RESULTS

Patients' data

This study was carried out in the period between October 2003 and December 2005. The patients were selected from the outpatients clinic of Benha University Hospital. This study included 40 patients, 33 females (82.5%) and 7 males (17.5%).

Blepharoblasty was indicated in all patients; 20 patients required lower eyelid blepharoblasty (LL group), 16 females and 4 males and the other 20 patients required upper eyelid blepharoblasty (UL group); 17 females and 3 males.

The age of patients enrolled in the study ranged from 18-61 years with a mean age of 38.5 ± 11.2; in the LL group, while those included in UL group had mean age of 39.8± 14.4 ranged from: 17-62 years. There was a non-significant (P>0.05) difference between patients included in both groups as regards their age (Fig. 57).

Patients included in UL group were divided into two subgroups according to the procedure performed, conventional blepharoplasty and blepharoplasty with creases formation. Ten patients; (20 eyes) underwent conventional blepharoblasty and 10 patients; (20 eyes) underwent blepharoblasty with crease formation.

There was a non-significant difference (P> 0.05) between patients underwent either approach for upper lid blepharoblasty as regards age and gender (Table 1).

Patients included in LL group were divided into two subgroups according to approach used, transconjunctival approach and transcutaneous approach. Ten patients, (20 eyes) underwent blepharoblasty through transconjunctival approach and 10 patients (20eyes) underwent blepharoblasty through transcutaneous approach. There was a non-significant difference (P> 0.05) between patients underwent either approach for lower lid blephroblasty as regards age and gender (Table 1).

Table (1): Patients data

Data	**Total**	**UL group**			**LL group**		
		Total	**Conven.**	**Advanced**	**Total**	**Transconj.**	**Transcut.**
Number	40	20	10	10	20	10	10
Age (years)	38.5±12.8 (17-62)	39.8 ± 14.4 (17-62)	39.3 ± 14.4 (17-62)	40.2 ± 15.1 (22-62)	37.2±11.2 (18-61)	38.2± 11 (25-61)	36.2±11.9 (18-52)
Gender; M:F	7:33	3:17	2:8	1:9	4:16	2:8	2:8

