Squamous Cell Carcinoma of the Lip &Cheek in Four Medical Centers in Baghdad. (Retrospective&prospective Study).

Ahmed Salah Hameed

Babylon university-College of Dentistry.

Abstract

This study is comprised of retrospective and prospective groups. Both groups were treated in four medical centers in Baghdad.

The retrospective group was chosen to present the data about the distribution of the lip&cheek carcinoma in those four medical centers in Baghdad during the period from October 1991 to the end of October 2000.

The cases of lip&cheek mucosa carcinoma were analyzed according to the age, gender, site, occupation, clinical stage, clinical presentation, histopathology and socioeconomic status.

The mean age of lip carcinoma patients was 61.5 year and male to female ratio was 2.3:1. The average duration of the lesion was 18.8 months .seventy- six cases were treated by surgical excision, 22 cases by radiotherapy and 39 cases by a combination of both.

Regarding the cheek mucosa carcinoma the mean age was 61.5 year. Male to female ratio was 1.16:1 and the average duration of cheek mucosa carcinoma before treatment was 17.5 months.

Twenty three cases were treated by surgical excision, 16 cases by radiotherapy and 15 cases by a combination of both.

The prospective group of lip &cheek mucosa carcinoma was studied in the same four medical centers in Baghdad .the total number of lip carcinoma was 23 cases and 13 cases of cheek mucosa carcinoma .this group is seen during the period from October 2000 to the end October 2001.

الخلاصة

هذه الدراسة تتكون من مجموعتين: الحالات السابقة (أي خلال العشرة سنوات الماضية) والحالات الجديدة (أي خلال فترة البحث) . المجموعتان كانتا قد تم علاجهما في اربعة مراكز طبية في بغداد. المجموعة الاولى (الحالات السابقة) كان قد تم اختيارها لتبين انتشار سرطان الشفة والخد في هذه المراكز الاربعة في بغداد من الفترة تشرين الاول لسنة 1991 والى نهاية تشرين الاول لسنة 2000 .

كان عدد حالات سرطان الشفة في تلك الفترة 137 حالة و54 حالة لسرطان بطانة الخد وهذه الحالات كان قد تم تحليلها حسب العمر ,الجنس,موقع الورم,العمل,المرحلة السريرية للورم,الحالة السريرية الظاهرة,التحليل النسيجي, والحالة الاقتصادية للمريض.

كان معدل العمر في حالة سرطان الشفة 61.5 ونسبة اصابة الرجال الى النساء كانت 2.3:1 و معدل الفترة الزمنية للورم كان 18.8شهرا.67 حالة كانت قد عولجت جراحيا, 22 حالة تم علاجها بالاشعاع الذري, والمجموعة الاخيرة كان علاجها جراحيا واشعاعيا معا.

فيما يخص سرطان النسيج المبطن للخد فان معدل العمر كان 61.5 ونسبة اصابة الرجال الى النساء كانت 1,16:1, ومعدل الفترة الزمنية كان 17.5شهراً .

عشرون حالة كانت قد عولجت جراحيا,16 حالة بالاشعاع الذري و15 حالة بالاشعاع والعلاج جراحيا معا.

اما دراسة الحالات الجديدة للمرضى المصابين بسرطان الشفة والخد , الدراسة كانت قد اجريت في نفس المراكز الطبية الاربعة في بغداد ,عدد المرضى المصابين بسرطان الشفة في هذه المجموعة كان 23 حالة, وعدد المرضى المصابين بسرطان الخد كان 13 حالة . هذه المجموعة كانت قد اجريت من تشرين الاول 2000 ولغاية تشرين الاول 2001 م.

Introduction

1.1. lip carcinoma:

The lip is the most common site of oral cancer; there are approximately 3.600 new cases per year in the united state(John Andrew et al, 2000). The risk factors of lip cancer includes : smoking (especially pipe),actinic radiation,trauma,occupation such as fishing and farming, inflammatory process(e.g actinic cheilitis), viral infection and a number of endogenous factors(Anderson, 1971; Spitzer et al ,1975).

The fast majority of squemous cell carcinoma of the lip are well- differentiated (Bert W,1993).

There are three types of squamous cell carcinoma of the lip: exophytic; verrocus type; and ulcerative. the exophytic tumor are probably the most common and the verrocus tumors are rare. Ulcerative type is minimally elevated and ulceration occurs early (Stell and Maran's,2000).

1.2. cheek mucosa carcinoma :

carcinoma of the cheek mucosa is an uncommon tumor and comprises only 5% of oral cancer(William Caroll et al,1998).carcinoma of the cheek mucosa like carcinoma of the other site of the oral cavity in that there is a male predominance 3:1 (Schwartz,1994).

It has been shown that leukoplakia has high association with the cheek mucosa carcinoma. Trauma could be considered the most causative factors in the development of cheek mucosa carcinoma. Whether this trauma is thermal, mechanical, or chemical.(Skolnik *et al* ,1972).

There are three distinctive clinicopathological types of cheek mucosa carcinoma:exophytic , ulceroinfiltrative , and verrocus.(John Batsakis,1979).

