

To Mohs or Not to Mohs

Considering the Elderly Patient

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ABSTRACT: Mohs micrographic surgery is a common procedure used to treat nonmelanoma skin cancers. With a clearance rate of approximately 98% in small primary basal cell carcinomas and approximately 97% in small primary squamous cell carcinomas, it is the gold standard of care. When considering a Mohs procedure, several criteria are reviewed and evaluated to make sure that Mohs is an appropriate treatment option for the specific tumor, and that the patient is an appropriate candidate to undergo Mohs. However, there are no such criteria for a specific age or functional status at which Mohs is deemed inappropriate (Connolly et al., 2012). Some may argue that patients in their 90s with a nonfatal skin cancer should not undergo an invasive surgery, as their quality of life may be impacted. Others may argue that, if they are healthy, surgery is the best answer. It is necessary for elderly patients and their caregivers to be fully informed about what type of skin cancer the patient has, its prognosis, and how it affects the patient's quality of life. All possible treatment regimens should be explained by the provider with opinions and advice given in respect to the patients' current health status and wishes in mind. Ultimately, care of the elderly patient regarding having or not having Mohs surgery should be a decision made between patient and provider, with the patient's preference as the priority.

Key words: Mohs, Elderly, Surgery, Quality of Life

Mohs micrographic surgery (MMS) is often recommended for certain skin cancers, but some elderly patients may endure more complications as a result, impacting the patients' remaining quality

of life. In a study conducted by the University of California San Francisco, "Skin Cancer in U.S. Elderly Adults: Does Life Expectancy Play a Role in Treatment Decisions?" the researchers found that most nonmelanoma skin cancers were typically treated surgically with either MMS or excision regardless of the likelihood of the tumor harming the patient or the patient's life expectancy (Fernandez, 2013). One in five of the patients from the study sample reported a complication from surgery, including pain, bleeding, poor wound healing, and/or itching. About half the patients with limited life expectancy, defined as patients 85 years or older with difficulty in at least one activity of daily living, a Lee index of 13 or greater (used to predict the risk of a cardiac event in patients undergoing noncardiac surgery), and medical comorbidities using a Charlson Comorbidity Index score of 3 or greater, died within 5 years of treatment from nonrelated complications including: heart disease, cerebrovascular disease, lung cancer, prostate cancer, pneumonia, chronic respiratory disease, and Alzheimer's disease (Fernandez, 2013).

Cost, risk, procedure duration, and patient preference should be considered when choosing from among treatments with comparable clinical outcomes. According to Linos, Chren, Stijacic Cenzer, and Covinsky (2016), MMS costs almost twice as much as excision, which is also almost twice as expensive as electrodesiccation and curettage. MMS can take an average of 3 hours, with some up to 8 hours in length depending on complexity, compared with an average of one hour for surgical excision and 20 minutes for electrodesiccation and curettage (Linos et al., 2016). One can see how MMS could become a stressful and taxing process for those older adults who have difficulty tolerating extended procedures, have memory impairment, or do not have the physical means of treating their wounds at home.

According to the American Cancer Society (2016a), basal cell carcinomas (BCCs) and squamous cell carcinomas (SCCs) are by far the most common types of skin cancer, with an estimated 3.3 million diagnosed with BCC or SCC each year, with most being BCC. These skin cancers are not usually considered fatal, and death from

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these types of skin cancers is uncommon, with reports of approximately 2,000 deaths in the United States each year. These numbers however are not for certain as these types of skin cancers are not normally tracked by cancer registries (American Cancer Society, 2016a). BCCs very rarely metastasize and are slow-growing tumors, but do have the potential to invade bone and other tissues beneath the skin, whereas SCCs have more risk of growing deeper beneath the skin or spreading to other parts of the body, however still uncommon (American Cancer Society, 2016b).

MOHS CRITERIA

MMS is a specific technique used to remove complex or ill-defined skin cancers while histologically examining 100% of the surgical margins. It combines surgical excision and surgical pathology that necessitates a single physician to act as a surgeon and a pathologist at the same time (Connolly et al., 2012). It is considered the gold standard of care for the removal of complex skin cancers.

In the United States, the standard of care is generally to treat all nonmelanoma skin cancers. There are currently no guidelines about whether providers should consider the functional status or patient age when deciding treatment options. As of 2012, the American Academy of Dermatology in collaboration with the American College of Mohs Surgery, the American Society for Dermatologic Surgery Association, and the American Society for Mohs Surgery developed appropriate use criteria (AUC) for 270 scenarios in which MMS is frequently considered based on tumor and patient characteristics (Connolly et al., 2012). For the 270 scenarios, a rating was given from 1 to 9, with 1–3 being inappropriate, 4–6 being uncertain, and 7–9 being appropriate use of MMS. This scoring system is based on the tumor location, patient characteristics, and tumor characteristics. The patient characteristics considered include immunosuppression, genetic syndromes, health, prior radiation status, and high-risk status for skin tumors (Connolly et al., 2012). Of the total 270 clinical scenarios evaluated, a consensus was reached on 205 (75.93%), with 168 (81.95%) of those scenarios deemed as appropriate use of MMS (Connolly et al., 2012).

