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Hidradenitis Suppurativa Increases Risk of Postoperative Complications After Mohs Surgery: A Retrospective Cohort Study

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To the Editor,

Hidradenitis suppurativa (HS) is a chronic inflammatory skin condition characterized by painful nodules, abscesses, and sinus tracts.[1] Though HS primarily affects intertriginous areas, it may involve the mandible, post-auricular area, scalp, temples, and nuchal skin.[1] Previous studies in orthopedic literature have demonstrated that patients with HS are at increased risk for adverse postoperative events, including wound dehiscence and surgical site infection.[2] Mohs micrographic surgery (MMS) is frequently performed to treat nonmelanoma skin cancer (NMSC) and melanoma (MM), particularly of the head and neck.[3] However, large-scale, real-world data assessing postoperative complications of MMS in patients with HS remains limited.

In this retrospective cohort study using the TriNetX Research Network, we evaluated whether HS is associated with increased postoperative complication rates in patients undergoing MMS for NMSC or MM. Patients with HS were identified using the ICD-10-CM for HS (L73.2). Patients with conditions impairing wound healing (epidermolysis bullosa, systemic sclerosis, Ehlers-Danlos, or Marfan syndrome), a history of postoperative complications prior to the study period, or systemic infection on the day of MMS were excluded. Patients with HS were propensity score matched on age, demographics, immunosuppressive medications, and comorbidities to a comparator cohort without HS. Postoperative complications were evaluated at 30 and 90 days following MMS with risk ratios (RR) and 95% confidence intervals (CI). Statistical significance was set at a two-tailed *P*-value <0.05.

One thousand forty-six (1,046) patients with HS were compared to 1,046 matched controls without HS (Table 1). At 30 days postoperatively, patients with HS were at a significantly increased risk of postoperative infection (RR 2.56, *P*=0.0026), delayed wound healing (RR 2.24, *P*=0.012), and dehiscence (RR 2.51, *P*=0.0047). At 90 days postoperatively, patients with HS remained at a significantly increased risk of postoperative infection (RR 2.17, *P*=0.003), delayed wound healing (RR 2.13, *P*=0.0098), and dehiscence (RR 2.13, *P*=0.0077). Our results suggest that HS is associated with postoperative infection, delayed wound healing, and dehiscence following MMS.

The pathophysiologic mechanism underlying these adverse outcomes likely involves the chronic inflammatory microenvironment in HS, which is characterized by bacterial dysbiosis and persistent colonization of open wounds and sinus tracts, serving as a reservoir for infection and delayed healing.[4] Beyond local manifestations, HS involves systemic immune dysregulation that may predispose patients to postoperative complications. Dysregulation of SOX9, a transcription factor essential for epithelial stem cell differentiation in wound repair, alongside elevated TNF-α and IL-17 activity and CXCL12/13-expressing fibroblasts, likely promote chronic inflammation and impaired healing.[5]

Limitations of our study include reliance on ICD-10-CM coding, retrospective design, and lack of clinical information on HS location, Hurley stage, perioperative antibiotic use, defect size, or repair type. Future prospective studies should clarify causality and inform targeted risk mitigation strategies.

DISCLOSURES

SNT is an investigator/speaker for Bioventus, Kerecis, Boehringer Ingelheim, Regeneron, and CASTLE. Other authors have no relevant COI to declare.

Ethical Approval:
Data accessible via TriNetX is presented in aggregate form and only contains anonymized data as per the deidentification standard defined by the US Health Insurance Portability and Accountability Act (HIPAA) in section 164,514(a). Given that this study used only deidentified data and did not involve individually identifiable patient data, this study was exempt from Institutional Review Board Approval.

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TABLE 1.

Baseline Demographic Characteristics of the Celecoxib, Sirolimus, and Acitretin Cohorts After Propensity Score Matching (PSM)

Outcomes	HS Cohort	No HS Cohort			HS Cohort	No HS Cohort		
	Number of eligible individuals (number of outcomes, 30-day)	Number of eligible individuals (number of outcomes, 30-day)	Risk Ratio (95% CI)	*P*-value	Number of eligible individuals (number of outcomes, 90-day)	Number of eligible individuals (number of outcomes, 90-day)	Risk Ratio (95% CI)	*P*-value
Postoperative infection	1000 (33)	1007 (13)	2.56 (1.35-4.83)	0.0026	1000 (43)	1007 (20)	2.17 (1.28-3.65)	0.003
Postoperative bleeding	1020 (≤10)	1029 (≤10)	N/A	N/A	1020 (≤10)	1029 (≤10)	N/A	N/A
Hematoma	1020 (≤10)	1029 (≤10)	N/A	N/A	1020 (12)	1029 (≤10)	N/A	N/A
Delayed wound healing	1021 (29)	1023 (13)	2.24 (1.17-4.27)	0.012	1021 (34)	1023 (16)	2.13 (1.18-3.83)	0.0098
Dehiscence	1022 (30)	1028 (12)	2.51 (1.29-4.88)	0.0047	1022 (36)	1028 (17)	2.13 (1.20-3.77)	0.0077

Ethics Statement: Written informed consent from patients was not required as information from TriNetX is deidentified.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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