

Management of oral cancer in a tertiary care hospital

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ABSTRACT

Objectives: Oral cancer is the 3rd most common cause of malignancy in Saudi Arabia after lymphoma and leukemia. The high incidence of oral cancer in this region is attributed to frequent use of tobacco (Shamma). In this report we have reviewed the mode of treatment and subsequent outcome of 228 oral cancer patients at the Oral Maxillofacial Surgery Unit of the Armed Forces Hospital, Riyadh, Kingdom of Saudi Arabia.

Methods: In this retrospective study the case notes of 228 oral cancer patients treated at the Armed Forces Hospital, Riyadh were reviewed. Age, sex, presenting symptoms, location of cancer in oral cavity, habit of tobacco chewing, mode of treatment and complications as a result of treatment were recorded.

Results: Out of 228 patients 149 were males and 79 were females with age ranging from 23 to 82 years. The majority of patients (58%) had tobacco chewing habit. Most of the patients received radiation therapy (98%),

some times with adjuvant chemotherapy. Seventy-three percent of patients underwent surgery followed by radiotherapy, whereas 2% had surgery alone. Recurrence of the disease was observed in 56% of the patients over a period of 5 years following initial treatment.

Conclusion: A close association between tobacco chewing and oral cancer was observed. It is concluded that post surgery radiotherapy is a highly successful method of treatment in patients with oral cancer. Cases with a history of shamma usage did not show deep invasion even when the tumor was large. They also showed good prognosis after excision but more resistant to radiotherapy comparing with those cases with no history of shamma usage. This point needs further investigation.

Keywords: Oral cancer, prevalence, management, epidemiology, retrospective studies, shamma.

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Cancer of the oral cavity is of a heterogeneous group, and its etiology as well as its frequency and presentation are varied. This is a common disease throughout the world, and its growing rate is also a global phenomenon.¹⁻³ The disease is one of the 10 most common causes of death worldwide, and it is estimated that the rate of oral cancer will continue to rise for years to come. The Kingdom of Saudi Arabia (KSA) appears also to be caught up in this epidemic. In this sub-region, several researchers have found that cancer of the mouth is the 3rd most common malignancy in the males after lymphomas and leukemia and the 4th in females after lymphomas, leukemia and breast cancer.⁴⁻⁸ Although the overall incidence of oral cancer has risen in the

last 2 decades, not much has been achieved in improving prognosis.⁹⁻¹¹ At the present time, approximately half of all oral cancer patients still die of the disease within 5 years, and this is in spite of the advances in radiotherapy, chemotherapy and surgical management.¹² Life style, attitude and above all else, tobacco use or shamma as it is called in this sub-region, have an intimate causal relationship with the development of oral cancer. In fact, the tumor's increased frequency in KSA is blamed on shamma¹³ and in 1989 SEBAI estimated the incidence of cancer in Saudi Arabia to be around 800 new cases per one million population yearly, and that more than 70% came into hospital at an advanced stage.¹⁴ In the mouth, the conditions to diagnose cancer early are

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favorable. But in spite of this, the patients are often seen at late stages of T3 and T4. This delay in diagnosis, both anamnestic and iatrogenic, might result from erroneous diagnosis and unsuccessful initial therapy. The diagnostic delay is further compounded by the unwillingness of patients to seek treatment early. This research has been conducted to verify the prevalence of oral cancer in Riyadh Al Kharj Hospital Program (RKH) using hospital data with regard to age, sex, site of cancer occurrence, stage of the disease, treatment modality and mortality. It is a review over a period of 8 years (1992-1999) of 228 cases of oral cancer treated in the Division of Oral and Maxillofacial Surgery (OMFS) of the Military Hospital in Riyadh.

