

# Surgical management of patients with advanced buccal pouch cancer

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## Introduction

IN WEST MALAYSIA, buccal pouch cancer is a problem second only to cancer of the cervix. This is in keeping with the fact that the incidence of intra-oral cancer is highest in Southeast Asia.<sup>1</sup> Betel-nut and tobacco chewing is a strong initiator and promoter of cancer of the cheek.<sup>2-4</sup>

Most patients seek treatment only when the primary lesion is in an advanced stage. However, fortunately, apart from involvement of the lymph nodes in the immediate vicinity, distant metastasis is rare.<sup>5</sup> Radiotherapy alone is not the answer to this problem.<sup>1,6</sup>

## Material and Method and Discussion

Between August 1969 and July, 1970, 18 patients were surgically treated in the University Hospital. This is a documentation of our experiences in the surgical management of two groups of patients with advanced intra-oral cancers — (i) Patients with no pre-operative radiotherapy, and (ii) Patients who have had a full course of radiation in an attempt to cure. Few comprehensive reports have been made of patients treated surgically following attempts at curative radiotherapy, and the problem encountered.<sup>5,6</sup>

Table 1 shows total number of patients treated, average age, sex ratio, racial distribution and betel-nut chewing habit, and the ratio of patients with and without radiotherapy. The predominance of the Indians over other races is very striking.

In Table II, the reasons for subjecting patients to surgery subsequent to radiotherapy are tabulated. Nine of the ten patients in this group were subjected to surgery because they did not respond to curative radiotherapy. The initial "good response" to radiation is usually not sustained.<sup>1,6</sup>

The type of excisional surgery carried out is summarised in Table III. Radical neck dissection was done only when there were obvious clinical lymph nodes involvement or when, at surgery, frozen section showed tumour in the neck glands.

A transverse skin crease lip-splitting incision is made. If radical neck dissection is to be carried out, another lower transverse incision is made. These incisions are adequate for radical surgery. Wound healing is much better than in the more commonly used vertical incision. Complete surgical extirpation of the diseases with adequate functional and aesthetic reconstruction and the rehabilitation of the patients in the shortest possible time, is easier managed with these incisions.

At the time of surgery, one gets the impression of cutting into solid tissue in the post-irradiated areas. There is almost total avascularity!

Table IV shows the type of reconstruction done. Primary closure was effected when there was adequate soft tissue left over, both lining and coverage, after excisional surgery. This should leave the patient with no serious functional or aesthetic deformity.

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**TABLE I**

Patients treated in University Hospital, Kuala Lumpur, between August 1969 and July 1970

Total number	18		
Average age	58 years		
Sex ratio	M : F = 11:7		
Ethnic groups	Indians	Malays	Chinese
		10	6
Betel nut	10	6	—
Radiotherapy	No	Yes	10
		8	

**TABLE II**

Irradiated Patients — ten

Reasons for Surgical Treatment:

1. Failed radiotherapy	4
2. Local recurrence with radionecrosis of mandible	5
3. Radionecrosis of mandible	1
	10

**TABLE III**

Excisional Surgery

	Non-irradiated cases	Irradiated cases	Total
A. Monoblock suprahyoid dissection with wide local excision, including the appropriate segment of the mandible	4	7	11
B. Radical neck dissection on the same side and as in above	4	3	7
C. Bilateral radical neck dissection and as in above	—	—	—
	8	10	18

All excisional surgery was carried out under frozen section control

One flap only was used for the intra-oral lining in seven patients. This was always a temporal flap, based on the superficial temporal vessels.

When there was both inadequate skin and lining coverage, two flaps were used, temporal for lining and deltopectoral for coverage.<sup>11-14</sup> This was done in three of the irradiated patients.

In Tables V and VI, the complications, morbidity and mortality in the two groups of patients are enumerated. It is obvious that surgery following attempts at conventional curative irradiation is fraught with serious drawbacks. When compared with Table IV, it is clear that the type of reconstructive surgery carried out was almost identical and equal in number in the respective groups except in the two-flap technique. The only significant difference is the almost total avascularity in the post-radiation cases. Wound infection and breakdown were major problems. These occurred in seven of the ten irradiated patients and resulted in major catastrophes. In comparison, only

two in the non-irradiated group developed wound infection and these were of a minor nature. Carotid bulb blow out was a problem in two patients and caused their death. Both were from the irradiated group. This is a definite and serious hazard in patients subjected to surgery following radiotherapy. It is not clear how this can be prevented, except perhaps by not undertaking surgery following curative irradiation or by modification of previous methods of administering irradiation.

Table VI shows interesting figures with regards to number of surgical procedures and average hospital stay of patients. As compared to the non-irradiated group, the duration of hospitalisation and the number of procedures is doubled in the irradiated group and this is because of the complications that are enumerated in Table V, the most prominent being infection and wound breakdown, fistula formation and flap necrosis.

Delaying of pedicle flap was carried out whenever thought necessary.

**TABLE IV**  
**Reconstruction**

	Non-irradiated cases	Irradiated cases	Total
A. Primary closure	4	4	8
B. One flap (for intra-oral lining)	4	3	7
C. Two flaps (for intra-oral lining and skin cover)	—	3	3
D. Bone graft	1	—	—
	8	10	18

Flap used: 1. Temporal flap  
2. Deltopectoral flap

**TABLE V**  
**Complications and Mortality**

	Non-Irradiated Cases — 8	Irradiated Cases — 10
1. Wound infection and breakdown	2	7
2. Fistula	—	4
3. Flap necrosis	1	3
4. Carotid bleeding	—	2
5. Septicaemia	1	—
6. Recurrence	—	1
Death	1	1

Coronary thrombosis  
Haemorrhage from carotid artery 3rd post-op week.

**TABLE VI**  
**Surgical Procedures and Average Hospital Stay Per Patient**

Non-irradiated cases			Irradiated cases		
No. of patients	—	8	No. of patients	—	10
Total no. of surgical procedures	—	14	Total no. of surgical procedures	—	42
Average no. of procedures per patient	—	2	Average no. of procedures per patient	—	4
Average hospital stay per patient	—	6	Average hospital stay per patient	—	12
		Weeks			Weeks

**Observations**

In the current state of our knowledge and experience, we consider that surgery should be the mainstay in the treatment of these patients with advanced disease, perhaps combined with planned pre-operative low dosage radiation which is followed by immediate surgery to cut down morbidity, mortality and recurrence rate.<sup>6,9</sup>

There should be organised communication between various groups of people interested and in-

involved in prevention and treatment of this disease — dentist, oral surgeons, radiotherapist, medico-social worker, cancer surgeons and reconstructive surgeons.

**Summary**

This is a documentation of our experience in the surgical management of 18 patients with advanced intra-oral cancer, ten of whom had had a full "cura-

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tive" course of radiotherapy pre-operatively. Attention is drawn to the problems of surgery following attempts at curative radiotherapy. It is hoped this initial report will serve as a guide for future planning and management of such cases.

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### Addendum

Since preparing this paper, a few patients have now been treated surgically after undergoing controlled preoperative radiation with very encouraging results.

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