; SOS = superoxidation solution.
Ortega-Peña S, et al. *Int Wound J.* 2017;14(3):470-479.

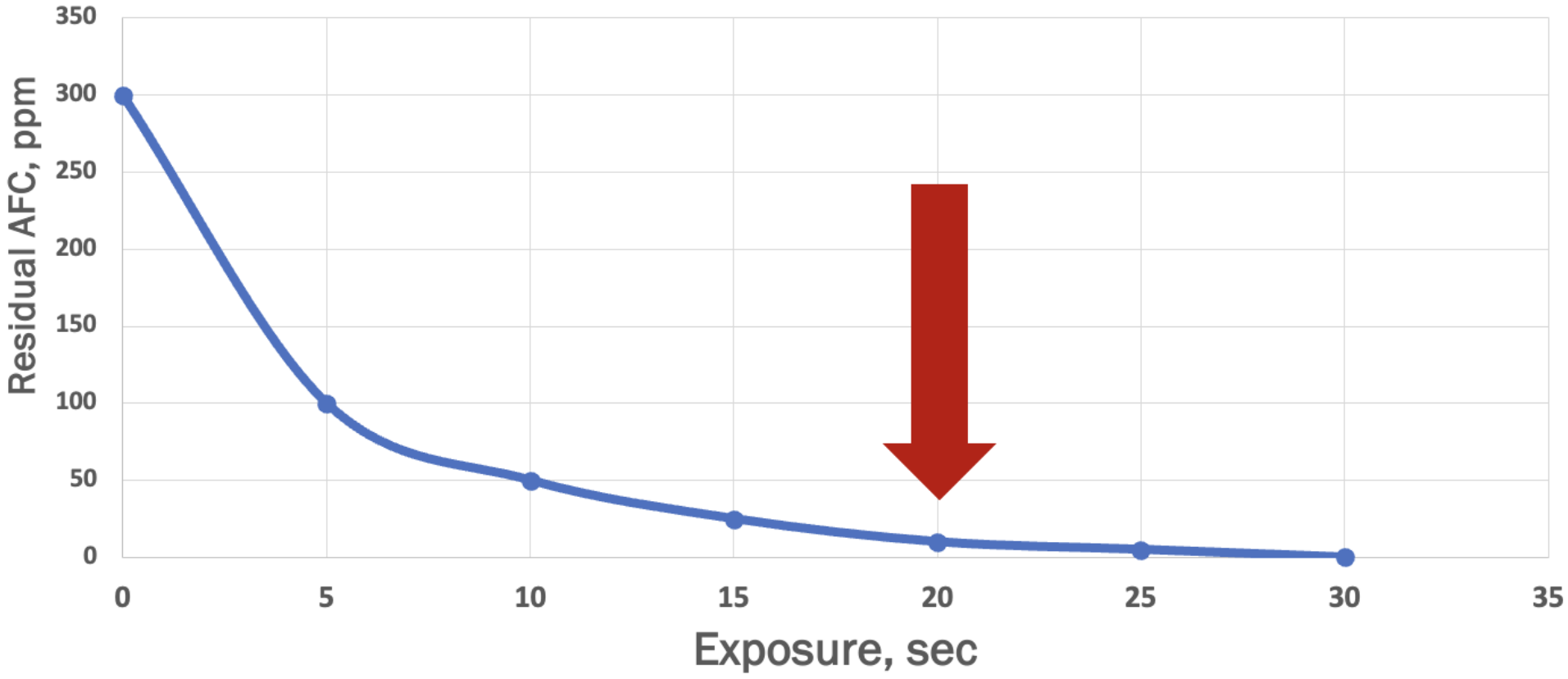
Soaking with Gauze as the Delivery System For a Reasonable Soak Time



Urgo laboratory data.

HOCl-Based Cleanser Safety Profile Is Due to Rapid Dissipation of HOCl at the Wound/Gauze Interface

HOCl is rapidly dissipated in direct contact with tissue protein



Urgo laboratory data.

Pure Hypochlorous Acid Solution

- pH range 4.5-6.5 — conducive to healing – average skin pH is 5.5
- High therapeutic index — Geng RSQ, et al. *Adv Skin Wound Care*. 2025;38(1):10-18.
  - Favorable effects on keratinocyte and fibroblast migration
- Reacts with organic matter in wound and dissipates in seconds
  - Can use with skin substitute grafts/autologous skin grafts and flaps in same operative setting
- Rapid rate of bacterial removal with pHA — Hiebert JM, Robson MC. *Eplasty*. 2016;16:e32.

Urgo laboratory data.

Management of Genital HS

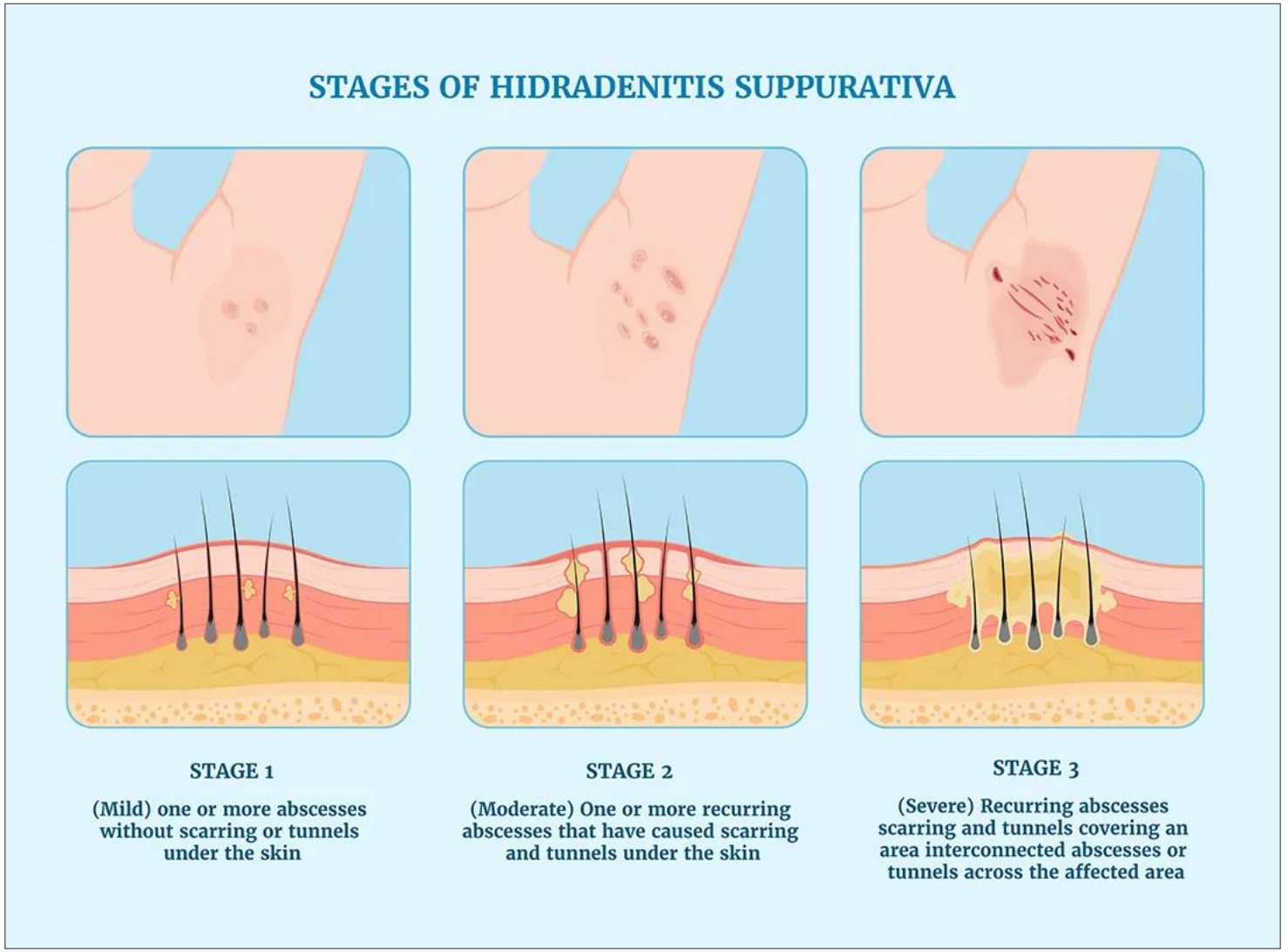
Lindsey Hartsell, MD
Emory University | Atlanta, GA

Objectives

Review	Discuss	Describe	Discuss
Review the pathophysiology of genital HS	Discuss clinical presentation and treatment considerations	Describe surgical management options	Discuss outcomes and quality of life after HS surgery

Overview

- Chronic inflammatory disease with hyperkeratinization and follicular occlusion
- Follicle rupture leads to abscesses, sinus tracts, and fistulas
- Men are more likely to have extra-axillary disease