Surgical therapy is often simpler and more cost effective .larger lesions require combined surgery and radiation.(Head&neck cancer symposium, 1997).

The 5- year survival rates was 76.2% for early stages and 31.2% for the late stages of cheek mucosa carcinoma treated by surgery or radiation or by combined therapy.(Krishnamurthi S. *et al*,1971).

The cases of the lip&cheek mucosa carcinoma in the retrospective and prospective groups were collected from the four medical centers in Baghdad are as follows:

1- The department of the oral&maxillofacial surgery, plastic&reconstructive surgery in the medical center of special surgery.
2- The department of the oral &maxillofacial surgery,plastic&reconstructive surgery in Al-Wasiti hospital.
3- Oral&maxillofacial department in Al-Karkh hospital.
4- The institute of radiotherapy and nuclear medicine in Baghdad.

This study is directed to estimate the number of the lip & cheek mucosa carcinoma that were recorded in that four medical centers in Baghdad during the last ten years.

Also this study is directed to analyze the epidemiological and clinical behavior of the lip &cheek mucosa carcinoma in retrospective &prospective groups.

In addition to that, we try to evaluate the out come results of different treatment modality that has been used in the treatment of the lip &cheek mucosa carcinoma.

Aim of the study:

1- Revising the cases of the lip&cheek mucosa carcinoma in the four medical centers in the last ten years.
2- Evaluate the treatment modality of the lip &cheek mucosa carcinoma that was used in those four medical centers.

Review of the literature

2.1 lip carcinoma:

2.1.1- incidence: carcinoma of the lip comprises 2.2% of all cancers in the united states and 15% of all cancers (Ashly *et al* ,1965). In a study of (Maj. Joseph *et al*,1974) at brook general hospital ,151 cases of squamous cell carcinoma of the lip

were reviewed all patient were white and 97% (145 of 151)were women , the highest incidence occurred in the fourth, fifth and sixth decade of life .

2.1.2 Etiological and predisposing factors:

Cancer of the vermilion border of the lip has been associated with both exogenous &endogenous risk factors:

A-The exogenous group includes:

1. Tobacco smoking.
2. Solar radiation, rural residence and out-door occupation.
3. Dry dusty climate.
4. Use of alcohol.
5- Recurrent herpetic infection.
6. Trauma and poor oral hygiene.

B- The endogenous group:

Several diseases have been considered to be endogenous risk factors in lip cancer:

1. Xeroderma pigmentosum.
2. A vitaminosis.
3. Actinic cheilitis.
4. Hyperkeratosis.
5. Syphilis.
6. Discoid lupus erythematosis.
7. Candidiasis.

2.1.3 Treatment of the lip carcinoma:

1. Surgical excision.
2. Destructive methods and these include:
   a- Curettage and desiccation: this method is mainly used for treatment of leukoplakia as shaving (Brufan C.,1985).
   b-Radiation therapy(which must be adjusted according to the extent of the primary lesion,volume of tissue involved and lymph nodes involvement.(Georgiade Gregory et al, 1992).
   c- Cryotherapy.
   d- 5- flurouracil therapy and cytotroxic therapy.
   e- Laser by carbon dioxide laser with a defocused beam, surgeons described excellent cosmetic results. The neodymium-YAG/ laser proved useful for field destruction.

   Neck dissection may be needed for certain patients.

The treatment of lip carcinoma involved two consideration the first is therapy for the primary lesion and the second is the approach to the regional lymph nodes.(Leonard Wurman *et al,* 1975). Small lesion of the lip , surgery and radiotherapy produce similar cure rates and the method of treatment is dictated by the anticipated cosmetic and functional result .(Million RR *et al,* 1994).

(John Hay, 1997) showed that most of the lip cancer is squamous cell carcinoma and the primary treatment is by radiotherapy, surgical excision with suitable reconstruction is reserved for recurrent carcinomas or advanced primary lesions involving bone/or with regional metastasis.(Vikram *et al,* 1985)suggest that for recurrent lip cancer the treatment as follows: if radiation therapy was used initially surgery is the preferred treatment. If surgery was used initially, surgery, radiation therapy or a combination of these may be used. Elective treatment of the neck is seldom recommended for patients with squamous cell carcinoma of the lower lip and a clinically negative neck.because few of those patients have cervical metastasis. In

these individuals the recommended approach often includes neck dissection and radiation therapy (John Andrew *et al*,2000).

2.1.4. Prognosis of lip carcinoma:

The survival rates for lip cancer treatment either with radiotherapy or surgery are very similar ,both modalities particularly for early disease are expected to give cure rates greater than 85% as expected the cure rates drops significantly as the size of the tumor increase ,curability fall to approximately 60% for lesions measuring 2-3cm in diameter and to around 40% for tumor larger than 3cm. there is also relationship between histological grade and curability; there is a 95% 3- year cure rate for grade I carcinoma but only 45% respectively for grade II, III and IV(Stell and Maran's,2000).recurrent squamous cell carcinoma at the site of the primary lesion carries a worse prognosis and may be an indication of an aggressive neoplasm.the presence of mandibular involvement drops the 5- year survival to 30% (Bert W ,1993).

