

CARCINOMA OF THE EYELID

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Carcinoma of the skin is one of the most common forms of malignant tumours. Yearly the Danish Cancer Registry (CLEMMENSEN 1976) registers approximately 1 800 new cases, of which about 10 per cent are eyelid carcinoma. In the treatment of this tumour, special care must be taken because of the anatomic conditions and the close relation to the eyeball so as to prevent injury to the eye.

At this centre, the treatment of eyelid carcinoma is mainly irradiation. In the 10-year period from first of April 1958 to first of April 1968, 274 patients were referred for primary treatment, and the results are now presented.

Material

Eyelid carcinoma is defined here as a malignant epithelial tumour originating from the skin in the area that is bordered by the supra- and infraorbital margins. Malignant melanomas in this area are not included.

The material consisted of 173 men and 101 women (Fig. 1), and most of the patients were between 50 and 60 years of age. Fifty per cent (Table I) had experienced symptoms or signs for over 1 year, and 20 per cent for over 3 years before consulting a physician.

Three patients with multiple tumours have been excluded; thus the material consists of 271 patients.

The area was divided into 4 regions, an upper and lower corresponding to the

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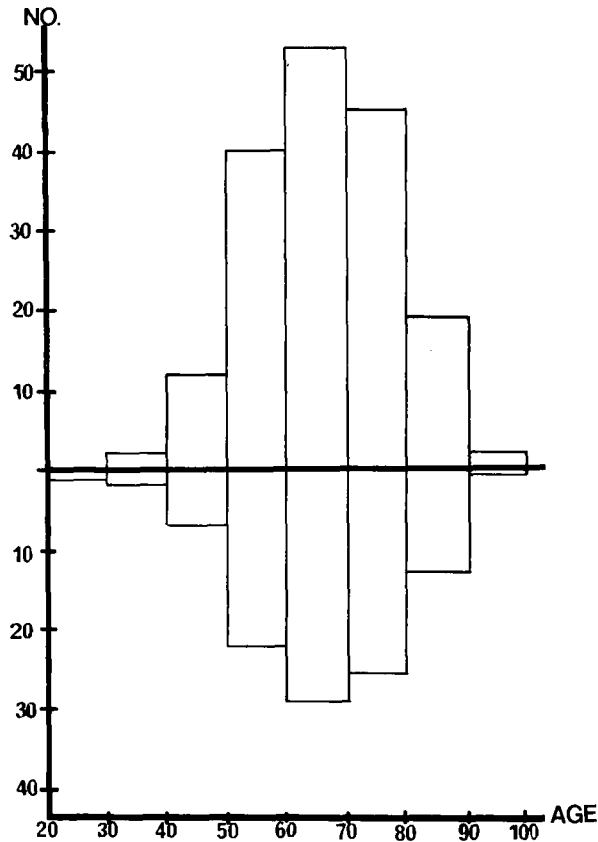


Fig. 1. Distribution of age and sex.
Upper part: 173 males. Lower part:
101 females.

superior and inferior eyelid and a medial and lateral corresponding to the nasal and temporal commissures.

The localisation and extension of the tumour was retrospectively determined by examination of the medical records, drawings and photographs; 80 per cent were limited to one region while the rest extended to 2 or more regions. The most common site was the lower eyelid and nasal commissure, where 75 per cent were located (Fig. 2).

A percentage of 55 were under 10 mm and only 1 per cent over 30 mm (Table 2). Of the tumours 87 per cent were basal cell carcinoma and the rest were mainly squamous cell carcinoma (Table 3).

Treatment. Radiation therapy was given to 256 patients and only 15 patients were primarily operated upon. A single dose irradiation was given to 109 patients (42.6%) and fractionated irradiation to 147 (57.4%). The single dose treatment was carried out according to the Ebbehøj method, which means that the tumour first is scraped to a smooth, even surface and then irradiated at 26 or 30 kV with a focus skin distance

Table 1*Duration of symptoms*

Years	No. of cases
$< \frac{1}{2}$	58
$\frac{1}{2}$ –1	60
1–3	80
Over 3	49
Unknown	27
Total	274

of 10 cm and a 0.2 mm Al filter. The total dose has been 39.62 to 47.17 Gy (4 200–5 000 R), measured as surface dose. The fractionated irradiation was given at 60 or 70 kV and a focus skin distance of 10 cm. As a rule, 9 daily fractions were given to a total dosis of 44.39 Gy (4 500 R) surface dose. The 3 larger tumours were treated at 100 kV and fractionated over a longer period.

