Cutaneous Carcinoma

IV. Analysis of 20 Cases in Negroes*

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Clinical and statistical studies indicate that exposure to sunlight is an important etiologic factor in the pathogenesis of cutaneous cancer in the white race, and experimental work has shown that skin cancer can be produced in animals by sunlight or ultraviolet light. The literature on cancer of the skin has been recently reviewed by several authors (1, 2, 8, 9).

In Negroes the heavily pigmented skin seems to be protected against the pathologic effects of sunlight. Clinicians have observed that skin cancer is rare in them, and this impression has been substantiated by many careful statistical studies. Skin cancer is so infrequent in the Negro race that, so far as could be determined, the literature contains no detailed report on a series of cases. An analysis of such a series should be of interest, as it may yield additional information on the etiologic factors of cancer of the skin.

This paper reports 20 cutaneous carcinomas occurring in colored male patients, with particular reference to incidence, anatomic location, pre-existing inflammatory lesions and scars, and the sex and geographic distribution of the patients. The findings on this group of colored patients are controlled by observations on white patients with cutaneous carcinoma and are compared with the statistical data reported in the literature.

The Incidence of Cutaneous Carcinoma in White and Colored Male Patients

From 1931 through 1942 the Tumor Clinic of Edward Hines, Jr. Hospital treated 10,857 white and 724 colored male patients with cancer. Cutaneous carcinoma occurred in 19.2 per cent of the white patients and in only 2.8 per cent of the colored group. The incidence of cutaneous carcinoma in Negroes is, then, only one-seventh of that observed in the white patients.

The clinical histories of the 20 cases of cutaneous carcinoma in colored men are summarized in Tables I and II as a matter of record.

Location of Lesion

In order to study the influence of sunlight in eliciting skin carcinoma, the cases were divided into two groups: (a) cancer of the exposed surfaces of the skin including face, neck, hands, and wrists; and (b) carcinoma of the covered surfaces, namely, scalp, trunk, upper and lower arms, and lower extremities.

Of the 20 cutaneous tumors in the Negro, 12, or 60 per cent, occurred on the exposed surfaces and 8, or 40 per cent, on the covered skin. In contrast, in the 2,080 white male patients with skin carcinoma, 96 per cent of the growths occurred on the exposed and only 4 per cent on the covered surfaces. This indicates that cutaneous carcinoma has a definite predilection for the exposed skin in the white but not in the colored patients.

Carcinoma of the exposed skin occurred in 18.4 per cent of the 10,857 white male patients with cancer and in only 1.7 per cent of the 724 colored men. The notable difference in percentages is statistically significant. Carcinoma of the covered skin occurred in 0.8 per cent of the white cancer patients and in 1.1 per cent of the Negroes. Evidently epithelioma of the covered skin is infrequent in both the white and colored patient, but there is no appreciable racial difference in the incidence of this type of tumor.

The findings indicate that, in comparison to the white men, the Negroes had a much lower incidence of carcinoma of the exposed skin but the same incidence of carcinoma of the covered skin.

Pre-existing Inflammatory Lesions and Scars

Of the 20 cutaneous carcinomas 5, or 25 per cent, definitely arose in a pre-existing inflammatory lesion or scar. The histories of the 5 patients are presented in detail at the end of the paper and are summarized in Tables I and II. In three additional cases the tumors probably arose at the site of pre-existing

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inflammatory lesions, but the clinical histories were not decisive. Four of the cutaneous tumors in the Negro developed in scars, and 1 followed arsenical fact that nearly all the patients in this hospital are war veterans, none of the cutaneous tumors followed a war injury.

