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Post-operative pain after Mohs micrographic surgery: analyzing physician perceptions of postoperative pain and how those perceptions affect opioid prescribing practices

Joshua D. Eikenberg MD, MPH[1], Savannah Taylor, MS, Kyle A. Prickett, MD, Mariana A. Phillips, MD

[1]Department of Dermatology, Virginia Tech Carilion School of Medicine, Roanoke, VA

Background/Objectives: Opioid abuse in the United States has become an epidemic. Opioid prescribing by dermatologists is generally limited to the surgical setting. Nevertheless, there is evidence to suggest that thousands of patients are at risk for long term opioid use as a result of prescriptions that they receive from dermatologists.1 However, little is known about dermatologists' perceptions of postoperative pain and how they correlate with patient perceptions of pain.

It is also unclear if physician perceptions of patient pain affect opioid prescribing practices or if receiving prescription opioids affects patient reported satisfaction with pain control. The objective of this study was to determine how physician perceptions of postoperative pain after Mohs micrographic surgery correlate with patient reported pain and affect physician opioid prescribing practices. We also sought to determine if patients receiving opioids were more likely to be satisfied with their level of pain control.

Methods: Patients presenting for Mohs micrographic surgery completed pain surveys using the Numerical Rating Scale (0-10) on the evening of (day 0) and the first four nights after the procedure. Patients also rated their satisfaction with their pain control on a 0-10 scale. After the repair, the physician recorded a prediction of the patient's pain level on day 0 using the Numerical Rating Scale (0-10). The predicted pain was compared to the recorded patient pain. The age, sex, diagnosis, surgery site, postoperative size, closure type, and oral analgesics used were recorded.

Results: A total of 260 of the 396 patients recruited completed the surveys. There were no significant differences in post-operative pain based on patient characteristics, closure type, or tumor location. There is no significant difference between mean day 0 patient reported pain (2.7±2.5) and physician predicted pain (2.9 ± 1.1; $p = 0.13$). Correlation between physician predicted pain and patient reported pain was significant ($p < 0.0001$) but the correlation coefficient was relatively small ($r = 0.27$). The majority (70.0%) of physician predictions were within 2 points or less of patient reported pain and 45.0% of physician predictions were within 1 point. However, 30.3% of physician predictions differed by 3 or more points from patient reported pain. Opioids were only prescribed to 45 patients (17.3%). The mean

predicted pain score of patients who were prescribed opioids (3.4 ± 1.2) was significantly higher than those who were not prescribed opioids (2.8 ± 1.1; p = 0.0018). There was no significant difference in patient satisfaction scores between those who were prescribed opioids and those who were not (p = 0.688).

Table 1: Patient characteristics (N = 260).

Characteristic	Value
Age, mean ± standard deviation	70.03 ± 10.53
Age, *n* (%)	
<60	37 (14.7)
60-69	85 (33.9)
70-79	88 (33.2)
≥80	50 (20.2)
Sex, *n* (%)	
Male	94 (36.2)
Female	166 (64.8)
Diagnosis, *n* (%)	
Basal cell carcinoma	187 (71.9)
Squamous cell carcinoma	58 (22.3)
Squamous cell carcinoma in situ	12 (4.6)
Melanoma in situ	1 (0.4)
Adnexal carcinoma	1 (0.4)
Atypical fibroxanthoma	1 (0.4)
Site, *n* (%)	
Nose	64 (24.6)
Cheek	47 (18.1)
Ear	34 (13.1)
Forehead	32 (12.3)
Scalp	17 (6.5)
Temple	14 (5.4)
Lip	10 (3.8)
Neck	10 (3.8)
Chin	9 (3.5)
Leg	8 (3.1)
Eyelid	6 (2.3)
Hand	4 (1.5)
Back	2 (0.8)
Arm	1 (0.4)
Forearm	1 (0.4)
Foot	1 (0.4)
Number of Stages, *n* (%)	
1	175 (67.3)
2	67 (25.8)
3	13 (5.0)
4	5 (1.9)
Defect size in cm^2 *n* (%)	
<1.0	17 (6.5)
1.0-1.9	48 (18.5)
2.0 – 2.9	56 (21.5)
>3.0	139 (53.4)
Closure type, *n* (%)	
Complex linear	155 (59.6)
Graft	42 (16.2)
Flap	40 (15.4)
Secondary intention	17 (6.5)
Graft with Cartilage	4 (1.5)

Conclusion: Physician predictions of perceived patient pain were within two points of patient reported pain in most cases. Physicians were more likely to prescribe opioids for patients with higher predicted pain. Patients who were prescribed opioids were no more satisfied with their level of pain control than patients who did not receive opioids. Patient characteristics, tumor location, and closure type were not associated with patient reported pain score.

References:

1. Cao S, Karmouta R, and Li DG. Opioid prescribing patterns and complications in the dermatology Medicare population. *JAMA Dermatol.* 2018;154(3):317-322.