A lead capsule 2 mm thick was placed in the conjunctival sac after anaesthesia with a few drops of cocaine mixture to avoid irradiation of the eyeball.

Fifteen patients were operated upon primarily. Of these 14 had the tumour removed elsewhere and were referred to this centre because at microscopy the excision was not radical with certainty. However, at the clinical examination no macroscopic tumour was found. Thus, irradiation was not considered indicated and the patients were controlled only. No recurrences have occurred.

One patient had a 3 cm $\times$ 5 cm basal cell carcinoma in an old burn scar. The tumour was removed at a large plastic operation. This case differs from the rest of the series, as the patient was young, 24 years of age, and later developed distant metastases. (The case is described in a report on metastasing basal cell carcinoma (LILHOLDT & SØGAARD 1975).)

Results of treatment. The results are presented in Table 4. No recurrence occurred in 94.5 per cent, but only two thirds of the patients were observed for more than 5 years. One third died within the first 5 years of other diseases and without recurrences, which is explicable, as most of the patients were old; 39 per cent were over 60 years of age.

A local recurrence in 9 patients, a new eyelid carcinoma in 4, and 2 patients developed distant metastases. Of the patients with local recurrence the primary tumour had a diameter of more than 10 mm in 7 patients; they were treated with fractionated irradiation. The other 2 patients had a small tumour and were treated with a single dose. All tumours with local recurrence except 2 were located in the nasal commissure.

The 9 with local recurrence were operated upon and were then free of recurrence. The 4 cases with a new eyelid carcinoma were again irradiated and were then also free of recurrence. The 2 cases with distant metastases were the young patient with basal cell carcinoma and one with squamous cell carcinoma treated with irradiation.

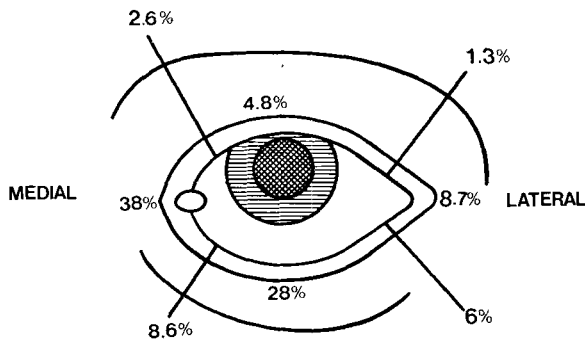


Fig. 2. Distribution of tumours in relation to the eyelids.

Complications. The complications appear in Table 5. Epiphora, occurring in 8 per cent, was not permanent, more a tendency to a watery eye when the patient was submitted to cold and wind.

Irradiation necrosis developed in 5 cases. These were small ulcerations which healed after conservative treatment. The irradiation scar is healed after 1 to 2 months. Particularly the fractionated irradiation gives an inconspicuous scar with little depigmentation or epidermal atrophy.

Discussion

The present series may to a certain degree be considered as selective, as some of the cases with larger and deeper infiltrating carcinomas possibly are primarily referred to plastic surgery. The age and sex distribution corresponds to those of previous Danish reports on carcinoma of the skin (EBBEHØJ 1951, MOSEKILDE 1951, SKOV JENSEN & VETNER 1973). The tumours were located on the lower eyelid and in the nasal commissure in 75 per cent, which corresponds to the findings of LEDERMANN (1964) in a material comprising 623 patients with eyelid carcinoma.

