

# The significance of incomplete excision in patients with basal cell carcinoma

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**Summary**—Sixty-seven patients with incompletely excised basal cell carcinomas are reviewed. No recurrences were seen in seven patients who had immediate supplementary treatment; 23 of 60 patients submitted to a "wait and see" regimen developed recurrent disease. Recurrence was commoner in those in whom both the lateral and deep margins were involved, and when the incomplete excision was for recurrent disease. The latter recurrences were more difficult to control in patients who had previously had radiotherapy, when the deep margin was involved and when a flap had been used to close the resulting defect. A case is made for immediate re-excision for all patients with incompletely excised basal cell carcinomas.

Surgery as primary treatment for basal cell carcinoma is associated with cure rates of the order of 95% (Hayes, 1962; Koplin and Zarem, 1980). Surgery for recurrent disease gives cure rates of 75-85% (Rank and Wakefield, 1958; Hayes, 1962).

Adequate excision, peripherally and in depth, is the key to surgical control, and the demonstration of tumour cells at the margins of excision is associated with recurrence rates of over 30% (Gooding *et al.*, 1965; Pascal *et al.*, 1968). The significance of "clear margins" varies according to the method used to examine the tissue (Abide *et al.*, 1984). It must be remembered that the tissue sent for histological examination is only sampled by the pathologist, and providing the tissue is properly handled and processed, then routine sections will tend to miss some incomplete excisions rather than spuriously reporting excisions as incomplete.

When surgically treated basal cell carcinomas are reported as having been incompletely excised the surgeon is placed in the dilemma of whether to perform an immediate wider excision, or to reserve further treatment until there is clinical evidence of recurrence.

Each of these regimens has its advocates who claim that their method preserves more tissue at the end of the day. Those favouring the "wait and see" policy point out that only a minority of patients will develop recurrent disease and, if follow up is diligent, supplementary treatment at that stage will again bring the disease under control (Gooding *et al.*, 1965; Casson, 1980). Those favouring immediate re-excision consider that a 30% recurrence rate is unacceptable and that the later more radical

surgery needed to control recurrent disease may not be in the best interest of the patient (Shanoff *et al.*, 1967; Koplin and Zarem, 1980).

Both philosophies have at times been followed in this unit, and a retrospective analysis of the results is presented in this paper.

## Patients

In order to allow for a 5 year minimum follow-up, the patients presenting for surgical treatment of basal cell carcinoma during the decade 1970 to 1979 were selected for this review. During this period 676 patients had 850 basal cell carcinomas excised: 65% of these patients had not been previously treated, and 7% of these subsequently developed recurrent disease. The remaining 35% had recurrent disease at the time of presentation and 15% of these subsequently developed further recurrences.

Routine histological assessment consisted of cross-sectioning, and at times the examination of peripheral sections.

A total of 67 patients were reported as having tumour cells present at the margins of excision after attempted curative surgery. The remainder of this review is concerned only with these 67 patients.

Twenty-eight (41%) of these patients had not been previously treated. Of the 39 (59%) being treated for recurrent disease 20 had had radiotherapy, 12 previous surgery and radiotherapy, and 7 surgery alone.

Figure 1 shows the distribution of the incompletely excised tumours, centred mainly in the mid-

