

**The accuracy of surgical treatment of non-melanoma
skin cancer in a private dermatology practice: a report
from Switzerland.**

Thomas Hofer

Private practice

Wettingen, Switzerland

Dr Thomas Hofer

Dermatology and Venerology FMH

Winkelriedstrasse 10

CH-5430 Wettingen (Switzerland)

Tel +41 56 427 27 22

Fax +41 56 427 00 12

E-Mail thomas.hofer@active.ch

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Abstract

Background: The incidence of non-melanoma skin cancer is increasing. Their treatment in a private dermatology practice offers a time and cost effective alternative to micrographic surgery.

Objective: Frequency and accuracy of conventional surgery of non-melanoma skin cancer i.e. of the head and neck in a private Swiss dermatology practice.

Methods: the data from the excision of all non-melanoma skin cancers in 1995 is compared with the data from 2004. The database from the 5-year period 1995 to 1999 is analysed, i.e. surgical treatment of basal and spindle cell carcinoma (BCC and SCC respectively) in the head and neck region.

Results: From 1995 to 2004 the number of excised non-melanoma skin cancers i.e. BCC's showed an increase in rate of 108.2% and 100% respectively. In the years 1995 to 1999, 280 (236/44) BCC/SCC had been excised from the head and neck, 106 (37.9%) from females, 174 (62.1%) from males. Ear (28.6%), nose (18.6%), eyelid (18.2%), temple (15.1%) show a higher-than-average (12.9%) rate of incomplete excision. 166 (59.3%) BCC/SCC were followed up for \geq 6 months (6 – 132, mean 61.4 months) with 25 (15.1%) later showing recurrence. The mean duration until recurrence was 43 (7-112) months. Further non-melanoma skin cancers during follow up (17.4 vs. 12.2%), preceding treatments (28.0 vs. 5.0%) and infiltrative histological subtype (40 vs. 12.4%) are associated with a higher risk for local recurrence.

Conclusion: Surgical treatment as a one-stage procedure with primary direct closure and postoperative histological assessment in a private practice is time and cost effective. Preceding surgery, known or suspected infiltrative histology and delicate localisation as on the nose-eyelid or the temple-periauricular regions should alert the independent dermatologist to consider collaboration with centers which offer micrographic surgery.

Dermatologists routinely deal with skin malignancies on a daily basis. In choosing the best treatment for skin cancer, treatment options range from surgical options (established conventional procedures or micrographic surgery, cryosurgery, electrocautery) to x-rays, to topically applied immunomodulators or photodynamic procedures. Dermatologists, being familiar with all the clinically different phenotypes of melanotic and non melanotic skin cancers, obviously represent the physician of choice when it comes to diagnosis, treatment and management of patients with skin cancers. Due to the increasing incidence of skin cancer, de Vries et al [1] have calculated a rise in the annual demand for care of skin cancer in the Netherlands to exceed 5% over the next 25 years, which in turn implies an increase in personal and financial efforts. Therefore a comparison must be made between optimal but often more expensive treatments and cheaper procedures in terms of overall cost effectiveness and practicality in the daily practice.

In 2004, a new medical tariff system called “Tarmed” was introduced in Switzerland. It regulates the tariff structure on which various health insurances base payment for, among other things, ambulatory procedures. Under Tarmed, Swiss dermatologists are now officially recognized as surgically active medical specialists, a fact which until then was unclear. Consequently, well defined surgical formation is now obligatory for dermatologists in training. In times of “supposed less demand” and the so-called “physicians plethora”, these circumstances interfere with the interests of others surgical groups like plastic surgeons, ophthalmologists and otolaryngologists. There is an ongoing discussion about competence in the treatment of skin cancers.

Even if micrographic surgery represents the “golden standard” [2] conventional excision and repair of skin cancer with postoperative histological assesment still remains the procedure of

choice for uncomplicated non-melanoma skin cancers. It is in the best interest of the patient to find the optimal collaboration between all surgically active physicians treating skin cancers. In Switzerland little data exists on the quality of skin surgery for non-melanoma skin cancer [3-5]. In view of this fact, a glimpse into a single physician's dermatology practice is offered. The reason for this study is to highlight in a critical manner the surgical accuracy of a dermatologist in private practice, and to define the limits of his work. The results presented here contain the bias of a one centre/one physician study, therefore they are not statistically evaluated but they do allow a comparison with data from the literature.