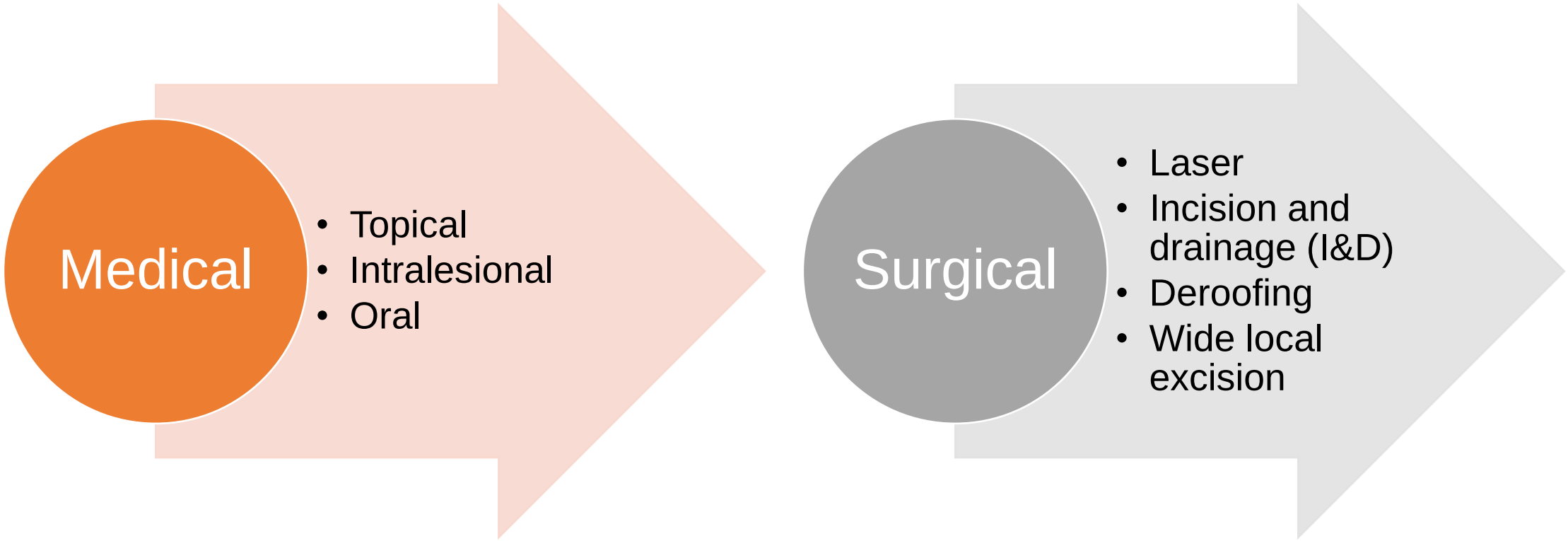


Presentation

- Often delayed in seeking medical care
  - Men 5 yrs more than women
- Urologists treat inguinal, scrotal, and perineal disease
- Patients experience pain, urinary and sexual dysfunction, and psychological challenges
- Untreated genital HS can lead to fistulas, edema (can be severe), and possible malignancy

Kagan RJ, et al. *Surgery*. 2005;138(4):734-740. Maclean GM, Coleman DJ. *Ann R Coll Surg Engl*. 2007;89(7):709-712.

Treatment


Medical
Topical
Intralesional
Oral
Surgical
Laser
Incision and drainage (I&D)
Deroofing
Wide local excision

Surgical Considerations

Medical optimization

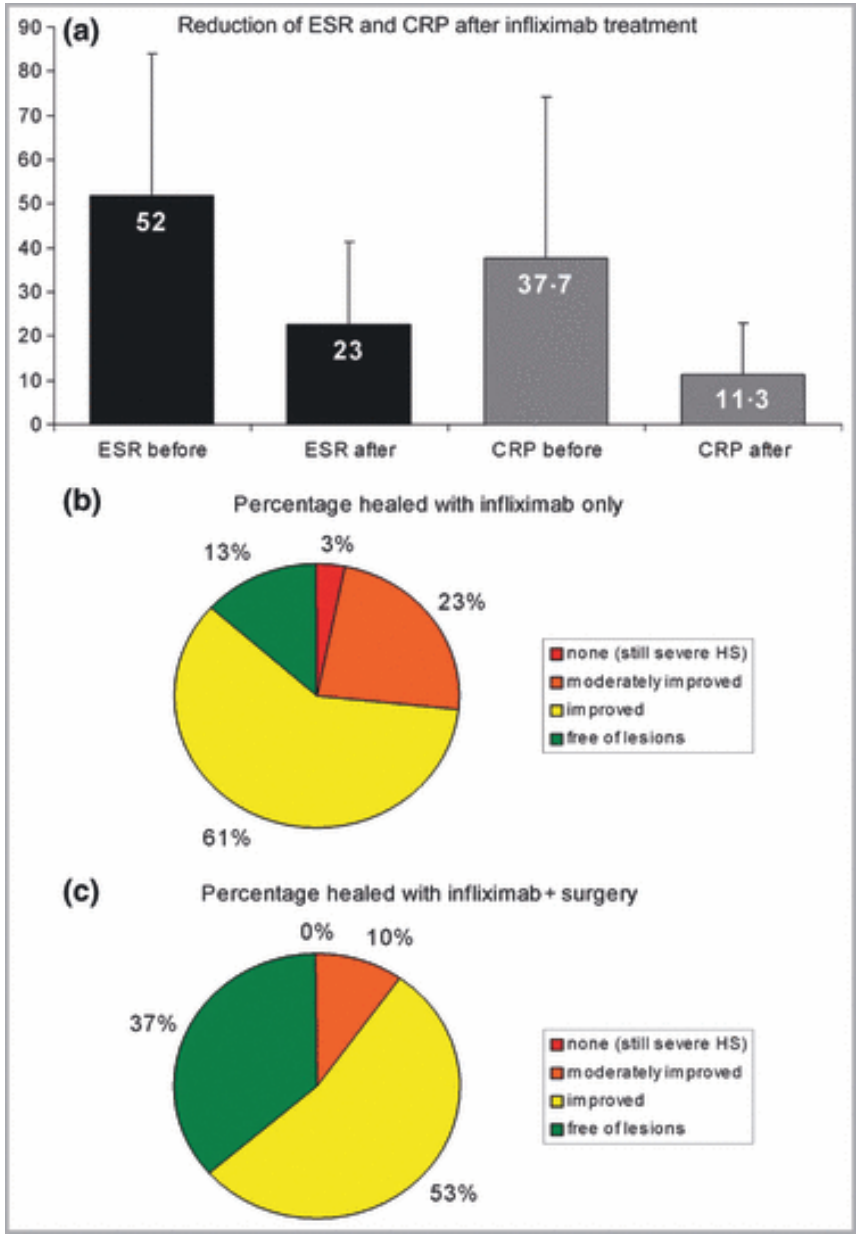
- Improved outcomes seen with combination biologic therapy and surgery

Potential for large areas of excision

- Complete vs staged approach

Need for prolonged wound care

Functional and cosmetic concerns



Van Rappard DC, Mekkes JR. *Br J Dermatol*. 2012;167(1):206-208.

Surgical Techniques

- Laser excision
- Incision and drainage (I&D)
- Deroofing
- Wide local excision
  - Evaluate affected area including fistula tracts
    - Lacrimal duct probe
    - Excise chronically inflamed and edematous tissue and fistulas

Reconstruction

Primary closure

Secondary intention

Extracelluar matrix (ECM)

Split-thickness skin graft (STSG)

Flaps

Primary Closure

- Used in smaller wounds – 50% or less of scrotum
- Irrigate copiously
- Tension-free closure

Secondary Intention

Useful in smaller wounds

Preferred for perineal defects

Can take wks to mos for complete healing

Risks: Wound contracture, poor cosmetic outcomes

Wet to dry vs ECM

Extracellular Matrix

- Decreases burden of wound care
- Increases angiogenesis; decreases inflammation
- Accelerates wound healing
- Can be used with negative pressure wound therapy (NPWT), skin grafts, flaps, and wounds healing by secondary intention

Bilateral inguinal excisions with application of Myriad™ Matrix (ovine forestomach matrix)

Post Excision	Wk 3	Wk 5	Wk 11
			

OFM = ovine forestomach matrix.

Post-op

Wk 2

Wk 8

Wk 11

Wk 16

Split-Thickness Skin Graft (STSG)

Non-Meshed Graft

- Less risk of contracture
- Improved cosmetic outcomes
- Consider for penile coverage in patients interested in maintaining sexual function
- Pie-crusting can prevent seroma or hematoma formation

Meshed Graft

- Allows for increased coverage area
- Increased graft take
- Increased risk of contracture compared to non-meshed STSG

Outcomes

- Kohorst, et al (2016) Retrospective review of 590 patients treated surgically
  - 24.4% recurrence rate at surgical site
  - Increase risk of recurrence after incision and drainage
- Risk of recurrence by type of surgical treatment
  - Wide excision: 13%
  - Local incision: 22%
  - Deroofing: 27%

Kohorst JJ, et al. *Dermatol Surg*. 2016;42(9):1030-1040. Mehdizadeh A, et al. *J Am Acad Dermatol.* 2015;73(5 Suppl 1):S70-S77.

Dermatol Surg. 2017 Jan;43(1):125-133. doi: 10.1097/DSS.0000000000000942.

Patient Satisfaction and Quality of Life Following Surgery for Hidradenitis Suppurativa

John J Kohorst [1], Christian L Baum, Clark C Otley, Randall K Roenigk, John H Pemberton, Eric J Dozois, Nho V Tran, Mark D P Davis

- 111 patients who previously underwent surgery for HS
- 84.7% were satisfied with results
- 96.3% were glad they underwent surgery
- 82.6% would recommend surgery to a friend

Take-Home Points

- Treatment of genital HS can be challenging and requires a multidisciplinary approach
- In cases refractory to medical management, surgery can offer excellent clinical and functional outcomes
- After excision, wounds can be managed by local wound care, ECM, skin grafts, or flaps
- Surgical intervention leads to improved quality of life

Hidradenitis Case Series

Abigail E. Chaffin, MD, FACS, CWSP, MAPWCA
Tulane University Dept. of Surgery | New Orleans, LA

1 Year Retrospective Case Series: Synergy of Preserved Hypochlorous Acid (pHA) Wound Solution in Conjunction with Ovine Forestomach Matrix Grafting in Complex Plastic Surgery Wound Reconstruction Surgeries

Katarina Stephanos, MS[1], Jessica Reid, MS[1], Jared Rosburgh, MS[1], Kristen Rizzuto, MS[1], Laurel Adams, BS[1], Dylan Wolff MD[2], Abigail Chaffin, MD, FACS, CWSP, MAPWCA[3]

1 Tulane School of Medicine, 2 Tulane School of Medicine, Department of Surgery, 3 Tulane Surgery, Division of Plastic Surgery

Background

- Wound healing is a complex physiological process, and despite advancements, managing complex wounds surgically remains challenging.
- pHA aids wound preparation by removing germs and assisting mechanical and surgical debridement.
- OFM is a biologically derived scaffold that supports cell migration, proliferation, and vascularization.