The prognosis for patient with lip carcinoma is significantly poorer when multiple cancers are present.(Gitt-Ha *et al,*1989).

2.2 carcinoma of the cheek mucosa:

2.2.1 Incidence:

Cheek mucosa carcinoma make about 5% of all oral cancer and like other sites there is a significant male predominance 3:1(Schwartz,1994).

Carcinoma of cheek mucosa is an uncommon and comprises only 5% of oral cavity carcinoma, cheek mucosa carcinoma occurs more frequently in men and is often seen in individual who use smokeless tobacco (William Caroll *et al,* 1998).

2.2.2 Etiology of cheek cancer:

The etiology of cheek cancer is similar to that of oral cancer in general but the most etiological factors that are associated with cheek cancer are as follows:

1- Tobacco smoking.
2- Highly alcohol intake.
3- Betel nut chewing (smokeless tobacco).
4- Dental conditions and these are includes:malhygiene ,oral sepsis, ill-fitting denture ,broken teeth ,badly carious teeth.
5- Chemical or thermal trauma from various materials.

Premalignant and predisposing factors that most commonly associated with cheek cancer:

1- Leukoplakia and erythroplakia.
2- Bullos or erosive lichen planus.
3- Plumer Vinson syndrome.
4- Oral submucous fibrosis.
5- Chronic candidal infection.

2.2.3 Treatment modality of cheek cancer:

(Bloom *et al,*1980) stated that surgery was highly effective when tumor was confined to the cheek mucosa ,in fact the variety of the reconstructive technique currently available has encouraged the surgeon to perform even aggressive resections when necessary. It is unreasonable to suggest that treatment (surgery) of the clinically negative neck may be appropriate in all patients except those with the smallest tumors T1 if results are to be improved.

Surgery and radiotherapy are equally effective in the early lesions while for the advanced disease the therapy should always be combined (Tartara-S *et al,*1990).elective neck therapy for stage I cheek carcinoma is not warranted because of relative low incidence of occult metastasis ,stage II,III and IV disease with No necks

should undergo ipsilateral elective neck therapy.neck dissection is indicated in patients with clinically positive cervical lymph nodes. An enblock resection along with neck dissection is performed and may necessitate partial mandibulectomy or partial maxillectomy ,for advanced tumor ,total parotidectomy may be indicated for tumors extending posterolaterally towards the masseter muscle. postoperative radiotherapy should be considered if lymph nodes confirmed to contain metastasis(Pramord K Sharma , 1990).

2.2.4 Prognosis of cheek cancer:

In a study of (Krishnamurthi S. *et al*,1971) he found that only two factors emerge as a significant in the cure of cheek mucosa carcinoma :a-extent of the disease and b-adequate therapy. other factors such as age,sex,hormonal status,diet,nutritional status, economic class and dental status of little importance .In general the prognosis of ulceroinfiltrative carcinoma of cheek is the poorest of the group.carcinoma in a localized retrocommissural location have the best prognosis (Dhawan *et al* ,1983). (Fang-F.M *et al* ,1997)found that 3-year acturial locoregional control rate over all survival rate and the disease specific survival rates were 64% 55% 62% for stage II, III &IV respectively.

Materials and methods

This study is divided into the following:

1- Retrospective group.
2- Prospective group.

The retrospective group included the patients seen in the period between 1991-2000. The total number of lip carcinoma in this study was 137 cases and the cheek mucosa carcinoma was 54.

The prospective group of the patients was seen in the period from the beginning of October 2000 to the end of October 2001.

The total number of lip carcinoma in this group was 23 cases; the total number of cheek carcinoma was 13 cases.

The data of the retrospective and prospective groups were collected from the four medical centers mentioned previously.

Methods: the case sheet was used for all cases of lip and cheek mucosa carcinoma, this case sheet include the following:

-patient's (name,age,gender,occupation,address,residence).
-chief complain.
-past medical history.
-family history.
-social history.
-past surgical history.
-habit/predisposing factors.
-clinical examination.
-staging.
-clinical appearance of the lesion.
-associated sign and symptoms.
-investigation.
-treatment (surgery, radiotherapy, chemotherapy, and combination).
-surgical operation notes.
-clinical progression.
-follow up. Date:

The results

In the retrospective group of the lip carcinoma the mean age was 61.5 year and the ratio of male to female was 2.3:1 . In the prospective group the mean age was 57 year and the ratio of male to female was 1.3:2.

In the retrospective group of cheek mucosa carcinoma the mean age was 61.5 year and the ratio of male to female was 1.16:1 .in the prospective group the mean age was 57.5 and the ratio of male to female was 1.16:1 (the details of the results could be seen in the tables1& 2).