Patients and Methods

The here presented dermatology practice opened in March 1989 and is located in north western Switzerland. The data used in this study was collected retrospectively. To demonstrate the increasing demand for surgical activity over a time period of 10 years, the data from the excision of all non-melanoma skin cancers in 1995 is compared with the data from 2004. In order to focus upon surgical accuracy, i.e. surgical treatment of basal and spindle cell carcinoma (BCC and SCC respectively) in the head and neck region, the database from the 5-year period 1995 to 1999 is analysed. Doctor's notes of all patients were re-examined allowing a minimum 6-year follow up for the last excised lesion in 1999. To compare with the literature on the further behaviour of BCC/SCC excised from the head and neck, only patients with a follow up of ≥ 6 months were considered. The excisions of skin malignancies are done as a one-stage procedure with primary direct closure, usually without a preceding biopsy. Tumour excision considers its clinical visible borders, a supposed added margin of safety and a minimum of sacrificed tissue. Wound closure

only in a minority of cases demands for local flaps or full thickness skin grafts. Postoperative histological assessment has been routinely done by the same two dermatopathologists¹ since 1989. Cross sectioning along the long axis with 1-mm bread loaf for margin control is used for smaller tumours, completed with peripheral sections for larger excisions.

Results

Table 1 gives the number and type of non-melanoma skin cancers excised in 1995 and 2004. In the years 1995 to 1999, 280 (236/44) BCC/SCC had been excised from the head and neck, 106 (37.9%) from females, 174 (62.1%) from males. 166 (59.3%) BCC/SCC were followed up for \geq 6 months (6 – 132, mean 61.4 months) with 25 (15.1%) later showing recurrence. The mean duration until their recurrence was 43 (7-112) months. Table 2 gives their recurrence rate and mean duration until recurrence dependent on whether it was a total or non-total excision. Table 3 provides additional characteristics: further non-melanoma skin cancers during follow up (17.4 vs. 12.2%), preceding treatments (28.0 vs. 5.0%) and infiltrative histological subtype (40-37.5 vs. 12.4%) are associated with a higher risk for local recurrence. 25 out of 214 BCC of the solid type (11.7%), 7 out of 12 BCC of the scirrhous/morphea-like type (58.3%) and none out of 5 BCC of the intermediate type (0%) were incompletely excised. Information on the number of non-total excisions from different parts of the head and neck is given in Table 4.

¹ Institut für Dermatohistopathologie, Regensbergstrasse 91 CH- 8050 Zürich

Discussion

In 1995 the dermatology practice presented here was already well established. The number of patients/diagnoses seen each year and the percentage of patients referred by other specialists remained stable for the following years and have already been published elsewhere [3,6] . While the number of excisions done in 1995 slowly rose from 280 to 332 in 2004 (an increase of 18.6%) the number of excised non-melanoma skin malignancies i.e. BCC's showed an increase in rate of 108.2% and 100% respectively (Table 1). This trend is confirmed by a recent publication from Switzerland [7]. The annual rise of more than 7% in demand for care of non-melanoma skin cancers is even higher than that mentioned by de Vries et al 2005 [1] from the Netherlands. It might be influenced by the fact that each patient entering the author's practice, independent of the reason for his/her visit, is examined for the presence of skin malignancies. This also may explain why about 27% (1999) and 37% (2004) respectively of BCC's were seen and removed from the limbs and body (Table 1). This indicates a definite change since the previously published data reporting that up to 94.41% of BCC's are localised on the head [8]. Switzerland is one of the countries in Europe with the highest registered incidence and prevalence of cancer. Lutz et al [9] conclude that well-developed economies offer an early detection, better treatment and thereby better survival for cancer. This may also explain the increase of treated skin malignancies in the study presented here.

In most cases the clinical accuracy of the dermatologist in diagnosing skin malignancies [3] enables their excision as a one-stage procedure with primary direct closure and without preceding biopsy. This has different advantages: it is time and cost-effective and less stressful for the patients. Especially elderly people prefer the small and familiar environment of a private practice

to the anonymity and business of a hospital. But there are clear limits to this procedure which have to be recognised in the interest of the patients. The here presented results show that the percentage of non-total excision of primary BCC's/SCC's in the head/neck region with 12.9% (Table 4) is lower than in other Swiss studies [4,5] but comparable with the latest results reported by Walker and Dudley [10]. In their review they tell about recent surgical audits showing a non-total excision rate of 4 - 24%. Especially the nose-eyelid and the temple-periauricular regions show a higher-than-average rate of non-total excision (Table 4). This corresponds with the literature where non-total excision is approximately double for most of these locations [10]. The recurrence rate of 28.6% (40% when follow up \geq 6 months) (Table 2) is also comparable with other reported studies (12 references with a recurrence rate of 19 – 100%, average 38% in [10]). Griffiths et al [11] report a median intervall to recurrence of 41 months, and the average duration observed in the practice presented here is 43 months which supports the recommendation of 3-12 monthly examinations for up to 10 years [10].

