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Early oral intake after reconstruction with a free flap for cancer of the oral cavity

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Abstract

To allow healing of the surgical wound patients are traditionally given nothing by mouth for 6–12 days after resection and reconstruction of a cancer of the oral cavity. Our aim was to assess the impact of introducing oral intake within 6 days postoperatively. Consecutive patients who had resection and reconstruction of a cancer of the oral cavity with a free flap within an 8-year period were selected from the head and neck database. Personal and social data; type, stage, and site of the tumour; type of resection and free flap; postoperative complications; and duration of hospital stay were recorded, supplemented by review of casenotes for the time that oral intake was started, duration of nasogastric and tracheostomy intubation, and changes in body weight. Patients in the early oral intake group started oral intake within 5 days postoperatively, and those in the late group began feeding from postoperative day 6. The duration of hospital stay in the early group was significantly shorter than that in the late group. There was, however, no difference in the morbidity, including orocutaneous fistula, between the two groups. The duration of nasogastric and tracheostomy intubation was shorter, and weight loss was less, in the early group than in the late group, but not significantly so. Early oral feeding does not increase the morbidity for patients having resection and reconstruction with free flaps for cancers of the oral cavity. Early oral intake is associated with a shorter hospital stay, and this may have implications for improved postoperative outcome.

Keywords: Oral cavity; Cancer; Surgery; Free flap; Early oral intake; Complications

Introduction

Only 1% of all cancers affect the oral cavity,[1,2] but they are associated with 40% mortality.[3] Advanced stage, anatomical site, and expectations of functional recovery make resection and reconstruction of these cancers challenging. Various techniques have been used for reconstruction after resection,[4–6] and postoperative complications relate to the site and extent of resection, the type of reconstruction, and whether or not preoperative radiotherapy has been given.[6] It is commonly thought that the risk of an orocutaneous fistula, a potential complication after intraoral reconstruction, increases when oral feeding is introduced early, as the use of the tongue and pharyngeal musculature is thought to place added stress on the suture line and food may contaminate the wound.

Little has been written about the effect of early oral feeding after resection and reconstruction of such cancers. Traditionally, patients are given nothing by mouth for an arbitrary 6–12 days before oral intake is resumed.[7,8] Research in patients after laryngectomy has shown that oral intake within 6 days of operation promotes restoration of the biomechanics of swallowing[9] and does not increase morbidity.[9,10] The studies are based on the premise that these patients are able to

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swallow their own saliva within 24 h of operation, so early oral intake of clear fluids does not pose an increased risk of fistulation.[9]

In this study we have investigated the impact of early oral intake on the postoperative outcome of patients having resection and reconstruction with a free flap for cancer of the oral cavity. In particular we recorded the duration of intubation (nasogastric and tracheostomy), postoperative weight loss, duration of hospital stay, and the incidence of postoperative complications including orocutaneous fistula.

Patients and methods

Consecutive patients who had resection and reconstruction with a free flap for cancer of the oral cavity were identified from our head and neck database according to a protocol approved by the Multiregional Ethics Committee. Patients who had had previous operations or radiotherapy for oral cancer, or pre-existing intractable aspiration, were excluded from the study.

Patients who were expected to require prolonged nutritional support, such as those having postoperative radiotherapy to the primary site and the neck bilaterally, routinely had a percutaneous gastrostomy tube inserted preoperatively or in the immediate postoperative period. The remaining patients had nasogastric tubes placed at induction, or immediately after the tracheotomy, before the operation.

Clinical and personal details of the patients, the type, stage, and site of the primary tumour, the type of free flap, the presence and type of postoperative complications, and duration of hospital stay were obtained from the database. The body weights at admission and discharge were used to calculate postoperative weight loss.

Patients were divided into: the early oral intake group for those who started taking fluids orally by postoperative day 5 ($n = 29$); and the late oral intake group, which comprised those who began oral intake from postoperative day 6 ($n = 25$). The decision to introduce oral intake depended on individual surgeons' preferences, and one surgeon (STT) routinely started early feeding as soon as the patient was able to dispose of saliva. Other surgeons prescribed late oral feeding. The patients in both groups were discharged when they had sufficiently recovered from the operation.

Statistical analysis

The Shapiro Wilks *W* test of distribution showed that most data were not normally distributed, so non-parametric tests were chosen to assess the significance of differences between the two groups. Specifically, we used the Mann–Whitney *U*-test to find out whether the groups differed in age, duration of stay, percentage of postoperative weight change, duration of nasogastric and tracheostomy intubation, if present, and the number of complications. The presence or absence of any local complications (such as orocutaneous fistula, complete or partial failure of the flap, and haematoma) and systemic complications (such as myocardial infarction and pneumonia) were also recorded. The χ^2 test was used to calculate the significance of any differences in the number of local complications or total number of complications between the two groups. There were too few systemic complications to apply statistical analysis, and these are therefore presented descriptively.

Results

Sixty-nine patients entered the study. Fifteen were excluded because they had had a previous operation or radiotherapy, or both for cancer of the oral cavity ($n = 12$) or their hospital records were missing ($n = 3$). The remaining 54 patients had 57 free flap reconstructions analysed with 29 in the early group and 25 in the late group. Type and stage of the tumour, and the type of resection, management of the neck, and free flap reconstruction used are shown in Table 1. Tracheostomy tubes were placed in 25 patients in the early group (86%) and 23 in the late group (92%), where there was concern that the airway might be compromised in the immediate postoperative period (Table 2).

Four patients in the early group and 5 in the late group were given percutaneous gastrostomies. Of the remaining patients who had nasogastric tubes, 25 were in the early group (86%) and 23 in the late group (76%) (Table 2).

The patients in the early group stayed in hospital for a significantly shorter time than those in the late group ($p = 0.013$). However, there were no significant differences between the groups in mean (SD) age (early group = 60 (15.4) years; and late group = 62 (26.5) years), mean (SD) duration of nasogastric intubation, mean (SD) duration of tracheostomy, mean percentage postoperative weight change (Table 2), or total number of complications (early group = 8, late group = 12).

A total of 57 free flap reconstructions were done for 54 patients; 3 operations had to be repeated to salvage failed flaps (2 in the late group and 1 in the early group). There were seven total failures (3 in the early group, and 4 in the late group), and 4 partial failures (1 in the early group and 3 in the late group). Failure of a flap was associated with an increased duration of stay in both groups but the numbers were too small for statistical analysis.

Four patients in the late group developed orocutaneous fistulas (7%), 3 of which were associated with partial or total failure of the flap compared with none of the patients in the early group. Two patients in this group had haematomas that required evacuation. In the late group, 1 patient had a myocardial infarction and subsequently developed pneumonia, a second developed congestive heart failure, and a third a cardiac arrhythmia. In the early group, 1 patient had a myocardial infarction. Both patients who had myocardial infarction had a small rise in troponin T concentrations and they made an uneventful recovery without invasive cardiac investigations or management.