Objectives

- This study explores the combined use of pure hypochlorous acid (pHA) solution and ovine forestomach matrix (OFM) grafting in plastic surgery wound reconstruction as synergistic therapeutic approaches.
- This case series explores the proposed synergy between pHA's unique germ and necrotic tissue debridement effects and OFM's biologic and structural benefits, with a goal of improved surgical wound healing outcomes.

Methods

- Retrospective review from June 2023 to June 2024 of patients who underwent OFM grafting along with pHA wound bed irrigation
- Operative techniques and perioperative protocols were examined
- Patient demographics, comorbidities, and operative cultures were reviewed
- Outcomes were assessed in the outpatient wound center, focusing on postoperative complications and/or healing process

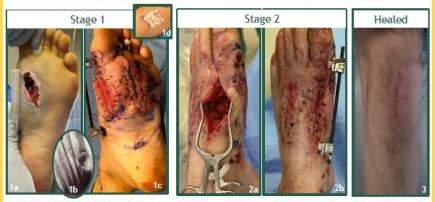
*Sponsored by Urgo Medical North America and Aroa Biosurgery

Results

Case 2: Posterior Scalp Hidradenitis Suppurativa

Left to right: (1) Prior to OR; (2a) closure via LTA; (2b) OFM Morcells applied on open areas; (3) Clinic photo fully healed in 6 weeks

Case 7: Gun Shot Wound to Foot



(1a) Initial GSW (1b) & Xray (1c) Local flap closure (1d) OFM Morcells over donor site | (2a) Placement of OFM sheet graft to fill around cadaver bone graft (2b) primary closure | (3) Healed in 14 weeks

Case 22: Crush Injury - Right Lower Leg

(1a) Post orthopedic involvement, initial encounter (1b) debridement w/ pHA & OFM graft (Morcells) | (2a) After full granulation, ready for STSG (2b) STSG | (3) Healed in 14 weeks

Case	Age, Sex	Wound Type/Location	Wound Management * All wounds were prepped w/ pHA wound solution	Type of OFM	Outcome
1	72 F	Pressure ulcer of sacral region, stage 4	Debridement with matrix graft placement	OFM Morcells	Transferred to LTAC and healing well w/ granulation and epithelialization w/o complications. Healed in 7 weeks
2	58 M	Posterior Scalp Hidradenitis suppurativa	wide resection w/ partial closure via LTA & OFM graft to the remaining open areas	OFM Morcells	healed successfully w/ granulation and epithelialization in 6 weeks w/o complications
3	62 F	Acute pressure injury to (L) tibia & knee	Stage 1: Knee – excision, OFM graft[1] Tibia – I&D, OFM graft, burning of exposed bone & blue vessel loop lacing, Stage 2: knee - flap & graft closure Tibia – STSG. For each stage, iNPWT was used	OFM Morcells[1] OFM Matrix sheet[2]	fully healed w/o complications in 9 weeks w/ no complications
4	45 F	Eschar post hematoma at her dialysis site (LUE)	Inpatient I&D w/ OFM graft	OFM Morcells	fully healed w/o complications in 7 weeks w/ no complications
5	29 F	Recurrent pilonidal cyst of gluteal cleft	Excision & OFM graft placed on wound base prior to closure via LTA	OFM Matrix Sheet	fully healed w/o complications in 6 weeks w/ minor wound dehiscence
6	75 M	Necrotic (R) lower leg wounds	I&D w/ OFM graft, iNPWT	OFM Morcells	Lost to follow up, but initially healing well w/ no complications
7	42 M	Gunshot wound to the left foot	Local flap closure to a wound of the left first and second metatarsal with OFM grafting[1] over the donor site and over remaining defect surrounding cadaveric bone graft[2]	OFM Morcells[1] OFM Matrix sheet[2]	Successful wound healing in 16 weeks with minor wound care
8	85 M	Non-healing left forearm wound with exposed tendon	Debridement with matrix graft placement over tendons	OFM Matrix sheet	Successful granulation and epithelialization after 12 weeks. No complications
9	48 F	Skin necrosis at the left ankle and lower leg due to contusion and hematoma	Debridement and matrix grafting	OFM Matrix sheet	Lost to follow up, but initially healing well w/ no immediate complications. No bleeding or exposure of bone or tendon
10	68 F	Gangrenous and necrotic lower extremity wounds to bilateral lower legs	Staged excision of chronic wounds followed by split thickness skin graft placement and FINE matrix grafting to help with STSG take	OFM Morcells	95% initial take of the graft. Prolonged healing course due to comorbidities. Full wound healing with no significant complications.
11	77 F	Severe calciphylaxis diffusely over to left leg w/ small calciphylaxis wounds to the right leg	Wide excision with local flap closure to the left leg. Several 2-3 cm areas of necrotic non-infected calciphylaxis to the right leg excised with matrix graft placed	OFM Morcells	Complete wound healing in 19 weeks w/ superficial wound healing complications requiring extended wound management
12	18 M	Recurrent gluteal cleft pilonidal cyst with abscess	Wide excision with matrix graft placement	OFM Morcells	Healed completely post operatively. Returned after 6 months with a new pilonidal cyst. This was resected and has remained healed
13	57 M	Bilateral lower extremity calciphylaxis wounds	Debridement and matrix graft placement	OFM Morcells	Full granulation of wounds in 6 weeks. No immediate necrotic or infectious complications
14	19 M	Recurrent gluteal cleft pilonidal cyst w/ abscess	Wide excision and wound debridement with matrix graft placement	OFM Morcells	Full wound healing in 4 weeks w/o complications
15	58 F	Non-healing wounds to the bilateral thighs	Sharp debridement with matrix graft placement	OFM Morcells	Healed w/ minor superficial wound dehiscence in 8 weeks
16	87 M	Skin necrosis to (L) LLE from hematoma	Sharp debridement and FTSG. Matrix graft placed over the graft to encourage take	OFM Morcells	Good take of graft with complete healing at 12 weeks
17	22 M	Gluteal cleft pilonidal cyst and abscess	Wide excision and wound debridement with matrix graft placement	OFM Matrix sheet	Full initial healing w/ recurrence of pilonidal cyst at 4 months
18	21 M	Gluteal cleft pilonidal cyst and abscess	Wide excision and wound debridement with matrix graft placement	OFM Morcells	Full initial healing w/ minor superficial wound dehiscence
19	65 F	Advanced pelvic osteomyelitis and multiple pressure injury wounds	Sharp debridement and muscle flap closure with matrix graft as implant	OFM Morcells	Due to advanced osteomyelitis she developed a recurrent deep serum at the operative site. This was drained successfully and treated w/ antibi
20	28 M	Gluteal pressure injury	Excision, OFM graft implant, hamstring/gluteal muscle flap reconstruction w/ direct skin closure, iNPWT	OFM Matrix sheet	Transferred to LTAC and fully healed w/o complications in 6 weeks
21	M	pilonidal cyst of gluteal cleft	Excision & OFM graft placed on wound base prior to closure via LTA	OFM Matrix sheet	Fully healed w/o complications in about 4 weeks
22	72 F	Crush injury w/ exposed bone & tendon (R) lower leg	Stage 1: Debridement and matrix graft placement for wound bed preparation. Stage 2: STSG Transfer to postacute LTAC	OFM Morcells	Fully healed after minor wound debridement in 16 weeks w/o major complication or reoperation
23	74 M	(R) calf ulcer post trauma	Planned postprocedural closure - I&D, STSG w/ OFM graft w/ multiple pHA irrigations during inpatient stay. iNPWT used	OFM Morcells	Transferred to LTAC and fully healed w/o complications in 7 weeks
24	17 M	pilonidal cyst w/ abscess of gluteal cleft	Excision & drainage w/ OFM graft placed on wound base prior to closure via LTA	OFM Morcells	Fully healed w/o complications in about 6 weeks

Table 1: Patient demographics, wound management, type of OFM and outcome. I&D: incision and drainage, LTA: local tissue arrangement, iNPWT: incisional negative pressure wound therapy, STSG: split thickness skin graft

Key Pearls

- **pHA wound solution can be beneficial as an adjunct to OFM grafts for various wound types to assist in integral debridement and help prepare the wound bed for OFM grafting**
- **For complex non healing wounds, OFM grafts are a beneficial addition to plastic surgical reconstructive procedures for successful healing**

Results

- 24 cases were reviewed with various wounds requiring plastic surgical reconstruction (table1)
- 15 patients healed without reoperation, 3 of which had a prolonged healing course (7,10,11)
- 3 patient experienced minor wound dehiscence which resolved with local wound care (5,15,18)
- 3 patients required reoperation (12,17,19)
- 2 patients were lost to follow-up but on discharge had no known complications (6,9)
- Cultures were sent from all patients revealing growth of various pathogens

