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Experiences in the management of squamous cell carcinoma

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ABSTRACT. The best approach to the management of squamous cell carcinoma should be decided in the early stage. The authors obtained satisfactory results in their cases treated in the early stage by excision combined with −40°C cryotherapy. In the more advanced cases without lymph node involvement, exenteration followed by 50-66 gray radiation dosage is sufficient to prevent recurrence and eliminate microscopic lesions. In cases with lymph node involvement, the lymph nodes could be treated with operation and radiation. In these cases the use of cytostatic therapy should be reviewed.

Key words: early stage; excision; cryotherapy; lymph node involvement

INTRODUCTION

Squamous cell carcinoma of the conjunctiva is a relatively rare tumor which usually appears as a slightly raised, gelatinous or white plaque on the corneal scleral limbus¹,².

Although it is usually only locally invasive, intraocular + orbital extension, lymph node involvement and even distant metastases have been reported, especially if left untreated²-⁶. Even after a wide excision at the in-situ stage a recurrence may occur in 20-40% of cases³.⁷-⁹.

Considering the frequency of recurrence, combination therapy is preferred even at the in-situ stage, such as wide excision, radiotherapy, and cryotherapy. In addition, in late stages cytostatic therapy is needed⁵. The aim of these treatments is to prevent visual loss, pain and the development of metastases¹⁰,¹¹. This paper will review the cases of squamous cell carcinoma that presented during the period of 1980 to 1988 to Cipto Mangunkusumo Hospital, their management, results and possible improvements, using existing facilities.

MATERIAL AND METHOD

We reviewed 60 cases of patients with squamous cell carcinoma including three cases of carcinoma in situ, sent to the Department of Ophthalmology, Cipto Mangunkusumo Hospital, during the period of 1980 to 1988. Diagnosis was confirmed by histopathological examination.

Modes of treatment were:
1. Surgery
   a. **Excision with or without cryotherapy**
      - A wide conjunctival excision was performed by removing 2-3 mm of healthy tissue surrounding the lesion.
      - Sclerectomy
      - Keratectomy
      The cryotherapy unit was the one used for cataract surgery capable of reaching $-40^\circ$C.
   b. **Enucleation**
      Enucleation was performed without using implants.
   c. **Exenteration**
      Total exenteration was done.
   d. **Debulking**

2. **Radiotherapy**
   Radiotherapy in a dosage of 60 to 74 meV was given either after surgery or as a single mode of treatment for special cases. It was given in two fields (anterior and lateral oblique) to protect the contralateral eye. In cases where electron rays were used, these were given as a direct beam from the anterior direction.

3. **Cytostatic therapy**
   Bleomycin 25-30 mg/kg BW

4. **Combination therapy**

**RESULTS**

Of a total of 13 patients with lesions >5 mm in diameter without lymph node involvement, five underwent surgery and radiotherapy, one received surgery, radiotherapy and cytostatic therapy, two received only radiotherapy and five received surgery only.

Surgery consisted of exenteration (nine patients), debulking (one patient) and enucleation (one patient). The dosage of radiation was 50-66 gray. A satisfactory result was obtained in four patients who underwent surgery and radiotherapy, two patients with radiotherapy only, one patient with surgery only, and in one patient who received surgery, radiotherapy and cytostatic therapy.

Of the four patients who had lymph node involvement, confirmed by biopsy, three underwent surgery, radiotherapy and cytostatic treatment, and one patient underwent surgery and radiotherapy. Only one patient survived, the others died of distant metastases. Surgery consisted of exenteration (one patient), debulking (two patients), exenteration with R.N.D. (one patient).

**DISCUSSION**

Squamous cell carcinoma of the conjunctiva presents clinically as a white, rough, irregular,
The management of squamous cell carcinoma

TABLE 3. Mode of treatment and results in cases of conjunctival squamous cell carcinoma with lesions >5 mm

