RESULTS

R E S U L T S

The clinical examination of our cases revealed that senile ectropion is the most common type of ectropion, it constituted 63.75% of our cases, while cicatricial ectropion is the second common type of ectropion as it represented 27.50% of our cases, followed by paralytic ectropion which represented 6.25% of our cases.

Table (1) ;shows the distribution of cases according to the type of ectropion.

1. Senile Ectropion :

Twenty nine patients of senile ectropion presented with bilateral affection, but only twenty of these cases gave bilateral complaint and required treatment of both eyes. Two cases of unilateral ectropion at the age of forty years were encountered. In all the bilateral cases(29 patients) the ectropion was more advanced in one lid than in the other. In these cases the ectropion was the result of relaxation of all lid tissues and the eversion of the lids was accentuated by epiphora, chronic hypertrophic conjunctivitis and chronic eczematous changes of the lids. Cases of senile ectropion varied according to the degree and the age group of the patients.

Table (1) distribution of cases according to type of ectropion.

Type of ectropion	No. of patients	No. of lids affected	No. of lids affected
1. Senile	31	51	63.75
2. Cicatricial	20	22	27.5
3. Paralytic	5	5	6.25
4. Mechanical	2	2	2.5
Total No. of Patients	58	80	

Table (2) shows the distribution of cases of senile ectropion according to the degree and the age of the patients.

From this table we found that:

The most frequent age for senile ectropion was 60-70 years age group representing 33.3% of our cases then 50-60 years age group representing 29.4% of our cases.

The seinle ectopion occured earlier in life than expected 7.8% of senile ectropion cases were found at the age of forty.

The most frequent degree of senile ecteopion met with was the second degree representing 41.2% of all cases, next in frequency was the first degree (37.2%), the least in frequency was the third degree 21.6%.

Table (2) distribution of cases of senile ectropion according to the degree and the age of patients.

age group	1st degree	2nd degree	3rd degree	Total no. of cases	% according to age
-40	4	-	-	4	7.84
-50	4	1	1	6	11.76
-60	5	4	6	15	29.41
-70	4	10	3	17	33.33
-80	2	3	-	5	9.80
-90	-	-	1	1	1.96
-100	-	3	-	3	5.88
Total No. cases	19	21	11	51	
% according to degree	37.25	41.18	21.57		

II. Cicatricial Ectropion

Cicatricial ectropion is the next common type (27.5%)

Table (3) shows the distribution of cases of cicatricial ectopion according to the cause and the age of the patients.

The most common causes for cicatricial ectropion were burns and trauma bot representing an equal percentage of 40.90% then surgical operations were responsible for only 13.6% and lastly irradiation with a percentage of 4.5% in our cases.

The most frequent age group affected with cicatricial ectropion was 15-30 age group representing 54.5% of our cases & next was 0.0-15 age group (22.7%) and the least age group affected was 50-70 (9.0%) .

Table (3) distribution of cases of cicatricial ectropion according to the cause and the age of the patients.

Cause	0-15	15-30	30-50	50-70	No. of cases	% according to cause
Burn	2	6		1	9	40.92
Trauma	2	6		1	9	40.92
Surgical operations	1		2		3	13.65
Irradiation			1		1	4.55
Total No.	5	12	3	2	22	
% according to age	22.73	54.55	13.65	9.09		

III. Paralytic ectropion

Paralytic ectropion represented the third in frequency of our cases 7.1 %.

5 cases were studied three males and two females their ages ranged from forty eigth to sixty three years old.

The five cases of paralytic ectropion were caused by Bells palsy, in two cases its occurance was at middle age in the forties, in the other three cases , the patients were above 60 years.

The lack of orbicularis support and the effect of gravity causes the affected eyelids to fall away from the eye and in three long standing cases elongation developed, one case was of the first degree ectropion , three cases were of the second degree, only one case was of the third degree.

There were some complications met with in our study of the various types of ectopion

I. Senile ectropion

Table (4) shows the distribution of complications according to the degree in cases of senile ectropion.

Epiphora was the commonest complication being present in all cases . Second in frequency was chronic conjunctivitis which constituted 62.75% of the cases. Blepharitis & eczema of the lid was present in 60.78% of the cases corneal affection was only found in one case in which the lower lid was detached from the medial canthal ligament giving rise to severe lagophthalmos.

The complications varied in frequency according to the degree of ectropion i.e. complications were most frequent in the third degree & least in the first.

Table(4) distribution of complications according to the degree in cases of senile ectropion.

	1st degree	2nd degree	3rd degree	Total No.	%
No. of cases	19	21	11	51	
Epiphora	19	21	11	51	100
Lagophthalmos	-	-	11	11	21.57
Chronic conjunctivitis	-	21	11	32	62.75
Hypertrophy of the conjunctiva	-	-	11	11	21.57
Blepharitis and eczema of lid	2	18	11	31	60.78
Corneal affection			1	1	1.96

II. Cicatricial ectropion (table 5)

Table (5) shows the distribution of complications according to the degree in cases of cicatricial ectropion.

The most common complication met with in our cases was lagophthalmos, it was present in all cases but varied in severity according to the degree of ectropion and was very marked in the three cases of upper lis ectropion. Epiphora was the next common complication representing (86.36%) it varied in severity according to wheather the punctum was everted. or not

Corneal affection wasthe least but most serious complication (13.64%) was present in two cases of upper lid ectropion complications were most frequent in the severe degrees of ectropion.