The debate is still going on as to whether BCC's which recur after complete conventional surgical excision actually do represent a recurrence or if in fact they represent a new primary BCC [11]. Here a recurrence rate of 6.1% (10.6% when follow up \geq 6 months) is reported (18 references with a recurrence rate of 0.3 – 22.8% in [10]) . But whether these “recurrences” result from incomplete histological examination, local metastasis, skip lesions or surgical seeding can not definitively be answered.

The occurrence of further non-melanoma skin cancers during the follow up is, as shown here in Table 3, associated with a higher risk of developing a recurrent BCC/SCC. One could therefore conclude that the higher the oncogenic burden of the skin the higher the risk for the development

of recurrence. While 7 (28%) out of 25 excisions with later recurrence had, at the time of their surgery in the author's practice, already undergone a previous surgery, there were only 7 (5%) of 141 excisions without later recurrence which already represented a recurrence at the time of their surgery. In other words: preceding surgery raises the risk of later recurrence. This observation is in accordance with Rowe et al who in 1989 [12] reported a two- to fourfold higher recurrence rate for previously treated BCC's. The here presented results also confirm that histological infiltrative BCC show a higher percentage of partial excision as well as local recurrence [2].

In conclusion: In accordance with the literature, the experience of a Swiss dermatology practice confirms the increasing incidence and demand for treatment of i.e. non-melanoma skin cancer. The quality of their surgical treatment as a one-stage procedure with primary direct closure and postoperative histological assessment is comparable with other reports. Treatment of skin cancer in a private practice offers a time and cost effective alternative which should not be underestimated in times where financial and personal resources have become limited. But preceding surgery, known or suspected infiltrative histology and delicate localisation like on the nose-eyelid or the temple-periauricular region should alert the independent dermatologist to consider the limits of his infrastructure and how much he or she personally can shoulder. The resulting and prompt collaboration with centers which offer micrographic surgery is in the best interest of the patients. These conclusions, won from the database of a private dermatology practice, are in accordance with the recently published recommendations of Walker and Dudley [2].

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Table 1: non-melanoma skin cancers excised in 1995 compared with ones excised in 2004

	1995	2004
Excisions total	280	332
Non-melanoma skin cancer total	73	152
No. of patients (F/M)	62 (17/45)	135 (57/78)
Exc non-melanoma skin cancer /Exc total %	26%	45.8%
Mean age	63.4 y	67.5 y
SCC	10	26
BCC total	63	126
BCC head/neck	46 (73%)	79 (62.7%)
BCC limbs/body	17 (27%)	47 (37.3%)

Table 2: details of 280 BCC and SCC excised from the head/neck region in the years 1995 to 1999

	Total excision	Non-total excision
Surgical accuracy	245	35
Mean age	68.4 y	71.7 y
Mean follow up all patients	36.1 months	42.3 months
Recurrence rate (total)	6.1% (15)	28.6% (10)
follow up ≥ 6 months	141 (57.6%)	25 (71.4%)
Mean follow up	62.0 months	58.5 months
Recurrence rate	10.6%	40%
Mean duration until recurrence	48.7 months (11-112)	34.5 months (7-96)

Table 3: characteristics of recurrent non-melanoma skin cancers:

characteristics		Total recurrence	%
Further skin malignancies during follow up	(92)	16	17.4%
No further skin malignancies during follow up	(74)	9	12.2%
Recurrence and preceding surgery	(25)	7	28.0%
No recurrence and preceding surgery	(141)	7	5.0%
BCC of the solid type	(121)	15	12.4%
BCC of the scirrhus/morphea-like type	(8)	3	37.5%
BCC of the intermediate type	(5)	2	40.0%

Table 4: Non-total excision depending on localisation (%)

Localisation	%
Ear	28.6%
Nose	18.6%
Lid	18.2%
Temple	15.1%
Chin/Lips	14.3%
Nasolabial	11.1%
Neck	9.5%
Forehead/vertex	5.3%
Cheek	4.6%
Average	12.9%