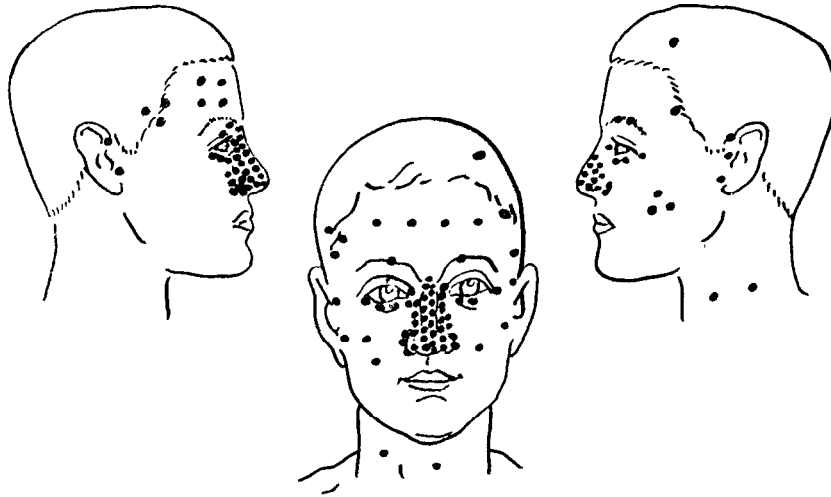


Fig. 1

Figure 1—Tumour distribution. Centre: All patients with incompletely excised tumours (67). Right: Those presenting with new tumours (28). Left: Those presenting with recurrent disease (39).

face. In the group presenting with recurrent disease incomplete excision was relatively commoner on the nose and at the alar base.

Thirty-seven were reported as having been incompletely excised at a lateral margin, 25 at the deep margin, and 5 at both.

Twenty-nine patients had the surgical defect directly closed, 17 were resurfaced with full thickness skin grafts, 7 with split skin grafts and the remaining 14 with local flaps.

Twelve of the 67 patients had morphoeic tumours: 6 of these were new tumours and 6 had been previously treated.

## Results

### *Immediate further treatment*

Seven patients had immediate further treatment. In retrospect it is difficult to determine on what grounds they were selected. In terms of age and sex they matched the group as a whole. Only 2 were being treated for recurrent disease: one post-radiotherapy and one having had both radiotherapy and previous surgery. Five of the lesions were at the alar base, one on the nose and one on the forehead. Two had morphoeic tumours. Four were reported as incompletely excised at the deep margin, 2 at a lateral margin and one at both. In 4 of the cases the defect had been directly closed, one patient had a full thickness skin graft and 2 had been covered with local flaps.

Of these 7 patients 6 had further excisional surgery within one month, and all but one required flap cover. Residual tumour was demonstrated in 5 of the 6 specimens. The seventh patient was considered unfit for further, more radical surgery and was treated by radiotherapy.

No patient who underwent immediate revisional surgery developed recurrent disease. The minimum period of follow up was 3 years and the average was 5 years.

### *“Wait and see” regimen*

Sixty patients with incompletely excised basal cell carcinomas were not offered immediate further treatment. Figure 2 shows the duration of follow-up, with the patients being seen at intervals of 3 to 6 months.

Twenty-three of these patients had not been previously treated. The Table shows the previous treatment regimens in those being treated for recurrent disease.

The methods of closure of the surgical defects, and the margin at which excision was reported as incomplete are also shown in Table 1.

Of these 60 patients 23 subsequently developed clinical evidence of recurrent disease. Figure 3 shows the distribution of these tumours.

The overall recurrence rate was 38%: this represents a 30% recurrence rate for those with new tumours and 43% for those presenting initially with recurrent disease. The table summarises the

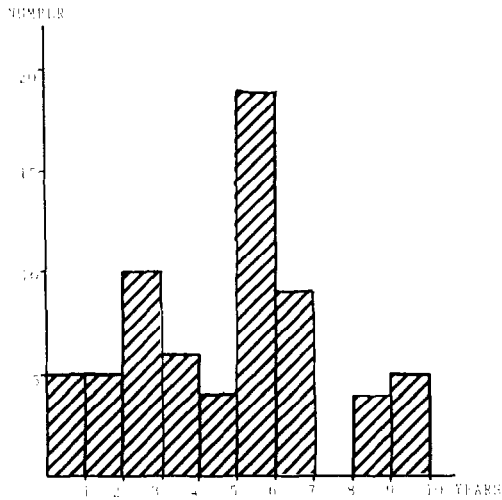


Fig. 2

Figure 2—The duration of formal follow-up after incomplete excision of basal cell carcinomas. Sixty-seven patients followed up for an average of 5 years.