Table(5) Distribution of complications according to the degree in cases of cicatrical ectropion.

No. of cases	Lower lid ectropion			Upper lid ectropion	Total No.	%
	mild degree	Moderate degree	Severe degree			
	2	9	9	3		
Epiphora	2	9	8	-	19	86.36
Lagophthalmos	2	10	7	3	22	100
Chronic conjunctivitis	-	-	7	-	7	31.82
Hypertrophy of conjunctiva			3		3	13.64
Blepharitis and eczema of lid						
Corneal affection			1	2	3	13.64

III. Paralytic ectropion (Table 6)

Epiphora, lagophthalmos and chronic conjunctivitis were the commonest complications met with they were present in all our cases. Next to that blepharitis and eczema of lid were present in 60% of the cases.

Table(6 Distribution of complications according to the degree in cases of paralytic ectropion.

No. of cases	1st degree	2nd degree	3rd degree	Total No. of cases	%
	1	3	1	5	
Epiphora	1	3	1	5	100
lagophthalmos	1	3	1	5	100
Chronic conj-unctivitis	1	3	1	5	100
hypertrophy of the con-junctiva			1	1	20
Blephartis and eczema of lid		2	1	3	60
Corneal affection					

Management of Senile Ectropion

First degree senile ectropion

Medical & conservative treatment was used in ten cases, this type of treatment improved the most annoying symptom of ectropion namely epiphora,, follow up of these ten cases revealed satisfactory results.

Cautery punctures: were successful in three cases one of them following failure of Kuhnt Helmbold operation, but few months later the progress of senile changes in the lid tissues was responsible for recurrence in all these cases.

Snellen sutures: were used in a bilateral case with immediate post-operative success, the patient did not present for follow up.

Medial conjunctivo-plasy operation was used in four lids of three patients, two of them were of (60 & 40 years old) and were successful Fig.(1). In the third patient who was(70 years old) with bilateral 1st degree ectopion the results were not satisfactory.

Kuhnt-Helmbold operation was used in one case which brought the lid margin in apposition with the globe Fig.(2).

A) (Preoperative)

B) One month after medial conjunctivo plasty operation.

Fig.(1) Right 1st degree senil ectropion.

a) pre operative

b) Six months after the operation. (Kuhnt Helmbold op.)

Fig. (2) Left 1st degree senile ectropion

Second degree senile ectropion:

1. Kuhnt-Helmbold operation was used in four cases two of then were successful Fig. (3), the other two showed under-correction at the time of the removal of the stitches (8th day) cautery punctures were used with improvement in one of these recurrent cases.

2. Imre operation was done in two cases but ectropion was not corrected satisfactorily Fig. (4).

3. Fox modification of Blaskovics operation for lateral ectropion repair was performed in one case with correction of the ectro-pion laterally but the punctum was still everted Fig.(5)

4. Fox modification of Blaskovics operation for medial ectropion repari was done in three cases.

In one case the ectropion wascorrected while in the other two cases the ectropion improved but there was under correction and notching of the lowerlid margin at the site of the excised wedge of lid tissues. Fig. (6)

5. Kuhnt-Szymanowski operation was done in ten Cases:
two cases were corrected at the time of removal of stitches on the 8th post operative day, but these were lid notches at the site of the marginal stitches which close the splitted lid

Four cases were corrected and remained so, in the early post operative period.

In these cases we did not use marginal stitches to, avoid lid notches. Fig.(7)

Four cases were corrected on table but slight under correction was dectected after removal of stiches.

a) Preoperative

b) After removal of the stitches of Kuhnt Helmbold operation.

Fig. (3) Left 2nd degree senile ectropion.

a) Preoperative

b) Right Imre operation after removal of the stitches.

Fig.(4) Rt. 2nd degree senile ectropion.

a) Preoperative Rt 2nd degree senile ectropion
Lt 3rd degree senile ectropion.

b) Rt Lateral ectropion repair Fox modification of Blaskovics op.

c) Lt medial ectropion repair (Fox modification of Blaskovics op.

Fig. (5) bilateral senile ectropion & 8 th day post operative.

a) Preoperative

b) 8 days post op. lower lid notch.

c) One month after op. (under correction)

Fig.(6) Lt : 2nd degree senile ectropion pre & after Medial ectropion repair of Fox.

a) Preoperative

b) 4th day after kuhnt-Szymanowski operation.

c) 4 months post op.

Fig.(7) Right 2nd degree senile ectropion.

Third degree senile ectropion:

Fox modification of Blaskovics operation was done in two cases, in the first case (Fig. (5) ectropion was corrected partially at the time of removal of stitches.

In the second case (Fig. (9) the ectropion is corrected on table but on the 8th post operative day residual ectropion and marked lagophthalmos were seen because the lower lid was not attached to the medial canthal ligament which required correction at a later date.

Kuhnt-Szymanowski operation was tried in eight cases, three cases were only partially corrected on the 8th post operative day, because the hypertrophied conjunctiva was not completely removed , while in the fourth and fifth case where there was no marked conjunctival hypertrophy the ectropion was fully corrected , with relief of symptoms. (Fig. (8)

In the sixth case the ectropion was fully corrected on table but the operation was followed by severe oedema untill the 8th post operative day. In the sevneth and eighthcases the lid came in apposition to the globe but we excised a lot of the tarsoconjunctival tissues which resulted in lid notchs and the lower punctum was drawn laterally, postoperative epiphora was less , with correction of lagophthalmos. Fig. (10)

Fig. (5) Left 3rd degree senile ectropion (preoperative) chronic hypertrophic conjunctivitis.

a) One month after op.

b) Six months after the op.