Discussion

The number of the cases of the lip and cheek mucosa carcinoma during the last ten years that was obtained from the four medical centers in Baghdad showed that there is no uniform distribution of the incidence of the lip and cheek carcinoma during the last ten years. The irregularities in the distribution of the number of the cases may be attributed to the following:

1- Difficulties in the transportation and other facilities.
2- Establishment of new centers of oral&maxillofacial and plastic surgery in the south and north of Iraq.
3- Inadequate recording of the cases in the medical centers mentioned previously.
4- Referral of the patients to other specialties rather than oral&maxillofacial and plastic surgeon.

1. Lip carcinoma:

In the retrospective group of the study the male to female ratio was 2.3:1 and in the prospective group the ratio was 1.3:1 which mean that the male to female ratio was some what equal in both groups of the study. males and females were nearly equally effected by lip carcinoma which does not agree with other studies (Bert W,1993;Antonio Dez-D *et al*,1995)where male to female ratio were 9.2:1 and 75:1 respectively.

The average duration of lip carcinoma in the retrospective group was longer than that found in the prospective group.In both groups the duration of the lesion in males and females was nearly equal. the differences in the duration of the lesion in the retrospective group may be due to recall bias, as some patients may not remember when the lesion has started or possibly due to incorrect recording of the information by the doctors who have written the case sheets

There were more urban resident among the lip carcinoma patients than rural residents in the present study .this may be explained by that urban resident are more exposed to chemicals and an air pollution than rural residents, and that the habit of smoking and alcohol intake is more frequent in cities than rural areas, in addition to the society habit.

This finding does not agree with that found in the studies of (Antonio Dez-D *et al,* 1995;Lo-Russo *et al*,1990)where rural residents were more affected by lip carcinoma than urban residents.

In our study lower lip was affected by lip carcinoma more than the upper lip followed by the commissure.this may be attributed to the fact that the lower lip is more exposed to sun light and heat,where as upper lip is shaded, and this is very close to the finding of other studies(Lo-Russo, 1990;C.Waynecruse, 1987;Bert W, 1993).

In the present study the metastasis of the lip carcinoma to the cervical lymph nodes was very low which agrees with the finding of(C.Waynecruse,1987;and Hosal-In ,1992).

Table (1)
Lip carcinoma

Study	Sex		Mean age		Mean duration		Residence		Occupation			Habit		Site				HISTOPATH.			Stages				C. C.				
	Male	Female	Male	Female	Male	Female	Urban	Rural	Out door.	Indoor	Unknown	Smoking.	Alcohol	Lower lip	Upper lip	Commisur	Unspecified	Well	Mod.	Poorly	I	II	III	IV	Ulceration	Leukoplakia	Swelling	Erythroplakia.	Coliflower
Retrospective	70.7(46)	29.93(41)	61.115	62.488	18.438	19.683	66.42(91)	33.58(46)	38.7 (53)	37.2 (51)	24.1 (33)	77.37(106)	8.03(11)	76.64(105)	16.79(23)	5.84(8)	0.73(1)	49.64(68)	36.5(50)	6.57(9)	54.01 (74)	27.01 (37)	8.76 (12)	10.22 (14)	46.72 (64)	1.46 (2)	31.39(43)	3.65(5)	13.87(14)
Prospective	56.52(13)	43.48(10)	60.923	52.1	14.308	13.000	56.52(13)	43.48(10)	(52.2) 12	(47.8)(11)	0 0	73.91 (17)	4.35(6)	65.22(15)	17.39(4)	4.35(1)	13.04(3)	34.78	56.52(13)	8.70(2)	34.78(8)	39.13(9)	8.70(2)	17.39(4)	69.57(16)	0	17.39(4)	8.70(2)	4.35(1)

This table represents the percentage of the following:
Sex, age, Residence, occupation, habit, site, histology, stages, and chief complain. Retrospective and prospective group of lip carcinoma.

Table (2)
Cheek mucosa carcinoma

Study Group	Sex		Mean age		Duration		Residence		Occupation		Habit		Site			HISTOPATH.			Stages				C. C.				
	Male	Female	Male	Female	Male	Female	Urban	Rural	Working	Non	Alcohol	Smoking	Anterior	Middle	Posterior	Well.	Mod.	Poorly	I	II	III	IV	Ulceration	Leukoplakia	Swelling	Erythroplakia	Coliflawer
Retrospective	53.70(29)	46.30 (25)	61.517	61.560	17.448	8.7600	72.22(39)	27.78(15)	40.74(22)	59.25(32)	9.26(5)	66.67(36)	24.07(13)	50.0(27)	25.93(14)	53.7(29)	33.33(18)	7.41(4)	24.07(13)	40.74(22)	27.78(15)	7.41 (4)	46.30 (25)	11.110 (6)	42.59 (23)	0 0	0 0
Prospective	53.85(7)	46.15(6)	61.714	52.333	13.714	7.666	92.31(12)	7.69(1)	53.84(7)	46.15(6)	15.38(2)	53.85(7)	15.38(2)	61.54(8)	23.08(3)	69.23(9)	30.77(4)	0 0	23.07(3)	15.38(2)	7.7 (1)	53.85(7)	76.92(10)	0 0	0 0	15.38(2)	7.7(1)

This table represents the percent age of the following:
Sex, Age, Duration, Residence, Occupation, Habit, Site, Histology, Stages, and chief complain. Retrospective and prospective group.

