ORAL CANCER IN MALTA

H.M. SULTANA
M.D., B.Sc., D.M.R.T.
Consultant, Radiotherapy Department,
St. Luke's Hospital, Malta.

J.M. PORTELLI
B.Ch.D., M.D.S. (Manch.), F.D.S.R.C.S. (Eng.)
Lecturer, Department of Dental Surgery,
Royal University of Malta.
Hon. Senior Registrar,
St. Luke's Hospital, Malta.

Introduction

The incidence of oral cancer is influenced by a variety of recognized contributory factors (Wynder 1957). A proportion of these factors are national habits (Sanghvi 1955). As a consequence the incidence varies enormously from country to country and between different racial groups in the same country (Vogler 1962).

This study, covering a four year period 1969-1972, was undertaken with a view to putting into perspective the problem of oral cancer in Malta, an island with a population of 314,216, of whom 150,598 are Males and 163,618 are Females (1967 Census).

The material was collected from the Malta Cancer Registry which was established within the framework of the Department of Radiotherapy in 1969 and supported by a grant to one of us (H.M.S.) from the British Cancer Campaign. The registry collects its material from notification of new cancer patients and cancer deaths to the Health Department. (Notification of Cancer Act 1957). This is supplemented by information from the two pathology laboratories in the island. A yearly follow up is undertaken and questionnaires are sent periodically to consultants and general practitioners asking for full details about new cancer patients and also for follow up purposes. Because of the small area covered it is reasonable to believe that there is less undernotification than in most other cancer registries.

The information collected relates to the W.H.O. I.C.D. No. 140, 141, 142, 143, 144, 145.

The following data with regards to oral cancer were collected and computed:-

1. Incidence of the disease by sex, age and site.
2. The stage of the disease at the time of presentation based on the U.I.C.C. T.N.M. classification.
3. Oral cancer as a percentage of the

total number of malignancies.

4. Histological classification.

5. Treatment pattern of oral cancer in Malta.

In view of the absence of any known national habits of aetiological significance in the development of oral cancer, together with the small number of cases involved, it was felt that no purpose would be served in attempting to relate the incidence of the disease with known aetiological agents.

Incidence

The number of newly registered cases of oral malignancies during this four year period was 145 (Table I). The total number of malignancies reported in the same period was 2311. Oral cancer thus accounts for 6.2% of the total number of malignancies. This can be regarded as a relatively low percentage. A wide range of figures is reported from other countries (U.I.C.C. 1973) varying between 5% and 50%. In Malta cancer of the lip is seen to account for the majority of oral tumours — 55.9%.

With the exception of tumours of the salivary glands malignancies of the oral cavity were rarely encountered below the age of 45 years. (Table II). As a result of this observation, the incidence per 100,000 population was computed on the bases of the total number of malignancies and on the number occurring at or above the age of 45 years. Thus the incidence of tumours of the lip is seen to occur in 12.9 per 100,000 males while in the 45 years and over the figure of 44.2 per 100,000 is obtained (Tables III & IV).

Table I

Malignant Neoplasms of Buccal Cavity and Oral Mesopharynx (ICD 140-145) Registrations 1969-1972 inclusive

ICD No.	*Site*	*Males*	*Females*	*Persons*
140	Lip	78	3	81
141	Tongue	6	4	10
142	Salivary Glands	7	10	17
143/144	Mouth	13	5	18
145	Oral Meso-Pharynx	16	3	19
Total		120	25	145

Table III

Malignant Neoplasms of Buccal Cavity and Oral Mesopharynx (ICD 140-145) Annual incidence per 100,000 population

ICD No	*Site*	*Males*	*Females*	*Persons*
140	Lip	12.9	0.5	6.4
141	Tongue	1.0	0.6	0.8
142	Salivary Glands	1.2	1.5	1.3
143/144	Mouth	2.2	0.8	1.4
145	Oral Meso-Pharynx	2.7	0.5	1.5