The same patient in (Fig. 8) after Kuhnt Szymanowski Operation.

a) Preoperative (corneal opacity)

b) One month after Fox modification of Blaskovics op. for medial ectropion repair.

Fig(9) Left 3rd degree senile ectropion.

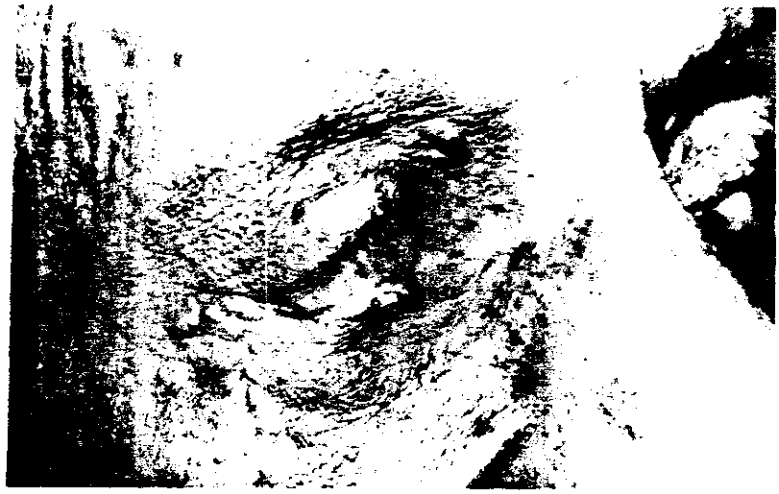
a) Preoperative marked lagophthalmos

b) Lagophthalmos less one month after the operation.

The same patient in Fig. (9)

a) Preoperative

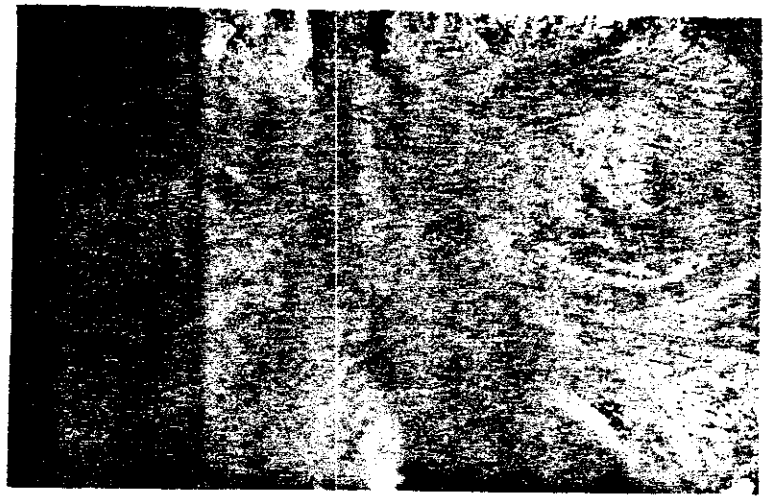
b) Rt. Lower lid notch one month post op.



c) Lt. lower lid punctum drawn laterally one month post operative.

Fig. (10) bilateral 3rd degree senile ectropion-bilateral Kuhnt Szymanowski operation.

a) Preoperative (marked lagophthlamos



b) One month postopative (lagophthalmos corrected)

The same patient in Fig.(10)

II. MANAGEMENT OF CICATRICIAL ECTROPION

Full thickness skin grafts were used successfully in Six cases of lower lid cicatricial ectropion where the grafts were put close to the lid margins and from canthus to canthus with slight over correction 10-15% without tarsorrhaphies Fig. (11-13).

Four grafts were taken from the retro auricular fold and the other two grafts from the medial aspect of the arms.

a) Preoperative

b) 9 months post-operative

Fig. (11) Right lower lid cicatricial ectropion

a) Preoperative

b) One month post-operative

Fig. (12) Right lower lid cicatricial ectropion.

a) Preoperative(corneal affection)

b) 3 months after operation.

Fig. (13) Right lower lid cicatricial ectropion

a) Preoperative lagophthalmos

b) 3 months post-operative lagophthalmos corrected.

The same patient in Fig. (13)

Full thickness free skin grafts were used in three cases of upper lid ectropion.

In the first case the post auricular graft was placed 8 mm. fromupper lid margin, from canthus to canthus and also, a hairy full thickness grafts from the scalp were put at the site of the lost eye brow, the immediate post operative results were not satisfactory but 9 months later, the ectropion and lagophthalmos were corrected. Fig. (14)

In the second case a full thickness graft was taken from the medial side of upper arm and put high and not from canthus to canthus without over correction, median tarsorrhapy was done for one month the ectropion and lagothalmos were improved but the cosmetic and functional results were less improved. Fig.(15)

The third case there was traumatic ptosis and injured medial canthal ligament inaddition to the ectropic distorted upper lid. Full thickness post auriculary free graft was placed close to the lid margin and from canthus to canthus with over correction but recurrence occured.

a) Preoperative

b) Preoperative lagohthalmos.

Fig.(15) Rt. upper lid cicatricial ectropion with lagophthalmos.

a) Graft was taken

b) lagohthalmas corrected.