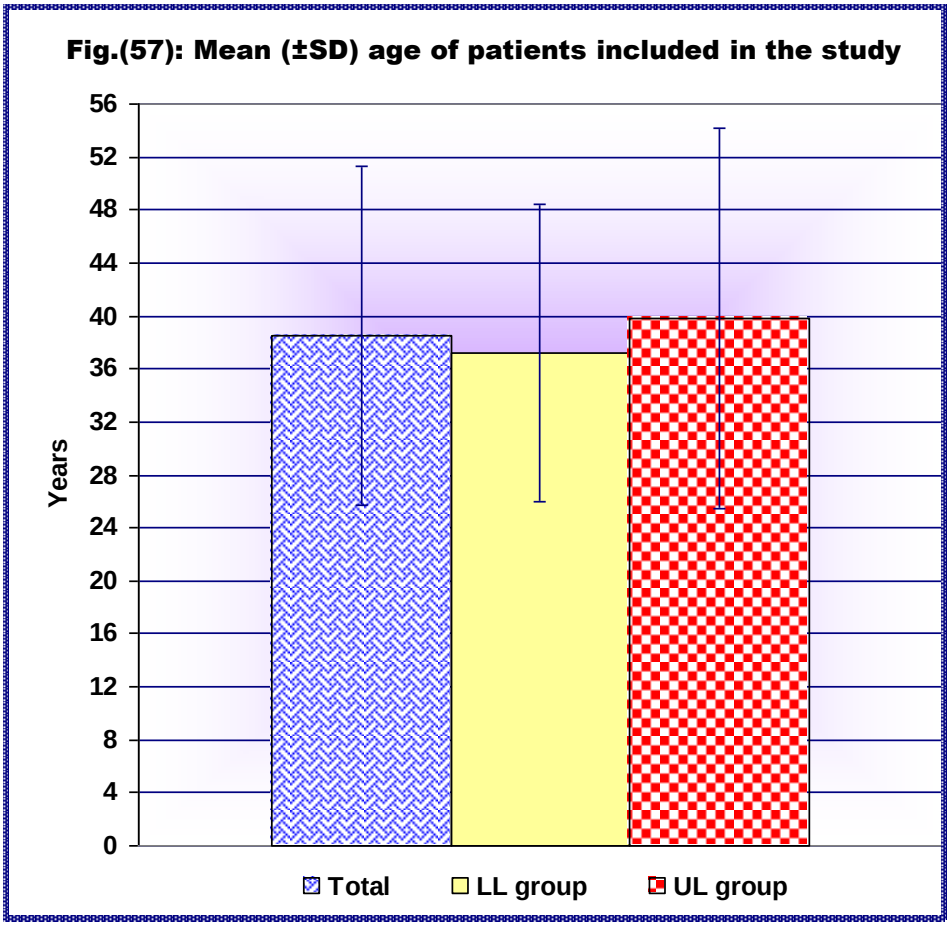


Fig.(57): Mean (±SD) age of patients included in the study
Years
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0
Total
LL group
UL group

PREOPERATIVE EVALUATION

All of the 40 patients had bilateral blepharochalasis. Thirty-one patients (62 eyes) had uncorrected visual acuity 6/6, 2 patients had 6/9, 3 patients had 6/12, 3 patients had 6/18 and one patient had corrected 6/6 visual acuity.

Preoperative examination data of patients with lower eyelid blepharochalasis, (Table 2)

All eyes had normal ocular motility test in all directions. Basic tear secretion was found normal in all examined eyes with no epiphora or dryness.

As regard the lower eyelid examination the excess skin of lower eyelids was reported in 20 eyes that were subjected to transcutaneous blepharoplasty; the other 20 eyes had no skin excess and were subjected to transconjunctival blepharoplasty. No horizontal lower eyelid laxity, lower eyelid retraction or ectropion were noticed.

The site of maximum fullness of fat in the lower eyelid was detected as follow:

a. In 14 eyes (35%) the maximum fullness was founded in the medial portion.

b. In 8 eyes (20%) the maximum fullness was founded in the medial and central portions.

c. In 6 eyes (15%) the maximum fullness was founded in the central portion.

d. In 4 eyes (10%) the maximum fullness was founded in the lateral portion.

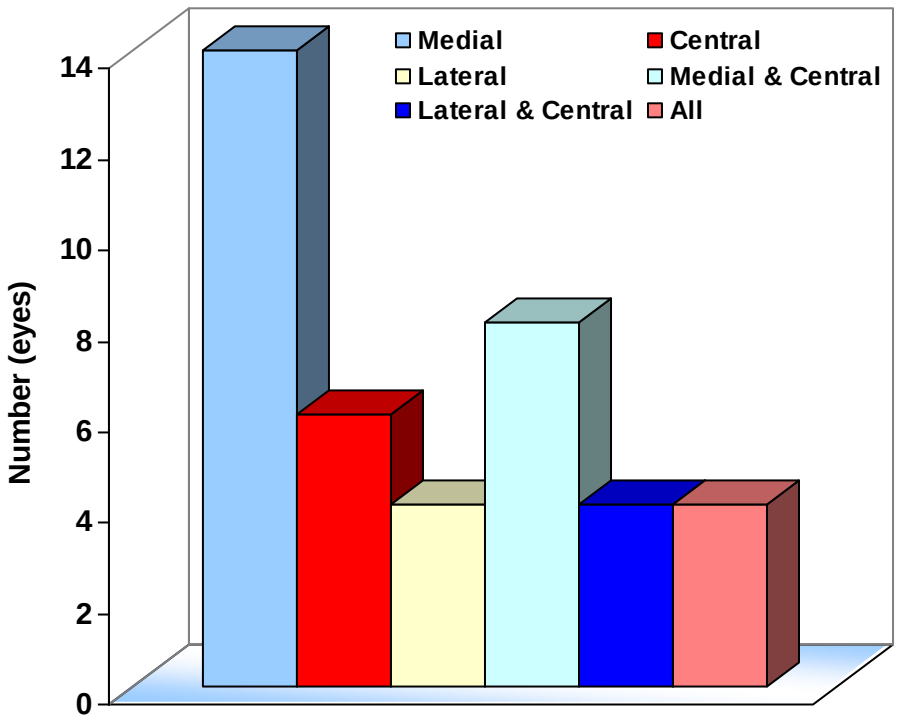
e. In 4 eyes (10%) the maximum fullness was founded in the lateral and central portions.