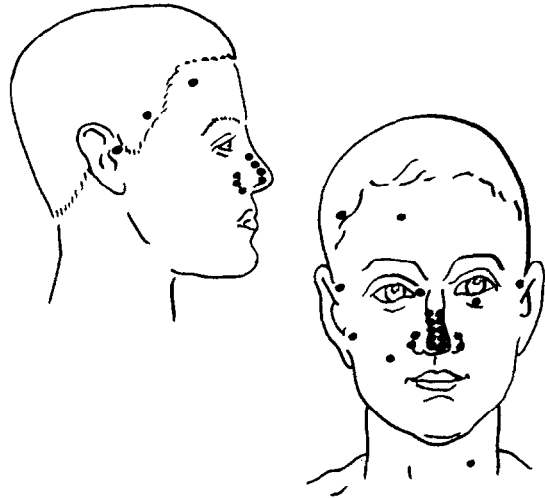


Fig. 3

Figure 3—Those who subsequently developed recurrent disease. Right: All of those who recurred (23). Left: Those not controlled by second operation (10).

previous treatment regimens of these patients and shows that patients who had had both surgery and radiotherapy before referral were at particularly high risk of further recurrence; 10 out of 11 of them recurred again and 5 of these were still not cured by another operation. The margin at which recurrence

was reported as incomplete influenced the subsequent development of recurrent disease. All 4 patients shown to have an incomplete excision at both the lateral and deep margins developed recurrent disease. Recurrence was not specific to any form of surgical treatment.

Six of the 10 patients with morphoeic tumours developed recurrence.

The time from the attempt at curative surgery until the recurrence became clinically manifest is shown in Figure 4. This time was shorter in those who were grafted than in those who were directly closed or resurfaced with flaps (Figure 5).

Once the recurrence was detected all 23 patients had supplementary treatment. Two were considered unsuitable for further surgery; one patient

**Table** The outcome of the "wait and see" policy

	A(T=60)	B(T=23)	C(T=10)
<i>Previously untreated</i>	23	7	2
<i>Previously treated</i>	37	16	8
Previous surgery	7	3	0
Previous radiotherapy	19	3	3
Both	11	10	5
<i>Margin involved</i>			
Deep	21	8	4
Lateral	35	11	3
Both	4	4	3
<i>Method used to close surgical defect</i>			
Direct closure	25	11	2
Wolfe graft	16	5	2
Split skin graft	7	3	2
Local flap	12	4	4

A: 60 patients subjected to "wait and see" regimen.  
 B: 23 patients who subsequently developed recurrence.  
 C: 10 patients with recurrent tumours requiring more than one procedure to control the disease.

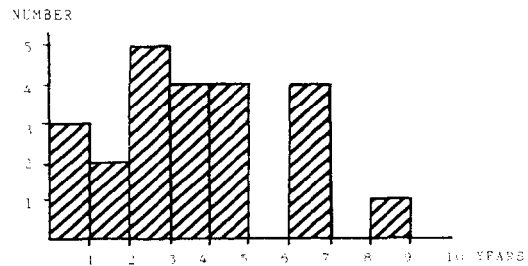


Fig. 4

Figure 4—Interval between incomplete excision and the detection of recurrent disease: 23 patients, mean time 2.8 years.

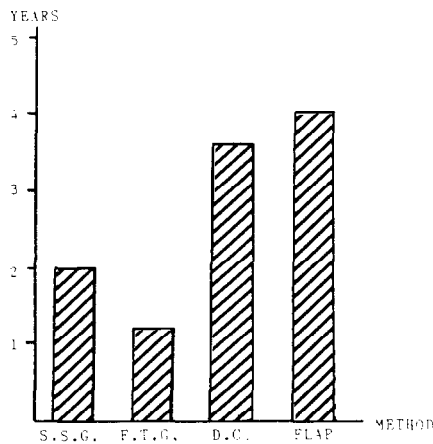


Fig. 5

Figure 5—The relationship between method of wound closure and the mean time interval until recurrence detected.

had defaulted from follow-up and then presented with a tumour considered incurable surgically and the second patient was unwilling to have the recommended surgical treatment, an orbital exenteration. Both of these patients had radiotherapy.