The same patient in Fig. (15) one month postoperative.

Seven cases of lower lid cicatricial ectropion were repaired by the use of a full thickness free skin graft in modified techniques gave different results.

In the first case Fig.(16) of this group the full thickness skin graft was used after one month from failure to repair the detached lower lid from its attachement to ghe medial canthal ligament. The ectropion was under corrected and resulted in oedema of the skin between the graft and lid margin.

In the second case the ectropion was affecting the lateral half of the lower lid and we put a full thickness skin graft to the area of ectropion with immediate correction of the ectropion and lagophthalmos.

In third case Fig.(17) we put the graft from canthus to canthus but 20 mm away from the lid margin, the ectropion and lagophthalmos were corrected , but oedema of skin of lower lid was persistant for 3 months after the operation.

In the fourth case Fig. (18) we put graft just below the area of the ectropion which corrected the ectropion on table. but two . months later residual ectropion was found, massage to the graft for next two months give slight improvement.

In the fifth case Fig.(19) the ectropion was localized to the middle third of the lower lid).

Localised full thickness skin graft was placed just below the lid margin following free excision of the scar tissue. The result was successful.

In the sixth case where there is loss of lower lid substance and ectropion a compositum full thickness graft from the auricular tissue of the ear was partially successful

The seventh case of post irradiation scar a localised full thickness graft was used which was followed by slight under correction.

A child with detached lower lid from its medial canthal ligament attachment was repaired by a horizontal skin release incision and trial for attaching the lower lid to the medial canthal ligament failed.

In one case of post-operative cicatricial ectropion we tried a trans position cheek flap but the facial nerve paresis resulted from excessive manipulations in the two operations, was followed by recurrence . A dermo flap canthal lift operation was done six months later with slight improvement.

a) preoperative

b) After removal of stitches (under corrected)

c) 2 months after full thickness skin graft (under corrected)

Fig. (16) right lower lid cicatricial ectropion with medial canthal injury.

a) Preoperative

b) 4th post op. day with the tie over in place.

c) 3 months post operative.

Fig.(17) Lt lower lid cicatricial ectopion.

a) Preoperative

b) after removal of stitches.

c) 6 months after operation.

Fig. (18) Rt. lower lid cicatricial ectropion.

a) preoperative corneal opacity

b) One month after operation

Fig. (19) Left lower lid cicatricial ectropion.

a) Preoperative marked lagophthalmos.

b) Post operative lagophthalmos corrected (one month)

The same patient in Fig. (19)

Two cases of cicatricial ectropion were treated by split skin grafts. Fig.(20). After a V shaped release incisions made at the junction of the scared skin of the cheeks and the healthy sking of lower lids and the edges of the flaps were undermined to make the lid margin lie in apposition with the globe. The split skin grafts were applied to thr raw surfaces.

The grafts were taken and ectropion and lagophthalmos were improved but on tilting the head to the sides ectropion of lower lids occured.

Two cases of cicatricial ectropion of the lower lids, caused by localised linear scar were treated by the Z plasty procedure without excision of the scar tissues. Slight improvement was obtained.

a) preoperative

b) (one month after the operation) ectropion improved.

Fig.(20) bilateral lower lid cicatricial ectropion.

a) Preoperative lagohthalmos

b) One month post op. lagophth-almos corr-ected.

The same patient in Fig. (20).

III. Management of Paralytic Ectropion:

Two cases were diabetics and hypertensives the third one was hypertensive only.

The five patients were studied after failure of the medical treatment and physiotherapy for one year.

Lateral tarsorrhaphy was done to one case and he came to us after failure of the previous measures to control his condition.

We tried Axenfeld suture for correction of lagophthalmos for, under correction and for fear of infection we removed the suture.

Eight months later Kuhnt-Szymanowski operation was done successfully. Fig. (21).

In two other cases Kuhnt-Szymanowski operation was performed from the start with successful results Fig. (22).

Two cases went to the medical section for control of the diabetes and hypertension and instructions for protection of the cornea were given in the form of antibiotic eye drops by day and antibiotic eye ointement by night.

a) Preoperative 2nd degree ectropion

b) One month after Kuhnt Szymanowski operation

c) 4 months after Kuhnt Szymanowski operation.

Fig. (21) Rt. lower lid paralytic ectropion.

a) Preoperative lagophthalmos

b) 4 months post-operative(lagophthalmos corrected).

The same patient in Fig.(21)

a) Preoperative 2nd degree ectropion

b) Postoperative after removal of stitches (ectropion corrected)

Fig. (22) Right lower lid paralytic ectropion.

a) Preoperative lagohthalmos

b) Post operative (lagohthalmos corrected).

The same patient in Fig. (22).

IV. Mechanical Ectropion

Mechanical ectropion represented the least number of our cases , that is two cases only representing (2.9%).

The first case Fig. (23) was treated successfully by excising the lower lid swelling with improvement of epiphora and lagophthalmos.

The second case Kuhnt Szymanowski operation was done with success, the lower lid came into apposition to the globe and epiphora improved.

a) Preoperative
Lower lid 14 x15 mm
cyst swelling.

b) 4 months after
excision of the
mass.

Fig. (23) Rt Mechanical ectropion of 2nd degree

D I S C U S S I O N

Our study revealed that senile ectropion is the most common type of ectropion it represented 63.75% of our cases.