f. In 4 eyes (10%) all of the three compartments were affected, (Table 2) (Fig. 58).

Table (2): Preoperative examination data of patients with LL blepharochalasis

Data			**Number of eyes**
Normal ocular motility test			40(100%)
Normal basic tear secretion test			40(100%)
Free cornea			40(100%)
Lower eyelid evaluation	Excess eyelid skin	Present	20(50%)
	Site of maximum fullness	Medial	14 (35%)
		Central	6 (15%)
		Lateral	4 (10%)
		Medial &Central	8 (20%)
		Lateral & Central	4 (10%)
		Medial & Lateral	0
		All	4 (10%)

Fi **Fig.(58): Frequency of the Site of maximum fullness of the lower eyelid**



Preoperative examination data of patients with upper lid blepharochalasis, (Table 3)

All eyes had normal ocular motility test in all direction. Basic tear secretion was found normal in all examined eyes. Corneal evaluation revealed free corneas in all examined patient.

No eyebrow ptosis was detected in any examined patient, and the lacrimal gland was in its normal place in all patients.

Only two patients (10%) had bilateral impairment of visual field in the supratemporal periphery.

Excess skin of upper eyelids was reported in the 40 eyes; but with variable positions in relation to lid margin as follow:

a. In 6 eyes (15%) the excess skin was noticed above the lid margin.
b. In 8 eyes (20%) the excess skin was noticed at the lid margin.
c. In 26 eyes (65%) the excess skin was noticed below the lid margin.

The palpable herniated fat was detected in the 40 eyes, but with variable degrees as follow:

a. In 4 eyes (10%) the herniated fat was just palpable.
b. In 12 eyes (30%) mild herniated fat was palpable.
c. In 24 eyes (60%) there were marked herniated fat.

The lid crease was accepted in 20eyes (50%), indistinct in 12 eyes (30%) and low in 8 eyes (20%).

Table (3): Preoperative examination data of patients with upper lid blepharochalasis.

Data			Number of eyes
Normal ocular motility test			40(100%)
Normal basic tear secretion test			40(100%)
Free cornea			40(100%)
No eyebrow ptosis			40(100%)
Normal visual field			36 (90 %)
Normal place and texture of lacrimal gland			40 (100%)
Upper eyelid evaluation	Excess eyelid skin	Above lid margin	6 (15%)
		At lid margin	8 (20%)
		Below lid margin	26 (65%)
	Palpable herniated fat	Just palpable	4 (10%)
		Mild	12 (30%)
		Marked	24 (60%)
	Lid crease	Accepted	20 (50%)
		Indistinct	12 (30%)
		Low	8 (20%)

INTRAOPERATIVE EVALUATION

As regards anesthesia, twenty six procedures were performed under general anesthesia; 18 in LL group and 8 in UL group, while 54 procedures were carried out under local infiltration anesthesia; 22 in LL and 32 in UL groups, (Fig. 59).

General anesthesia was used in LL group for transconj-unctival approach in 14eye, and in 4 eyes for transcuteneous approach, while in UL group 8 conventional procedures were done under general anesthesia and 6 eyes for blepharoplasty with crease formation.

