Prognostic factors associated with recurrence in Merkel cell carcinoma: A 20-year single institution experience

Yingjoy Li, BA[1], Bonnie A. Lee, MD[2], Linda T. Doan, MD[2], Kenneth G. Linden, MD PhD[2], James Jakowatz, MD[3], Maki Yamamoto, MD[3], Thuy B. Tran, MD[3]

[1]University of California, Irvine School of Medicine, Irvine, CA, U.S.A.; [2]University of California, Irvine – Department of Dermatology, Irvine, CA, U.S.A.;
[3]University of California, Irvine – Department of Surgical Oncology, Irvine, CA, U.S.A.

Introduction

- Merkel cell carcinoma (MCC) is a rare, aggressive cutaneous neuroendocrine malignancy.
- This cancer primarily affects White, male, elderly, and immunosuppressed patients who reside in areas with high ultraviolet solar indices.
- 5-year overall survival: 51%, 35%, and 14% for local, nodal, and distant disease, respectively.
- Recurrence rates of Merkel cell carcinoma have been reported with a wide range between 27% to 77%.
  - Recurrence-associated prognostic factors, including specific patient and tumor characteristics, have only been partially studied.

Objective

- To study the clinical characteristics of patients diagnosed with Merkel cell carcinoma and to investigate prognostic factors associated with recurrence.

Methods

- After institutional review board (IRB) approval, patients with Merkel cell carcinoma were identified from a single-institution electronic medical record from 2003 to 2023.
- Patients were stratified by whether they had a recurrence of their Merkel cell carcinoma or not.
- Demographics and tumor characteristics were evaluated.

Results

- A total of **193** patients with Merkel cell carcinoma were identified.
- 58 (30.1%) had at least one recurrence.
- Most patients were male (66.8%), White (83.2%), and initially diagnosed at a community practice (88.7%).
- 10 (5.2%) were immunosuppressed.
- A full metastatic workup, including FDG-PET imaging, did not reveal a neuroendocrine tumor of another origin in any of these patients.
- Anatomic location of the primary tumor, tumor size, mitotic rate, lymphovascular invasion, tumor-infiltrating lymphocytes, and tumor extension did not seem to affect likelihood of recurrence.

Table 1. Demographic characteristics of patients with Merkel cell carcinoma, stratified by recurrence status.

	No Recurrence (n=135)	Recurrence (n=58)	p-value
Age ≥50, n (%)	130 (97.7)	55 (94.8)	0.288
Birth Sex, n (%)			
Male	90 (66.7)	39 (67.9)	0.938
Female	45 (33.3)	19 (32.8)	
Race, n (%)			
White	113 (85.0)	45 (78.9)	0.310
Non-White	20 (15.0)	12 (21.1)	
Insurance, n (%)			
Public	101 (78.3)	43 (81.1)	0.669
Private	28 (21.7)	10 (18.9)	
ECOG Performance Status, n (%)			
0	49 (63.6)	22 (53.7)	0.659
1	18 (23.4)	14 (34.1)	
2	4 (5.2)	2 (4.9)	
3	6 (7.8)	3 (7.3)	
Institution of initial biopsy, n (%)			
Community	90 (87.4)	51 (91.1)	0.495
UC Irvine	7 (6.8)	4 (7.1)	
Other Academic	6 (5.8)	1 (1.8)	
MCC Included in Pre-Biopsy Differential Diagnosis, n (%)			
Yes	10 (15.9)	25 (89.3)	0.336
No	53 (84.1)	28 (93.3)	

Table 2. Tumor and treatment characteristics of patients with Merkel cell carcinoma, stratified by recurrence status.

	No Recurrence (n=135)	Recurrence (n=58)	p-value
Anatomic Location of Tumor, n (%)			
Head-Neck	62 (47.0)	25 (43.9)	0.803
Non-Head-Neck	56 (42.4)	27 (47.4)	
Tumor Size, n (%)			
≤2 cm	13 (65.0)	4 (50.0)	0.683
>2 cm	7 (35.0)	4 (50.0)	
Lymphovascular Invasion, n (%)			
Yes	13 (43.3)	14 (53.8)	0.432
No	17 (56.7)	12 (46.2)	
Tumor-infiltrating Lymphocytes, n (%)			
Present	23 (76.7)	14 (73.7)	0.813
Absent	7 (23.3)	5 (26.3)	
Combined MCC, n (%)			
Yes	4 (4.0)	9 (16.7)	**0.007**
No	12 (12.8)	10 (18.9)	
Lymph Nodes, n (%)			
Positive	31 (42.5)	27 (64.3)	**0.024**
Negative	42 (57.5)	15 (35.7)	
Residual Disease, n (%)			
Yes	42 (55.3)	35 (83.3)	**0.002**
No	34 (44.7)	7 (16.7)	
Surgical Margins, n (%)			
Yes	6 (12.8)	13 (38.2)	**0.008**
No	41 (87.2)	21 (61.8)	

Discussion and Conclusion

- Clinicians should consider lymph node involvement, residual disease, and positive surgical margins as poor prognostic factors for recurrence of Merkel cell carcinoma.
- Combined Merkel cell carcinomas with other skin cancer types (i.e. squamous cell carcinoma) suggest higher risk of recurrence compared to pure Merkel cell carcinomas.

References

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Yingjoy Li, University of California, Irvine School of Medicine, 1001 Health Sciences Rd, Irvine, CA 92617, United States of America, yingjoyl@hs.uci.edu, (213) 271-8657