Next in order is cicatricial ectropion 27.5% of our cases, followed by paralytic 6.25% and lastly mechanial ectropion 2.5% . These results agreed with Fox statement(1962) that senile ectropion occurs more often than all the other types of ectropion put together and with Callahan's (1954) and Musterde (1969) stating that the senile ectopion is a comaratively common condition and its frequency is increasing as are all geriatric problems.

Aetiology & Incidence of various types of ectropion:

1. Senile Ectropion:

Our senile ectropion cases were of the relaxed type and we did not meet any case of spastic or cicatricial types.

The relaxed type is the most common type but the other types must be differentiated from it because the surgical repair for each type is different Callahan(1954)

Our cases of senile ectropion were almost always bilateral but may be more advanced in one lid than in the other the cases were affecting the lower lids and were the result of relaxation of all lid tissues from old age.

The factors which were responsible for progressive increase of the eversion were epiphora, chronic hypertrophic conjunctivitis and chronic eczymatus changes of the lids Fralic (1962) and Musterde (1969).

We classified ectropion into three degrees but Philips (1950) classified it into four degrees. The 1st degree in our classification where the lower lid is not in apposition with the globe but separated fromit by a short interval which interferes with the normal capillary drainage of tears. The punctum may be visible or not.

In the second degree of ectopion the palpebral conjuncitva is visible and usually the punctum is evereted. In the 3rd degree the whole palpebral and fornix conjunjunctiva are visible this is responsible for lid and conjunctival complications, Philps(1950)described the 4th degree as the stage of secondary skin contracture and exposure of the whole lower lid conjun tiva with the development of conjunctival complications.

Fox (1962) classified ectropion into 1st stage where the lid is still in good position, but it is lax and can be easily pulled away from the eye ball, and as relaxation develops the punctum gradually becomes visible.

The second stage where there is gradual eversion of of the whole lid with elongation, in addition to relaxation.

The third stage where sagging and eversion becomes more advanced and conjunctival hypertrophy and Keratinization occurs.

These stages coincide with our classification Page(118) We distributed the cases of senile ectropion according to the degree and the age of the patients. We found that the most frequent period at which the seinle ectropion occured was 60-70 age group(33.3%) and next to that was 50-60 years. age groups responsenting 29.4% of our cases.

The senile ectropion occured earlier in life than expected 7.8% of senile ectropion cases were found at the age of forty.

The most frequent degree of senile ectropion met with was the second degree reprsenting 41.2% of all cases where the occurance of relaxation and elaongation and gradual eversion of the lid margin increases the annoying symptom of epiphera & chronic conjunctivitis which brings the patient for ophthalmic advice.

II. Cicatricial ectropion :

In our study cicatricial ectopion was the next common type of ectropion representing 27.5% . But Bartelett and McKinzie (1966) mentioned that the cicatricial and the senile types

are about equally common.

In our cases we found that the most frequent causes for cicatricial ectropion were burns and trauma both representing an equal percentage of 40.9% , then surgical operations were responsible for only 13.6% and lastly irradiation 4.5%.

These results conformed with the statement of converse et.al (1964)which stated that cicatrical ectropion resulted most frequently from burns, and is due to destruction of the skin of the eyelid and of the surrounding facial area. It is also the result of lacerations (trauma) that has not been properly treated, also from the excessive removal of skin in the excision of tumours and other cosmetic operations of the eye lids.

The most frequent age group affected with cicatricial ectropion was 15-30 age group representing 54.5% of our cases, next was 0.0-15 age group 22.7%. These age groups representing the periods of activity of individuals as they are more liable to be exposed to burns and trauma.

III. Paralytic ectropion

Paralytic ectropion is the thrid in frequency of our cases representing 7.1% and as Fox(1970) mentioned, it is not a common condition,paralytic ectropion was caused by Bells palsy in our cases, other causes than Bells Palsy mentioned by Beard (1962) are tumours of posterior fassa mastoid disease, parotid disease or surgical or accidental severance of facial nerve , these causes were not encounterd in our series of cases.

Two cases occured at the middle age(40 years) and three cases occured in old aged patients.(above 60 years old) these three patient were hypertensives and two of them were diabetics as well, which may explain the occurance of Bells palsy in these cases. In our paralytic cases the ectropion was atonic resembling the senile type but here the loss of tissue tonus was greater.

As Beard's statement (1962) the lack of orbicularis support and the effect of gravity causes the lower eyelid to fall away from the eye and in long standing cases elongation occurs. This gave a clinical picture quite similar to that of senile ectropion as mentioned by Fox (1970)

IV. Mecahnical ectropion:

Mechanical ectropion represented the least number of our cases, that is two cases only representing 2.9% of our cases

One case was caused by a cystic swelling of the lower eyelid(cystic adenoma of Zies gland) pulling the lower eyelid by its weight.

The other case was caused by a heavey braod and thick graft in the sulcus subtarsalis pushing the lower eyelid away from the globe Fox (1970) mentioned that Machanical ectropion is an actual pulling or pushing away of the lid margin from the globe, and Musterde (1969) added that turning forward of the lid margin may be due to the presence of a swelling whether simple or malignant in the tissues of the lid.

Complications of the Various Types of Ectropion

I. Senile Ectropion:

1. Epiphora was the commonest complication met with in our cases encountered in 100% of cases. Fox (1962) mentioned that epiphora occurs on top of relaxation of tissues of the lid, when the punctum becomes out of position and this starts to occur at the end of the first stage of development of senile ectropion.