Table I: A Summary of Clinical Histories of 20 Cutaneous Carcinomas in Negroes

<table>
<thead>
<tr>
<th>Tumor Case No.</th>
<th>Site of lesion</th>
<th>Age</th>
<th>Duration</th>
<th>Size (cm.)</th>
<th>Histology</th>
<th>Pre-existing lesion</th>
<th>Initial treatment</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>11206</td>
<td>Lower eyelid</td>
<td>46</td>
<td>2 yr.</td>
<td>1</td>
<td>S.</td>
<td>—</td>
<td>Excision</td>
<td>No recur. 4 yr. 11 mo.</td>
</tr>
<tr>
<td>6594</td>
<td>Nose (side)</td>
<td>43</td>
<td>3 mo.</td>
<td>Small</td>
<td>S.</td>
<td>—</td>
<td>X-ray</td>
<td>No recur. 1 yr. 1 mo.</td>
</tr>
<tr>
<td>12152</td>
<td>Nasolabial fold</td>
<td>47</td>
<td>5 yr.</td>
<td>9</td>
<td>S.</td>
<td>Fleshy mole, 5 yr.</td>
<td>X-ray, Enucleation of eye</td>
<td></td>
</tr>
<tr>
<td>8223</td>
<td>Nose (side)</td>
<td>43</td>
<td>3 yr.</td>
<td>0.3</td>
<td>—</td>
<td>X-ray</td>
<td>No recur. 7 yr.</td>
<td></td>
</tr>
<tr>
<td>9022</td>
<td>Nose (tip)</td>
<td>43</td>
<td>3 mo.</td>
<td>0.5</td>
<td>—</td>
<td>X-ray</td>
<td>No recur. 3 yr. 4 mo.</td>
<td></td>
</tr>
<tr>
<td>7608</td>
<td>Cheek</td>
<td>42</td>
<td>11 yr.</td>
<td>3.5 × 2.5</td>
<td>—</td>
<td>X-ray</td>
<td>No recur. 3 yr. 4 mo.</td>
<td></td>
</tr>
<tr>
<td>2977</td>
<td>Upper lip (skin surface)</td>
<td>41</td>
<td>Several mo.</td>
<td>Very small</td>
<td>S.1</td>
<td>Excision and radium</td>
<td>No recur. 7 yr.</td>
<td></td>
</tr>
<tr>
<td>5271</td>
<td>Temporal region</td>
<td>41</td>
<td>2 mo.</td>
<td>0.8</td>
<td>—</td>
<td>X-ray</td>
<td>No recur. 8 yr. 6 mo.</td>
<td></td>
</tr>
<tr>
<td>8936</td>
<td>Neck (back)</td>
<td>68</td>
<td>25 yr.</td>
<td>2.5 × 2.5</td>
<td>B.</td>
<td>Excision</td>
<td>No recur. 1 yr. 8 mo.</td>
<td></td>
</tr>
<tr>
<td>8223</td>
<td>Neck (back)</td>
<td>67</td>
<td>9 yr.</td>
<td>12.5 × 7</td>
<td>B.</td>
<td>Incomplete excision and x-ray</td>
<td>Persistence. D. 3 yr. 6 mo.</td>
<td></td>
</tr>
<tr>
<td>8911</td>
<td>1. Right thumb</td>
<td>43</td>
<td>5 mo.</td>
<td>1. 6 × 4</td>
<td>1. S. III *</td>
<td>1. Amputation</td>
<td>D. 1 yr. 3 mo.</td>
<td></td>
</tr>
<tr>
<td>2. Left hand</td>
<td>42</td>
<td>5 mo.</td>
<td>2. 2.5</td>
<td>2. S. II</td>
<td>2. X-ray</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7483</td>
<td>Scalp (parietal region)</td>
<td>43</td>
<td>9 yr.</td>
<td>4</td>
<td>S. II</td>
<td>Small scar</td>
<td>X-ray</td>
<td>Recur. D. 3 yr. 7 mo.</td>
</tr>
<tr>
<td>6118</td>
<td>Back of upper thorax</td>
<td>50</td>
<td>3 yr.</td>
<td>10 × 9</td>
<td>B.</td>
<td>—</td>
<td>Excision</td>
<td>D. 4 mo. with pulmonary metastasis ?</td>
</tr>
<tr>
<td>6964</td>
<td>Scapular region</td>
<td>51</td>
<td>?</td>
<td>12 × 10</td>
<td>S.1</td>
<td>Persistent ulcer, 20 yr.</td>
<td>Incomplete excision</td>
<td>Persistence. D. 1 yr.</td>
</tr>
<tr>
<td>8256</td>
<td>Lower leg (posterior)</td>
<td>41</td>
<td>3 mo.</td>
<td>17 × 13</td>
<td>S. II</td>
<td>*</td>
<td>Amputation leg x-ray to nodes</td>
<td>D. 4 mo.</td>
</tr>
<tr>
<td>1879</td>
<td>Lower leg, inner aspect</td>
<td>51</td>
<td>7 mo.</td>
<td>12 × 10</td>
<td>S.1</td>
<td>*</td>
<td>Excision</td>
<td>No recur. 9 yr.</td>
</tr>
<tr>
<td>275</td>
<td>Popliteal space</td>
<td>36</td>
<td>13 yr.</td>
<td>Large</td>
<td>B.</td>
<td>—</td>
<td>Radium</td>
<td>D. 1 yr.</td>
</tr>
<tr>
<td>11062</td>
<td>Thigh</td>
<td>50</td>
<td>15 ? yr.</td>
<td>20 × 13</td>
<td>S. III</td>
<td>*</td>
<td>Symptomatic</td>
<td>D. 41 d.</td>
</tr>
<tr>
<td>12442</td>
<td>Small toe (amputated in another hospital)</td>
<td>51</td>
<td>?</td>
<td>Large lymph nodes</td>
<td>S. II</td>
<td>*</td>
<td>X-ray</td>
<td>D. 3 mo.</td>
</tr>
</tbody>
</table>