The present results, with reference to freedom from recurrence and complication

Table 2

Size of tumour related to involvement of conjunctival limbus

Size (largest diameter in mm)	No. of cases	Involvement of limbus	Per cent
Previous excision	15	4	27
< 10	134	35	26
10-20	98	41	42
20-30	20	12	60
> 30	3	3	(100)
Unknown	1		
Total	271		

Table 3*Microscopic types*

	No. of cases	Per cent
Basal cell carcinoma	236	87
Squamous cell carcinoma	25	9
Mixed carcinoma	6	2
Possible carcinoma	2	1
No microscopy	2	1
Total	271	100

Table 4*Results of treatment*

	No. of cases	Per cent
No recurrence	242	94.5
Local recurrence	9	3.5
New eyelid tumour	4	1.6
Distant metastases	1	0.4
Total	256	100

Table 5*Complications of treatment*

	No. of cases	Per cent
Ectropion	2	0.8
Entropion	1	0.4
Epiphora	21	8.2
Keratitis	5	2.0
Blepharitis	1	0.4
Temporary radiation necrosis	5	2.0
Total	35	13.8

frequency, correlate with the Danish reports on skin carcinoma and the one on eyelid carcinoma by LEDERMANN. A primary curative percentage of 95 per cent and a complete cure of 99.3 per cent were found in this investigation. LEDERMANN has a primary curative percentage of 92.

The 9 patients who had a local recurrence all had marginal recurrences and never central ones. In these cases it seems probable that the irradiated area was too restricted and did not include the entire tumour. All cases with local recurrence after irradiation were cured by operation.

SKOV JENSEN states in an article on single dose treatment that tumours located in

the surrounding parts of the eye, and with infiltration of the conjunctival limbus, should be treated by the single dose method only if their surface area measures less than 10 mm in diameter. Primary operation is indicated instead. However, satisfactory results may be obtained in larger tumours if the treatment is fractionated as demonstrated in the present series. LEDERMANN recommended irradiation for all types of eyelid carcinomas except those that are located in the middle third of the upper lid, especially because of the relationship of this part of the lid to the cornea. In such cases surgery was indicated.

Surgery alone has not been used in larger series. FREEMANN & KNOX (1964) have collected an American material comprising 1 341 patients with skin carcinoma, of which 194 were primarily operated upon; 200 were irradiated and 947 were treated with curettage and electro-coagulation. They found no difference between the results of the treatments, except for squamous cell carcinoma over 2 cm in diameter, where they found operation to give the best results.

However, the results are not comparative, as curettage with electro-coagulation is mainly used for well-outlined tumours that are not sclerosive and have not invaded underlying fasciae, cartilage or bone.

PRÆTORIUS & THOMS (1976) have published a series in which they state that careful scraping of the tumour, especially with tumours under 5 mm, gives very satisfactory results. Curettage with or without electro-coagulation on the eyelids should not be recommended because of the close relation to the eyeball and because of a tendency of the tumour to infiltrate the limbus and invade the conjunctiva.

Eyelid carcinoma is, as a rule, a small tumour of low malignancy which can be treated satisfactorily with both surgery and irradiation. Both methods give nearly 100 per cent cure and a low complication frequency with correctly performed treatment. Operation entails ordinarily, plastic surgery, and necessitates hospitalisation, whereas irradiation may be given ambulant.

As the majority of the patients with eyelid carcinoma are elderly people and as the tumour often is small, it is more reasonable to choose irradiation as the primary treatment. Operation should be considered for patients with larger and deep infiltrating tumours. Recurrence after irradiation should always be operated upon.

SUMMARY

A series of 274 cases with eyelid carcinoma, 95 per cent irradiated, was analyzed. The results show that the majority of eyelid carcinomas can primarily be irradiated with satisfactory curative and cosmetic results, but operation may be considered in larger and deeper infiltrating tumours. Recurrence after primary irradiation should be operated.

ZUSAMMENFASSUNG

Fünfundneunzig Prozent von 274 Patienten mit Augenlid-Karzinom wurden bestrahlt. Die Ergebnisse zeigen, dass die Mehrzahl der Augenlid-Karzinome primär bestrahlt werden

kann mit zufriedenstellenden kurativen und kosmetischen Resultaten, jedoch kann eine Operation bei grösseren und tiefer infiltrierenden Tumoren erwogen werden. Rezidive nach primärer Bestrahlung sollten operiert werden.

RÉSUMÉ

Les auteurs analysent une série de 274 cas de carcinome de la paupière, dont 95% ont été irradiés. Évidemment la majorité des carcinomes de la paupière peuvent être traités par une irradiation primaire avec des résultats curatifs et esthétiques satisfaisants, mais l'opération peut être envisagée pour les tumeurs plus grandes et plus profondément infiltrantes. Les récidives après une irradiation primaire devraient être opérées.

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