The largest number of lip carcinoma in the present study was confined to the vermilion border of the lip,where as extension of the lip lesion to the bone represented the lowest number, this may be attributed to the fact that lip carcinoma could be easily detected and diagnosed.

Treatment

The treatment of lip carcinoma in the present study was surgery, radiotherapy or a combination of both. The surgical treatment was either local excision or extensive surgical procedure.

Usually the defects after this surgical procedure were closed primarily because it was less than one half of the lip length. Other defects which have involved one half of the lip length were closed by flap reconstruction.

Some patients who suffered from lip carcinoma were elderly with systemic diseases (hypertension, diabetic mellitus etc.)Such patients cannot withstand the surgical procedure or they refused the surgical procedure. So they were treated by external beam radiation with an average dose of 5000 Rad/20 fraction.

The last group was treated by a combination of surgical procedure followed by postoperative external beam radiation with an average dose of 4500 Rad/20 fraction.

Complications:

There were few complications seen after treatment of patients with lip carcinoma during their follow up and these are:

A-after surgical excision:

1-Rounding of the corner of the mouth.

2-Oro cutanous fistula.

3-Wound dehiscence.

4-Postoperative infection.

5-Microstomia.

B-After radiotherapy:

1-Erythema of oral mucosa.

2- Skin reaction.

3- Subcutaneous fibrosis.

Prognosis of lip carcinoma:

In the retrospective group of the present study there were 74 out of 137 cases of lip carcinoma who lived as disease free from the time of treatment until the time when the data collection was started.

Twenty –six out of 74 cases lived for more than 5-year without recurrence of lip tumor and 56 out of 74 cases lived for 3-year disease free.

No cases of death have been recorded during the period of the retrospective group of this study as a result of lip carcinoma.

During the 6- months follow up of the patients who were treated by surgery , radiotherapy or a combination . the outcome result in present study of treatment of patients who suffered from lip carcinoma were satisfying and acceptable. This impression came from clinically observing the patients after treatment regarding the cosmetic and functional results(ability to speak, ability to eat and oral competence)and the general status of the patients.

2.cheek carcinoma:

In the present study the male to female ratio was 1.16:1 was found in both groups. This means that males and females were nearly equally affected by cheek mucosa carcinoma. This finding is in agreement with the finding of (Ilstad and Bigelow,1985)which revealed that men and women are approximately equally

affected by cheek carcinoma. This ratio lower than that found by (Schwartz,1994 and John Batsakis, 1979) of 3 and 4 to 10:1 respectively.

Smoking habit was more predominant than alcohol consumption habit in the present study and this support the fact that tobacco smokers and tobacco chewers are more affected by cheek mucosa carcinoma.

The most common clinical presentation of cheek mucosa carcinoma was ulceration with pain and this was found in both groups of the present study which does not agree with finding of(Denish et al,2000).where a mass or swelling represented the most frequent clinical presentation ,but in agree with study of (Vegers et al ,1979)where ulceration was the most frequent clinical presentation .

In the retrospective group , the lesion were found to be confined to the cheek mucosa in higher number ,where as in the prospective group the lesion were found to involve the bone(maxilla and mandibule) in high number.this may be attributed to the delay in presentation and diagnosis of the condition.

Treatment:

In the present study patient with cheek carcinoma were treated by surgery, radiotherapy or a combination of both.

The surgical treatment was either wide local excision or composite resection with or without neck dissection.

The surgical approach most frequently used in this surgical procedure

(composite resection)were Fergusson incision and lower lip split technique.

Some patients with cheek mucosa carcinoma had systemic diseases (hypertension, diabetic mellitus, etc.) so they were treated by external beam radiation with an average dose of 5500 Rad/ 30 fraction.

Complications

A-complication after surgical excision:

1-Pain and limitation in shoulder movement.

2-Postoperative infection and pus discharge.

3-Wound dehiscence.

4-Chylorhrrea.

5-Chest infection.

6-Oronasal fistula.

B-Complication after radiotherapy:

1-Mucosal changes.

2-Loss of taste.

3- Skin reaction.

4- Trismus and jaw locking.

Prognosis of cheek mucosa carcinoma:

In the retrospective group of the present study: twenty five out of 54 cases were disease free from the time of treatment by surgery, radiotherapy or a combination until the time where data collection was started.

Eleven out of 25 cases lived for 5-year without recurrence of the cheek tumor .fifteen cases out of 25 lived for 3-year free of disease.

