Table 1 Comparison of the characteristics of the main variants of oncological surgery with microscopic control of the margins

	Mohs	Tübingen	Muffin	Munich
Optimal tumor size	<4 cm	>2 cm	<2 cm	<2.5 cm
Favorable excision plane	Flat or convex	Flat or convex	Flat or convex	Any
Number of histological slides[a]	Intermediate	Intermediate	Lower	Higher
Skin incision	Oblique	Vertical	Vertical	Vertical
Type of margin assessment	Peripheral	Peripheral	Peripheral	Central
Relationship of the neoplastic mass with the surgical margin	Impossible	Impossible	Impossible	Possible
Assessment of perineural invasion	More difficult	More difficult	More difficult	Easier
Resection of adjacent normal tissue	Greater[b]	Lower	Lower	Lower

[a] Considering an incision of the same size.
[b] Incision at 30°–45°.

References

1. Kopke LF, Konz B. Micrographic surgery. A current methodological assessment. Hautarzt. 1995;46:607–14.
2. Löser CR, Rompel R, Möhrle M, Häfner HM, Kunte C, Hassel J, et al. S1 guideline: microscopically controlled surgery (MCS). J Dtsch Dermatol Ges. 2015;13:942–51.
3. Kopke LFF, Konz B. The fundamental differences among the variations of micrografic surgery. An Bras Dermatol. 1994;69:505–10.
4. Portela PS, Teixeira DA, Machado CDAS, Pinhal MAS, Paschoal FM. Horizontal histological sections in the preliminary evaluation of basal cell carcinoma submitted to Mohs micrographic surgery. An Bras Dermatol. 2019;94:671–6.
5. Rapini RP. On the definition of Mohs surgery and how it determines appropriate surgical margins. Arch Dermatol. 1992;128:673–8.

Anna Carolina Miola [a], Hélio Amante Miot [a,*], Luis Fernando Figueiredo Kopke [b]

[a] *Department of Dermatology, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista, Botucatu, SP, Brazil*
[b] *Department of Dermatology, Hospital Universitário, Universidade Federal de Santa Catarina, Florianópolis, SC, Brazil*

* Corresponding author.
E-mail: heliomiot@gmail.com (H.A. Miot).

Received 10 February 2020; accepted 14 February 2020
Available online 12 May 2020

https://doi.org/10.1016/j.abd.2020.02.004

On the different methods of micrographic surgery and their differences in the visualization of the tumor and surgical margin, and in the contribution to clinical and oncological aspects☆,☆☆

Dear Editor,

Micrographic surgery was developed in the 1930s by Dr. Friedrich Mohs, using the *in vivo* tissue fixation method. In 1970, Stegman and Tromovitch published a series of cases using *ex vivo* fixation. In 1995, the Munich method was described.

Since then, surgeons have been constantly learning these techniques.[1–4]

In the study by Portela et al.[5] a new form of debulking assessment was described, but it is identical to the Munich method previously described in the literature. The concepts of margin and surgical border are imprecise. The authors illustrate an essential feature of the Munich method: the possibility of assessing the tumor–surgical margin relationship and observation of the tumor. Thus, it is possible to better demonstrate the subtype, cytological aspects, and tumor architecture, which have clinical and oncological relevance and are important for decision making. These factors gain importance in tumors with rarer histology and with greater metastatic potential; it also facilitates the identification of perineural invasion. In turn, peripheral methods evaluate only the surgical border, and do not observe the tumoral core. Although bread-loafing of the paraffin block is performed during debulking, the sample is smaller and the results are not available in the trans-operative period, given the time required for paraffin embedding and processing. A drawback of the fresh method is the greater chance of technical artifacts (Table 1).

☆ How to cite this article: Corrêa Filho SS. On the different methods of micrographic surgery and their differences in the visualization of the tumor and surgical margin, and in the contribution to clinical and oncological aspects. An Bras Dermatol. 2020;95:546–7. https://doi.org/10.1016/j.abd.2020.03.003

☆☆ Study conducted at the Private Clinic, Blumenau, SC, Brazil.

