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Morbus Bowen

A Description of the Disease in 617 Patients

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Between 1943 and 1983 a total of 617 patients were diagnosed to have morbus Bowen (m.B.). Eighty percent of the patients were over 60 years old at the time of diagnosis. Three-fourth had their disease on sun-exposed areas (head, neck and hands). Almost 1/4 had concomitant basal cell epithelioma (c.b.) and 1/10 squamous cell carcinoma (c.s.). Approximately 1/5 had multiple m.B. tumours. Effective therapy was curettage followed by cauterization, excision, or X-ray. *Key words: basal cell epithelioma, squamous cell carcinoma.* (Received September 1, 1987.)

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In 1912 J. T. Bowen described 2 patients with a chronic atypical epithelial proliferation, which histologically was precancerous (1). The disease has later come to carry his name.

The clinical appearance of morbus Bowen (m.B.) is not specific. The lesion is rather well-marked, but otherwise it may be more or less keratotic, red or with variable degree of pigmentation, even resembling lentigo maligna. Due to the relatively low incidence of the disease, there has been uncertainty concerning its degree of malignancy. Thus, it is not known for certain whether m.B. can change into a squamous cell carcinoma (c.s.) nor the latency for such a development.

This article presents a description of m.B. in 617 patients seen at the Department of Dermatology, The Finsen Institute, Copenhagen, over a 40-year period.

PATIENTS

The investigation is retrospective covering the period from 1943 to December 31, 1982. The patients were referred because of a skin tumour. A few received treatment for another skin disease at The Institute, when their tumour was discovered. All patients were caucasians.

The diagnosis of m.B. was always based on histological examination by experienced histopathologists. The diagnostic criteria are in accordance with what is internationally accepted (2). Throughout the years a uniform evaluation has been maintained. In case of expressed uncertainty of a differential histological diagnosis between m.B. and c.s., this was noted for each patient. If the pathologist had judged the diagnosis to be m.B., the patient was enrolled in this study.

The authors went through all medical records carrying a diagnosis of m.B. from Jan. 1, 1943 to Dec. 31, 1982. A list of questions was answered.

Some data were regarded as reliable (age at diagnosis, name, sex, histology, localization of tumour, treatment, length of observation, date of last observation and date of death). A few data were included despite uncertainty concerning their reliability (duration before diagnosis, multiple m.B., other recognized skin tumours, observed recurrence of tumour, psoriasis, arsenic, UV light and Grenz X-rays).

Many patients have died. Some patients were still seen in our out-patient clinic. If a patient had been seen within the last 12 months, no further clinical evaluation was performed.

The remaining patients were contacted by mail and asked to come for follow-up. The patients who did not respond, were traced from the Central Personal Registry, Ministry of The Interior, which files the names of all Danish citizens, date of decease, if applicable, and their address. Thus, we have been able to trace all patients, except a few who had moved abroad.

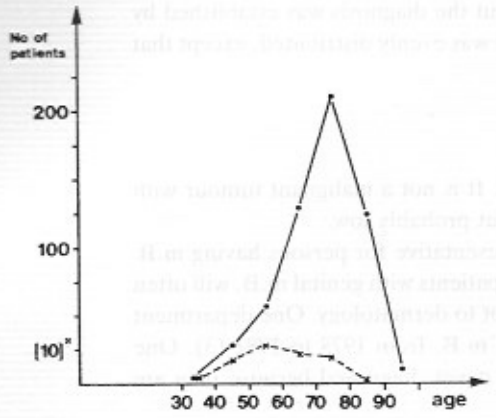

Fig. 1. Age distribution at the time of diagnosis. ×—× Patients with genital Bowen (n=38), ● other patients (n=579).

* The ordinate has 10 as unit for patients with genital morbus Bowen and 25 as unit for patients with morbus Bowen at other locations.

RESULTS

The 617 patients with m.B. consisted of 274 men and 343 women. Their ages at the time of diagnosis are shown in Fig. 1. The tumour is discovered mainly in people over 60 years of age (80.6%). Patients with genital m.B. (18 men and 20 women) contracted their disease at an earlier age (Fig. 1, stippled lines). Thus, half of these patients (52.6%) developed their tumour before 60 years of age.

Table I shows the localization of the tumour; most occurred on the head (54%); 3/4 (72.5%) occurred on sun-exposed skin areas (head, neck, hands).

One-third of the patients had their tumour for less than one year before referral to The Finsen Institute, another third considered the duration of the tumour to be between one and 5 years. Ten percent thought the tumour was of more than 5 years' duration, and approximately 1/4 of the patients could not give any information.

Following diagnosis and treatment we observed 35% of the patients for less than one year, 30% between one and 4 years, and 35% for 5 years or more. Table II shows the treatment given and the number of observed relapses. Cauterization, excision and X-ray had the lowest number of observed relapses. It should be emphasized that our results only show the minimum of relapses. Most relapses (78%) occurred within the first 3 years.