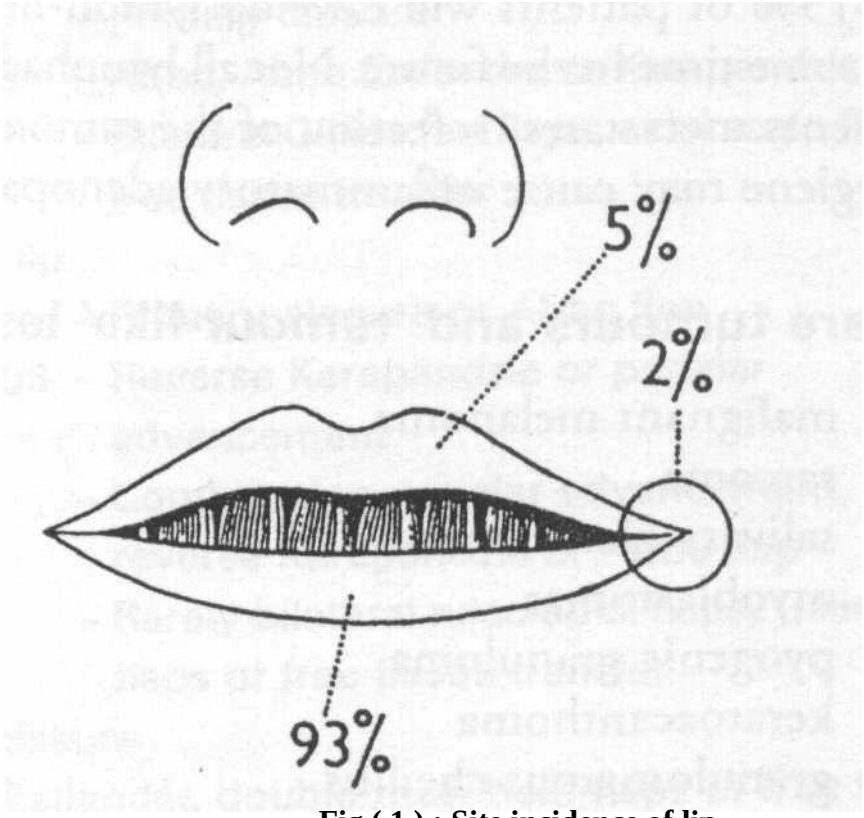

Fig (1) : Site incidence of lip

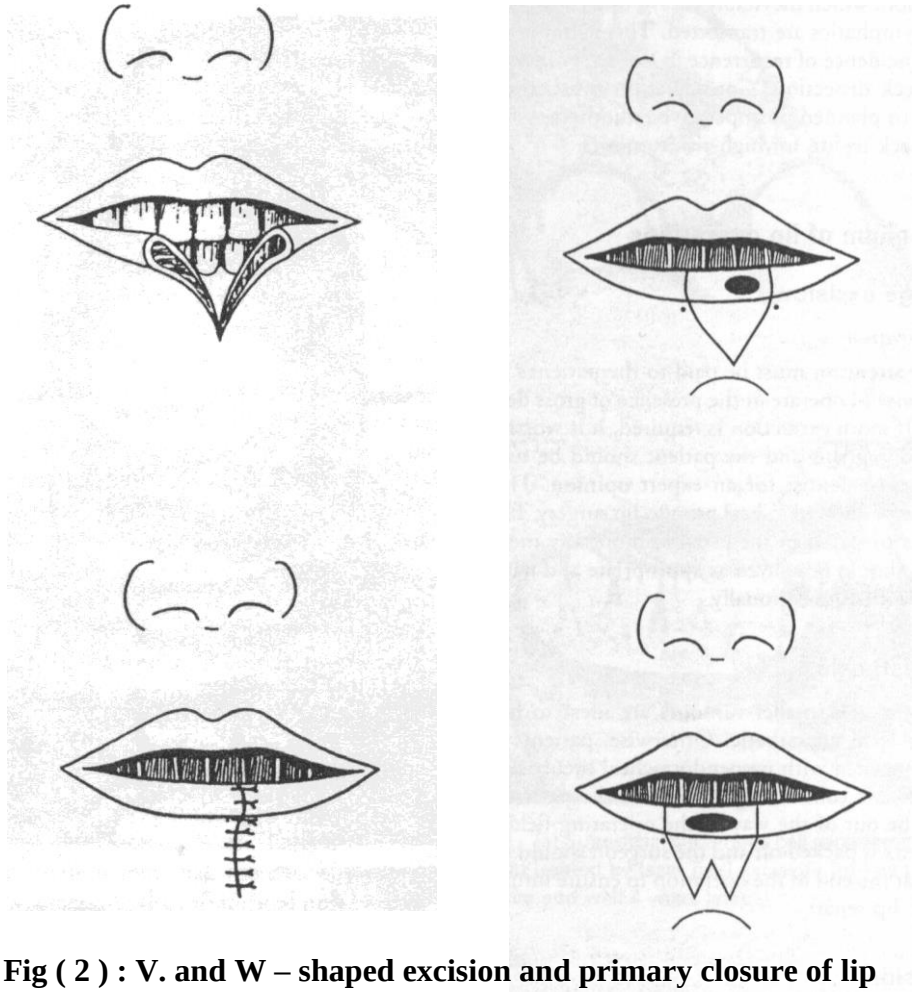

Fig (2) : V. and W – shaped excision and primary closure of lip

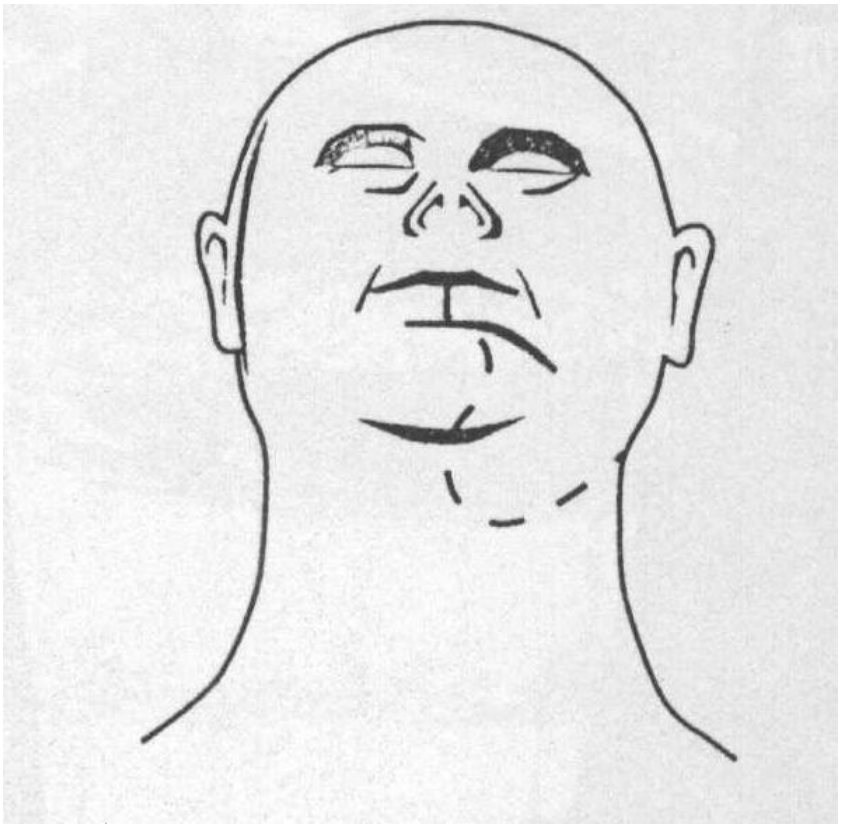

Fig (3) : Lower lip split technique use in the excision of cheek carcinoma

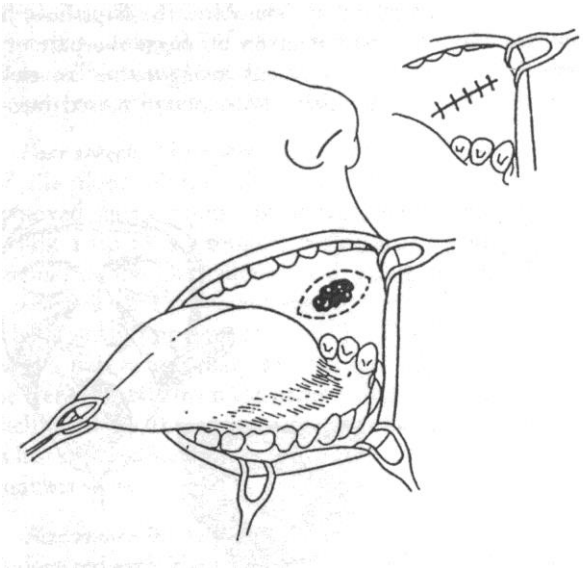

Fig (4) : Excision and primary closure of cheek carcinoma

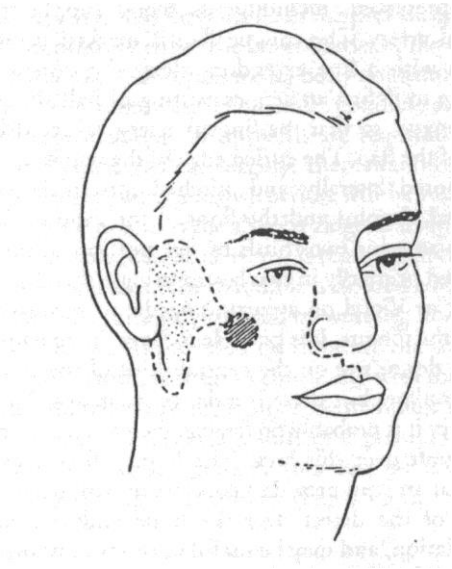

Fig (5) Fergusson incision Upper lip split technique

There were seventeen out of 54 of cheek mucosa carcinoma who suffered from recurrent cheek carcinoma after treatment.

The 6- months follow up of the patients who were treated from cheek mucosa carcinoma was satisfactory and acceptable. This impression came from clinical observation of the patients regarding the ability to swallow, speak and general status of the patients.

Only one case died after composite resection of the cheek mucosa carcinoma and this case was advanced stage IV cheek mucosa carcinoma.

Conclusion

1-The distribution of cases of the lip and cheek mucosa carcinoma during the last ten years was irregular in that four medical centers.

2-Males and females are somewhat equally affected by lip carcinoma and nearly equally affected by cheek mucosa carcinoma.