Table II

Malignant Neoplasms of Buccal Cavity and Oral Mesopharynx (ICD 140-145) Distribution by sex and age

ICD No.	*Site*		*Below 30 yrs*	*30-44 yrs*	*45-59 yrs*	*60-74 yrs*	*75 yrs and over*
140	Lip	Males	0	9	28	25	16
		Females	0	0	0	2	1
141	Tongue	Males	0	0	3	3	0
		Females	0	0	1	3	0
142	Salivary Glands	Males	2	1	1	2	1
		Females	4	4	1	1	0
143/144	Mouth	Males	0	1	2	7	3
		Females	0	0	2	2	1
145	Oral Meso-Pharynx	Males	0	1	1	10	4
		Females	0	1	0	2	0

Table IV

Malignant Neoplasms of Buccal Cavity and Oral Mesopharynx (ICD 140-145) Annual incidence per 100,000 population 45 years and over

ICD No.	*Site*	*Males*	*Females*	*Persons*
140	Lip	44.2	1.7	21.5
141	Tongue	3.8	2.2	3.0
142	Salivary Glands	2.5	1.1	1.8
143/144	Mouth	7.7	2.8	5.1
145	Oral Meso-Pharynx	9.6	1.1	5.1

The incidence of oral malignancies is commoner in males than in females although cancer of the tongue is not uncommon in females. In our series 40% of tongue cancers was in females. No malignant disease of the tongue was seen below the age of 45 years. 58.8% of neoplasms of the salivary glands were in females as opposed to the low percentage of 3.7% for cancer of the lip, 29% for cancer of the mouth (I.C.D. No. 143,144) and 15.8% for cancer of the oral mesopharynx.

The incidence and distribution of oral cancer in Malta appears in general to be similar to that seen in other countries with an established Medical and Dental service (Table V). The figure for cancer of the lip in Malta, 6.4 per 100,000 population, is higher than that in most European countries and similar to that in Northern Ireland (Jones 1968).

Staging

Staging was based on the U.I.C.C. T.N.M. classification. As expected early diagnosis is especially evident in cancer of the lip. In only 6.0% of cases was metastasis to lymph nodes thought to have occurred at the time of presentation. In 71.6% of cases the lesion was superficial and 2 cm or less in diameter.

Lymph node involvement in cancer of the tongue was observed in 30% of patients, at the time of presentation, while 60% of lesions were superficial and less than 2 cm in diameter.

The picture with regards to the rest of the oral cavity is not as encouraging. While lymph node metastasis was observed in only 22.2% of cases, lesions larger than 2 cm in diameter or with deep infiltration constituted 72.2%.

Cancer of the oral mesopharynx was limited to one site in 21% of patients. Metastasis to lymph nodes was recorded in 57.9% in our series. The relatively late diagnosis of malignancies of the oral

Table V

Malignant Neoplasms of the Oral Cavity International Incidence per 100,000 population
(Binnie *et al.* 1972)

Country and Registration Period		*Lip ICD 140*	*Intra-oral ICD 141, 143, 144*	*Salivary Glands ICD 142*
Denmark	M.	6.8	2.2	1.2
1960-1962 mean	F.	0.6	1.1	1.5
Sweden	M.	4.0	2.4	0.8
1959-1961 mean	F.	0.3	1.7	0.8
Malta	M.	9.3	1.3	0.8
1969-1972	F.	0.4	1.2	1.3
England and Wales	M.	2.9	4.7	1.4
1960-1962 mean	F.	0.4	1.7	1.5
Israel	M.	6.0	2.2	1.1
1960-63 mean	F.	1.8	2.1	1.3

mesopharynx is well recognized, cervical lymph node metastasis often being the presenting symptom.

Histology

Except for cancer of the lip diagnosis of the vast majority — 90.6% of oral malignancies was confirmed by histological examination. Only 37.6% of tumours of the lip were examined histologically; all these were reported as Squamous Cell Carcinoma. Biopsy of the lip lesions was often omitted prior to radiotherapy because of the clinically obvious nature of the disease.

There were no unexpected findings from histological examination of lesions of the rest of the oral cavity. Squamous Cell Carcinoma. Biopsy of the lip lesions was from sites other than the salivary glands. Squamous Cell Carcinoma has been reported to account for approximately 80% of tumours of the buccal cavity and pharynx (Smith 1973). Reticulum Cell Sarcoma was observed in 15.8% of lesions of the oral mesopharyx.

Table VI

Malignant Neoplasms of Buccal Cavity and Oral Mesopharynx (ICD 140-145) Percentage of Oral Malignancies treated in Malta

ICD	*Site*	*Percentage*
140	Lip	100 %
141	Tongue	40 %
142	Salivary Gland	100 %
143/144	Mouth	66.7%
145	Oral Mesopharynx	36.9%

Treatment pattern

The relatively high incidence per 100,000 population of cancer of the lip gives cause for concern. This is no doubt due, in part, to the high level of actinic rays in the island (Sultana 1970).

Treatment of lip cancer is simple and except in the advanced cases the results are very gratifying. Both surgery and radiotherapy give a high cure rate. Since 1963, radiotherapy has been the treatment of choice at St. Luke's Hospital. All tumours of the lip in the series were treated in Malta (Table VI) 84% by radiotherapy alone, whereas 4% required a combination of both surgery and radiotherapy. Shielding of the oral cavity with lead during treatment decreases the risk of developing radiation caries and osteoradionecrosis.

Small early cancers of the mucosal aspect of the cheek are usually treated by an intra-oral applicator using 140Kv X-rays. Telecobaltherapy is indicated in the more advanced lesions Small areas of residual disease can be successfully treated by means of a gold grain implant. 67% of tumours of the mouth in this series were treated in Malta. 83% of these by radiation alone; the rest by a combination of surgery and radiotherapy.

Malignancies of the tongue are in general more difficult to treat. Some of the early anteriorly placed lesions can be treated by a limited diathermy excision followed by intra-oral medium voltage X-ray therapy. Tongue lesions at other sites were treated by hemiglossectomy, or Radium Needle implants. The latter form of treatment is not available locally and these patients were referred to the Royal Marsden Hospital for treatment.

In our series 40% of patients were treated in Malta, half of these being treated surgically.

Cancer of the oral mesopharynx is usually treated by telecobaltherapy. This type of treatment has only recently become available in Malta. As a result 63% of our patients were treated abroad. Treatment in Malta by conventional deep X-ray therapy was limited to those patients who were unable or refused to travel abroad and to patients who were only suitable for palliative treatment because of the nature of their disease.

The successful treatment of malignant disease of the oral cavity when diagnosed at an early stage is well documented. Oral cancer in Malta thus poses a great challenge to the Medical and Dental professions in the field of early diagnosis. When

one considers the small number of cases involved, the problems arising should not be unsurmountable.

References

BINNIE, W.H., CAUSON, R.A., GERRY, B.H., and SOAPER, A.E. (1972). Oral cancer in England and Wales. A National Study Morbidity, Mortality, Curability and Related Factors. Office of Population Census and Surveys H.M.S.O. London.

JONES, J.H. (1968). Br. J. Cancer *22*, 502.

POPULATION CENSUS 1967.

SANGHVI, L.D. RAD, K.C.M., and KHANOLKAR, U.R., (1955). Brit. Med. J. *1*, 111.

SMITH, C.J. (1973). Int. Dent. J., *29*, 82.

SULTANA, H.M. (1970). St. Luke's Hospital Gaz. *5*, 49.

U.I.C.C. (1973). Clinical Oncology. A manual for students and doctors. Springer Veslag, Berlin.

VOGLER, W.R., LLOYD, W.J., and MILMORE, B.K. (1962). Cancer, *15*, 246.

WYNDER, E.L., BROSS, I.J., and FIELDMAN, R.M. (1957). Cancer *10*, 1300.