

THE MANAGEMENT OF INTRA-ORAL CANCER AT THE HEAD AND NECK CLINIC OF THE JOHANNESBURG HOSPITAL

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An attempt has been made at the Johannesburg Hospital to put the treatment of oral cancer on a proper basis.

The first step was taken by Prof. D. J. du Plessis in May 1959 when he established a Head and Neck Clinic—a euphemism for a cancer clinic dealing with lesions involving the face, neck and oral cavity. The scope extends to the larynx, sinuses and orbital lesions—depending on the request of the specialist concerned.

The clinic is staffed by a radiotherapist, a general surgeon with special experience in head and neck surgery, an assistant surgeon, a plastic surgeon, speech therapist and a recent acquisition, an oral pathologist. There is also close liaison with the staff of the University of Witwatersrand Oral and Dental Hospital.

Decisions on management are made at the clinic and the patients are then treated either by the radiotherapist or the surgeon. However, during and on completion of treatment, follow-up is maintained at the clinic. This enables the various members of the clinic to assess accurately, without prejudice, the efficacy of the different modalities of treatment.

TREATMENT OF INTRA-ORAL CANCER

The treatment policy has not been consistent throughout the 6 years that the clinic has been in existence. Modifi-

cations on the surgical side have been necessary and the selection of cases for operation has become more stringent. Since 1962 Cobalt 60 teletherapy has virtually supplanted radium needling and conventional 250 Kv therapy.

The management of squamous carcinoma of the tongue, floor of mouth, alveolus of lower jaw, pillars of fauces and tonsillar region is conducted at present along the following lines:—

Initially cases are assessed into those that are considered operable and inoperable. The criteria for inoperability are as follows:

1. Poor general condition.
2. Primary lesions that are so extensive that surgical excision could not possibly circumscribe the lesion adequately (adequate excision implies a 2 cm. margin of normal unstretched tissue).
3. Fixed cervical nodes and metastatic nodes extending to the clavicles.
4. Distant metastases.
5. Anaplastic lesions, irrespective of size.

A biopsy is done in all cases and many require an examination under anaesthesia before a decision on operability is made. Most cases are confidently placed in one or other group. A few are classed as *borderline* and these are the cases that test the criteria for operability, which we regard as synonymous with curability. On occasions, known

borderline cases have been subjected to operation and, thus far, every one of these has recurred.

Inoperable cases are treated mainly by palliative radiotherapy. As must be expected, the results are poor, but are not comparable with surgical results which include no cases in this group.

Operable cases are treated either by surgery, radiotherapy, or a combination of both. Operable cases are placed in one of 3 categories.

Group A—an early lesion without evidence of cervical metastases.

Group B—a larger primary lesion but no evidence of cervical metastases.

Group C—two types of cases: (a) those recurring after radiotherapy and (b) those presenting for the first time with operable primary plus metastatic cervical nodes.

Group A—The Early Lesion

This is a lesion not more than 1 cm. in diameter. It is well differentiated, there is not the slightest suspicion of clinical metastatic nodes and it is not a recurrence from previous treatment.

This early lesion is treated by *local excision*. The fear is always present that this term may lead to the excision of inadequate little ellipses and so we prefer to call this operation *tri-dimensional excision*.

This operation was first used by us on 3 old and rather decrepit patients. Following this procedure, there was no disability, the stay in hospital averaged 1 week, and there was much less discomfort than when similar lesions were treated by radiotherapy or radium needles.

Tri-dimensional excision must be performed so that there is a clear margin of at least 2 cm. of normal tissue and, most important, a similar depth. It is utilized mostly in tongue and floor of mouth lesions and occasionally for the lower alveolar mucosa where bone, perforce, must be removed in order to satisfy the depth requirements.

It is unfortunate that few cases are referred with early lesions suitable for tri-dimensional excision. Only 10% of our series have been in this category.

Results of tri-dimensional excision. This operation has been performed on 21 lesions. There have been no local recurrences.

On reviewing this series 18 lesions were well selected. Unfortunately, 3 cases, in retrospect, were poorly selected. Two were recurrent primaries after radiotherapy and the third was a large lesion (2½ cm. in diameter).

All 3 of these developed metastatic cervical nodes, one of which was inoperable. The remaining 2 had radical neck dissections. One has died with recurrence in the neck and the other is well.

Of the 18 patients that were considered suitable for tri-dimensional excision, 2 have developed metastatic cervical nodes and have had radical neck dissections. Both are well 2½ years and 1 year after operation respectively.