Table 1 Comparison between some characteristics of the Munich method and peripheral methods[a]

	Munich method	Peripheral methods (Mohs, Tübingen, muffin)
Observation of the tumor core	Yes	No
Tumor analysis	Yes	No (only if there is tumor involvement of the surgical border)
Evaluation of the cutaneous tumor site[b]	Yes	No
Observation of the tumor-surgical margin relationship	Yes	No
Analysis of tumor cytology (*e.g.*, mitotic figures)	Yes	No (only if there is tumor involvement of the surgical border)
Assessment of perineural involvement	Easier	More difficult
Number of glass slides	Greater	Smaller

[a] Even if a previous biopsy of the affected area is performed, there may be a discrepancy between the data from the incisional biopsy and the posterior excision due to sampling, as pointed out by Portela et al.[5]
[b] Important in ill-defined tumors or scars.

The author of this correspondence highlights the importance of broadening the discussion of the technical and laboratory details of the various forms of micrographic surgery, including the implications of each technique for the clinical and oncological data.

Financial support

None declared.

Author's contributions

Sandro Simão Corrêa Filho: Approval of the final version of the manuscript; conception and planning of the study; drafting and editing of the manuscript; critical review of the literature; critical review of the manuscript.

Conflicts of interest

None declared.

References

1. Kopke LFF, Gouvea PS, Bastos JCF. A ten-year experience with the Munich method of micrographic surgery: a report of 93 operated cases. An Bras Dermatol. 2005;80:583–90.
2. Arnon O, Rapini RP, Mamelak AJ, Goldberg LH. Mohs micrographic surgery: current techniques. Isr Med Assoc J. 2010;12:431–5.
3. Kopke LFF, Konz B. Essential differences between the variations of micrographic surgery. An Bras Dermatol. 1994;69:505–10.
4. Rapini RP. Pitfalls of Mohs micrographic surgery. J Am Acad Dermatol. 1990;22:681–6.
5. Portela PS, Teixeira DA, Machado CDAS, Pinhal MAS, Paschoal FM. Horizontal histological sections in the preliminary evaluation of basal cell carcinoma submitted to Mohs micrographic surgery. An Bras Dermatol. 2019;94:671–6.

Sandro Simão Corrêa Filho

Private Clinic, Blumenau, SC, Brazil

E-mail: sscorrea@gmail.com

Received 25 February 2020; accepted 2 March 2020
Available online 11 May 2020

https://doi.org/10.1016/j.abd.2020.03.003

Histopathological aspects of the inclusion of surgical material in micrographic surgery using the Munich method and its comparison with horizontal histological sections☆,☆☆

Dear Editor,

The Munich method for micrographic surgery is technically distinct from the Mohs technique, both regarding the surgery itself and laboratory processing, as well as the microscopic analysis. The surgical specimen is usually examined without division, as long as its size allows for full inclusion.[1]

In the Munich technique, originally described in 1992 and published in Germany in 1995, the surgical specimen is frozen, usually outside the cryostat, by a direct stream of CO_2 and with the use of distilled water, and then inserted in the cryostat to be sliced.[2] However, we have, similarly to other colleagues, frozen the specimen directly in the cryostat with the use of OCT, as is customary in the intraoperative technique not only for skin, but for several other tissues.[3,4]

Presented as a ''new way of assessing debulking,'' from the technical and laboratory standpoint, the method described by Portela et al.[5] with horizontal sections, is identical to the Munich technique, despite starting from the surface to the depth and the fact that the interval and the thickness of sections are different, which may vary due to the peculiarities of each tissue. Likewise, the observation

☆ How to cite this article: Vilar AN, Ferreira ACF. Histopathological aspects of the inclusion of surgical material in micrographic surgery using the Munich method and its comparison with horizontal histological sections. An Bras Dermatol. 2020;95:547–8.
☆☆ Study conducted at the Private Clinic, Concórdia, SC, Brazil.