Abbreviations: yr. — years, mo. — months, d. — days, S. — squamous cell carcinoma (Roman numeral after S. indicates grade of malignancy), B. — basal cell carcinoma

Dermatitis. The scars resulted from a variety of injuries, namely, carbuncle, ulcer associated with varicose veins, extensive burn, and a gunshot wound received in civil life. It is probable that these injuries had poor or no medical treatment. In spite of the The 5 tumors occurred a considerable period after the original injury or after the onset of the chronic inflammatory lesion. The age of the scars in which epithelioma developed varied from 8 to 31 years.

In Table III is shown the percentage of tumors
that developed in chronic inflammatory lesions or scars in colored and white patients. The statistics on the white patients were obtained in a previous study on cutaneous carcinoma in patients at Pondville Hospital (16). The table shows that 1 per cent of the white patients with carcinoma of the exposed skin, and 18 per cent of those with carcinoma of the covered skin, gave a history of a pre-existing inflammatory lesion or scar. The latter percentage is of the same order of magnitude as the 25 per cent for colored patients with cutaneous carcinoma. It is seen, then, that both cutaneous carcinoma in the Negro and carcinoma of the covered skin in the one should not assume that the combination of cutaneous carcinoma and cicatrix is fortuitous. In view of the fact that even a large scar involves only a small percentage of the surface of the skin and that many of the tumors arose definitely in the cicatrix, it would seem that the scar is an etiologic factor in cutaneous carcinoma of the Negro. On the other hand, the high frequency of scars in the control group and the rarity of cutaneous carcinoma in the colored race indicates that a cicatrix rarely gives rise to carcinoma.

The above analysis leads to the paradoxical conclusion that many cutaneous carcinomas in the Negro arise from scars, but very few scars develop carcinomas.