   Epiphora was responsible of two complications, first, as a result of the mapping action of tears down ward and out wards, tends to drag the lid away of the globe, thus helping to stretch it. Second, the constant wetting of the skin of the lower lid and cheek by the tears result in chronic eczymatous state of lid skin, which in time produces contraction of the skin and more ectropion, eventually the lid becomes completely relaxed and everted with thickening of the exposed conjunctiva Musterde (1969).

2. Chronic conjunctivitis which constitutes 62.75% of our cases.
3. Blepharitis and eczyma of the lid was present in 60.67% of the cases.
4. Chronic hypertrophy of the conjunctiva occured only in 21.56%.

5. Corned affection , one case only was affected where marked long standing lagophthalmos was present.

Complications was most frequent in the third degree of ectopion and least in the first degree, table (4).

II. Cicatricial Ectropion:

The most common complication met with in our cases was lagophthalmos, it was found in all cases, but varied in severity according to the degree of ectropion and most serious in the cases of upper lid ectropion. Epiphora was the next common complication representing 86.36%, it varied in severity according to whether the punctum was everted or not. Corneal affection was the most serious complication occured only in few cases. (13.64%).

Mustarde (1969) explained how, ectropion of the upper lid, even of moderate degree, may affect the cornea from exposure during sleep and results in serious affection of vision, and hence the timing of repair of the ectropion will be determined mainly by the liability to corneal affection and to a lesser degree by the presence of other complications.

III. Paralytic Ectropion:

The most frequent complication here were epiphora ,

lagophthalmos and chronic conjunctivitis were found in all our cases.

Blepharitis and Eczema of lid were present in 60% of the cases. Lagophthalmos endanger the cornea . So,Beard(1962) stressed on the protection of the cornea by means of moist chamber, or a patch at night or adhesive support of the lower lid, until some degree of facial nerve function has returned, this will usually suffice, and if the cornea needs additional protection a temporary lateral tarsorrhaphy can be done.

It was found from tables (4,5 and 6) that the complications of ectropion regardless its cause and in order of frequency were:

1. Epiphora.
2. Chronic conjunctivitis.
3. Blepharitis and eczyma of the lid.
4. Lagophthalmos.
5. Hypertrophy of the conjunctiva.
6. Corneal affection.

Epiphora was the most frequent complication and lagophthalmos and corneal affection were the most serious complications.

There was no difference between these complications in various types of ectropion except in the severity. The most

characteristic complication of senile ectropion was epiphora and that of cicatricial ectropion was lagophthalmos but paralytic ectropion was charterised by the presence of both epiphora and lagophthalmos equally.

MANAGEMENT OF VARIOUS TYPES OF ECTROPION

I. Senile Ectropion:

1. Medical and Conservative measures:

Medical and conservative measures were adopted in cases of 1st degree senile ectropion. Ten cases were studied in our series. Astringent eye drops were found useful in decreasing the amount of tears and so diminish the epiphora. The patients were also advised to mop up their tears in an upward and inward direction otherwise if the opposite direction is followed in mopping the tears it will inhance the relaxation and stretch of the tissues of the lids. This method of treatment is considered only as a palliative measure. Mustarde (1969) advocated this line of treatment .

2. Cautery puncture technique:

In two cases of our series cautery puncture technique of Ziegler (1909) was tried and was used in one case after in adequate correction of Kuhnt Helmobold operation.

The results of this method were unsatisfactory because the tissues of the lid (conjunctiva and tarsus) were cauterised superficially and the reaction was not effective. Therefore we advise the use of the cautery puncture technique in the early cases of senile ectopion, i.e. in the stage of loss of tonus and relaxation, and also to apply the punctures deep enough to get the desired effect.

3. Medial Conjunctiva Plasty :

This operation was performed successfully in two cases of 1st degree senile ectropion.

The age of these patients was less than sixty year with mild loss of tonus and relaxation Fig.(1)

This procedure failed in two lids of seventy years old patient because the relaxation and atonia of the lids were more advanced than in the first cases.

4. Kuhnt-Helmbold operation:

This operation was done in one case of the first seinle ectopion , which brought the lid margin in apposition with the globe Fig.(2) . As for the epiphora it did not improve because of lacrimal passages obstruction.

The same operation was also used in four cases of the second degree senile ectropion where the ectropion was medial than else where.

The cases were successful but the other two cases were found under corrected on the eighth post operative day, because we did not remove enough tarso-conjunctival tissue.

Cautery puncture improved the condition in one of these recurrent cases.

Fox (1972) mentioned that the medial canthus must receive more and more attention as the severity of the ectropion increases. Hence, addition medial surgery such as medial tarsorrhaphy or medial ectropion repair was found necessary.

5. Immre operation:

Was tried in two cases of second degree senile ectropion when the maximum degree of ectropion was in the middle third of lower lid.

The result of this operation was not satisfactory because the procedure was localised to the middle third of the lower lid only, senile ectropion affects the whole and not only the middle third.

6. Fox modification of Blakovics operation for lateral ectropion repair:

This method of repair was adopted in a case of second degree senile ectropion.

The ectropion was corrected laterally, but the punctum was still slightly everted. The failure of this operation was due to excision of the full thickness wedge of the lid tissues was away from the punctum. In order to prevent such complications of incomplete inversion of the punctum few cautery punctures below

the punctum may be necessary or a medial conjunctivo plasty operation may be done according to Fox (1972).

