SKIN

BRIEF ARTICLE

Comparing Porocarcinoma Outcomes Following Resection by Surgical Management Technique

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ABSTRACT

Introduction: Porocarcinoma is a neoplasm of eccrine sweat glands. While wide local excision (WLE) has traditionally been the surgical technique of choice for porocarcinoma resection, the number of cases treated using Mohs micrographic surgery (MMS) is increasing.
Methods: We performed a retrospective review of patients diagnosed with porocarcinoma from January 2015 - February 2020. Chi-square and Fisher's exact test was used to evaluate outcomes.
Results: Twelve patients were evaluated following surgical treatment. WLE recipients were younger, with an equal number of white and black patients. All MMS patients were white (4). Both WLE and MMS were most performed on the head and neck (6 and 3, respectively). Local recurrence rate was 12.5% in the WLE group (vs. 0% for MMS). Mortality rate was 25% for each group.
Discussion: Prognosis following WLE is poor. Our results suggest that MMS is a useful modality for the surgical treatment of porocarcinoma.

INTRODUCTION

Porocarcinoma is a rare, cutaneous neoplasm of eccrine sweat glands, most commonly on the head and neck in older adults.[1] While wide local excision (WLE) has traditionally been the surgical technique of choice for porocarcinoma resection, the number of cases treated using Mohs micrographic surgery (MMS) is increasing.[2,3] Currently there is no consensus on the optimal treatment methodology, though WLE is often considered first-line.[4] To date, few studies have examined outcomes of MMS as compared to gold-standard WLE for the treatment of porocarcinoma.

METHODS

After institutional IRB approval was obtained in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, a retrospective chart review was conducted to identify patients diagnosed with porocarcinoma at our institution between January 2015 and February 2020. Patient demographics, tumor characteristics, surgical treatment type, and

outcome data were recorded. To compare outcomes following surgery, patients were grouped into a disease-free survival group and an unfavorable outcome group consisting of patients with disease recurrence, metastasis, or death. Pearson chi-square and Fisher's exact test was then used to evaluate these outcomes in patients treated with WLE as compared to MMS. A p-value of $\leq$0.05 was considered significant.

RESULTS

Of 19 cases at our institution, 12 had sufficient follow-up to evaluate outcomes following excision. Most patients diagnosed with porocarcinoma were white (66.67%) with an average age of 63 at diagnosis, and an equal number of males and females. Eight patients underwent WLE (4 males and 4 females), while four patients received MMS (2 males and 2 females, p-value=0.727). Three patients in the WLE group had concurrent sentinel lymph node (SLN) biopsies, of which two were positive for regional nodal metastasis. In the WLE group there was an equal number of white and black patients and patients were younger. All patients in the MMS group were white (p-value=0.141) and older (p-value=0.463). No statistically significant differences were detected between the two groups. WLE was performed on the head and neck (6), trunk (1), and lower extremities (1). MMS was most performed on the head and neck (3), with one case performed on the trunk. WLE lesions were up to 3 cm, while MMS lesions were up to 5.8 cm.

All patients who underwent sentinel lymph node biopsy, had lymph node or distant metastases at diagnosis, or who received adjuvant chemo- or radiation therapy underwent WLE. No statistically significant difference was detected in patients undergoing WLE as compared to MMS when evaluating for disease-free survival versus unfavorable outcomes following treatment (p-value=0.576, **Table 1**).

Local recurrence rate was 12.5% in the WLE group (vs. 0% for MMS), 37.5% for disease progression or regional metastasis in remission following adjuvant therapies (vs. 25% for MMS), and mortality rate of 25% for each group.

DISCUSSION

Porocarcinoma is a rare skin cancer that is often locally aggressive and potentially fatal.[1] Surgical excision is the mainstay of treatment, with WLE performed most commonly.[3] WLE has an estimated local recurrence rate of about 20%,[2] regional metastasis rate of 20%, and distant metastasis rate of 12 percent.[5] MMS, on the other hand, is utilized for treatment of porocarcinoma with increasing frequency.[2-5] Of reported cases of porocarcinoma treated with MMS, regional metastasis rates are 7%, with no reports of local recurrence or distant metastasis.[5] Outcomes of porocarcinoma following MMS in our study are similar.

Despite WLE being the most commonly used surgical technique for porocarcinoma, no statistically significant difference in outcomes existed between patients undergoing WLE and MMS at our institution. Patients in the MMS group were found to have higher rates of disease-free survival, while patients in the WLE were found to have higher rates of recurrence and metastases. These results suggest that MMS is a useful modality for the surgical treatment of porocarcinoma. As demonstrated by our patient population, in

Table 1. Outcomes following surgical treatment of porocarcinoma.

	WLE Cohort	MMS Cohort	p-value
Age at diagnosis (mean years)	60.63	67.5	0.463
Sentinel Lymph Node biopsy *(count, %)*	3 (37.5%)	0 (0%)	0.255
Lymph node mets at diagnosis *(count, %)*	2 (25%)	0 (0%)	0.424
Adjuvant chemotherapy *(count, %)*	1 (12.5%)	0 (0%)	0.667
Adjuvant radiation *(count, %)*	5 (62.5%)	0 (0%)	0.071
Patient Outcomes *(count, %)*			0.576
Disease-free survival	3 (37.5%)	2 (50%)	
*Unfavorable outcomes**	5 (62.5%)	2 (50%)	
Recurrence	1 (12.5%)	0 (0%)	
Recurrence or mets, now in remission	3 (37.5%)	1 (25%)	
Death	2 (25%)	1 (25%)	

WLE: Wide Local Excision
MMS: Mohs micrographic surgery
*Unfavorable outcomes include recurrence, metastasis, or death

older patients with cancers of the head and neck, MMS may be particularly useful. Our study is limited by its small sample size – although it is reflective of the rarity of this disease. Future studies with larger sample sizes, such as a multi-institutional retrospective review, or prospective trials where patients are subjected to similar adjuvant therapy and clinical surveillance are necessary to further characterize patient and neoplasm qualities best suited to each surgical technique in order to optimize porocarcinoma survival outcomes.

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