**Table II: Summary of Traumatic and Inflammatory Lesions Followed by Cutaneous Carcinoma**

<table>
<thead>
<tr>
<th>Tumor Case No.</th>
<th>Age at time of trauma</th>
<th>Trauma or lesion</th>
<th>Type of healing</th>
<th>Time interval between lesion and tumor (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6437</td>
<td>43 and recurrence at 49</td>
<td>Carbuncles, back of neck</td>
<td>Incised with uneventful healing</td>
<td>8 years after 2nd lesion</td>
</tr>
<tr>
<td>8911</td>
<td>34</td>
<td>Arsenical dermatitis</td>
<td>Persistent</td>
<td>9</td>
</tr>
<tr>
<td>8256</td>
<td>30</td>
<td>Gunshot wound, right lower leg</td>
<td>Good healing without removal of buckshot *</td>
<td>11</td>
</tr>
<tr>
<td>1879</td>
<td>46</td>
<td>Ulcer with varicose veins, right lower leg</td>
<td>Application of iodine with inflammation and slow healing</td>
<td>8</td>
</tr>
<tr>
<td>11062</td>
<td>4</td>
<td>Extensive burn, back, left hip, and left thigh</td>
<td>No grafts</td>
<td>31</td>
</tr>
</tbody>
</table>

* See Fig. 3.

**Table III: Number and Percentage of Cutaneous Carcinomas that Developed in a Pre-existing Scar or Chronic Inflammatory Lesion in White and Colored Patients**

<table>
<thead>
<tr>
<th>Tumor Case No.</th>
<th>Age at time of trauma</th>
<th>Trauma or lesion</th>
<th>Type of healing</th>
<th>Time interval between lesion and tumor (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6437</td>
<td>43 and recurrence at 49</td>
<td>Carbuncles, back of neck</td>
<td>Incised with uneventful healing</td>
<td>8 years after 2nd lesion</td>
</tr>
<tr>
<td>8911</td>
<td>34</td>
<td>Arsenical dermatitis</td>
<td>Persistent</td>
<td>9</td>
</tr>
<tr>
<td>8256</td>
<td>30</td>
<td>Gunshot wound, right lower leg</td>
<td>Good healing without removal of buckshot *</td>
<td>11</td>
</tr>
<tr>
<td>1879</td>
<td>46</td>
<td>Ulcer with varicose veins, right lower leg</td>
<td>Application of iodine with inflammation and slow healing</td>
<td>8</td>
</tr>
<tr>
<td>11062</td>
<td>4</td>
<td>Extensive burn, back, left hip, and left thigh</td>
<td>No grafts</td>
<td>31</td>
</tr>
</tbody>
</table>

* See Fig. 3.

A control group of 30 colored male patients in this hospital were interrogated and examined for scars. Since nearly all these patients were from Chicago, this group differs from the colored men with cutaneous carcinoma, who came from urban and rural sections of the midwest. Large cicatrices, 10 to 55 cm. in length, were found in 7, or 23 per cent, of the patients; moderate sized ones, 5 to 9 cm. in length, occurred in 10, or 33 per cent; and small ones in 9, or 30 per cent. It seems, then, that large scars are rather common in adult Negroes.

Although both the control patients and those with cutaneous carcinoma had high percentages of scars, a white patient developed in a large percentage of the cases in a pre-existing scar or chronic inflammatory lesion.

**Geographic Distribution**

Patients are referred to Hines Hospital by Veterans Administration Facilities in all parts of the country, but particularly by those in the midwest. This circumstance affords an opportunity of studying the effect of geographic factors on the incidence of cutaneous carcinoma.

During 1931 through 1942, 363 colored male patients with cancer originated from the North Central states. Of these, 8, or 2.2 per cent, had cutaneous carcinoma (Table V). Of 353 patients from the Southern states, 12, or 3.4 per cent, had epithelioma. The difference in the two percentages is not statistically significant. For comparison a study of the incidence in 1941 of cutaneous cancer in the white
patients was made. Of the patients originating from the North Central and Southern states, 13.3 and 32.5 per cent respectively had cutaneous carcinoma. The difference in percentages is significant. A much higher percentage of white patients with cutaneous carcinoma came from the south than from the North Central states.

It may be concluded that geographic factors affect the incidence of epithelioma in the white but not in the colored race.