Today, there is an interactive application tool that can be downloaded onto any smartphone that is based on the AUC, called Mohs AUC (Hilton, 2016). This app allows the provider to select cancer type, area of the tumor, occurrence rate, subtype of the lesion, size, and patient health (with only three choices: healthy, immunocompromised, or genetic syndrome) and then gives a score of 1–9 of appropriateness (Hilton, 2016). The app does not consider patients' age, pharmacologic management, mental status, physical ability, comorbidities, or preferences.

MOHS EXPERT THOUGHTS

Richard Gary Bennet, MD, an experienced Mohs surgeon who served as panel director of the American Academy of Dermatology Summer Scientific Sessions in Boston in 2016, suggests that the AUC guidelines and app are not the “end all be all” and should not be considered totally inclusive (Hilton, 2016). Of important criteria when evaluating for MMS, age and comorbidities are left out. According to Dr. Bennett, real-world practice means MMS in an elderly patient in his or her late 90s with a non-melanoma skin cancer such as a BCC on the nose may not have the same benefit to that of a younger adult with the same cancer diagnosis (Hilton, 2016).

Chrysalyne Delling Schmults, MD, a Harvard Medical School associate professor of dermatology, states that their Mohs practice has grown away from performing MMS for epidermal BCC and SCC in situ tumors, unless the patient has failed other treatment such as topical fluorouracil or imiquimod (Hilton, 2016). Topical therapies have been shown to have between an 80% and 90% cure rate according to recent literature (Hilton, 2016). According to Dr. Schmults, MMS should be the standard of care for the more aggressive tumors and shines in the dermally invasive tumors, which would not clear with topical therapy or achieve clear margins with excision (Hilton, 2016).

WEIGHING THE BENEFIT IN A GROWING ELDERLY POPULATION

MMS has a cure rate of 98%–99% for primary BCC and SCC tumors, which is the highest cure rate among the various treatment methods used today (Kauvar, 2016). The difference between Mohs surgery and excisional surgery is that Mohs is done in stages. The tissue taken is immediately reviewed on site, rather than the tissue being sent to a laboratory for results days later (Kauvar, 2016). The surgeon is specially trained in MMS, pathology, and reconstructive surgery and takes the smallest amount of tissue possible while obtaining clear margins and leaving the patient with an optimal cosmetic result (Kauvar, 2016). The patient can leave the clinic knowing the tumor has been removed and no longer carry the burden or emotional distress of having to fail other less effective therapies.

Regarding safety of MMS, a 13-site, 13-surgeon multicenter prospective study with 1,550 patients with 1,792 tumors in total, with a mean age of 69 years, was conducted in geographically diverse areas around the United States (Merritt, Lee, Brodland, Zitelli, & Cook, 2012). Of the 1,792 tumors treated, 1,709 tumors or 95.3% were available for follow-up. Results showed zero patients with any major complications during MMS, or the reconstruction phase, and only 44 or 2.6% of patients experienced minor complications during the study, including postoperative

bleeding, infection, necrosis, and hematoma (Merritt et al., 2012). Pain was also evaluated on a zero to ten scale with an average report of peak postoperative pain level of 1.99% (Merritt et al., 2012). This study concluded that 97.4% of its study population tolerated MMS, without any complications, and therefore suggests that there is evidence to support MMS as effective and safe (Merritt et al., 2012).

In a retrospective study called “Life Expectancy After Mohs Micrographic Surgery in Patients Aged 90 Years and Older,” attention is drawn to the growing population of older adults, with patients in their 90s expected to more than triple by 2050 (Delaney, Shimizu, Goldberg, & MacFarlane, 2013). This study used the Charlson index score to evaluate the potential effect of medical comorbidities on survival and was designed to assess the safety of MMS in those aged 90 years or older. The study consisted of 214 participants with a mean age of 92.3 years at the time of surgery (Delaney et al., 2013). There were no complications associated with any of the surgeries performed, and the Charlson index score failed to predict survival rates. Those with high index scores survived just as long as patients with only a few or no comorbidities (Delaney et al., 2013). The study also noted that tumor size, number of stages, and closure types did not affect survival times in comparison with expected life expectancy. The study concluded that this growing elderly population can safely undergo MMS (Delaney et al., 2013).

In a comparative prospective cohort study of 2,575 patients undergoing MMS, with 1,942 patients (75.4%) being younger than 80 years old and 633 patients (24.6%) being 80 years old or older, there showed no significant differences in proportion of reoccurrences in the first year of follow-up (Camarero-Mulas, 2017). Those in the older group usually had larger tumor sizes, with deeper invasion, larger defect sizes, more stages required, and longer time required in the operating room. Despite this difference, there was only a 7% incidence of postoperative complications in both groups leading to the study’s suggested conclusion that MMS is just as safe in the elderly population as it is in the younger population (Camarero-Mulas, 2017).