7. Fox modification of Blaskovics operation for medial ectropion repair: was done in three cases of second degree senile ectropion, in one case it was succesaful while in the other two cases the ectropion was under corrected with notching of the lower lid margin at the site of the excised wedge of lid tissues. The cause of this under correction was the limited space at the nasocanthal angle produced by the root of the nose and in this particular patient the presence of sebaceous cyst at the medial canthus which made it difficult to excise enough skin triangle medially, while the cause of notching was the incorrect coaptation of the edges of the triangular wedge. This triangular gap in the lid should be closed in layers, conjunctivo tarsal layer and skin muscle layer.

We begin by putting united sutures at the lid margin first and going down to the fornix in the same way, the sutures were tied from below upward to facilitate closure of the wound.

Fox modification of Blaskovics operation for medial ectropion repair was used in two cases first case Fig(5) the ectropion was corrected partially at the time of removal of stitches

and month later, the punctum was visible.

The patient was given an appointment at a later date to complete the repair of his ectropion. In the second case Fig. (9) there was in addition to senile ectropion an injury to the medial canthal ligament. The operation corrected the ectropion toa great extent but lagophthalmos did not improved and required a medial canthal ligament repair to complete the cure of the condition. Fox (1968) used this technique for ectropion repair with satisfactory results in moderate atonic ectropion with eversion but with slight elongation. Fox. (1970) added to that, this procedure usually produces good inversion of the punctum but, without covering of the plica and caruncle, and requires only enough skin to be resected to appose the lid nicely against the globe, as too much skin resection may produce a cicatricial epicanthal fold. He also advised in advanced cases the use of surgical procedures on the lateral canthus,as the medial canthal repair is not sufficient because of space limitation at the naso canthal angle.

8. Kuhnt-Szymanowski technique:

Was done in ten cases of the second degree senile ectropion and in eight cases of third degree senile ectropion.

Six cases of the second degree senile ectropion were corrected and the other four cases were undercorrected on

the eight post operative day. These cases of third degree senile ectropion were corrected successfully while the other cases were undercorrected on the eighth post operative day, and the last two cases were overcorrected.

The nine successful cases following the classical Kuhnt-Szymanowski operation were classified according to the degree of corrected ectropion which was the second and the third degrees. The amount of tissues removed depends upon the degree of eversion and elongation of the lid, it also depends on whether the ectropion was more at the medial or lateral halfs of the lid.

If the ectropion is more medially, the tarso conjunctival triangle should be close to the punctum. The cases which were under corrected of the second degree senile ectropion were due to inadequate removal of lower lid tissues than what was required for proper correction, all these undercorrected cases could be adjusted by either cautery puncture or conjunctivo-plasty procedures.

The under corrected cases of the third degree senile ectropion was due to the hypertrophied conjunctiva which could not be removed completely in the tarso-conjunctival triangle and was responsible for the undercorrection. To prevent the undercorrection following the operation in these cases the hypertrophied

conjunctiva should be excised first.

In the two overcorrected cases we excised too much of the tarso-conjunctival tissue which made the closure of the tarsoconjunctival wound difficult and resulted in notching of the lid margin, which was marked in one case. While in the other case the notching was less marked because lateral canthotomy was done to facilitate the closure of the tarso-conjunctival wound. Also, as a complication of this overcorrection the puncti were pulled laterally out of position but did not result in epiphora.

The proper procedure in closing the tarso-conjunctival triangle is by using cat gut sutures on the tarsal side and fine black silk on the conjunctival side in order to get proper coaptation and starting as close to the lid margin as possible to prevent notching at the site of the removed tarso-conjunctival triangle. It is unnecessary to close the splitted lid margin by sutures or if required not to tighten the sutures to prevent notching at the lid margin.

The splitted lid margin and the two laminae of the lid can be closed satisfacterily by one or two mattress sutures starting from the conjunctival side to the skin side and tied on a rubber strip. However, a firm pressure dressing usually suffices instead of the sutures Fox. (1970). He still prefers the Kuhnt-Szymanowski operation for long standing of senile & paralytic ectropion

because this procedure does all the things that an operation for atonic ectropion should do, it shortens, inverts and hangs the lid up where it belongs, also it places the scar on the temporal region where it is least visible.

II. CICATRICIAL ECTOPION:

Full thickness free skin graft was used in sixteen cases , thirteen of them were lower lid cicatricial ectropion and three were upper lid ectropion.

Lower lid Cicatricial Ectropion: Nine cases were successfully treated and the other four cases were undercorrected.

In six successful cases, we used the technique of Mustarde (1969) we did a para marginal skin incision close to the lid margin and from canthus to canthus and the chosen graft was larger 10-15% of the estimated requirements . The full thickness graft was taken from the retro auricular fold in four cases and from the medial side of the arms in the other two cases as the preferable doner sites for grafting were burned.

In the other three successful cases we used after excising the localised scar tissue of the lid, a full thickness graft which was placed at the site of the ectropion.

This technique was followed in two cases with correction of the ectropion and lagophthalmos.

In the third case the graft was put from canthus to canthus but away from the lid margin, the ectropion and lagophthalmos were corrected but oedema of the lower lid was

persistant for the whole follow up period, because of the interference of the lymphatics of the skin, we put the graft at that place to avoid the site of a previous skin graft which was placed close to the lid margin.