<table>
<thead>
<tr>
<th>No.</th>
<th>Lesion diameter</th>
<th>Lymph node involvement</th>
<th>Operation choice</th>
<th>Radiation dosage to the orbit</th>
<th>Radiation dosage to the lymph node</th>
<th>Cytostatic</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>50 Gy</td>
<td>50 Gy</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>2.</td>
<td>5-10 mm</td>
<td>(+)</td>
<td>exent RND (-)</td>
<td>66 Gy</td>
<td>40 Gy</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>3.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>(-)</td>
<td>60 Gy</td>
<td>(-)</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>4.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>50 Gy</td>
<td>(-)</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>5.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>66 Gy</td>
<td>(-)</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>6.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>enucl</td>
<td>?</td>
<td>?</td>
<td>(+)</td>
<td>Good</td>
</tr>
<tr>
<td>7.</td>
<td>5-10 mm</td>
<td>(+)</td>
<td>exent RND *</td>
<td>?</td>
<td>?</td>
<td>(+)</td>
<td>+Meta</td>
</tr>
<tr>
<td>8.</td>
<td>5-10 mm</td>
<td>(-)</td>
<td>debulk</td>
<td>?</td>
<td>?</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>20 Gy#</td>
<td>(-)</td>
<td>(?)</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>&gt;10 mm</td>
<td>(+)</td>
<td>debulk</td>
<td>60 Gy</td>
<td>50 Gy</td>
<td>(+)</td>
<td>+Meta</td>
</tr>
<tr>
<td>11.</td>
<td>&gt;10 mm</td>
<td>(+)</td>
<td>debulk</td>
<td>50 Gy</td>
<td>50 Gy</td>
<td>(+)</td>
<td>+Meta</td>
</tr>
<tr>
<td>12.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>(?)</td>
</tr>
<tr>
<td>13.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>(?)</td>
</tr>
<tr>
<td>14.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>(?)</td>
</tr>
<tr>
<td>15.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>(-)</td>
<td>?</td>
<td>?</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>16.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>Good</td>
</tr>
<tr>
<td>17.</td>
<td>&gt;10 mm</td>
<td>(-)</td>
<td>exent</td>
<td>(-)</td>
<td>(-)</td>
<td>(-)</td>
<td>Good</td>
</tr>
</tbody>
</table>

* RND (radical neck dissection).
# Patient refused further treatment.
+ Meta = died with metastasis.
Period of follow up: 2-9 years.

exophytic lesion which may be firmly attached to the globe.

There have been few reports in the literature of cases with advanced squamous cell carcinoma, which are the object of our study. Contrary to literature reports of male predominance\cite{1,3,8,11}, our cases showed an equal distribution between the two sexes. The high incidence among females may be explained by the fact that most Indonesian women work in the open air. In agreement with reports that claim ultraviolet\cite{3,8,12} as one of the suspected causes, we found numerous cases of squamous cell carcinoma in our tropical country. We encountered 60 cases in nine years compared to Eric et al. from the Mayo Clinic with 98 cases in 62 years, while Ratburn and Naquin found only six cases in 30 years\cite{13,14}. A possible mode of treatment in the early stages is wide excision combined with radiotherapy and cryotherapy. The literature states that combination therapy with wide excision and irradiation, with strontium in early cases gives a satisfactory result\cite{10,11}.

The complication rate with this method is minimal. Elkon and Constable found no complications\cite{15}.

It is also widely reported that a combination of wide excision with cryotherapy has recently been used, even though the success has still to be evaluated in the future. Since the lesion has a tree-like growth pattern, wide excision cannot always eliminate this growth, resulting in a 40% recurrence rate\cite{9}. As suggested, cryotherapy should be applied at $-70^\circ$C so that it can dissolve the tumor cells both on the surface and in the deep layers.
We have performed excision in 43 cases, 36 of whom also received cryotherapy. According to our results which were satisfactory, our mode of therapy may be considered as appropriate to handle such cases. We could not apply the cryotherapy at a temperature of \(-70^\circ\text{C}\) since the instrument is not available. We also cannot perform the radiation therapy using sources such as \(\text{e.g., strontium, which is actually easy, safe and inexpensive, for the same reason (not available).}\)

Surgery followed by radiation appeared to show good results in late stages without lymph node involvement. We found eight cases in good health during the follow-up period. In these cases, exenteration combined with radiation therapy of 50-60 Gy seemed to be sufficient to eliminate the microscopic lesions which may still exist\(^\text{15}\). The enucleation performed resulted in a recurrence which needed repeated surgery. It may be advisable to perform an exenteration from the beginning of the treatment. We encountered unsatisfactory results in four cases with positive lymph node involvement. A review should be done of the dosage of radiation used and the management prior to the radiation of lymph nodes. An increased dosage to a maximum of 70-75 Gy or a combination with surgery prior to or after subsequent radiation may improve the expected result in the same way as in skin tumors.

REFERENCES