Conclusion

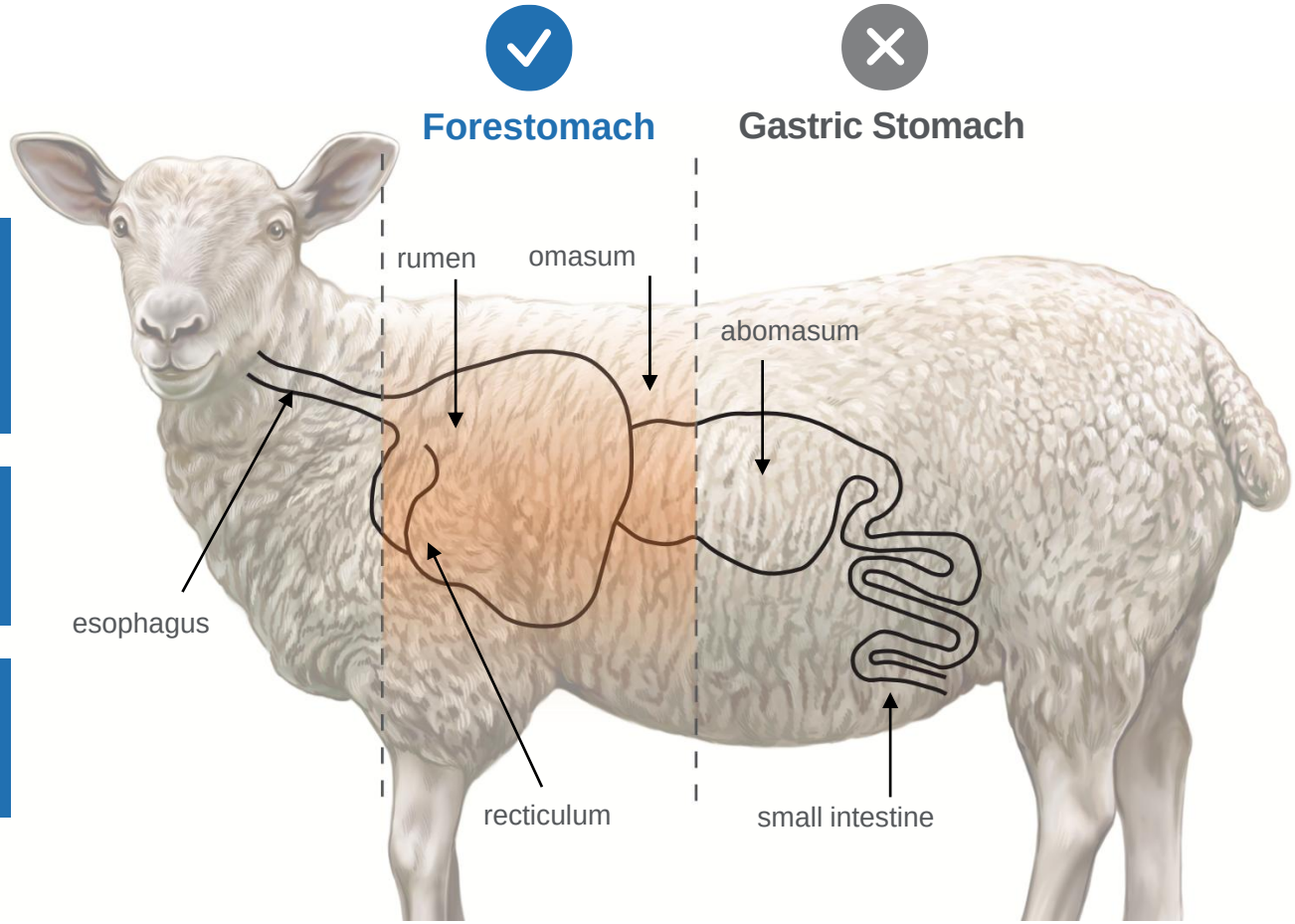
- This study demonstrates the potential benefit of combining pHA solution for wound preparation prior to OFM grafting for improving healing outcomes in patients with complex wounds undergoing reconstructive surgery.
- The results reveal high rates of successful healing with a majority of patients achieving wound closure without reoperation.
- While some patients experienced minor complications, overall outcomes suggest the synergy of pHA and OFM may enhance healing by promoting antimicrobial effects and providing a supportive scaffold for tissue regeneration.

References

1. Dye, A., Alkhalil, A., Carney, B. C., Hoffman, H. N., Moffatt, L. T., & Shupp, J. W. (2017). Disruption of Biofilms and Neutralization of Bacteria Using Hypochlorous Acid Solutions: An In Vivo and In Vitro Evaluation. *Advances in skin & wound care*, *30*(12), 543–551.
2. Lim, S., Irvine, S. M., Johnson, K. D., Fisher, N. J., Flodeen, E. W., Negron, L., Dempsey, S. G., McLaughlin, R. J., Viswalingam, M., Ward, B. R., & May, B. C. (2010). A functional extracellular matrix biomaterial derived from ovine forestomach. *Biomaterials*, *31*(16), 4517–4529.
3. Mayer DO, Tettelbach WH, Caporusso G, Downie F, Hampton J, Hodgson H, Lazaro-Martinez JL, Probst A, Schultz G, Strömer EK, Parnham A, Frescos N, Stang D, Holloway S, Percival SL. J Wound Care. 2024 Jun 1;33(Sup6b):S1-S32. doi: 10.12968/jowc.2024.33.Sup6b.S1.

Ovine Forestomach Matrix (OFM):
A Sustainable Source Material

- Abundant source – lamb are raised in New Zealand to supply high-quality meat products globally
- Forestomach is highly vascular – evolved for nutrient absorption
- High rate of tissue turnover (remodeling) – rich biology



OFM = ovine forestomach matrix.

Lun S, et al. *Biomaterials*. 2010;31(16):4517-4529.

OFM for Surgical Soft Tissue Repair

- Contains complex biology, including growth factors, cytokines, and anti-inflammatory proteins
- Natural vascular channels support angioconduction
- Engineered perforations and interstitial spaces facilitate cell access and lateral cell migration
- Available as sheets and in morselized formats

Dempsey SG, et al. *J Proteome Res*. 2019;18(4):1657-1668. Smith MJ, et al. *J Biomater Appl.* 2021;36(6):996-1010.

Ovine Forestomach Matrix Grafts

Reconstructive (flap-based)
Immediate closure of the defect

Use advanced ECM grafts to

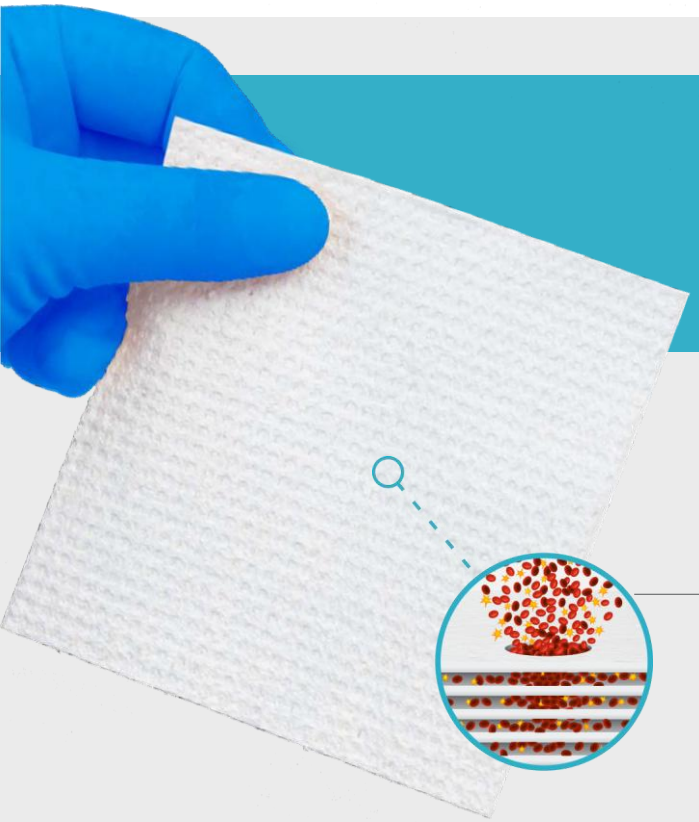
- Fill surgical dead space
- Address local tissue inflammation/chronicity
- Reduce post-operative flap complications

Non-Reconstructive
Promote granulation tissue formation

Use advanced ECM grafts to

- Rapidly build well vascularized tissue
- Cover exposed structures
- Fill tunnelling/undermining
- Prepare wound bed for closure via secondary intention or STSG