THE ROLE OF THE NURSE

Often, patients feel more at ease speaking with a nurse regarding their thoughts, fears, and concerns. The nurse plays a vital role in advocating for the MMS patient and makes sure the provider is fully aware of the patients’ comorbidities, medications, allergies, and wishes. It is important to allow time for discussion of options, risks, and benefits of any procedure, and the nurse should be able to discuss and answer any questions regarding the surgery, preoperative, and postoperative care needs. The nurse can also advocate the need for possible antibiotics, anxiolytics, pain medications and should closely

follow and monitor these patients before, during, and after surgery.

CONCLUDING THOUGHTS

These findings highlight the challenges for providers in treating nonfatal skin cancers, as guidelines and standards of care push providers to treat diseases instead of caring for the patient (Fernandez, 2013). Although advanced age, comorbidities, functional status, and life expectancy do not always affect treatment choice, high cure rates should not necessarily be the goal when considering the fragile elderly patient who might not want to undergo invasive procedures in his or her final years of life. There is a possibility that some elderly patients would choose less invasive alternatives to MMS if they were given all pertinent information (Linos et al., 2016). On the other hand, it is impossible to predict any one patient’s life expectancy, and therefore advanced age should not dictate or restrict a patient from receiving MMS if one so chooses it, especially when current evidence suggests its effectiveness and safety in the elderly population.

Ultimately, judgment regarding the appropriateness of any treatment option should be made by the patient, considering all the individual circumstances presented by the patient, and the provider (Connolly et al., 2012). The provider–patient relationship must be one of trust, and respect, where the patient feels confident that the provider will choose a treatment that best suits them on an individual level and where the provider ultimately respects the patient’s decision regarding said treatment and works together to obtain optimal health according to the patient’s standards, not those specific to standards of care or guidelines.

REFERENCES

- American Cancer Society. (2016a). Keys statistics for basal and squamous cell skin cancers. Retrieved from <https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer/about/key-statistics.html>
- American Cancer Society. (2016b). What are basal and squamous cell skin cancers? Retrieved from <https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer/about/what-is-basal-and-squamous-cell.html>
- Camarero-Mulas, C. (2017). Mohs micrographic surgery in the elderly: Comparison of tumours, surgery and first-year follow-up in patients younger and older than 80 years old in REGESMOHS. *Journal of the European Academy of Dermatology and Venereology*, 32, 108–112. <http://dx.doi.org/10.1111/jdv.14586>
- Connolly, S. M., Baker, D. R., Coldiron, B. M., Fazio, M. J., Storrs, P. A., Vidimos, A. T., ... Wisco, O. J. (2012). AAD/ACMS/ASDSA/ASMS 2012 appropriate use criteria for Mohs micrographic surgery: A report of the American Academy of Dermatology, American College of Mohs Surgery, American Society for Dermatologic Surgery Association, and the American Society for Mohs Surgery. *Journal of the American Academy of Dermatology*, 67(4), 531–550. <http://dx.doi.org/10.1016/j.jaad.2012.06.009>
- Delaney, A., Shimizu, I., Goldberg, L. H., & MacFarlane, D. F. (2013). Life expectancy after Mohs micrographic surgery in patients aged 90 years and older. *Journal of the American Academy of Dermatology*, 68(2), 296–300. <http://dx.doi.org/10.1016/j.jaad.2012.10.016>

- Fernandez, E. (2013). Aggressive surgery for nonfatal skin cancers might not be best for all elderly patients. Retrieved from <https://www.ucsf.edu/news/2013/04/105436/surgery-nonfatal-skin-cancers-might-not-be-best-elderly-patients>
- Hilton, L. (2016). How to weigh benefit of Moh's. Retrieved from <http://dermatologytimes.modernmedicine.com/dermatology-times/news/how-weigh-benefit-mohs>
- Kauvar, A. (2016). Mohs: The gold standard. Retrieved from <https://www.skincancer.org/skin-cancer-information/mohs-surgery/standard>
- Lincoff, E., Chren, M., Stijacic Cenzer, I., & Covinsky, K. E. (2016). Skin cancer in U.S. elderly adults: Does life expectancy play a role in treatment decisions? *Journal of the American Geriatrics Society*, 64(8), 1610–1615. <http://dx.doi.org/10.1111/jgs.14202>
- Merritt, B. G., Lee, N. Y., Brodland, D. G., Zitelli, J. A., & Cook, J. (2012). The safety of Mohs surgery: A prospective multicenter cohort study. *Journal of the American Academy of Dermatology*, 67(6), 1302–1309. <http://dx.doi.org/10.1016/j.jaad.2012.05.041>

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