

## DISTANT METASTASIS OF CARCINOMA IN THE MAXILLO-FACIAL REGION—RELATIONSHIP TO THE METHOD OF THERAPY AND TNM SYSTEM—

BY

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### ABSTRACT

Based upon the autopsy findings, the incidence of distant metastasis was studied to seek the relativity between the method of treatment and the TNM system at the time of initial examination on 31 cases with squamous cell carcinoma in the maxillo-facial region. The results are summarized as follows: 1) The incidence of distant metastasis among all of these cases was 58 per cent. 2) There was no significant difference in the incidence between the groups with radiation therapy and chemotherapy. 3) There was no relativity with the TNM system. 4) In the group with radiation therapy, the incidence at the "sites of the movable mucosa" was significantly higher than that at the "sites of the non-movable mucosa." 5) There was no relationship to the performance of radical neck dissection.

### INTRODUCTION

Distant metastasis is a very important problem in the treatment of carcinoma of the maxillo-facial region. However, it seems that there are not so many reports on the detailed research made on the clinical aspects and distant metastasis based upon the autopsy findings.

The main purpose of the present study is to study the relationship among the incidence of distant metastasis and the method of the treatment and the TNM system (U.I.C.C. 1968) at the time of initial examination for primary carcinoma.

### MATERIAL AND METHOD

Fifty-two patients died of cancer in the ward of the first department of oral surgery of the Tokyo Medical and Dental University Hospital and underwent autopsy during the ten-year period from 1964 through 1973. Among these cases, 31 cases, which were so-called primary cases and diagnosed as squamous cell carcinoma histopathologically, were studied in this study.

The primary sites of these cases were the tongue (nine cases), floor of the mouth (four cases), lower lip (one case), buccal mucosa (one case), maxillary antrum (seven cases),

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Received for publication, September 17, 1976.

hard palate (one case), upper gingiva (two cases), lower gingiva (five cases) and an unknown site (one case).

Five cases of T2, seven cases of T3 and 12 cases of T4 were classified (seven cases with carcinoma of the maxillary antrum are not included), and the majority of these cases were relatively advanced cases. On the other hand, 13 cases of N0, N1a, N2a and 18 cases of N1b, N2b, N3 were classified and in the majority of these cases metastases to the regional lymph nodes were suspected clinically (Tables 1 and 2).

We arranged in order the method of the treatment, because in the greater part of the cases some combined therapies had been performed. The method of treatment is indicated by using S for surgical treatment, R for radiation therapy and C for chemotherapy in every case, as shown in Table 3. Subsequently, according to the treatment of the first choice, the cases are classified into the three groups of surgical treatment (S Group), radiation therapy (R Group) and chemotherapy (C Group).

We defined distant metastasis as meta-

Table 1. Initial staging (U.I.C.C. 1968)  
— Primary sites —  
(Excluding seven cases of carcinoma in the maxillary antrum)

	Cases
T1	0
T2	5
T3	7
T4	12

Table 2. Initial staging (U.I.C.C. 1968)  
— Regional lymph Nodes —

	Cases
N0	4
N1a	6
N1b	8
N2a	3
N2b	6
N3	4

stasis to the organ or tissue below the level of the clavicle, according to Topazian<sup>1)</sup> and Hoye *et al.*<sup>2)</sup>, and studied the existence of distant metastasis independently of its extent.

## RESULT

Eighteen of 31 cases (58%) had distant metastases.

The incidence of distant metastasis in each group was as follows:

R Group: ten of 16 cases (63%)

C Group: seven of 14 cases (50%)

Table 3. Method of treatment

No. of case	Primary site	Method of treatment
1	Tongue	*SRRC
2	Tongue	RCSC
3	Tongue	RC
4	Tongue	RRS
5	Tongue	RSCS R/C
6	Tongue	R
7	Tongue	RRS
8	Tongue	RSR
9	Tongue	CRS
10	Floor of mouth	CR
11	Floor of mouth	CR
12	Floor of mouth	CSRRS
13	Floor of mouth	RR R/C
14	Lower lip	RSRCR
15	Buccal mucosa	CRS
16	Unknown	C
17	Max. antrum	RRC
18	Max. antrum	R
19	Max. antrum	RRS
20	Max. antrum	RR
21	Max. antrum	C
22	Max. antrum	CR R/C
23	Max. antrum	C
24	Hard palate	CSR
25	Upper gingiva	C
26	Upper gingiva	CRS
27	Lower gingiva	RS
28	Lower gingiva	RSCR
29	Lower gingiva	C R/C
30	Lower gingiva	C R/C
31	Lower gingiva	RS

\* Italics show the treatment of the first choice.

