Reply to Letter: Effectiveness of Mohs and Close

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The following is a response to the Letter to the Editor by Konda, Francis, and Patel regarding the article "Mohs and Close" Technique (MCT) for selected cases to increase the efficiency of Mohs micrographic surgery.[1,2] The letter raises questions about our utilization of MCT that require clarification.

First, none of the cases requiring 2 or more stages were upstaged to a different tumor subtype on subsequent stages. The preoperative clinical assessment of a tumor is extremely important in deciding whether a tumor would be appropriate for the Mohs and close technique. If a tumor on initial clinical assessment is indurated or otherwise clinically inconsistent with a biopsy report that reveals a low risk histologic subtype (eg, superficial basal cell carcinoma or squamous cell carcinoma in situ), it is likely that there was sampling error with the initial biopsy and the biopsy report does not reflect the true histology of the lesion. Also, a non-indurated, 8 mm diameter, well-defined nodular basal cell carcinoma on the lax skin of the lateral cheek would be more amenable to MCT than a 2 cm, indurated morpheaform basal cell carcinoma on the same site. Finally, preoperative curettage (as mentioned in the article) is a very useful technique to reinforce the physician's initial assessment that a tumor has clearly defined tumor margins and reduce the need for unnecessary initial Mohs stages.

Second, Konda and colleagues raise the possibility that preemptive undermining will result in the iatrogenic seeding of tumor cells and tumor recurrence. Studies have refuted this concern with incisional/excisional biopsies of melanoma. One large study of over 2000 patients found no evidence that incomplete excision of primary melanoma resulted in locoregional or distant recurrence.[3] In addition, our recurrences are meticulously tracked annually. For all recurrences, patient records, Mohs slides, and maps are pulled and reviewed. None of the recurrences have occurred following MCT cases, most likely because tumors chosen for MCT cases are not large, aggressive, ill-defined tumors on high-risk sites that have a higher risk of recurrence. Recurrence rates in our practice are consistently below 1.5% for over 2000 cases annually, which is consistent with reported recurrence rates of Mohs micrographic surgery in the literature. We also find that several nicks (2 to 4 depending on the size of the specimen) are very helpful in precisely defining the location of residual tumor for subsequent stages, which conserves tissue because the surgeon can more accurately gauge where to excise residual tumor. We have not had problems with nicks resulting in confounding artifacts and false negatives or positives.

Third, none of our cases requiring 2 or more stages changed from primary closures to partial closures due to larger than expected defects. As stated in the methods section, tumors were chosen for MCT if the repair (either primary or partial closure) would not change to a different repair option if further stages were required. As stated in Table 3, there were no cases with change in repair due to increased stages. None of the patients in the study who needed more than one stage required removal of all of their sutures. In other words, MCT was performed on sites with sufficient laxity to accommodate the unlikely event that more stages would be required. Also, second intention healing was not utilized in any of the 456 cases because the senior author determined that primary closure or partial closure was more appropriate for these particular cases either to improve cosmetic result or accelerate wound healing. Second intention healing is utilized hundreds of times annually in our practice for defects located on a variety of sites such as the scalp, ears, hands, lips, and legs and it is inappropriate and unfounded to imply or suggest that wounds were unnecessarily repaired in this study. In fact, the senior author has published studies on the utility of second intention healing for defects on some of these sites.[4,5] In addition, numerous patients referred to our practice for MMS are treated with curettage or topical therapy if the senior author deems it appropriate.

Finally, Konda and colleagues correctly site the appropriate use criteria for MMS to delineate cases where MMS may be appropriate but not mandatory.[6] However, they incorrectly imply that tumors chosen for MCT did not satisfy the appropriate use criteria outlined in the article published in the *Journal of the American Academy of Dermatology*. All of the 456 tumors chosen for MCT scored at least a 7 on the appropriate use criteria. Konda and colleagues also site the American College of Mohs Surgery Improving Wisely Quality Collaborative Study[7] and noted that the average number of stages in the MCT study was 1.2, which falls below the low outlier cutoff of 1.28 stages per case. One would expect MCT cases to clear in fewer stages, as tumors selected for MCT are smaller, more well-defined tumors. In any Mohs practice, the mean number of stages would be low if smaller, more low risk tumors were preferentially separated out and selected for analysis. Conversely, the mean number of stages would be high if recurrent, large, aggressive tumors were preferentially separated out and selected for analysis. The overall mean number of stages per MMS case is the important number, and the value in our institution is within the acceptable range outlined in the article (above the low outlier cutoff and below the high outlier cutoff).

In conclusion, medicine is constantly adapting, and physicians make changes to their practice that they believe will increase efficiency without compromising patient care. The MMS practice at our institution is high volume (14-17 MMS cases per day) and the vast majority of patients come from referrals outside of the practice. The MCT technique saves over 13 minutes for cases that clear in one stage, which is a significant amount of time over the course of a day if this technique is utilized for several patients. This extra time allows for the more efficient completion of medical records and teaching of residents and fellows. These tasks are never left over at the end of the day as Konda and colleagues imply. Ultimately, the quality of our practices as Mohs surgeons can be evaluated on the effectiveness of surgery (acceptable recurrence rates), cost effectiveness (non-outlier status), and patient satisfaction (excellent evaluations, reviews, and confidence of referring physicians that their patients are being well-treated). The MMS practice at our institution consistently satisfies all three categories.

References

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