Geographic distribution.—Many investigators have observed that skin cancer in the white race occurs much more frequently in the Southern than in the Northern states (Table V). The statistics for the patients of Hines Hospital support this observation. In contrast, the incidence of cutaneous carcinoma in the Negro is not appreciably affected by geographic factors. For example, the incidence rates for white men in the United States Registration Area is 3.09 in Northern, and 5.07 in Southern states; while the

| Table IV: Incidence of Cutaneous Carcinoma in White and Colored Males and Females |
|---------------------------------|-----------------|-----------------|
|                                  | Incidence rates | Ratio of incidence rates | Number of patients with cutaneous carcinoma |
|                                  | White: Male Female | Colored: Male Female | White: Male Female Colored |
| Patients with cutaneous carcinoma per 100,000 persons |
| Philadelphia, Pa. (18) 1938 75.1 60.0 4.6 7.2 | 16.3 8.3 1.3 0.6 | 641 520 5 8 |
| Birmingham, Ala. (17) 1938 103.9 73.2 5.7 5.6 | 18.2 13.1 1.4 1.0 | 142 103 5 5 |
| Deaths with cutaneous carcinoma per 100,000 persons |
| Metropolitan Policyholders (4) 1911–35 2.3 1.2 0.7 0.7 | 3.3 1.7 1.9 1.0 |     |
| U. S. Registration Area (6) 1930–32 3.35 1.92 0.96 1.03 | 3.5 1.9 1.7 0.9 |     |
| Patients with cutaneous carcinoma per 100 persons with cancer |
| U. S. Public Health Survey Detroit, Mich. (11) 1937 12.3 6.2 9.2 3.0 | 1.3 2.1 2.0 3.1 | 266 212 6 5 |
| Chicago, Ill. (3) 1937 12.5 6.9 3.7 1.3 | 3.4 5.6 1.8 2.9 | 809 464 8 5 |
| Pittsburgh, Pa. (10) 1937 16.2 9.2 3.3 2.8 | 4.9 3.3 1.8 1.2 | 401 314 3 3 |
| Philadelphia, Pa. (18) 1938 19.8 10.7 3.0 1.9 | 6.6 5.6 1.8 1.6 | 1,000 724 6 9 |
| New Orleans, La. (12) 1937 29.2 20.4 4.3 2.6 | 6.9 7.8 1.4 1.6 | 369 280 8 12 |
| Atlanta, Ga. (14) 1937 38.5 23.1 1.7 4.2 | 23.1 5.5 1.7 0.4 | 512 358 1 11 |
| Birmingham, Ala. (17) 1938 46.1 24.9 9.3 3.5 | 5.0 7.1 1.9 2.7 | 500 211 5 6 |
| Dallas and Fort Worth, Texas (13) 1938 47.6 23.2 6.0 2.9 | 7.9 8.0 2.1 2.1 | 836 403 3 4 |
| Hines Hospital 1931–42 19.2 2.8 | 6.9 | 2,080 20 |

**REVIEW OF LITERATURE AND DISCUSSION**

**Incidence.**—A comparison of the incidence of cutaneous carcinomas in white and colored males has been made by many investigators, who have employed three different methods for measuring incidence. Table IV summarizes the results obtained by the various authors. All the results presented in the table agree that the incidence of skin cancer in the colored person is much less than that in the white. In fact, the ratio of incidence rates of cutaneous carcinoma in white and colored individuals (see columns 7 and 8, Table IV) in the different studies is always above 1.0, and in one study it is as high as 23.1. In the present study the incidence in the white male patients was 6.9 times as great as in the colored.

rates for colored men are 1.18 and 1.03. According to the various reports in the literature, and according to the present findings, there is no significant or consistent difference in the incidence of skin cancer in the colored race for Northern and Southern states.

**Sex.**—In the various studies on cutaneous carcinoma in the white race, the ratio of the incidence rates for men to that for women is consistently above 1.0, and is usually approximately 1.8 (Table IV, column 9). White men, then, are more prone to develop epitheliomas than women.