12 eyes with conventional upper blepharoplasty and 14 eyes for blephroplasty with crease formation were performed under local infiltration anesthesia. While in LL group 16 lower lid transcutaneous and 12 transconjunctival blepharoplasties were performed under local infiltration anesthesia (Table 4).

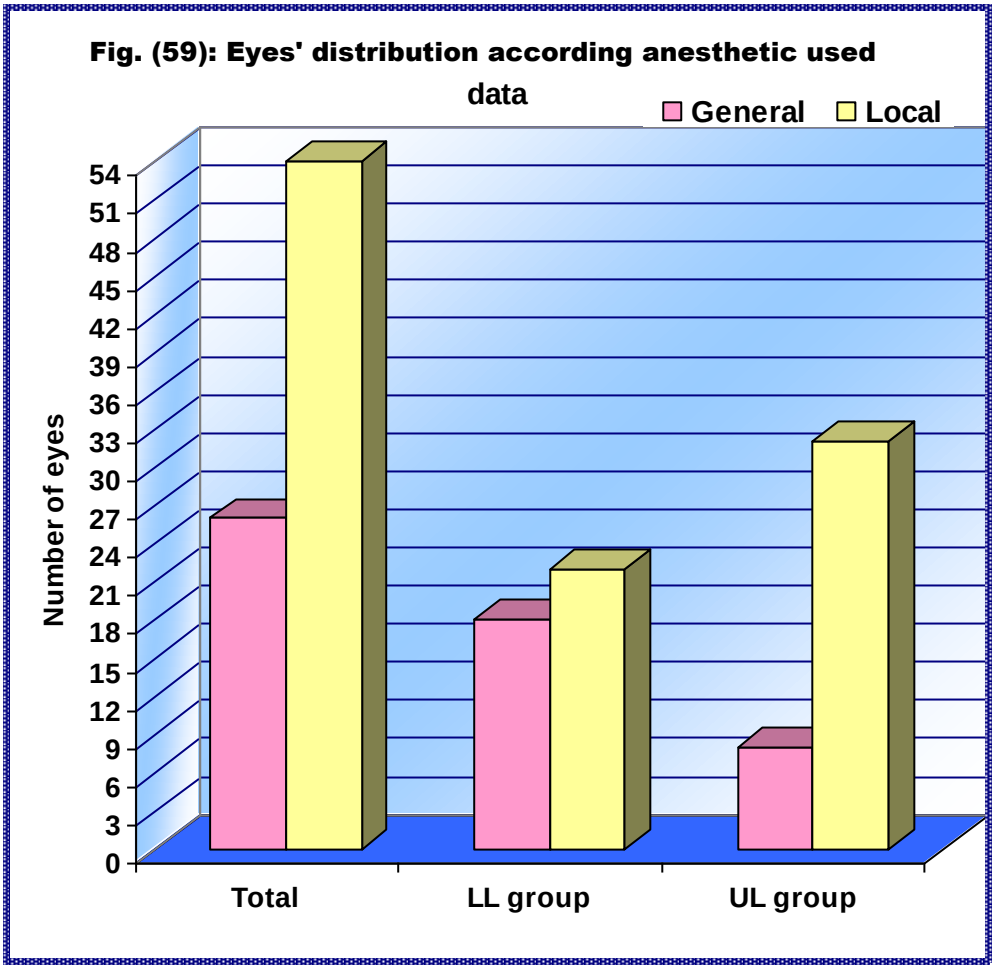
The general anesthesia was performed more in the young patients, or uncooperative patients.

Mild pain sensation was encountered in 5 eyes (9.3%) operated upon under local infiltration anesthesia, 3 in LL group and 2 in UL group.