3-Urban residents are more affected by lip and cheek mucosa carcinoma than rural residents.

4- In the prospective group of present study the cases of cheek mucosa carcinoma are of advanced stages.

5- Out-door working and in-door working is equally affected by lip carcinoma.

6- The prognosis of lip and cheek mucosa carcinoma after 5-year was acceptable and after 3-year was excellent.

References

Anderson (1971) : cause and prevention of lip cancer.J can.associat.37: 138-142.

Antonio Dez-D, Stanidis-K,Trigonidis-G (1995):squamous cell carcinoma of the lip in northen Greek population.Eurp.-J- cancer B-oral oncology.Sept.;31B(5):333-9.

Ashly ,McConell, Macheda,Grazer(1965): Carcinoma of the lip. A comparison of five year results after irradiation and surgical therapy.Am.J surg.110:549, 1965.

Bert W O Malley,MD(1993):Lip cancer.May 6;Otolaryngology Head and Neck surg.

Bloom, Spiro(1980): carcinoma of cheek mucosa .Aretrospective analysis.Am.J.surg. 140: 556-9.

Brufan C. (1985): Oue experience in surgery of cancer and precancerous lesions of the lower lip .Journal of Dermatological syrgery,Oncology(9) Sept.1985.

C. waynecruse (1987):squamous cell carcinoma of the lip . plastic and reconstructive surgery Decmb.1987. No.6 vol.80.

Dhawan,Thakur and Madan(1983):poly chemotherapy in squamous cell carcinoma of the buccal mucosa.Cancer. 1983: 51: 773-7.

Denish Chhetrei, Jeffry Rawnsley,Thomas Calcaterra(2000):Carcinoma of the buccal mucosa.OtolaryngologyHead and Neck surg.123:566-71.

Fang-FM, Leung-SW,Haung-ss(1997):combined modality therapy for squamous cell carcinoma of buccal mucosa.Head-Neck 1997 Sept.19(6):506-12.

Gitta-HA, Bernt-H,Rink-B, (1989):retrospective multi center study on carcinoma of the lip and the oral cavity.Dtsch-2-mund.-Kiefer,Nov.-Ders.;13(6):472-6.

Head&Neck cancer symposium(1997):Februray(6), Head&neck squamous cell carcinoma.public health service.National cancer institute.

Hosal-In, Onerci-M, Kaya-S (1992): (squamous cell carcinoma of the lower lip). Am. J. otolaryngology. 1992 Nov. Dec. :13(6): 363-5.

Ilstad, Mary Bigelow(1985):clinical behavior and results of current therapeutic modalities for squamous cell carcinoma of buccal mucosa.surg. Gynecology obstet..160:254-8.

John Andrewridge, Douglas,Bonnie (2000): cancer management. Multidiscripancy approach, 4th edition.

John Batsakis(1979): squamous cell carcinoma of the oral cavity and the oropharynx. hapter 6,P.153. Tumor of the Head&Neck.2nd edition.

John Hay (1997):cancer management- manual Head and Neck tumor group. 21 July:1997. Radiation oncology.

Krishnamurthi S.,V. Shanta, Sastri (1971):combined therapy in buccal mucosa cancer. Radiology 99:1109-415,may 1971.

Leonard Wurmen, George Adams,William Meyerhoff,(1975):carcinoma of the lip. The Am. J. of surg. March 25 -29,p.470-474.

Lo-Russo, Agonisi-V,Frosini-P(1990):Carcinoma of the lip.Acta-Otorhinolaryncology-Ital.1990 sept.OCT.:10(5): 447-51.

Maj Joseph and Col Peterson(1974):Carcinoma of the lip. Southern Medical Journa,July Vol.67 No. 7.

Million RR ,Cassisi MJ(1994):management of head&neck cancer. Multidisplinary approach.Philadilphia,lippincott,2nd edition Philadelphia 1994:643-692.

Pramord K. Sharma(1990):Malignant neoplasm of the oral cavity. Chapter 77. 3rd edition.

Skolnik, James M. (1972): Carcinoma of buccal mucosa and retromolar area.Otolaryngology clinic of north America. Vol.5,no. 2 Jun. 1972.

Stell and Maran's (2000):Head and neck surgery 4th edition p.275.

Spitzer ,Stern-Y, Levy-R (1975) :the occupation of fishing as risk factor in cancer of lip N.Engl. med.293: 419-424.

Schwartz(1994):chapter 15;(Tumor of the Head and Neck) p.623.

Tartara-S, Giudice-M,Colella-G,(1990):therapeutic modalities of epidermoid carcinoma of buccal mucosa.Minerva-Stomatol,1990 Jan. 39(1):53-6.

Vegers, Gordon,Isaac(1979): Squamous cell carcinoma of the buccal mucosa. Arch Otolaryncology-Vol.105,April 1979.

Vikram B, Strong EW, Shah JP (1985):Intraoperative radiotherapy in patients with recurrent head and neck cancer.AM.j.of surg.150(4):485-487.

William R Caroll ,Glenn E., David J.(1998):head and neck cancer symposium(carcinoma of the lip).