The remaining 21 patients had a further surgical excision; 6 then had direct closures, 4 had split skin grafts, 4 full thickness grafts and 7 local flaps.

In 10 of these 21 patients more than one further operation was necessary to eradicate the disease. As can be seen from the table, this was a problem particularly when the patient had initially been treated for recurrent disease, when the excision had been reported as incomplete at the deep margin and when the recurrence developed under a flap.

## Discussion

Recurrence of basal cell carcinoma following surgical excision can be linked, statistically, with several factors. It is commoner in areas where surplus soft tissue is scarcest (Gooding *et al.*, 1965; Shanoff *et al.*, 1967; Koplin and Zarem, 1980) and in younger female patients (Hauben *et al.*, 1982); perhaps these two factors are linked by a reluctance to excise any more tissue than necessary under such circumstances. Recurrence is commoner when the tumour is of the morpheic type (Koplin and Zarem, 1980; Hauben *et al.*, 1982).

It is more difficult to control recurrent disease than to control new tumours, and it is generally agreed that the margins of excision recommended

for the latter are inadequate for the former (Rank and Wakefield, 1985; Casson, 1980).

In series where patients with incompletely excised basal cell carcinomas have not received early supplementary treatment, the recurrence rates have generally been in excess of 30% (Gooding *et al.*, 1965; Pascal *et al.*, 1968).

Of the 676 patients treated by this unit for basal cell carcinoma during the decade under review, 93% of those with new tumours and 85% of those being treated for recurrent disease remained disease free after surgical excision. This is in agreement with other published series (Koplin and Zarem, 1980).

The 67 patients with incomplete excisions represent only 10% of the total number of patients treated during the decade. Other series have yielded a range of 5 to 20% (Hayes, 1962; Casson, 1980; Koplin and Zarem, 1980; Hauben *et al.*, 1982).

Only 7 of the 67 patients reported as having incomplete excisions were subjected to immediate further treatment. None of these patients subsequently developed recurrent disease. This has also been the finding of other surgeons (Gooding *et al.*, 1965; Pascal *et al.*, 1968).

Sixty patients had supplementary treatment postponed pending the development of clinically evident recurrent disease. The follow-up of these patients was less than perfect; a small number defaulted from follow-up and in a number of other cases, because of the distances involved or the poor general health of the patients, follow-up was entrusted to the general practitioner. In addition, a number were formally discharged at two years, this being the period of follow-up normally reserved for those with otherwise unremarkable basal cell carcinomas. In a small number of cases it is likely that a more diligent follow-up would have led to prompter diagnosis and treatment of recurrent disease.

The method of closure of the surgical defect did not seem to influence the rate of recurrence. The time taken for recurrence to become clinically detectable was longer when flaps were used or the wound directly closed than when grafts were used. In all four patients who developed recurrent disease beneath a flap, more than one procedure was required to control the disease. This was only true of a minority of patients who had other methods of closure. If the problems encountered in controlling recurrent disease beneath flaps was due solely to delay in diagnosis then similar problems should have been seen when wounds were directly closed.

They were not. This would suggest that the opening of tissue planes associated with the fashioning of local flaps was more important than delay in diagnosis in those patients where recurrent disease proved difficult to control.

With a "wait and see" policy only a minority of the patients with incompletely excised basal cell carcinomas developed recurrent disease but within this group of patients there is a subgroup where it proved difficult to control. There would appear to be unacceptable risks in denying immediate further treatment to those who are already being treated for recurrent disease or where the excision was incomplete at the deep margin, where flaps have been used to close the surgical defect or where careful prolonged follow-up poses a problem.

From the data collected it would seem that there are definite advantages in considering immediate supplementary treatment for all patients with incompletely excised basal cell carcinomas. Although the surgery involved was in general more sophisticated than the original procedure, none of the patients so treated developed clinically detectable recurrent disease.

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