Table (4): Eyes distribution according to anesthetics used

Data	Total	UL group			LL group		
		Total	Conven. Blepharoplasty	Blepharoplasty with crease formation	Total	Transconj. Blepharoplasty	Transcut. Blepharoplasty
General	26 (32.5%)	14 (17.5%)	8 (10%)	6 (7.5%)	12 (19%)	8 (10%)	4 (5%)
Local	54 (67.5%)	26 (32.5%)	12 (15%)	14 (17.5%)	28 (35%)	12 (15%)	16 (20%)
Total	80 (100)	40 (50%)	20 (25%)	20 (25%)	40 (50%)	20 (25%)	20 (25%)

Fig. (59): Eyes' distribution according anesthetic used



In UL group: the fat was found passing through a small single opening in the orbital septum in 12 eyes (30%), while in the other 28 eyes (70%) the fat was presented through the completely incised septum, (Table 5).

In the group with blepharoplasty and crease formation procedure the crease was created by 6/0 absorbable stitches, while the skin was closed by 6/0 non absorbable sutures.

In LL group: Intraoperative bleeding during dissection occurred in 4 eyes (10%): 3 in transconjunctival subgroup and one in transcutaneous subgroup. Exposure and dissection was slightly difficult in 6 eyes (15%) in which the exposure was started from the lateral compartment. While those cases stared centrally or medially it was more easy in exposure and dissection. Conjunctival stitches using 6/0 absorbable stitches were used in 7 eyes (35%) transconjunctival approach, while in transcutaneous approach the skin incision was closed by 6/0 non absorbable sutures.

Table (5): Intraoperative data

Data		**Number of eyes**
Intraoperative pain sensation		5 (9.3%)
Fat pass through orbital septum in UL group	Small single opening	12 (30%)
	Completely incised septum	28 (70%)
Intraoperative bleeding in LL group		4 (10%)
Difficult exposure & dissection in LL group		6 (15%)
Conjunctival stitching in LL group		7 (35%)

POSTOPERATIVE EVALUATION

Immediate postoperative complications :

All patients had postoperative pain ranged in severity from mild to moderate, but responded to oral paracetamol, only 4 patients (10%) required initial injectable then oral analgesics.

Subconjuntival hemorrhage was the most frequent post-operative complication encountered in patients operated upon through transconjunctival approach and was reported in 13 eyes (65%) but responded to conservative therapy. Edema and ecchymosis of the operated eyes were reported in all cases, but all responded to early cold and then hot ferments. All patients required supplemental short-course of α- chemotrypsin therapy to aid edema resolution. (Table 6).

Table (6): Immediate postoperative complications & their management

Complication		Number(%)	Management
Pain	Mild	72 (90%)	Oral analgesics
	Moderate	8 (10%)	Initial injectable then oral analgesics
Ecchymosis & subconjunctival bleeding		13 (16.25%)	Conservative treatment
Ecchymosis		48 (60%)	Local foments and α-chemotrypsin
Ecchymosis & edema		19 (23.75%)	Local foments and α-chemotrypsin oral

Late postoperative complications

In the upper lid blepharoplasty:

Late post operative complications were observed in 7 eyes (17.5%), 4 underwent conventional and 3 had blpharoplasty with crease formation (Table 7, Fig. 60).

Irregular lid crease was encountered in 2 eyes, shallow lid crease was encountered in one eye, low lid crease was encountered in one eye and high lid crease was encountered in one eye. Under-correction was reported in 2 eyes