Methods. A retrospective study of the patients who attended the Oral and Maxillofacial Clinic with a histologically diagnosed squamous cell carcinoma of the oral cavity was undertaken. These patients were referred from all regions of KSA to RKH, and cover an 8 year period from January 1992 to December 1999. The records of all cases of squamous cell carcinoma treated in the OMFS of RKH was retrieved for analysis. There were available files of 234 patients with diagnosed carcinoma of the oral cavity between the period under review. Adequate clinical information was available in 228 patients, and therefore, only these patients are included in this study. The patients were classified according to sex and age. The site and size (stage) of the tumors was also noted where available. Other demographic data including family history, presenting complaint, smoking habit and relevant medical history were collected for each patient. Records of the radiographic findings, which included plain x-rays of the jaws, computed tomography (CT) and sometimes magnetic resonance imaging (MRI) were obtained. In this manner, it was possible to assess local extension of the cancer, and whether there was infiltration of contiguous anatomic structures or evidence of bony erosion. The records also showed that following initial examination and tentative diagnosis, a biopsy was taken, the site and method of biopsy being determined. The commonly used methods were incisional biopsy and fine needle, especially in those cases where a nodal biopsy was undertaken. The treatment protocols for each patient were determined from the case notes. These were surgical ablation, radiotherapy and chemotherapy. If chemotherapy was prescribed, it would be in principle the first modality, with evaluation for response after each pulse. In cases of radiotherapy, dosage fields and sequencing pre and postoperative were determined. Cases of bone involvement had surgery as a modality in principle. Locoregional control was assessed one month after completion of treatment. Patients were reviewed every 2 months in

Table 1 - Age Distribution of oral cancer RKH (1992-1999) (n = 228).

| Age (Years) | Male | Female | Total (%) |
|-------------------------------|------------|-----------|------------------|
| 0 - 10 | - | - | - - |
| 11 - 20 | - | - | - - |
| 21 - 30 | 1 | 1 | 2 (0.9) |
| 31 - 40 | 3 | 2 | 5 (2.2) |
| 41 - 50 | 11 | 9 | 20 (8.8) |
| 51 - 60 | 79 | 27 | 106 (46.5) |
| 61 - 70 | 35 | 29 | 64 (28.1) |
| 71 - 80 | 17 | 10 | 27 (11.85) |
| 81 - 90 | 3 | 1 | 4 (1.75) |
| Total | 149 | 79 | 228 (100) |
| RKH-Riyadh Al-Kharj Hospital. | | | |

the first year and then every 3 months for the 2nd year. Thereafter, patients were seen at intervals of 6 months up to 5 years and then annually. During each visit, evidence of recurrence either at the primary site or lymph node was sought. In case of suspicion, confirmation was assessed with a rebiopsy and histological examination.

Results. The sample comprised 228 patients, which was composed of 149 males and 79 females with an average of 50.2 years. The youngest patient was 23 years and the oldest 82. The demographic data is shown in **Table 1**. The mean age at the time of tumor diagnosis was 56.8 and the age ranged from 23 to 82 years. Of all the patients, 132 admitted using tobacco (58%). The common presenting signs and symptoms were jaw and neck swelling, pain numbness, and bleeding. These findings are summarized in **Table 2**. Many of the patients reported more than one symptom. Thirty-seven

Table 2 -Presenting signs and symptoms of 228 patients with oral cancer.

| Signs and symptoms | % |
|---|----|
| Jaw and neck swelling | 51 |
| Facial pain | 48 |
| Numbness trigeminal distribution | 29 |
| Bleeding | 33 |
| Others (headache, sore throat, fatigue, nausea) | 27 |
| *Some patients showed more than one sign and symptom. | |

Table 3 - Overall sex and site incidence of oral cancer RKH (1992-1999) (n=228).

| Site | Male | Female | Total (%) |
|--------------------|------------|-----------|------------------|
| Tongue | 65 | 37 | 102 (44.7) |
| Floor of the mouth | 29 | 13 | 42 (18.4) |
| Retromolar Trigone | 20 | 15 | 35 (15.35) |
| Lip | 17 | 7 | 24 (10.5) |
| Alveolus | 11 | 5 | 16 (7) |
| Maxilla | 7 | 2 | 9 (3.95) |
| Total | 149 | 79 | 228 (100) |

Table 4 - Postoperative complications in patients who had surgery with or without irradiation.

| Post-op Complication | N |
|-----------------------------|----|
| Hematoma formation | 7 |
| Fistula | 11 |
| Wound infection | 22 |
| Partial flap necrosis | 5 |
| Total flap necrosis | 1 |
| Systematic complications | 8 |
| op - operative; N - number. | |

