EDITORIAL

The Value of Mohs Surgery for the Treatment of Nonmelanoma Skin Cancers

"Better health with the best cosmetic result." No one can ask more from a surgical procedure in the 21st century. This phrase best describes Mohs surgery. Mohs micrographic surgery (MMS) has been used as a surgical method for treating skin cancers for the last 70 years. The method has gained popularity among American dermatologists over the past 40 years and worldwide for almost 25 years. Variations of MMS started appearing and indications for surgery also expanded. Initially, MMS was mainly indicated for basal and squamous cell carcinomas (SCCs), i.e. nonmelanoma skin cancers (NMSC). Today, the method is applicable for a variety of other skin cancers such as melanoma *in situ*, microcystic adnexal carcinoma, dermatofibrosarcoma protuberans and other adnexal and spindle cell tumours. The essentials of MMS were published by the American College of Mohs Surgery in 1988,[1] and in 1994 the American Academy of Dermatology published a position paper on the guidelines of MMS.[2] This surgical method has been developed and performed by dermatologists, and most of the articles published in peer-reviewed journals were written by dermatologists. The value of MMS for the treatment of NMSC has been well established in the literature. The primary tumour indication for MMS is NMSC. In a survey conducted among American Mohs surgeons, 98% of the tumours treated by MMS were NMSC.[3] Seventy-three percent of the tumours were basal cell carcinomas (BCCs) and 23% were SCCs. An important contribution of MMS to the treatment of BCC is its ability to significantly reduce tumour recurrence.

During the early years of use of MMS, mainly large, recurrent BCCs were treated. In recent years, referral patterns have changed towards a preference for Mohs surgery for the treatment of smaller, primary BCCs. This may be a result of increased awareness by the dermatologic and medical community of the numerous advantages of Mohs surgery. Furthermore, there is a greater appreciation of MMS tissue-sparing properties, which may result in less complex and more successful aesthetic reconstructions.[4] Low recurrence rates are achieved by MMS in BCC treatment. Three recent studies from Europe examined the recurrence rate of BCC after MMS. In a recent study performed in Italy, the BCC recurrence rate after MMS was 3.4% for primary BCC and 4.9% for recurrent BCC.[5] A study from Sweden showed that the resulting 5-year recurrence rates were 2.1% for primary (previously untreated) tumours, 5.2% for recurrent BCCs and 3.3% overall. In total, 87.9% of the tumours required at least two stages of Mohs micrographic surgery.[6] A study from Spain showed

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that over a mean follow-up period of 32 months, the recurrence rate was 0.37%.[7] Mohs surgery is performed today on all types of BCCs including the superficial type. SCC is a more aggressive type of NMSC than BCC. Its relationship to cumulative sun exposure is well known and it is much more frequent in organ transplant patients. Due to the unique characteristics of MMS, it is used for the treatment of primary and recurrent SCC. A recent study showed that the recurrence rate of SCC after MMS is as low as 1.2%.[8] MMS is also indicated for SCC of the penis, nail unit and extremities in organ transplant patients. Mohs surgery is able to track SCC with perineural invasion and in transit metastases of SCC. Nowadays, we know that massive inflammatory infiltrate in SCC can mask tumour persistence. Hence, in current practice, we remove extra layers in MMS when we see this type of infiltrate. Although MMS is the gold standard for the treatment of NMSC, we must use the method wisely and according to the proper indications. In the author's opinion, there is no rationale for performing MMS on a primary BCC on the extremities or the trunk. Expanding the use of this method for inappropriate indications raises the cost of medical expenses in certain societies.

In conclusion, based on my personal experience in MMS for almost 20 years, I prefer to define Mohs surgery in a rigid functional way: Peripheral margins must be cut at an angle of 45° in most cases; frozen sections are by definition part of modern MMS; the frozen section laboratory must be adjacent to the operating room; and the surgeon should be the one who reads the slides. If all of these criteria are not met, the surgical method should neither be called Mohs surgery nor should the word "Mohs" be part of its name. I would like to add more points in favour of Mohs surgery as addressed by McGovern and Leffel:[9] "Unifying the duties of surgeon and pathologist assures fewer errors when performing histopathologic and clinical correlation for each patient. Separating the tasks between two physicians increases the errors in mapping and applying the Mohs map to subsequent stages." However, I am strongly in favour of seeking a quality assurance via interaction with a dermatopathologist.

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