Ovine Forestomach Matrix (OFM) Grafts



Sheet Graft

Contains 2-, 3- or 5-layers of non-crosslinked ovine **ECM**

For **soft tissue repair, reinforcement,** or **complex wounds**

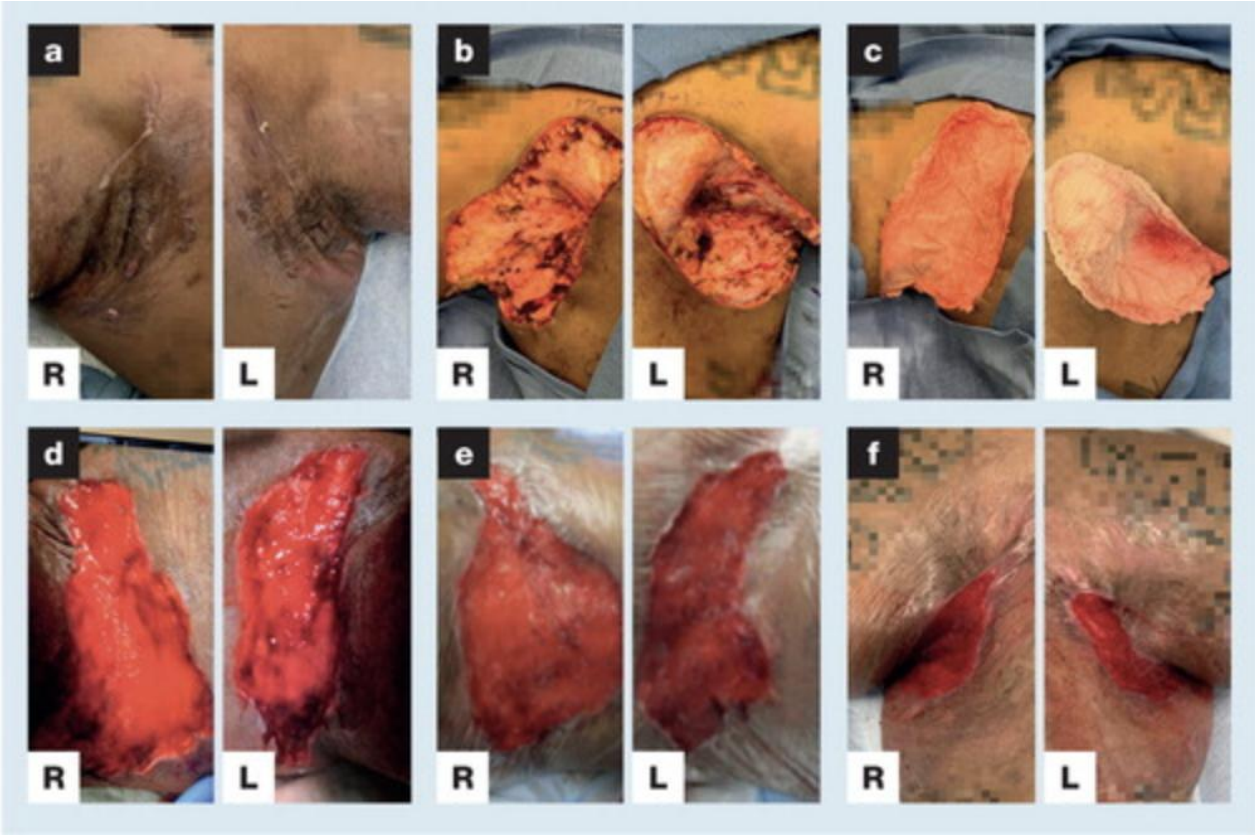
Particulate

Morselized ovine ECM

For **management of acute and chronic wounds**

Hidradenitis Case Series

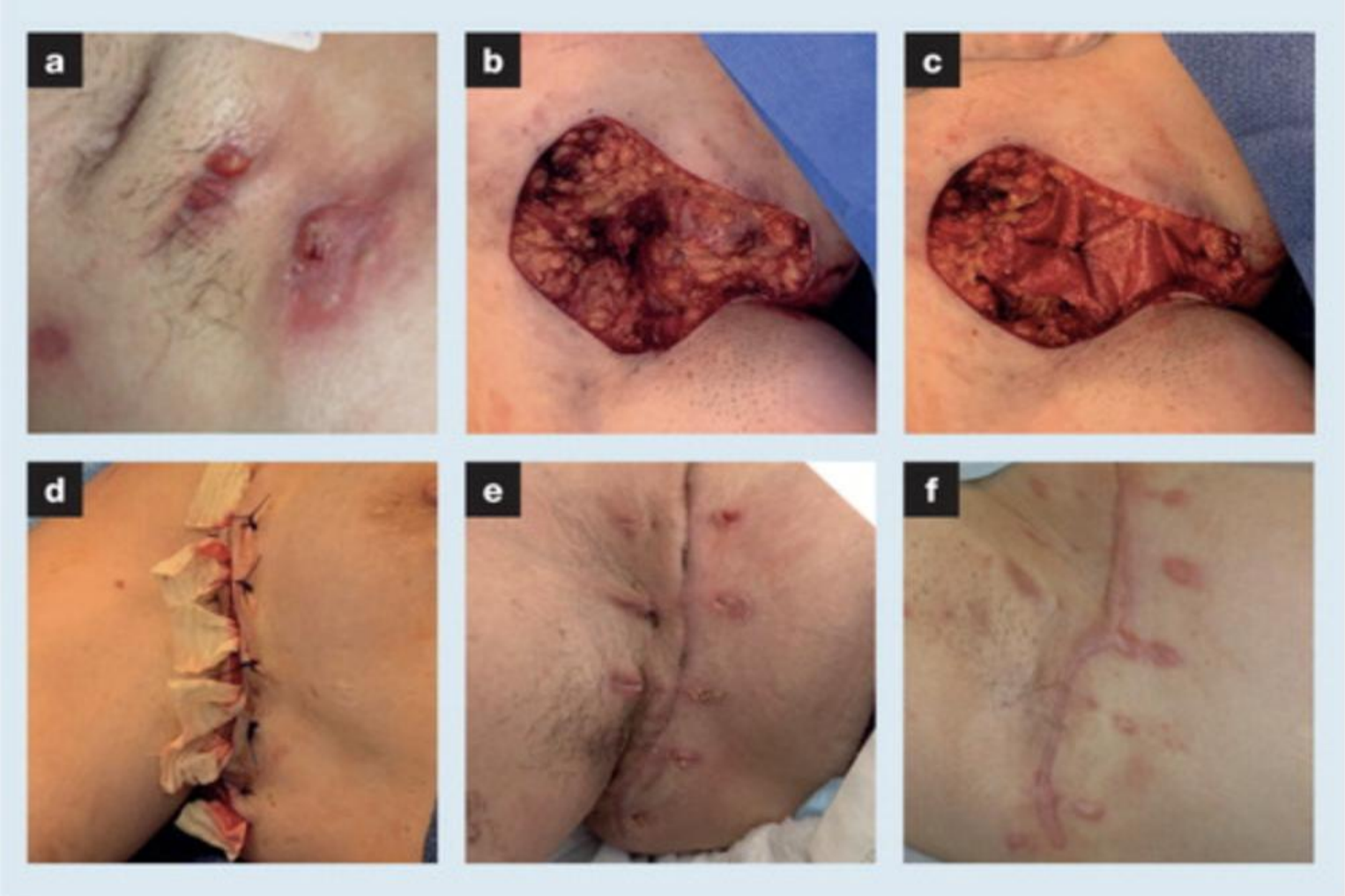
- Prospective pilot case series of Hurley stage 3 axillary hidradenitis surgical patients
- Ovine forestomach matrix (OFM) graft used as a dermal substitute for staged reconstruction (n=3) or as an implant under a fasciocutaneous flap (n=5) after surgical resection of diseased hidradenitis tissue
- Complete healing was seen in all patients within 1-3mos
- Excellent ROM at long-term follow up; no reported disease recurrence
- No major surgical complications



OFM = ovine forestomach matrix.

Chaffin AE, Buckley MC. *J Wound Care*. 2020;29(11):624-630.

Hidradenitis Case Series



Chaffin AE, Buckley MC. *J Wound Care*. 2020;29(11):624-630.

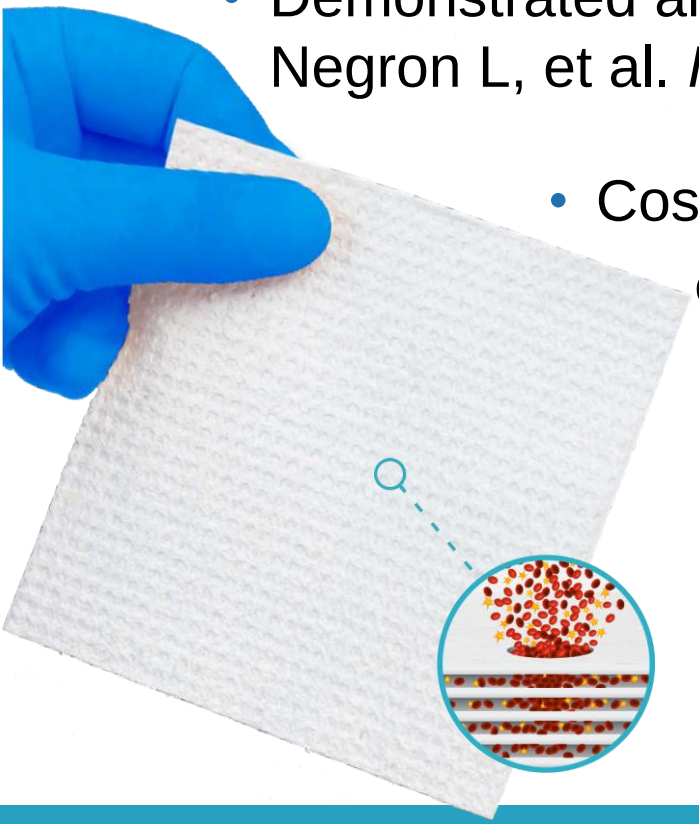
Axillary Hidradenitis

Axillary Hidradenitis

- Wide resection
- OFM graft
- Flap advancement
- Wick-assisted closure
- Support bra

Ovine Forestomach Matrix Grafts

- Safe and effective in HS reconstruction – as a dermal template or implant to augment flap closure
  Chaffin AE, Buckley M. *J Wound Care.* 2020;29(11)
  - Demonstrated anti-inflammatory properties, specifically MMP modulation
    Negron L, et al. *Int Wound J.* 2014;11(4):392-397.



- Cost-effective option for soft tissue reconstruction, generally requiring only 1 application – Lawlor J, et al. *Plast Reconstr Surg Glob Open.* 2024;12(12):e6406.
  - Facilitates pliable tissue regeneration minimizing chances of recurrence and improves cosmesis and function – Dardano AN, et al. *Trauma Cases Rev.* 2024;10:105.

Axilla:
7 months postop

- Normal arm ROM and contour

Surgical Reconstruction of Hidradenitis Suppurativa via Flap Advancement

Chaffin A, Buckley M. Extracellular matrix graft for the surgical management of Hurley stage III hidradenitis suppurativa: a pilot case series. *J Wound Care*. 2020;29(11):624-630.

Initial defect

Wide excision

Graft placement

Flap advancement

Wk 3

Wk 5

Wk 6

Penile/Scrotal/Perineal Hidradenitis

- 37y Male
- 15-yr history of HS
- No prior HS resection
- Progressive severe LYMPHEDEMA
- Difficulty ambulating
- Had to retire from the Air Force

Penile/Scrotal/Perineal Hidradenitis

Penile/Scrotal/Perineal Hidradenitis

Penile/Scrotal/Perineal Hidradenitis




Penile/Scrotal/Perineal Hidradenitis

- Morselized OFM graft to remaining penile wound

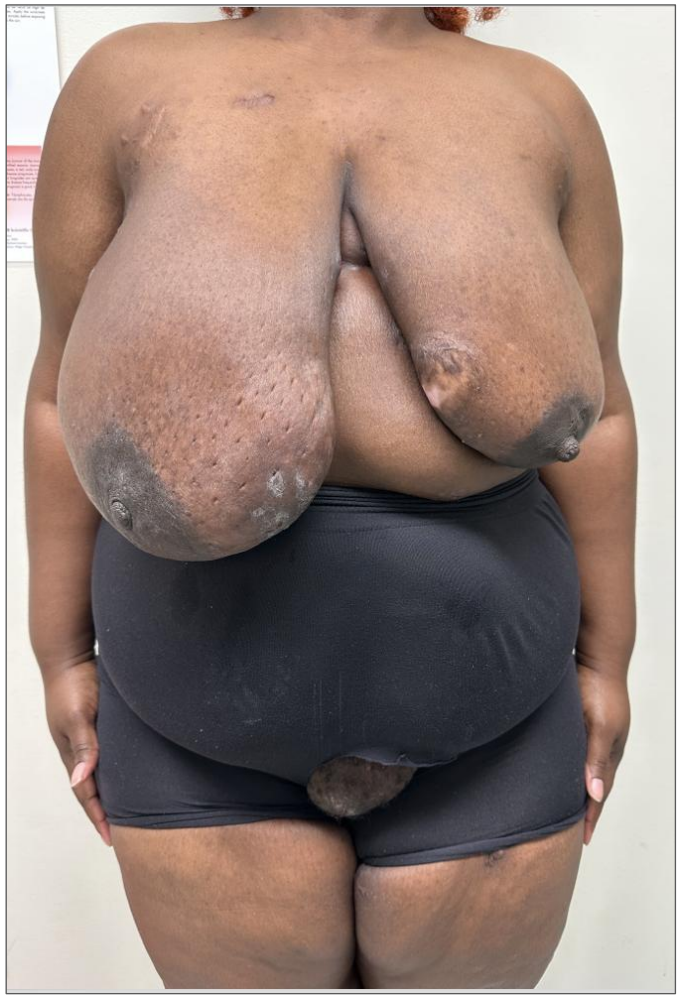
Penile/Scrotal/Perineal Hidradenitis

- 4 months postop
- HEALED
- Able to ambulate and urinate normally

Breast Hidradenitis

- IMF/lower poles most common
- Obesity common
- Mammogram/MRI first
- Macromastia symptoms
- HS symptoms

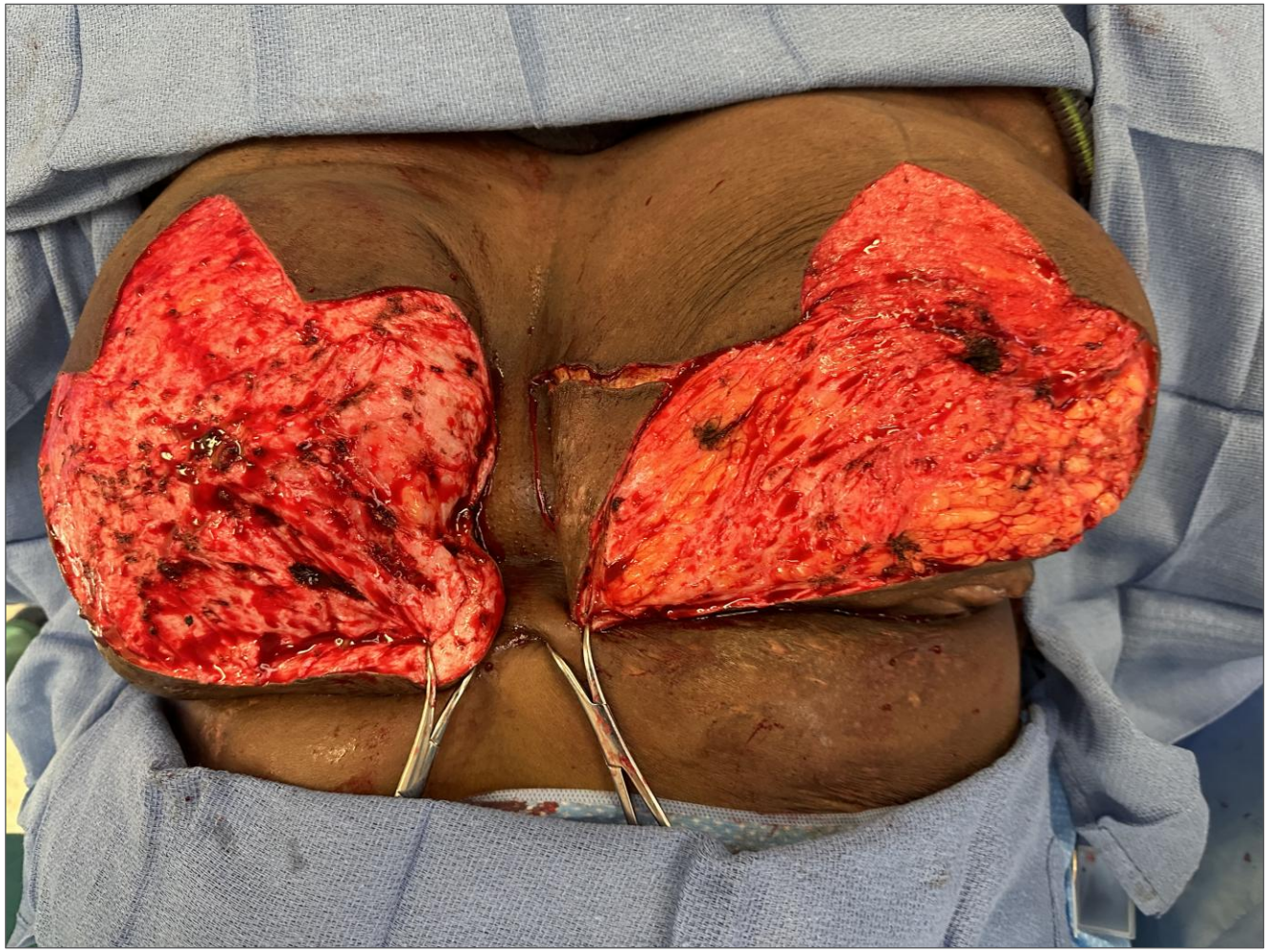
Breast Hidradenitis

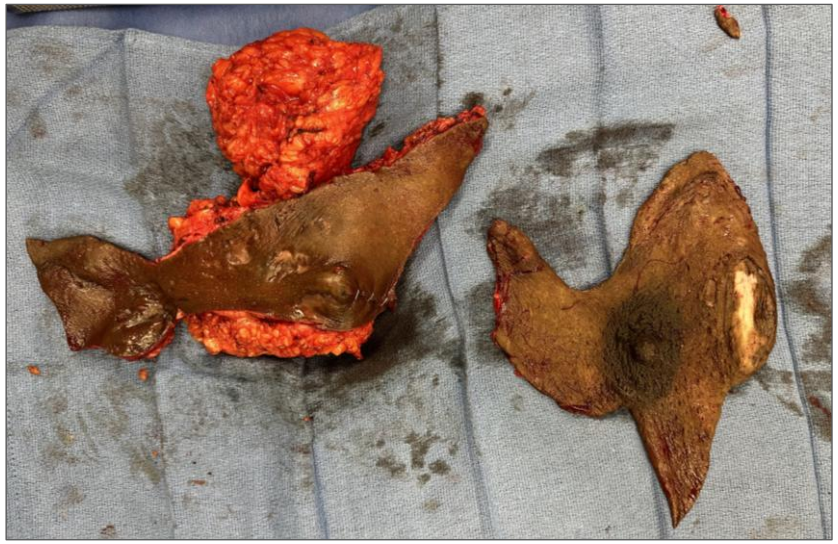


Breast Hidradenitis

- Salvage uninvolved upper pole tissue
- Resect all hidradenitis disease
- Discuss whether preservation of nipple-areolar complexes is possible/ideal
- Irrigation of wound post debridement with pHA and pHA prior to closure
- Surgical wide drainage
- Target antibiotics to cultures

Breast Hidradenitis



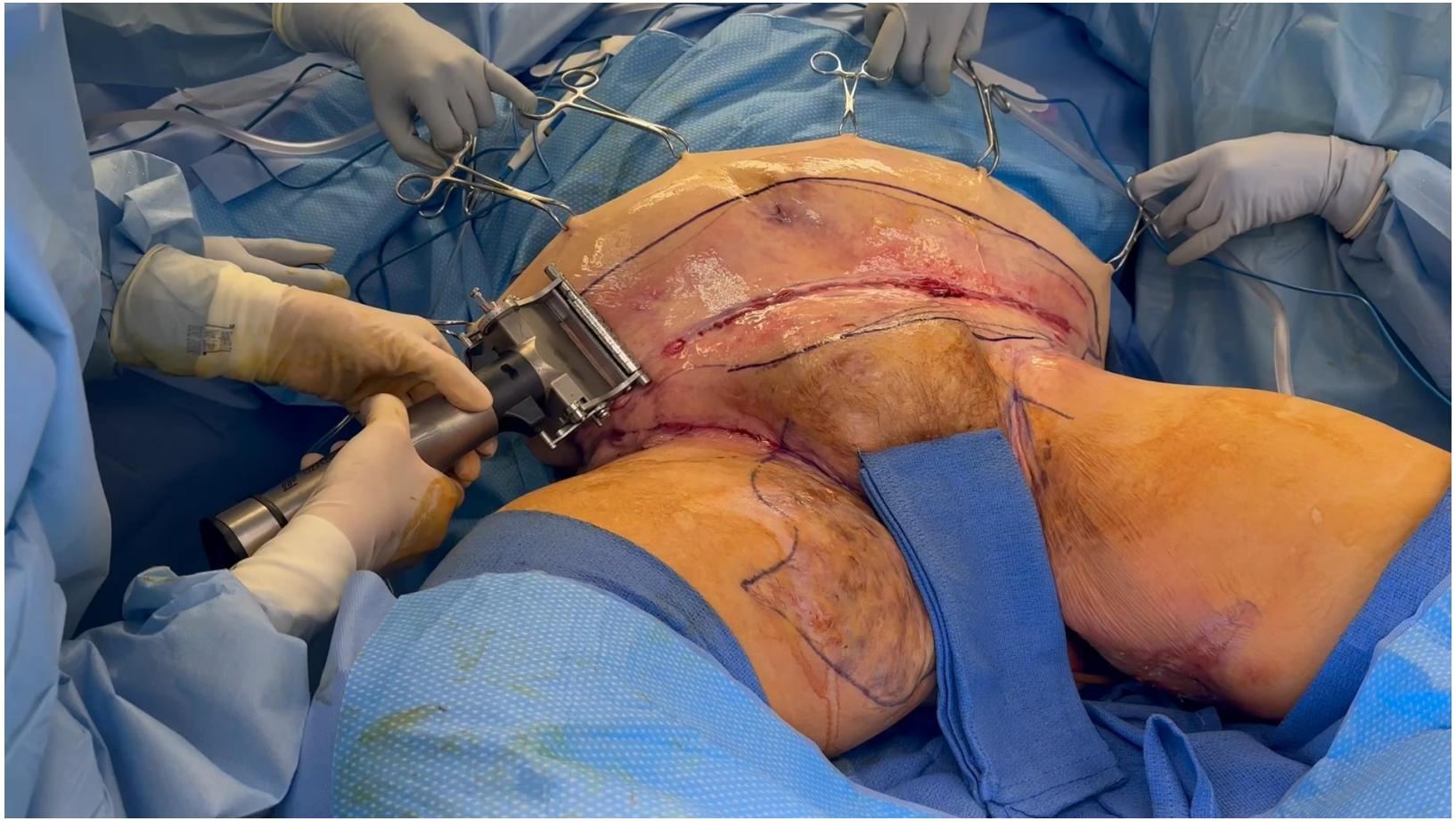


Breast Hidradenitis

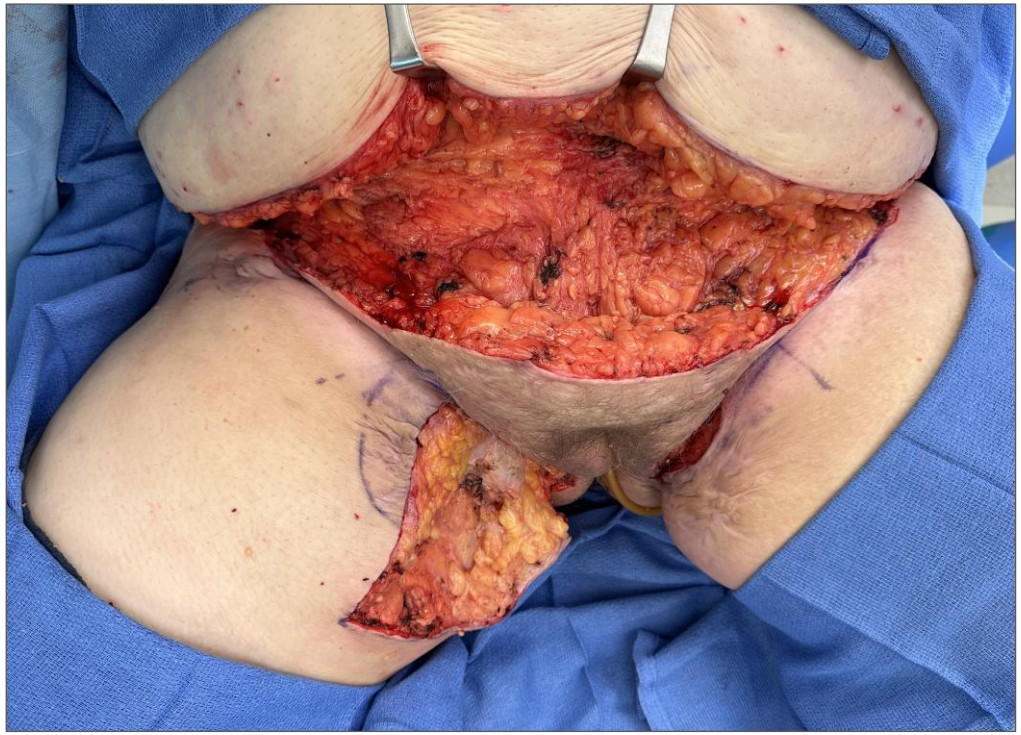
Breast Hidradenitis

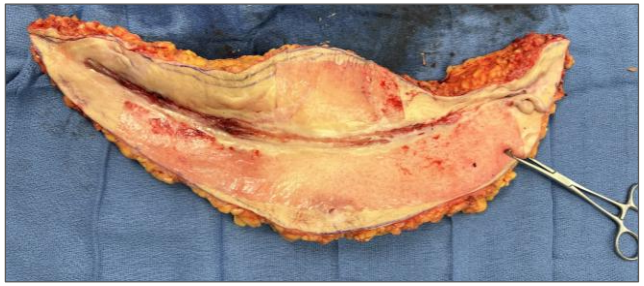
Abdomen/Pubis/Thighs Hidradenitis

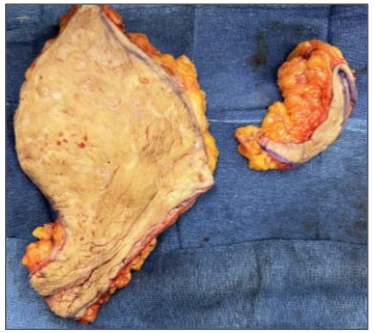
Abdomen/Pubis/Thighs Hidradenitis



Abdomen/Pubis/Thighs Hidradenitis







Abdomen/Pubis/Thighs Hidradenitis

Abdomen/Pubis/Thighs Hidradenitis

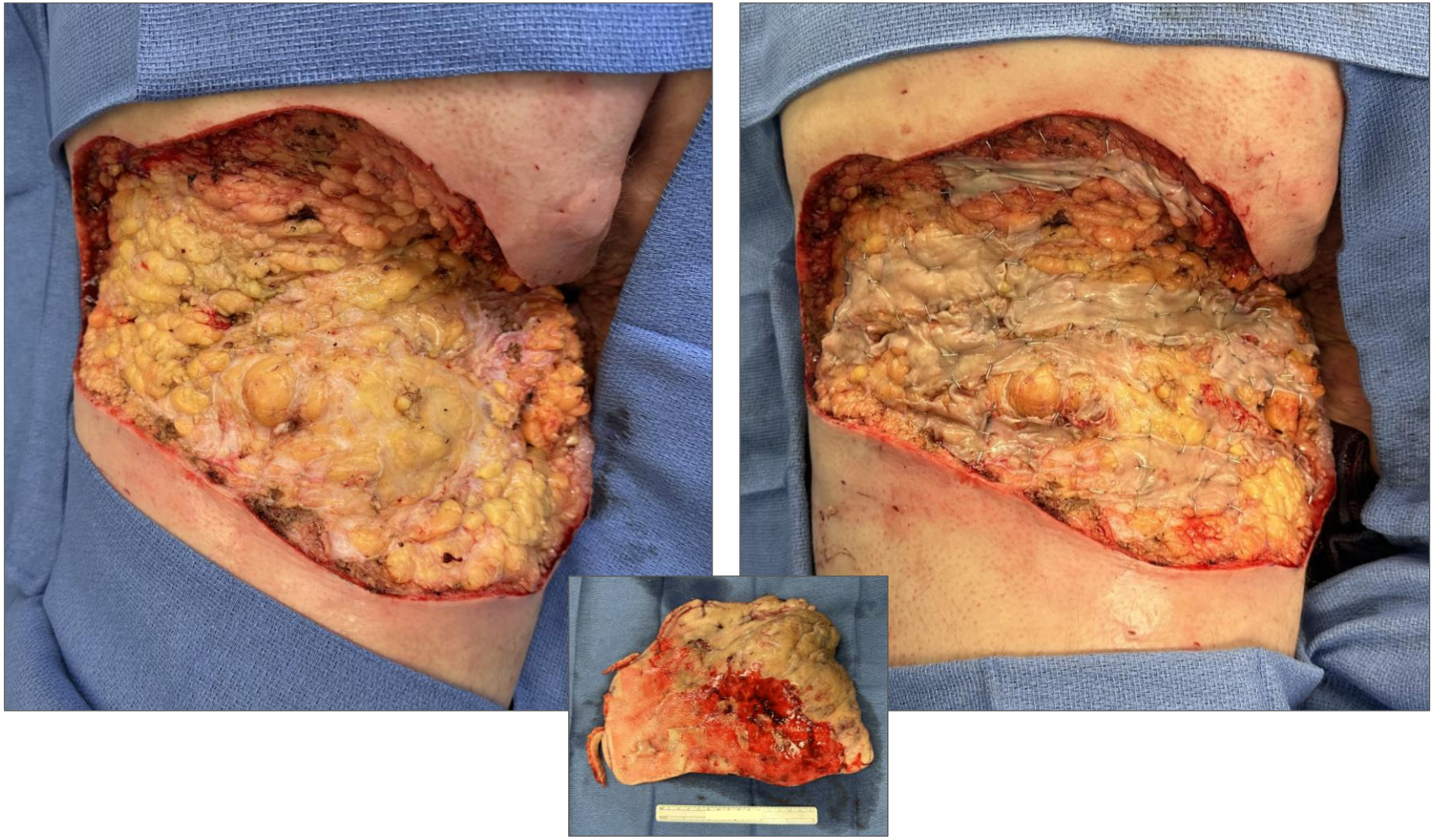
Thigh/Perineum Hidradenitis

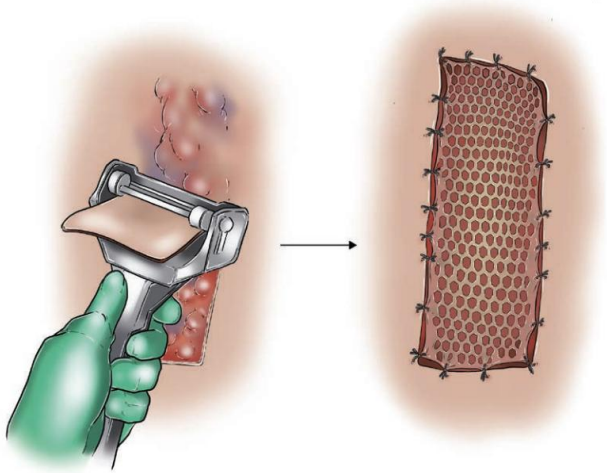
- 41y Female with diabetes
- 15-yr HS history
- Severe psoriasis; on infliximab
- ED visit for acute thigh hemorrhage

Thigh/Perineum Hidradenitis

- Weight loss/DM improvement with GLP-1 medications
- Nicotine cessation
- Sense of hope that a surgeon is willing to help her
- Plan for 3 stages of surgery
  - Posterior thigh/posterior perineum
  - Anterior perineum/abdomen/anterior thighs
  - Right axilla

Recycled Skin Graft Technique





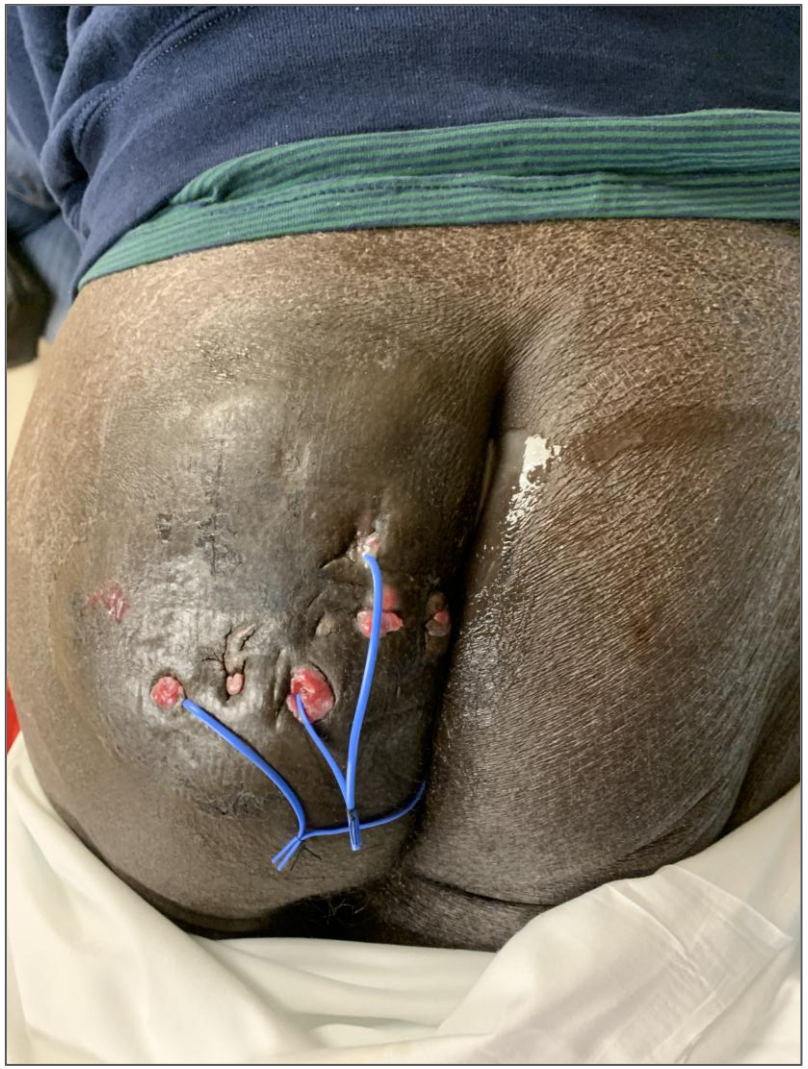
Hamaguchi R… Chaffin AE, et al. *Plast Reconstr Surg.* 2022;150(5):1115-1127.

Thigh/Perineum

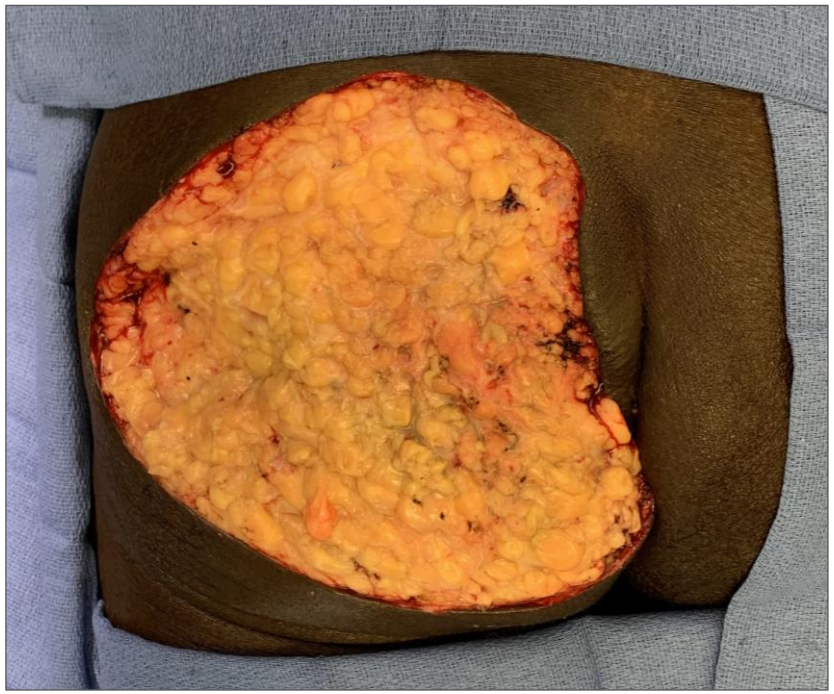
4 wks postop

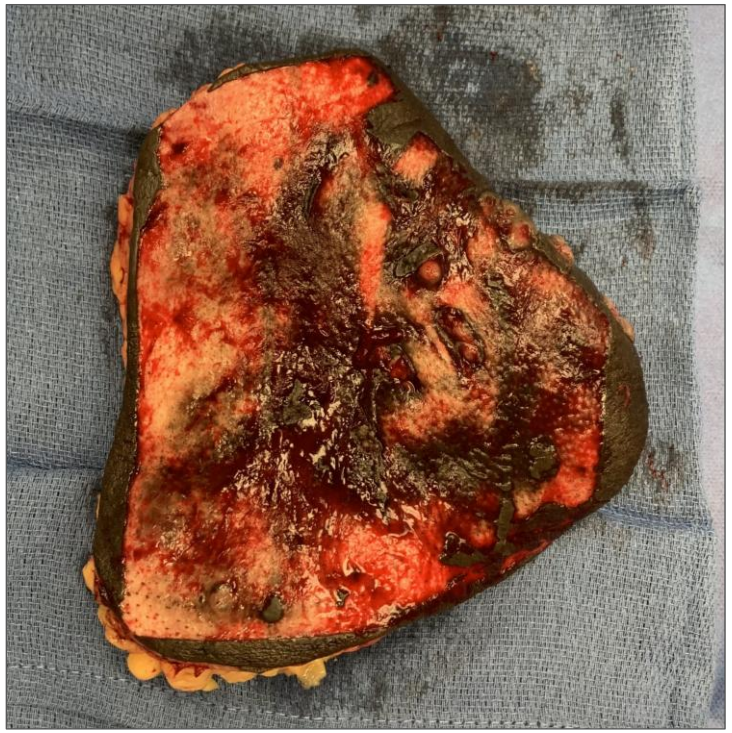
12 wks postop

Gluteal/Perianal Hidradenitis



Gluteal/Perianal Hidradenitis





Gluteal/Perianal Hidradenitis

Thermal Imaging Analysis of Affected Skin in HS Patients Using Forward-Looking Infrared Imaging Technology


FIGURE 1

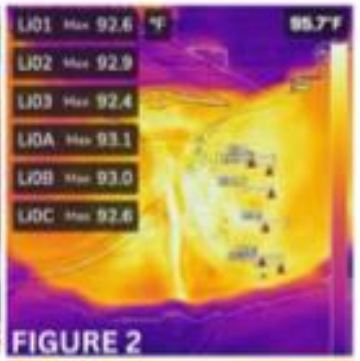


FIGURE 2

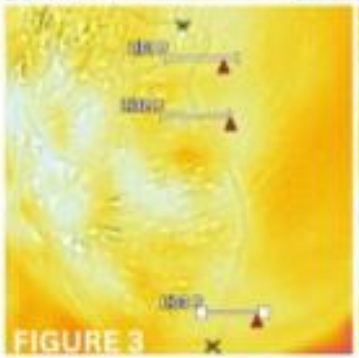


FIGURE 3

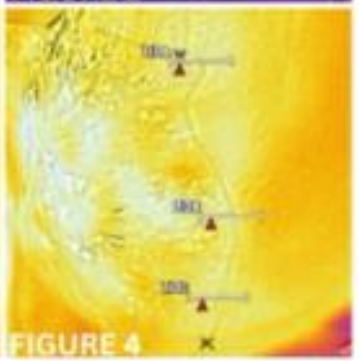


FIGURE 4


FIGURE 5

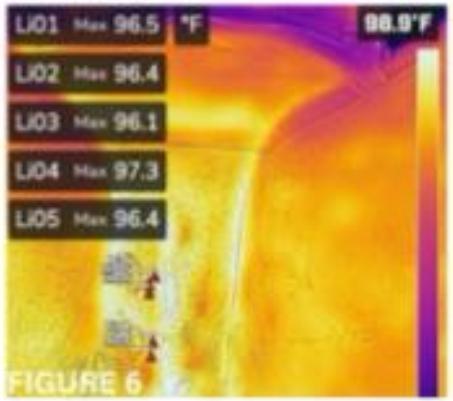


FIGURE 6


FIGURE 7

Forward looking infrared imaging is a cost-effective and accessible option for surgical planning in HS. Forward looking infrared imaging device can be limited by environmental factors and may be limited in the clinical setting, but it is less problematic in the operating room where standardized conditions are more achievable. Thermal cameras capture surface temperature by reflecting underlying inflammation. Forward looking infrared imaging may be used to complement other imaging methods by offering real-time feedback on resection margins and identifying areas of subclinical disease.

Polling Question

Ovine forestomach matrix (OFM) grafts can be used as an implant in addition to on the wound surface as a dermal regenerative matrix.

1. True
2. False

Polling Question

Chronic wounds tend to have a pH that is acidic.

1. True
2. False

Chronic, non-healing wounds tend to have a pH that is more alkaline (higher) than a healthy, healing wound. This means the pH is often in the range of 7-9 compared to the normal range of 6.5-8.5 for acute wounds and 4-6 for healthy skin.

Polling Question

Cytotoxicity of cleansing solution should matter as a matter of principle.

1. True
2. False

Clinical Pearls

- 3 Cs of hidradenitis management
  - Calm it down
  - Cut it out
  - Keep it Calm
- Chronic hidradenitis wounds are often highly colonized
- Pure hypochlorous acid wound cleanser can be useful for germ and debris removal in contaminated wounds such as in HS patients preoperatively, post debridement, and postoperatively to improve wound outcomes
- Surgical resection of advanced hidradenitis often leaves significant soft tissue deficits; OFM can be helpful in surgical management of these soft tissue deficits

Thank You

Please submit your questions
via the Question Box