In the colored race the ratio of incidence rates for men to that for women varies in different studies (Table IV, column 10). In the studies of the death rates in the United States Registration Area and
among Metropolitan Life Insurance Company policy-holders the rates are low, 0.9 and 1.0 respectively. In the United States Public Health survey, which is based on smaller numbers of cases, the ratio is about 2. In spite of these inconsistencies, it is probable that there is no great difference in the incidence rates of cutaneous carcinoma in colored men and women.

Location of lesion.—It is well known that cutaneous carcinoma in white persons occurs predominantly (about 96 per cent) on the face, neck, and hands. The localization of the cutaneous lesions in colored persons has been studied by few investigators. In Quinland and Cuff's series of 11 cases (15) 5, or 45 per cent, were on the exposed skin. An analysis of Howles' data (7) shows that in 58 colored patients with cutaneous carcinoma only 41, or 71 per cent, involved the exposed skin. Similarly in this study of 20 patients the exposed surfaces of the skin were affected in 12, or 60 per cent, of the cases.

It may be concluded that there is a definite racial difference in the localization of cutaneous carcinoma.

Pre-existing lesions.—None of the published reports on cutaneous carcinoma in Negroes consider the number of tumors that develop from pre-existing chronic inflammatory lesions and scars. In a personal communication, Quinland (15) states that 3 of 11 cutaneous tumors (27 per cent) developed in pre-existing lesions (old ulcer from bubo, unhealed traumatic wound, and scar of old burn). Similarly in this study at least 5 of 20 tumors (25 per cent) arose in scars or in a chronic inflammatory lesion.

DISCUSSION

The statement is frequently made that exposure to sunlight is an important etiologic factor in cutaneous carcinoma. Strictly speaking, however, sunlight is a causal agent only in carcinoma of the exposed skin (face, neck, hands, and wrists) and is presumably not a factor in cancer of the covered skin. In view of this fact the custom of placing all cases of cancer of the skin in one group is not entirely satisfactory. It would be preferable to form two groups, namely, carcinoma of the exposed and carcinoma of the covered skin.

The division of cutaneous carcinoma into two groups led to the finding that the statistical data for carcinoma of both the exposed and covered skin in the Negro are similar to the data for carcinoma of the covered skin in the white race. Carcinoma of the exposed and covered skin in colored patients, and of the covered skin in white patients, was equally rare (1.7, 1.1, and 0.8 per cent of cancer patients respectively). Furthermore, both cutaneous carcinoma in the colored and carcinoma of the covered skin in the white men developed frequently (25 per cent and 18 per cent) in scars or chronic inflammatory lesions.

There is a factor that accounts for the similarity in the statistical data on carcinoma of the covered skin in the white patients and of the exposed and covered skin in the colored. This factor is the protection of the skin from the physiologic and pathologic effects of exposure to the sun. In the Negro the entire skin is protected by pigment, whereas in the white

<table>
<thead>
<tr>
<th>Year studied</th>
<th>Incidence rates</th>
<th>Number of patients with cutaneous carcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>U.S. Registration Area (5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern states</td>
<td>1926–30</td>
<td>3.09</td>
</tr>
<tr>
<td>Southern states</td>
<td>1926–30</td>
<td>5.07</td>
</tr>
<tr>
<td>Patients with cutaneous carcinoma per 100 patients with cancer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Areas in U.S. Public Health Survey (3, 10, 11, 18)</td>
<td>1937–38</td>
<td>15.33</td>
</tr>
<tr>
<td>Southern Areas in U.S. Public Health Survey (12, 13, 19, 17)</td>
<td>1937–38</td>
<td>40.35</td>
</tr>
<tr>
<td>Hines Hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Central states</td>
<td>1941</td>
<td>13.3</td>
</tr>
<tr>
<td>North Central states</td>
<td>1931–42</td>
<td>32.5</td>
</tr>
<tr>
<td>Southern states</td>
<td>1931–42</td>
<td>3.4</td>
</tr>
</tbody>
</table>
race only the covered skin is shielded from sunlight by
hair or clothing.