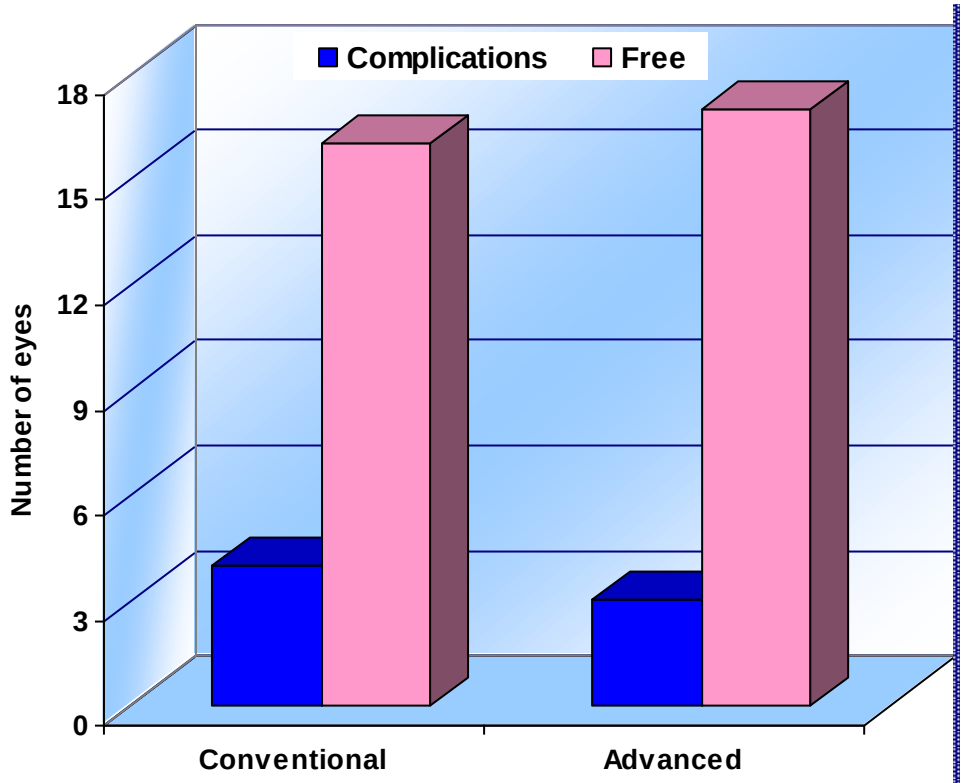
The result of excision of excess skin was good in all cases except in one patient in which there was bilateral residual excess skin that required re-excision. No post operative change in visual acuity was reported in all cases.

There was a non-significant difference as regards the frequency of postoperative complications between both conventional blepharoplasty and blepharoplasty with crease formation procedures, ($X^2 = 0.161$, $p > 0.05$).

Table (7): Late postoperative complications after upper eyelid blephroplasty and their management

Complication		Number of eyes	Patients gender	Management
Lid crease	Irregular	2 (5%)	Female	Nothing
	Shallow	1 (2.5%)	Female	
	Low	1 (2.5%)	Female	
	High	1 (2.5%)	Female	
Under-correction		2 (5%)	Female	Re-correction
Total		7 (17.5%)		

Fig. (60): Frequency of postoperative complication After upper eyelid blepharoplatsy



In the lower eye lid blephroplasty (LL group) :

Postoperative complications were observed in 6 eyes (15%), three after transconjunctival approach and three after transcutaneous approach, (Table 8, Fig. 61).

Residual fat prominence in the lateral portion was encountered in 4 eyes, 3 after transconjunctival and one after transcutaneous approach.