We observed more than one concomitant m.B. in 117 patients (18.9%), 57 had two tumours, 37 between two and five tumours and 23 more than five tumours. Nineteen patients had psoriasis.

Table III describes other observed skin tumours. Almost 1/4 (143 of 617) of the patients were found to have c.b. and 1/10 (63 of 617) c.s. Only 11 patients with m.B. (2%) had arsenical keratosis.

Table I. *The localization of Mb. Bowen in the 617 patients*

In 117 patients more than one lesion occurred

Area	No. in location	Percentage
Head	333	54.0
Neck	30	4.9
Hands	84	13.6
Trunk	62	10.0
Extremities	99	16.0
Genital	38	6.2

In 23 patients the histology showed features of c.s., but the diagnosis was established by the pathologist as m.B. The localization of these tumours was evenly distributed, except that 7 of these patients (1/3) had genital m.B. (Table IV).

DISCUSSION

M.B. is a precancerous dermatosis or carcinoma in situ. It is not a malignant tumour with capabilities for metastasis. The incidence is unknown, but probably low.

Our group of 617 patients cannot be regarded as representative for persons having m.B. They are selected because of their referral. Thus, female patients with genital m.B. will often be referred directly to departments of gynecology and not to dermatology. One department of gynecology in Copenhagen received 49 patients with m.B. from 1978 to 1982 (3). One must also realize that a high number of m.B. cases are never diagnosed because they are asymptomatic and occur in elderly persons.

The relationship between m.B., c.s., and carcinoma basocellular (c.b.) is not clear. Our

Table II. *Treatment given and the number of relapses*

Treatment	No. of patients	Percent of all patients	Observed relapses	
			Total no.	Percent of all relapses
Curettage	345	56	65	19
Cauterization	16	3	1	6
Excision	65	11	3	5
X-ray	97	16	6	6
5 fluoro-uracil	21	3	3	14
Freezing	56	9	19	34
None	17	3		

Table III. *Other non-melanoma skin tumours that were diagnosed in the patients*

Tumour	No. of patients	Percentage
Basal cell epithelioma	143	23%
Squamous cell carcinoma	63	10%
Kerato-acanthoma	14	2%
Arsenical keratosis	11	2%
Morbus Bowen developing into Squamous cell carcinoma	23	4%

Table IV. *The localization of Mb. Bowen in 23 patients whose lesions had histological features of squamous cell carcinoma*

The table gives the percentages of patients with histological evidence of transformation

Area	No. of patients	Total no. of patients
Head	9[a]	333 (2.7%)
Neck	3[a]	30 (10.0%)
Hand	2	84 (2.4%)
Trunk	4[b]	62 (6.5%)
Extremities	4[c]	99 (4.0%)
Genital	7	38 (18.4%)

[a] 2 had multiple tumours, [b] 1 had multiple tumours, [c] 3 had multiple tumours.

study shows that 3/4 of m.B. cases occur on sun-exposed areas, which is similar to c.s. and c.b. (4, 5). It is striking that 1/3 of the patients with m.B. had other skin tumours, a finding compatible with other studies (6). One reason could be a high carcinogenic load such as arsenic, which will increase the incidence of lung and skin cancer. This was seen in Taiwan among people drinking water with a high content of arsenic (7), and in German Vineyard workers, who were exposed to arsenic used in mildewicide (8).

We tried to evaluate potential carcinogenic factors such as skin type, UV light, Grenz X-rays, topical thorium application or thorium wax plate application, or arsenic, but the information was inadequate. We only diagnosed arsenic keratosis in 11 patients although arsenic was a very common ingredient of vitamin and iron tablets, containing arsenic trioxides, in Denmark until the early sixties. Also, only 19 patients (3%) had psoriasis. Another possible explanation may be a reduced capacity for DNA repair following exposure to UV light. It has previously been shown that patients with actinic keratosis, m.B., or c.s. have a reduced DNA repair of UV-induced damage in lymphocytes (9). However, this would not explain the increased number of c.b. cases in our patients.

The sex ratio in our investigation was 0.80 (men : women). This is identical with the sex ratio of 0.81 (men : women) found by Degos et al. (10) in a study of 243 French patients. Two American studies had a sex ratio of 4.74 (men : women) (11) and 1.18 (6). The reason for this difference is unknown, but emphasizes that the patients in various studies may not be comparable.

Patients with genital m.B. should be carefully evaluated. Seven of our patients showed histological changes suggestive of, but not diagnostic for, c.s. Five of the patients were known to have internal malignancies.

This investigation gives information on m.B. found in a large group of caucasian persons. It is a disease occurring on sun-exposed areas in elderly persons, being fairly easily cured by careful curettage combined with cauterization, excision, or X-ray. One-third of the patients had other non-melanoma skin tumours elsewhere, 23% basal epithelioma and 10% squamous cell carcinoma. Therefore, patients with m.B. should be carefully examined for other skin tumours.

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