S Group: one of one case (100%)

Between the R and C Groups, a significant difference was not recognized.

In the R and C Groups, the incidence of distant metastasis by the T classification was as follows:

R Group

T2: three of four cases (75%)

T3: three of three cases (100%)

T4: three of seven cases (43%)

C Group

T3: three of four cases (75%)

T4: three cases of seven cases (43%)

In the two groups there was no relativity between the incidence of distant metastasis and the grade of the T classification.

Subsequently, in the R and C Groups the incidence of distant metastasis by the N classification was as follows:

R Group

N0: two of three cases (67%)

N1: six of nine cases (67%)

N2: two of three cases (67%)

N3: none of one case (0%)

C Group

N0: none of one case (0%)

N1: two of four cases (50%)

N2: four of six cases (67%)

N3: one of three cases (33%)

And also by clinical diagnosis of metastasis to the regional lymph node:

R Group

N0 and Na: six of nine cases (67%)

Nb and N3: four of seven cases (57%)

C Group

N0 and Na: one of four cases (25%)

Nb and N3: six of ten cases (60%)

In the two groups there was no relativity between the incidence of distant metastasis and the grade of the N classification.

Regarding the site of the primary lesion we differentiated the "sites of the movable mucosa" of the tongue, floor of the mouth, buccal mucosa and lip from the "sites of

Table 4. (D.M.=Distant Metastasis)

Group	"Sites of Movable Mucosa"		"Sites of Non-Movable Mucosa"	
	Cases	D.M. (%)	Cases	D.M. (%)
S Group	1	1(100)	0	0(0)
R Group	9	8(90)	7	2(29)
C Group	5	3(60)	8	4(50)
Total	15	12(80)	15	6(40)

Table 5. (R.N.D.=Radical Neck Dissection)

	Cases	D.M. (%)
Performance of R.N.D.	14	8(57)
Non-Performance of R.N.D.	17	10(59)

the non-movable mucosa" of the gingiva, hard palate and maxillary antrum. In the C Group there was no significant difference in the incidence of distant metastasis between the "two sites", but in the R Group the incidence at the "sites of the movable mucosa" was significantly higher than that at the "sites of the non-movable mucosa". And also the total incidence at the "sites of the movable mucosa" was two times as high as that at the "sites of the non-movable mucosa" (Table 4).

Moreover, we investigated the relationship between the incidence of distant metastasis and the performance of radical neck dissection. Consequently, there was no relativity between them (Table 5).

#### DISCUSSION

In the present study we chose the type of therapy given and the TNM system as two of the many factors influencing the development of distant metastasis. But there was no significant relativity between the incidence of distant metastasis and these two factors.

Hoye *et al.* (1962)<sup>2)</sup> described that no significant correlation could be established between distant metastasis and the type of the therapy given, which was surgical treat-

ment and radiation therapy, and O'Brien *et al.* (1971)<sup>3)</sup> also described that the method of treatment used, either being surgery or radiation therapy, did not affect the incidence of distant metastasis.

On the other hand, Urano *et al.* (1975)<sup>4)</sup> demonstrated experimentally that the incidence of metastasis was not influenced by any of the treatments, which were surgery, radiotherapy and chemotherapy.

It is considered that our present result is very valuable because we dealt with chemotherapy, using mainly Bleomycin and 5-FU, in the clinical cases.

Moreover, Probert *et al.* (1974)<sup>5)</sup> suggested that the grade of the TNM system did not affect the incidence of distant metastasis. The present result was similar to that of Probert *et al.*.

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