In two under corrected cases we did not put the graft from canthus to canthus and we did not take the precaution of 10-15% over correction , also in one of these two cases the lower lid was not attached to the medial canthal ligament which needs further repair.

In the thrid undercorrected case the skin and subcutaneous tissues at the medial canthus and medial half. of lower lid was hard and erythematus due to previous irradiation and excision of rodent ulcer, the graft was not enough to corred the condition and the lacrimal passages were obstructed.

The last case of under correction, there was partial loss of substance of lids which was not fully corrected by the compositum full thickness graft taken from the auricle of the ear.

The technique of full thickenss skin graft was used in three cases of upper lid ectropion. Twe cases were successful,

in the first case a full thickness skin graft from post auricular fold wasput from canthus to canthus 8mm. from the upper lid margin, and two full thickness hairy grafts from the scalp were put at the site of lost eye brow.

The early post operative results were not satisfactory but after nine months the ectropion and lagophthalmos of upper lid were corrected and the eye brow graft was taken.

In the second case the graft was taken from the medial side of the upper arm and was put 12 mm. from the upper lid margin a median tarserrhapy was done for one month, the ectropion and lagophthalmos was improved but the cosmetic and functional results was less satisfactory as when split skin graft or post auricular full thickness skin graft were used and put closer to the lid margin. The third case was recurrent though the graft was post auricular and from canthus to canthus and over correction was taken in consideration, but there were multiple trauma in the form of detached upper and lower lids from their medial lanthal attachments and traumatic ptosis,all these affections were responsible for recurrence.

Two cases of lower lid cicatricial ectropion of the extrinsic type where the scar of the cheeks pulled the healthy lower lid skin causing the ectropion were treated by the use of split skin grafts applied to the raw area flollowing the release

incisions. The grafts were taken and the ectropion and lagophthalmos were corrected, but the ectropion appears on tilting the head to the sides because of the pull of the scars of the face and neck causing a mild degree of ectropion of lower lids on turning the head to the sides.

Z plasty procedure was used in three cases of lower lid cicatrical ectropion caused by linear scars, by transposition of the flaps slight improvement occured, the scars were associated with medial canthal ligament injury in two cases which gave place for under correction.

Trials for medial canthal ligament repair were done in two cases. A sixty years old man with detached lower lid from its medial canthal attachment with linear scar at the medial canthus the scar was excised and the ligament was exposed and chromic cat-gut was used to repair the lower lid into its normal position the condition was cosrected on table, but recurrence developed after removal of stitches, one and half months later a full thickness skin graft was put into the lower lid after release insicion and removal of the remains of the scar tissue under,correction detected on the 8th post operative day. The second case was a child with detached lids from medial canthal ligament with marked scarring of the medial half of the lower lid a trial to release the tension of the

scars on the lower lid and to attach the lid to the medial canthal ligament failed.

The last case of this group was a woman came with the lower lid cicatricial ectropion at the lateral half of the lower lid after excision of a rodent ulcer of the cheek. We did a cheek transposition flap with much undermining up to the tragus of the ear slight improvement occured but recurrence and facial nerve palsy was detected after the operation. Six months later a dermo flap canthal lift operation was done with improvement of the ectropion but lagophthalmos was not corrected.

III. PARALYTIC ECTROPION :

After one year trial of medical treatment and physiotherapy, surgical correction was indicated. In one case the patient came to us after recurrence of ectropion and lagophthalmos after lateral tarsorrhaphy operation.

We tried Axenfeld suture for correction of lagophthalmos , but two week post operatively we removed the suture for fear of infection and the unsatisfactory result was obtained. Eight months later Kuhnt Szymanowski operation was done successfully correcting the ectropion and lagophthalmos Fig.(21).

In other two cases Kuhnt Szymanowski operation was performed after one year trial medical treatment with correction of both ectropion and lagophthalmos. Fig.(22)

Paralytic ectropion begin similar to senile ectropion of atonic nature , lengthening and eversion develops in longstanding cases, so lid shortening measures can be used. As Beard (1962) mentioned if the paralytic ectropion is marked and of long standing, a lid shortening operation such as Kuhnt-Szymanowski procedure is indicated. It will give a far better result than

will a fascia lata sling. But Bartelett and Mckinzie(1966) recommended the use of modified Kuhnt-Szymanowski operation combined with a fascia lata sling to prevent future stretching.

King et al(1970) mentioned that many of the operations used for correcting senile ectropion can be applied to the paralytic type.

IV. MECHANICAL ECTROPION :

Two cases were managed, the first one was treated successfully by excision of a mass of the lower lid pulling it by its weight & gravity away from the globe and removing the excess of redundant skin over the mass horizontally. This corrected the ectropion and lagophthalmos . The second case which was due to a heavy , thick and broad graft at the sulcus subtarsalis pushing the lid margin away from the globe and assisted by the senile relaxation of this old man. The condition was cured by the use of Kuhnt Szymanowski operation excising the thickest and broadest part of the graft in the tarsoconjunctival triangle. So, the treatment of mechanical ectropion is to remove its cause. Though Fox (1970) mentioned that the treatment of mechanical ectropion is temporary and conservative and is not surgical and as a rule it only requires attention to the offending agent and temporary protection of the cornea until the condition causing the ectropion is corrected.

But as we have seen in our two cases if the cause of the ectropion can not be treated conservatively, surgery is indicated.