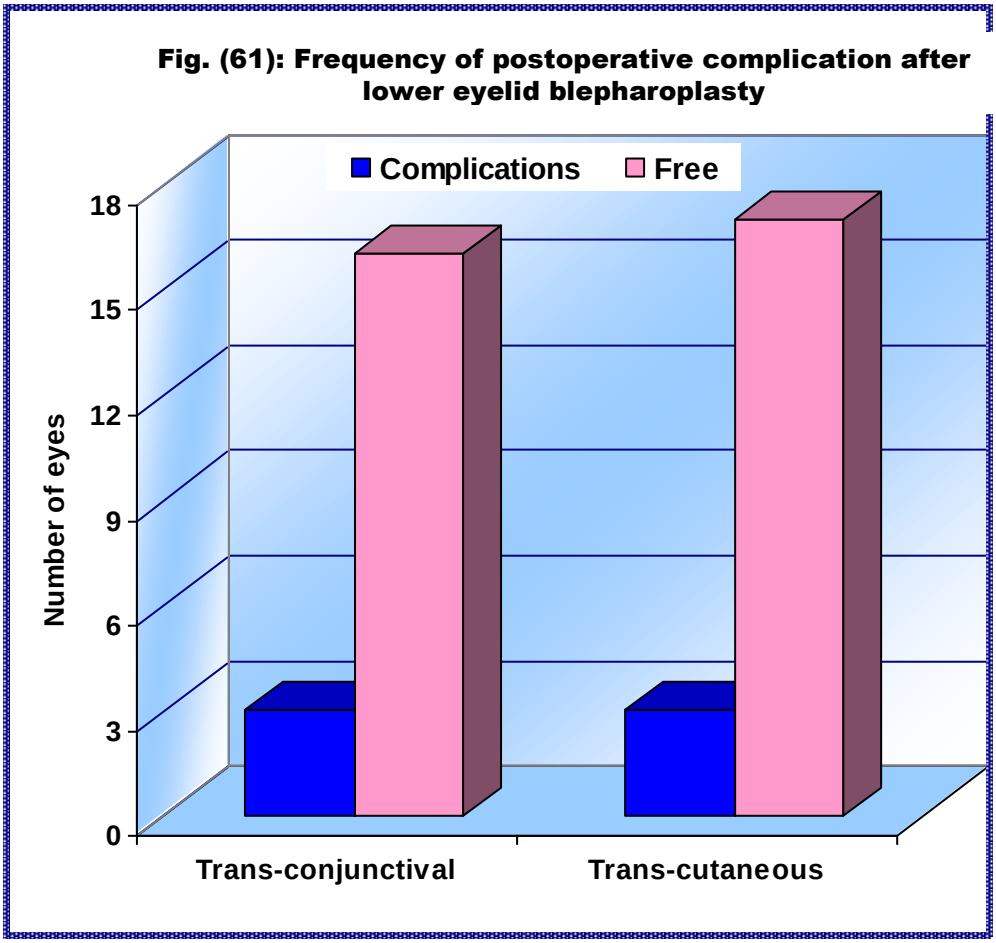
Postoperative basic tear secretion test detected 2 dry eyes, while no changes in the visual acuity was reported in all cases.

There was a non-significant difference as regards the frequency of postoperative complications between both approaches, ($X^2 = 0.823$, $p > 0.05$).

Table (8): Late Postoperative complications after lower eyelid blephroplasty and their management

Complication	Number of eyes	Bilatralty	Patients gender	Management
Residual fat	4 (10.3%)	Bilateral	Male.	Re- correction
		Unilateral	Female	
		Unilateral	Female	
Residual excess skin	2 (5.2%)	Bilateral	Male	Re-excision
Dry eye	2 (5.2%)	Unilateral	Female	Conservative
Total	6 (15.5%)			

Fig. (61): Frequency of postoperative complication after lower eyelid blepharoplasty



Postoperative patients satisfaction :

Nine patients were unsatisfied with the surgical outcome with a total satisfaction rate of 77.5%. Only one male patient was unsatisfied by his bilateral residual fat prominence after bilateral low transconjunctival blepharoplasty and requested re-operation that was carried out through transconjunctival approach and the prominence completely disappeared. This patient became finally satisfied by the outcome after re-operation. Eight females were unsatisfied with the surgical outcome as follow:

One patient had bilateral under-correction after conventional upper lid blephroplasty and underwent re-correction and was partially satisfied after the re-correction.

Another female had right residual fat after transconjunctival lower lid blepharoplasty and requested re-operation that was carried out through transconjunctival approach and the prominence completely disappeared, however she remained unsatisfied.

The third had left residual fat after lower lid transcutaneous blepharoplasty and requested re-operation that was carried out through transconjunctival approach, also she had dry eye which was managed conservatively.

The other 4 females had upper lid blepharoplasty with unilateral low crease, bilateral irregular crease, shallow unilateral crease and the fourth had high unilateral crease, respectively.

The eighth female had unilateral dry eye which was managed conservatively.

