

24 Month Retrospective Review of Pilonidal Disease Plastic Surgical Excision and Reconstruction Techniques involving the use of Pure Hypochlorous Acid (pHA) Preserved Wound Solution for Wound Bed Preparation

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Background

- Pilonidal disease is a chronic inflammatory disease characterized by tunneled sinus tracts¹ with heavy microbial colonization
- Reported recurrence rates requiring intervention approach 33%²
- Plastic surgical reconstructive procedures represent the most advanced approach for treatment however recurrence and complications remain high

Objectives

- We share our experience with a comprehensive treatment plan for pilonidal disease
- This includes operative resection, wound bed preparation with preserved with a highly stable hypochlorous acid (pHA) solution, and varied reconstructive techniques
- We compare recurrence rates using our techniques with those reported in the literature

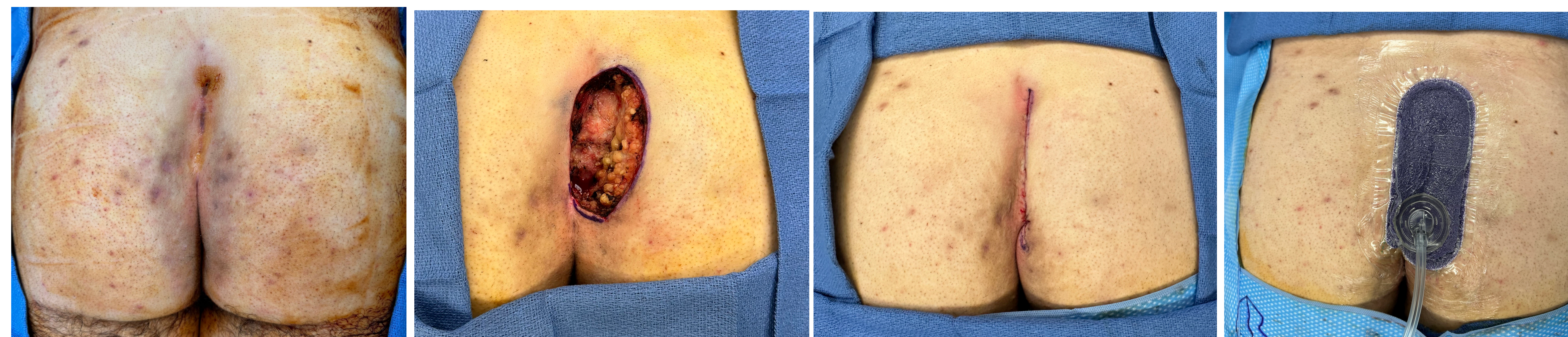
Methods

- Retrospective review of all patients treated with our protocol from November 2021 to November 2023
- Operative techniques and perioperative protocols were examined
- Patient demographics, comorbidities, and operative cultures were reviewed
- Outcomes were assessed in the outpatient wound center based on presence of any recurrent disease and healing outcomes

Results



Patient 6: 24 M with prior incision and drainage, multiple sinus tracts. Left: preoperative marking with sinus tract identified with methylene blue. Middle: fully excised defect. Right: fully healed by 6 weeks.



Patient 11: 19 M with tunneled sinus tracts. Left: preoperative photo. Middle left: fully excised defect. Middle right: tension-free, off midline closure. Right: negative pressure wound therapy is essential for offloading tension, decreasing shear force and edema, prevent urinary and fecal soilage as part of reconstructive success

Case	Age, Sex	Prior procedure(s)	Reconstruction	Cultures	Outcome
1	52 M	I&D, excision and closure	GFAF	CONS	5mm wound dehiscence treated with local wound care
2	43 M	Multiple I&D	GFAF	Mixed skin microbiota	Fully healed
3	16 M	None	GFAF	Mixed skin microbiota	7mm wound dehiscence treated with local wound care
4	24 M	4 prior resections	GFAF	MRSA	Fully healed
5	18 M	None	GFAF	<i>Bacteroides thetaiotomicron</i>	Fully healed
6	24 M	Multiple I&D	GFAF, LTA	None	Fully healed
7	20 M	Excision, perianal dehiscence	GFAF	None	Reoperation due to perianal wound, delayed healing
8	17 M	None	GFAF	None	Fully healed
9	25 M	Excision, V-y flap reconstruction	GFAF	<i>Pseudomonas sp.</i> , <i>Aggregatibacter segnis</i>	Fully healed with HBOT
10	23 M	I&D, excision and closure	LTA	Alpha-hemolytic <i>Streptococci</i> , <i>Prevotella sp.</i> , <i>Peptostreptococcus asaccharolyticus</i>	Fully healed
11	19 M	None	GFAF	None	Fully healed
12	20 F	Excision, dehiscence	GFAF	<i>Propionibacterium granulosum</i>	Fully healed
13	18 M	Excision, flap recon, dehiscence	CLWC	None	Dehiscence requiring operative reconstruction
14	76 F	Resection, coccygectomy	LTA	None	Fully healed

Table 1: Patient demographics, reconstruction, cultures, and healing outcome. I&D: incision and drainage; GFAF: gluteal fasciocutaneous advancement flap, LTA: local tissue arrangement; CLWC: complex layered wound closure CONS: coagulase negative *Streptococcus*; MRSA: Methicillin resistant *Staphylococcus aureus*; HBOT: hyperbaric oxygen therapy

Key Surgical Pearls

- Tension-free closure: flap mobilization and progressive tension sutures (#1 PDS)
- Off-midline closure
- Treat wound polymicrobial colonies with pHA
- Postoperative shear/pressure avoidance
- Postoperative hair removal regimen or laser hair removal

Results

- 14 cases were reviewed
- Common features included chronic, tunneled disease with various prior operative intervention (table 1)
- Stabilized pure hypochlorous acid preserved wound solution (pHA) was used for wound bed preparation in all cases
- 12 patients healed without reoperation
- 8 cultures grew various pathogens

Conclusion

- Pilonidal excision, irrigation with stabilized pure hypochlorous acid (pHA) preserved solution irrigation, and perioperative care were standard for all patients but reconstruction remained variable
- High success rates (12/14; 85%) were seen with this integrated protocol
- Wound bed preparation with pHA improves outcomes after excision and reconstruction for pilonidal disease

References

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2. Halleran DR, Lopez JJ, Lawrence AE, et al. Recurrence of pilonidal disease: our best is not good enough. *J Surg Res.* 2018;232:430-436. doi:10.1016/j.jss.2018.06.071