Five patients have died from intercurrent disease. One of these suffered a coronary occlusion in the postoperative period, and the other 4 died of intercurrent disease, 5 years 2 months, 4 years, 2 years 11 months, and 2 years respectively after operation.

The 3 year follow-up results for tri-dimensional excision shows a total of 9 patients. Five are alive and free from cancer; four are dead, 3 from intercurrent illness and 1 from recurrent cancer in the neck.

Group B

This consists of operable primary lesions, outside the scope of the first group, but without clinically detectable cervical nodes.

This group is treated, with few exceptions, by radiotherapy. The follow-up of 36 determinate cases in this group, all treated primarily by radiotherapy, is interesting.

In 10 of the 36 the primary was controlled, but 5 of these subsequently developed metastatic nodes which were dealt with

by radical neck dissection. Two of these have died, both with distant metastases, and 3 survive with a follow-up of 5 years, 4 years and 2 years 9 months after operation.

The remaining 26 all developed recurrence of their primaries with or without glands. Six were inoperable, and the remaining 20 had operations. Two, already mentioned in the previous section, were wrongly treated by tri-dimensional excision; both developed metastatic nodes, one inoperable and the other controlled by radical neck dissection 10 months ago.

Eighteen were properly treated by a radical operation of the 'commando' type.

The results of the 18 'commando' procedures on patients with recurrent lesions after radiotherapy are as follows: Eleven are alive and well, there was 1 postoperative death and 6 have died with recurrent cancer.

The 3 year follow-up shows a total of 8 patients of whom 4 are alive and well; 3 have died of recurrent cancer and 1 died in the postoperative period.

Of the 36 determinate cases treated by radiotherapy initially, 20 patients are alive and free from cancer. Fifteen of the survivors were rescued by surgery. This should illustrate the value of therapist and surgeon working in a closely-knit unit where follow-up visits are frequent enough to pick up recurrences and metastatic nodes while still operable.

Group C

These cases come from two sources. *Firstly* a group just mentioned, whose primaries recur after radiotherapy and *secondly*, patients presenting for the first time with operable primaries, plus metastatic glands. All these cases are submitted to a 'commando' procedure. This is a mono-bloc operation designed to remove the primary widely in continuity with a radical neck dissection. In most cases the hemi-mandible is resected and provides the connecting link between the primary and the glands. Lesions at the commissure of the jaws, the pillars of fauces and soft palate also require a partial maxillectomy to ensure a safe margin of normal tissue.

On occasion we conserve the mandible and do a 'pull-through'. This operation requires stringent selection—the primary must be small and there should be at least a 2-cm. margin between the edge of the primary and the mandible. We have only found 5 cases suitable for the pull-through procedure.

There are 38 cases in this group, 18 being post-radiotherapy recurrences. This series includes lesions of the tongue, floor of mouth, lower alveolus, buccal mucosa, commissure of jaws, pillars of fauces, tonsils and adjoining soft palate.

Microscopically positive glands were present in 70% of the cases in this group. The scope of the radical neck dissection varies according to the site of the primary and the distribution of the metastatic nodes.

Included in this series is a female patient treated initially by a 'commando' pull-through for a squamous carcinoma of the right side of tongue and positive ipso-lateral nodes. A year later a contra-lateral node appeared and a radical neck dissection was performed on the left side. She has survived 5 years to date with no recurrence. Not so fortunate were 2 others of a similar type, one of whom died 24 hours after operation with a cerebrovascular accident and the other of recurrence of cancer.

We have not been enthusiastic about doing bilateral simultaneous radical neck dissections. Recently we performed a laryngectomy with a bilateral neck dissection in one stage and removed both internal jugular veins—but conserved the external jugular vein on one side with its connections to the upper portion of the internal jugular vein. This worked well and the patient was discharged 13 days after operation.

The results of 38 'commando' procedures are as follows: 22 are alive and well, 1 is alive with recurrent cancer, 15 are dead (8 with recurrent cancer, 4 from intercurrent disease and 3 postoperatively).

The 3 year follow-up total is 19 patients, of whom 10 are alive and well and 9 are dead; 4 with recurrent cancer, 3 from intercurrent disease and 2 postoperatively.

DISCUSSION

The 'commando' operation for intra-oral cancer is a development of the work of Kocher (1880) who excised cancer of the tongue via a submandibular incision and George Crile snr. (1901) who devised the surgical block dissection for malignant glands in the neck. Ariel¹ gives credit to Grant Ward (1932) for combining these two operations. The combined operation, however, was not a safe procedure until the advent of antibiotics, blood transfusion and intubation anaesthesia in the early 1940s.

The term 'commando' operation was coined by the house-staff of Memorial Hospital, New York, in 1942. They noted a similarity between the commando raids, then being carried out by the Allied forces on Dieppe, and the radical operations being regularly performed by Hayes Martin and his team.²

The value of the 'commando' operation is undoubtedly great and published results, as high as 63% 5-year survival rates,³ give an impression of great superiority over radiotherapy. Such comparisons are however not valid. The radiotherapist treats all-comers, including the inoperable case. The surgeon must perforce select his cases and in so doing, loads his series in his favour, particularly with lesions in group A.

The group B cases should not be used for comparison either. The radiotherapist is unlikely to present all controlled cases to the clinic. Certainly all recurrences are presented and thus the group B series is loaded with this type of case.

Anaplastic tumours, as noted previously, are considered inoperable, irrespective of size. Our experience with surgery on anaplastic tumours is that there are no survivors, while some have been controlled by radiotherapy. Another point relevant to this is that surgery interferes with radiotherapy and response in surgical recurrence is poor. In well-differentiated lesions we know of no method of forecasting the response to radiotherapy — but in anaplastic lesions we can at least foretell that surgery is doomed to failure and may prejudice the response to subsequent radiotherapy.

Pertinent, too, is the effect of radiotherapy on subsequent surgical procedures. We have used pre-operative irradiation in doses of up to 3,000 rads and this has not caused any difficulty. Full courses of \pm 6,000 rads, however, make surgery more hazardous. Healing is retarded and breakdown of intra-oral and cutaneous suture lines is common. Sloughing may expose the bared carotid artery and lead to fatal haemorrhage. This catastrophe has occurred as late as 8 months after operation.

Elective (prophylactic) radical neck dissections are recommended by many head and neck surgeons. Others are selective.⁴ The average incidence of cervical metastatic nodes in squamous carcinoma of the anterior two-thirds of the tongue is 50%, and most reports find that a percentage of negative clinical nodes are microscopically positive (and *vice versa*). We do not practise elective radical neck dissection in early cases. Our figures for the well-selected group A cases show an incidence of 2 metastatic cervical nodes out of 18 cases (11%). This figure is approximately the same as for cancer of the lower lip where elective radical neck dissection is not advised. However, the 'com-

mando' procedure which we advise for recurrent primary lesions always includes a radical neck dissection, irrespective of whether nodes are clinically absent or present. Toker,⁵ whose paper is based on material from our clinic, examined 31 specimens of which 21 contained positive nodes. Ten of the specimens were negative, so that in effect 34% of our radical neck dissections were elective.

Early diagnosis is undoubtedly the most favourable factor in successful treatment of oral cancer. The figures for group A cases should emphasize this. We often receive late cases at the Head and Neck Clinic, who reported to their medical practitioners with early cancers and were treated for months with various paints, pigments and proprietary mouth-washes.

There are only 2 lesions of the tongue that are more common than cancer. They are aphthous and traumatic ulcers. Both of these should heal within 7 days with or without treatment. Any ulcer lasting longer should be regarded as a squamous carcinoma until proved otherwise.

This report covers a total of 75 cases of whom 44 are alive and well.

The 3 year follow-up for the whole series totals 39 patients; 20 are alive and well (51%), 19 are dead — 11 from recurrent cancer and 8 from intercurrent disease or postoperatively. Excluding the 8 dead from causes other than cancer there are 31 determinate cases of whom 20 are alive and well (64.5%).

SUMMARY

1. A review of some aspects of the work of the Head and Neck Clinic of the Johannesburg Hospital is given.

2. Treatment policy for intra-oral squamous carcinoma is discussed. Cases are selected on a basis of separating the inoperable from the operable. The operable fall into 3 groups:

Group A are early lesions treated by tri-dimensional excision.

Group B are more advanced but with no metastases. They are treated initially by radiotherapy, but recurrences of primaries and metastatic cervical nodes are dealt with by radical surgery.

Group C are recurrences and *de novo* cases presenting with operable primaries plus metastatic nodes. These are treated by 'commando' procedures.

3. Results of the various procedures are given and a 3-year follow-up is included as a guide to the efficacy of such treatments.

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