percent presented with 2 or 3 symptoms. Only 42% presented with a single complaint. The tongue was most frequently involved in 102 cases (45%). The next common site was the floor of the mouth, followed closely by the retromolar trigone, which is often referred to as the coffin's corner due to its occult nature. **Table 3** summarizes the location of the oral cancer being reviewed. In many cases, the orthopantomogram supported by CT or MRI were very useful in the assessment of local extension with involvement of contiguous anatomic structures such as bony invasion and the paranasal sinuses. Biopsy was routinely carried out in all cases, even where the patient came with a referral indicating the diagnosis. The most common approach in our hospital was incisional biopsy at the primary site, which was carried out in 87% of the patients. Removal and examination of suspectedly affected lymph nodes was the next most common method of diagnosis, and this was achieved in 15%. With the popularization of fine needle aspiration in recent times, we employed this method in 8% of the cases. Ninety-eight percent of the patients were treated with radiation therapy. Adjuvant chemotherapy was added to the treatment regimen in 32% of the cases. Surgery was the only treatment modality utilized in 2%. Seventy-three per cent underwent surgery and postoperative radiotherapy and the rest were treated by radiotherapy alone (21%). There were 47 neck dissections including supraomohyoid neck dissection, modified neck dissection and radical neck dissection. En bloc mandibulectomy was achieved in 17 patients and marginal mandibulectomy in 11 patients. Of the en bloc osteotomies, 10 were reconstructed with Arbeitsgemeinschaft fuer osteosynthesfragen (OA) Association for the Study of Internal Fixation (ASIF) reconstruction plates and 7 with osteocutaneous fibula flaps. There were no intraoperative complications. But postoperative complications occurred in 31 patients. These included hematoma

formation, 2 of which required subsequent evacuation. In addition, we encountered wound infection, and in some cases with partial or total necrosis of the flap. Details of complications encountered postoperatively are shown in **Table 4**. There was no death during hospital stay. The follow-up time began in the first month after treatment and the minimal follow-up time for all patients was 5 years. During the follow-up period, 56% developed recurrent disease. Of these, local recurrence was most common and occurred in 73%. Cancer recurrence was detected within the first 2 years. It can, therefore, be assumed that a follow-up period of up to 5 years will identify nearly all cases of recurrence.

Discussion. The purpose of this study was to evaluate the outcome of oral cancer management based on a sample of patients presenting for treatment at a single department of the institution RKH. This series of 228 patients represents an interesting and heterogenous group. There was preponderance of male patients in the ratio of 1.89:1, and this is similar to the findings of other researchers.¹⁵⁻²⁰ With regards to age, in an epidemiologic evaluation of all cancer patients from the King Faisal Specialist Hospital and Research Center (KFSH & RC), the age of oral cancer patients ranged from 44-74 years.¹⁵ This is in agreement with our findings, with the highest peak between 51-60 years, followed by the 61-70 year-group. With regards to signs and symptoms, neck and jaw swelling was the most common presenting sign. Pain was also a frequent sign that led patients to seek treatment. Other commonly described presenting symptoms were lymphadenopathy, headache, recurrent sore throat and bleeding. Radiologic studies were found invaluable, and were useful in the diagnosis of bony erosion and destructions. In this respect, it was common routine to request for plain

tomography, CT scanning, and MRI in both coronal and sagittal projections. In this series, bony invasion was found in 28 patients. Treatment of these patients invariably involved radiation therapy, consistent with accepted practice.²¹⁻²³ Of the patients in this series, 98% received radiation therapy and 32% with adjuvant chemotherapy. Surgery was employed in a total of 75%. The decision on the type of surgical approach was determined by the presumptive histological diagnosis obtained at incisional biopsy in conjunction with the clinically obtained data on the dimensions of the tumor and evaluation of the CT and MRI.²⁴⁻²⁸ We agree that radiotherapy combined with surgery is highly efficient in the control of oral cancer. The indications for pre or postoperative radiotherapy are legion and in continuous evolution.²¹⁻²³ Despite a broad range, the mean time to recurrence was 22.8 months. In this series, the disease-free 5 year survival rate was 27%. There was a slight survival advantage demonstrated by female patients. However, in our group men also showed a much higher incidence of oral cancer than women. Cancer of the tongue was the most common finding, followed by the floor of the mouth and retromolar fossa. It has been postulated that tobacco chewing (shamma) in KSA is a strong causative factor.¹³ It is interesting to note that those cases with a history of shamma usage did not show lymph node metastasis, even when the tumor size was large. Furthermore, they showed good prognosis after excision, even without radiation therapy. On the other hand, they more or less proved resistant to radiotherapy. We, therefore, suggest that the primary treatment for this case is surgery. Further investigation is required in this respect.

In conclusion, one should benefit from the clinical expertise exhibited in the output of the OMFS while being mindful that accurate and appropriate data is extremely difficult to obtain from a survey of medical records.

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