The final satisfaction data was as follow:

Thirty-two patients were satisfied with the surgical outcome of blepharoplasty with a complete satisfaction rate of 80%.

Five patients (12.5%) were partially satisfied.

Three patients (7.5%) were unsatisfied (Table 9, Fig. 62).

Table (9): Final satisfaction rate

Satisfaction	Number (%)	Gender
Complete satisfied patient	32 (80%)	7 males 25 females
Partially satisfied patient	5 (12.5%)	Females
Unsatisfied patient	3 (7.5%)	Females

Fig. (62):Patients' distribution according to their satisfaction with the surgical outcome

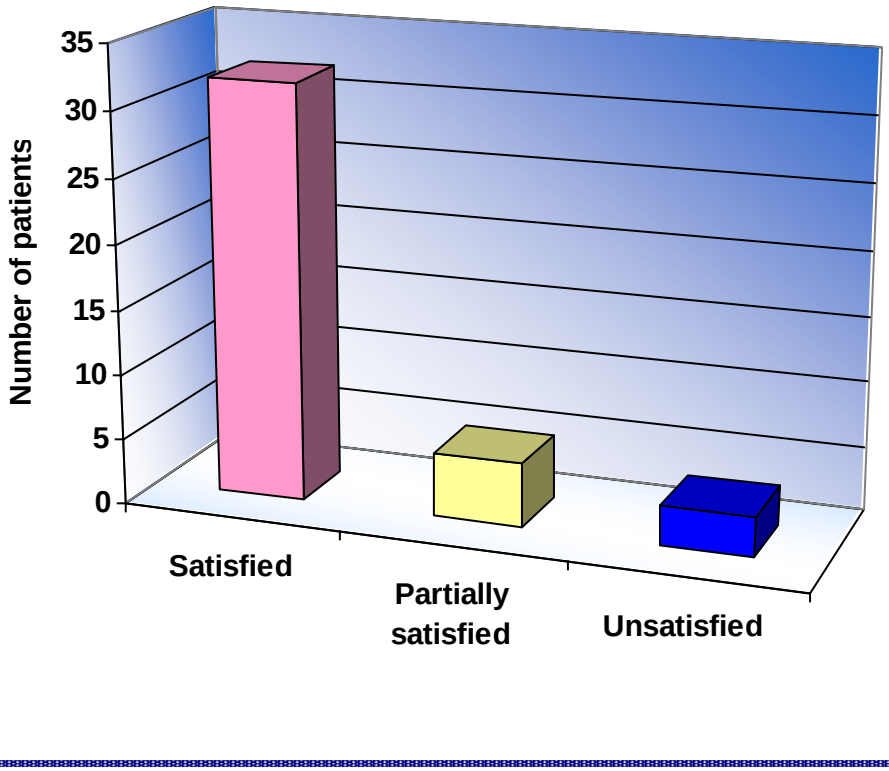


Fig. (63): Preoperative appearance of patient with bilateral upper lid blepharochalasis

Fig.(64):Post operative appearance (3months) after conventional upper lid blepharoplasty without creation of lid crease.

Fig. (65): Preoperative appearance of patient with bilateral upper lid blepharochalasis.

Fig. (66): Post operative appearance (3 months) after upper lid blepharoplasty with crease formation .

Fig.(67): Preoperative appearance of patient with bilateral lower lid orbital fat herniation.

Fig.(68): Post operative appearance (3 months) after transcutenous lower lid blepharoplasty.

Fig. (69): Preoperative appearance of patient with bilateral lower lid orbital fat herniation.

Fig.(70): Post operative appearance (3 months) after transconjunctival lower lid blepharoplasty.

Fig.(71): Post operative (2days) edema after bilateral upper lid conventional blepharoplasy.

Fig. (72) : Post operative (1month) after complete resolution of the edema.

Fig. (73): Post operative (3 days) subconjunctival hemorrhage after transconjunctival blepharoplasty.

Fig. (74): