

Head and Neck Tumors- An Analysis of First One Hundred Cases Managed at Maxillofacial Surgery Unit Mayo Hospital Lahore.

S A CHEEMA R A WARRAICH

Department of Oral and Maxillofacial surgery, Mayo Hospital, Lahore
Correspondence to Dr. Saeed Ashraf Cheema,

A total of 100 cases of head and neck tumors were managed during period of three years. These included 61 males and 39 females with age ranging from 4 years to 75 years, mean age being 41 years. Squamous cell carcinoma was the most common tumor i.e., 47 cases. It was followed by ameloblastoma i.e., 15 cases. Follow up of 72 cases was available, eight patients died during this study while rest of the cases i.e., 20 patients, did not show for follow up. Among 72 cases, there was recurrence of the growth in 27 cases while 45 cases did not have recurrence till the time of completion of this preliminary study. Reconstruction with regional or distant flaps was needed in 46 cases.

Key words: Head and neck tumors,

Head and neck region represents a relatively small anatomical area but gives rise to a wide range of neoplastic conditions¹. These tumors are difficult to treat because they involve closely situated distinct anatomical structures of cervicofacial region. Involvement of the vital structures traversing the neck area makes problem worst. As these tumors are situated very near to the skull base, intracranial spread may change the scenario of management all together².

The incidence of these tumors varies widely from one part of the world to another depending upon the cultural variations, personal habits and geographical differences. Malignant tumors of head and neck region account for approximately 5.6 % of all body tumors in USA. Almost double of this figure has been reported from Middle East where the incidence of head and neck tumors ranges between 12.2 to 18.4% of the whole body tumors. It accounts for 50% of all cancers in India^{3,4} while a frequency of 12.8% has been reported from Bahawalpur area in Pakistan^{5,6}

We present statistics of the first one hundred cases managed at our department during a period of three years along with literature review.

Material and methods

This study was conducted at Department of Oral and Maxillofacial Surgery, Mayo Hospital Lahore. First one hundred cases of head and neck tumors, managed at the department, were included in the study. Only surgically treated cases were entered into the study while all those cases found inoperable or refused surgery were excluded from the study. All the cases were diagnosed preoperatively on basis of histopathology and this was reconfirmed after the surgery.

A complete workup of all these cases was carried out before surgery and it included detailed history, general physical examination, local examination and investigations like complete blood exam, complete urine exam, x-ray chest, ECG, ultrasonography and CT scan of the area in most of the cases. As a routine these cases were presented in tumor board consisting of a maxillofacial surgeon,

clinical oncologist, pathologist, ENT surgeon and plastic surgeon. Usually opinion from physician regarding the medical fitness was sought preoperatively and suggested parameter obtained. In most of the cases excision and reconstruction was done at the same time while in some of the cases a report of tumor free margins was awaited. Facility of frozen section was not available in any of these cases. Cases were discharged postoperatively after removal of drains and stitches. These patients were advised follow-up after every month during first year and then after every three months. Cases advised radiotherapy were referred immediately after the wound and suture line got healed.

Results:

A total of 100 cases of head and neck tumors were managed in three years i.e., from June 1999 to June 2002. These included 61 males and 39 females. Age ranged from 4 years to 75 years, mean age being 41 years. Follow-up period ranged from 2 months to 3 years. Out of this total, 20 cases lost contact during follow up and other 8 patients died during the study period. Among the 72 cases left for study growth recurred in 27 cases i.e., 37.5% while 45 cases i.e., 62.5% did not show recurrence till the time of completion of this study. (Table 1) Squamous cell carcinoma was the most often operated tumor in this series i.e., in 47 cases. This was followed by ameloblastoma, diagnosed in 15 cases. Giant cell tumor was the diagnosis in 7 cases and basal cell carcinoma in other 5 cases. Growth was adenocystic carcinoma in 4 cases. Malignant fibrous histiocytoma was diagnosed in two patients. Both of them were females and presented with huge growths involving mandible with a history of just 20-30 days. Rest of the tumors are shown in the table. (Table 2)

Out of a total of 47 cases of squamous cell carcinoma, lower alveolus was the site of origin in 20 cases, cheek mucosa in 15 cases, tongue in 5 cases, maxilla in other 4 cases while lower lip, floor of mouth and forehead was responsible in one case each.

Ameloblastoma was the second most frequent tumor in the series and mandible was site of origin in 11 cases while it originated from maxilla in rest of the 4 cases.

Reconstruction with local or distant flaps was required in 46 of the cases. In 18 cases pectoralis major flap was utilized. In 17 of the cases it was utilized as myocutaneous flap while in one case it was utilized as osseomyocutaneous flap. Latissimus dorsi myocutaneous flap was used to reconstruct the post-ablative defect in 8 cases. Staged reconstructions with deltopectoral fasciocutaneous flap were carried out in 5 cases. Cheek advancement flap served the purpose in 3 of the cases while tongue flap was used in 2 cases, and sternomastoid muscle flap in one case. In two of the cases reconstruction was accomplished with free flaps. (Table 3)

Table 1 Follow up

	SCC	Ameloblastoma	Others	Total
Recurrence	17	01	09	27
No recurrence	14	14	17	45
No follow-up	16	-	04	20
Expired	7	-	01	08

Table 2. Histopathology

Histopathology	n=
Squamous cell carcinoma	47
Ameloblastoma	15
Giant cell tumor	07
Basal cell carcinoma	05
Adenocystic carcinoma	04
Pleomorphic adenoma	02
Pleomorphic carcinoma	02
Lymphoma	02
Malignant fibrosing histiocytoma	02
Malignant melanoma	02
Sarcomas	02
Others	10

Table 3 Reconstruction options

Reconstruction option	n=
Pectoralis major	18
latissimus dorsi	8
Temporalis muscle	6
Deltopectoral flap	5
Cheek flap	3
Tongue flap	2
Scalp flap	1
Sternomastoid	1
Free flap	2

Discussion

Head and neck tumors represent significant diagnostic and therapeutic challenge. The frequency of various tumors of the region varies in different parts of world depending upon various geographical locations, environmental influences, social and cultural variations and role of known and unknown etiological influences¹

Most common tumor in our series was squamous cell carcinoma and this is in accordance with the other reports, which speak it as the most frequent histopathological entity in the region^{7,8,9,10}. Injudicious use of Pan, betel nuts, and naswar plays a definite role in causation of oral

cavity cancer. Similar are the observations quoted from India where it is as high as 50% of all tumors⁴. Further evidence comes from a study from south-west Saudi Arabia where this tumor accounts 15.1% of the head and neck tumors, a figure almost three times of normal percentage. Here traditionally used shama, an admixture of tobacco, is held responsible as etiological factor.⁵ Although tongue has been said the most common site for intraoral malignancy¹¹ it was lower alveolus gingival, which was most frequently involved in our series. The second most commonly involved site was cheek mucosa. In this series, tongue was the third most common site for squamous cell carcinoma.

Follow up period in this study was too short in some of the cases that a true recurrence rate could not be quoted but in this preliminary study out of 47 cases of squamous cell carcinoma only 31 cases were there for follow up. We lost 9 of the cases for follow up while other 7 cases expired during the course of treatment. Of those left for study 17 cases showed recurrence and 14 cases are free of growth till the time of study. The factor to be noted is that most of the cases were in stage III & VI. Long term figures of the disease free patients remains awaited.

Ameloblastoma was the second most common tumor treated at our department. The exact origin of the neoplastic epithelium is not clear but strong resemblance to ameloblasts supports an odontogenic origin.¹² These tumors are most frequent odontogenic benign but locally aggressive neoplasm consisting of proliferating odontogenic epithelium with various amounts of surrounding fibrous tissue.¹³ Many a treatment modalities have been advocated^{14,15}. Surgical approach is usually accepted as treatment of choice as other modalities like curettage and enucleation have a much higher recurrence rate of upto 100%¹⁶. We also agree with the finding on the basis of results obtained in this series. All the patients were dealt surgically with a recurrence rate of 7% only.

Pectoralis major myocutaneous flap proved to be the workhorse in this series as this was utilized in 18 cases for post ablative reconstruction. This flap brings bulk, can be used as single paddle or bipaddle for providing skin cover and or lining of the oral cavity^{17,18}. Latissimus dorsi was the second most common flap used in the series. This muscle also brings bulk, reaches areas where pectoralis major will be difficult choice and also can be used single paddled or bipaddle. The only draw back is that position of the patient needs to be changed during the operation and morbidity is increased as compared to the pectoralis major myocutaneous flap^{19,20}. Although deltopectoral flap serves good function as well this is a fasciocutaneous flap which needs delay at times and reconstruction is staged one. Free flaps have revolutionized the head and neck cancer surgery but require sophistication, expertise and facilities available to be benefited by the advent of this technique.

One thing that is quite obvious from this study is the fact that level of awareness among people regarding the

disease needs to be raised. This lack of awareness results in late presentation. Similarly follow up is also very poor. In recent studies improved cure rates have been shown in some of the intraoral tumors and this improvement may be attributed to increased awareness, earlier diagnosis, and/ or better treatment^{21,22,23}

Conclusion

We can conclude that squamous cell carcinoma is the most prevalent tumor in the head and neck region. It poses diagnostic and therapeutic challenge, which is reflected by high recurrence rate. Surgery remains to be the treatment of choice for odontogenic tumors. There is a need to raise the awareness among people about head and neck tumors so that they may present at an early stage where the results are more encouraging.

References

1. Farooq A, Saood A, Asif M, Afsar A, Noshin W Y. Malignant tumors of head and neck region-a retrospective analysis. JCPSP2001; 11(5): 287-290.
2. Warraich RA, Cheema SA. Head and neck tumors-reconstructive options for soft tissue defects. Ann of KEMC 2001.7(1): 11-13.
3. Shanta V, Krishnamurthi S A. A study of etiological factors in oral squamous cell cancers. Br J. Cancer 1959;13:381.
4. Malaowalla AM, Silverman S, Meni NJ, Bilimoria KF, Smith LW. Oral cancers in 57518 industrial workers of Gujrat , India. Cancer 1976;37: 1882-6.
5. Alghamdi SA, Malatani T, Kameswaran M, Khurara P. Head and neck cancer in a referral center in Asir region. Ann S A. 1994;14: :250-53.
6. Alam MI, Ahmed R. Frequency of tumors in Bahawalpur,Pakistan 1984-88.JCPSP 1993; 3(3) :73-5
7. Khan SM, Gillan J Nasreen S Zia S. Cancer in north west Pakistan. Pak J Med Res 1996; 35: 167-9.
8. Ahmad J. Hashmi MA, Naveed IA, Hussain A, Armin D. Spectrum of malignancies in Faisalabad: 1986-1990.Pak J Path.1992; 3: 103-10.
9. Mustafa AS, Ali A. A survey of malignant tumors in D.I. Khan Division.(Letter)Pak .J. Path 1992 ; 3 127-8.
10. Jafarey NA, Zaidi SHM. Cancer in Pakistan. JPMA 1987; 37: 178-183.
11. Jackson IT. Intraoral tumors and cervical lymphadenopathy. Grabb and Smith's Plastic Surgery. 5th edition. 1997; 439-452.
12. Niamat U, Naveed Y. A rare case of malignant ameloblastoma with multicentric presentation. JCPSP 11 (8) 514-515, 2001
13. Pindborg JJ, Kramer IRH. Histological typing of odontogenic tumors, jaw cysts and allied lesions. In: International histological classification of tumors No 5. Geneva, World Health Organization, 1971.
14. Lownie JF, Lurie R. Diagnosis and management of odontogenic tumors. Surg annu 21:73-96,1989.
15. Gardner DG, Pecak AMJ. The treatment of ameloblastoma based on pathologic and anatomic principles. Cancer. 46:2514-19, 1980.
16. Sehdev MK et al. Ameloblastoma of maxilla and mandible. Cancer 33:324-33,1974.
17. AA Shah, WM Malik. Head and neck reconstruction: A three years experience. Annals of K.E.M.C. 5: 19. 1999.
18. Back SM. et al. The pectoralis major myocutaneous island flap for reconstruction of the head and neck. Head neck surg. 1:293, 1979.
19. Olivari N. The latissimus flap. Br J. Plast Surg. 29: 126, 1976.
20. Quillen C.G. Latissimus dorsi myocutaneous flaps in head and neck reconstruction. Plast. Reconstr Surg. 63: 664,1979.
21. Cancer facts and figures.1978.New York: American Cancer Society, 1977.p.3.
22. Cruse C W. ,Radocha RF. Squamous cell carcinoma of the lip. Plast ReconstrSurg.1987;80:787-791.
23. Zitsch RP. Carcinoma of the lip. Otolaryngol Clin North Am 1993;26:265-277.