The present work affords additional evidence of the
importance of sunlight in the etiology of cutaneous

cancer in the white race. The findings are as clear
cut as in an animal experiment. For carcinoma of the
covered skin, where the influence of sunlight is ex-
cluded as in an animal experiment. For carcinoma of
the covered skin the influence of sunlight is eliminated in the colored but not in the
white race. The incidence of this type of cancer
was found to be approximately 7 times as large in
the white as in the colored patients. The findings
suggest that exposure to sunlight was a major etiologic
factor in six-sevenths of the carcinomas of the exposed
skin in the white race.

Some of the observed differences in the statistical
data for cutaneous carcinoma in the two races can be
attributed to the importance of sunlight as an etiologic
agent in cutaneous carcinoma of white but not of
colored persons. In the white race the incidence of
epithelioma is particularly great in Southern states
(about 2 to 3 times as large as in Northern states)
and in men (about twice as frequent as in women).
In the colored race there is no definite difference in
the incidence of cutaneous carcinoma in Northern and
Southern states and in men and women.

The predominating etiologic factors in cutaneous
carcinoma of colored individuals are scars and chronic
inflammatory lesions. Although many tumors were
found to arise in pre-existing lesions, it is probable
that few scars give rise to carcinoma. It would seem,
then, that scars and chronic inflammatory lesions are
not potent carcinogenic factors.

It was surprising to observe that although nearly all
the patients in this hospital are war veterans, none of
the cutaneous tumors arose on the basis of a war
injury. This finding may be due to the fact that war
injuries usually receive adequate medical attention and
are, therefore, less likely to give rise to large, irregular,
distorted scars or chronic ulcers. It seems that cutane-
ous carcinoma develops more frequently after civilian
than after war injuries.

SUMMARY AND CONCLUSIONS

This paper presents a detailed analysis of 20 colored
male patients with cutaneous carcinoma and reviews
the literature on this subject. From this study the
following conclusions may be drawn.

Carcinoma of the exposed skin is much less fre-
quent in colored than in white persons, but carcinoma
of the covered skin has the same incidence in the
two races.

In the white race cutaneous carcinoma is more preva-
ient in the Southern than in the Northern states, and
in the colored race the incidence of cutaneous car-
cinoma is not affected by geographic factors.

White men have a higher incidence of cutaneous
carcinoma than white women, whereas no definite
sex difference in incidence was observed in the colored
race.

A high percentage of cutaneous carcinomas in colored
patients developed in a pre-existing scar or in a chronic
inflammatory lesion. Paradoxically, a low percentage
of scars give rise to an epithelioma. None of the
cutaneous carcinomas in the Negro followed a war
injury.

Exposure to sunlight and other climatic conditions
is, it is believed, the major etiologic factor in carci-
noma of the exposed skin in the white race. Scars
and chronic inflammatory lesions are, apparently, im-
portant etiologic factors in carcinoma of the exposed
and covered skin in the colored race, and also in
carcinoma of the covered skin in the white race.

CASE HISTORIES

Case No. 6437.—The patient, a 67 year old Negro
male, had a carbuncle on the back of his neck in
1914. This healed, leaving a scar. The carbuncle
reappeared in 1920, was incised, and healed unevent-
fully. In 1928 a tumor developed in the scar. X-ray
treatment at another hospital caused regression of the
lesion. In September, 1936, the patient observed a
hard mass about the size of a quarter at the site
of the previous lesion. The mass increased in size and
then ulcerated. He was admitted to this hospital on
December 1, 1937. Physical examination showed an
ulcerated area 12.5 x 7 cm. with indurated, slightly
raised edges. The ulcer was deep and involved the
muscles of the back and neck. There were no palpable
regional lymph nodes. Several biopsies made before
and during treatment resulted in the diagnosis of basal
cell carcinoma.

Case No. 8911.—The patient, a 43 year old colored
male, was admitted August 24, 1939, with a history
of generalized arsenical dermatitis of nine years' dura-
tion. He had been treated for this condition in several
different hospitals without any improvement. Five
months prior to admission he developed progressively
growing ulcers on both hands. On examination in
this hospital he had large, warty, keratotic lesions
on the buttocks, shoulders, back, and the palmar and
dorsal aspects of the hands and fingers. The palmar
surface of the proximal phalanx of the right thumb
had an ulcer measuring 6 x 4 cm. There was also a
raised, ulcerated lesion 2.5 cm. in diameter on the
web between the thumb and index finger of the left
hand (Fig. 1), and there were large, ulcerating, metastatic nodes in both axillae. The two primary lesions were found on histological examination to be squamous cell carcinoma. The tumor on the right hand was

Case No. 8256.—A 41 year old colored male patient entered the hospital March 6, 1939. He stated that in 1927 he accidentally shot himself in the right lower leg. The wound healed after a short time and left a small scar that gave him no trouble. In the first week of December, 1938, he bruised the leg on a corn stalk and there soon appeared a bluish, discolored area surrounding the old scar. Several days later the area became painful, tender, and swollen. About one

Fig. 1.—Case 8911. Cutaneous tumors occurring on the hands of a colored man with arsenical dermatitis.

Fig. 2.—Case 6118. Cutaneous carcinoma on the back of a colored man.

grade 3 and on the left, grade 2. It is of interest to note that the larger lesion (6 × 4 cm.) had a higher grade of malignancy than the smaller lesion (2.5 × 2.5 cm.), although both tumors were said to be of the same duration (5 months).
Fig. 3.—Case 8236. Roentgenogram of the right lower leg of a colored man with cutaneous carcinoma. The tumor is posterior to a group of buckshot that had been present for 11 years.
month after the injury an ulcer developed and grew rapidly. The following month he noticed a large mass in the right inguinal region.

On examination in this hospital the lower third of the right leg on the posterior surface was found to have a large, infiltrating, ulcerated tumor $17 \times 13$ cm. In the inguinal region there were fixed, firm nodes ($4 \times 5$ and $10 \times 8$ cm.). On x-ray examination, there were found approximately 31 small, rounded, opaque shadows resembling buckshot anterior to the tumor in the right leg (Fig. 3). The biopsy diagnosis was carcinoma, squamous cell, grade 2.

**Case No. 1879.**—A 54 year old colored male was admitted to the hospital December 8, 1932. He gave a history of varicose veins since 1900. In 1924 he struck the anterior surface of the left lower leg. An abrasion developed, which was treated by the application of iodine. The area became inflamed and healed slowly but finally healed completely. In May, 1932, an ulcer developed in this area and gradually increased in size. On examination in this hospital, the inner aspect of the left lower leg just above the ankle was found to have an extensive, irregular, ulcerated lesion measuring $12 \times 10$ cm. and raised 1 cm. In addition there was considerable varicosity of the superficial veins of the left lower leg. Histological examination of the lesion showed carcinoma, squamous cell, grade 1.

**Case No. 11062.**—A 50 year old colored male gave a history of an extensive burn at the age of 4 years, with involvement of the left side of the back, left hip, and left thigh. The burn healed, leaving a non-symptomatic scar. About 30 years afterward, in 1926, an ulcer developed in the scar on the thigh. The ulcer varied in size and was at times large and at other times small, but never healed completely. He was admitted to the hospital June 16, 1941.

Examination showed an extensive scar extending from the inferior angle of the left scapula, across the back and buttocks, down the posterior lateral aspect of the left thigh, and terminating in the left popliteal space. In the scar of the lateral surface of the upper thigh was an ulcer $20 \times 13$ cm. A biopsy led to the diagnosis of carcinoma, squamous cell, grade 3.

**REFERENCES**

Cutaneous Carcinoma. IV. Analysis of 20 Cases in Negroes

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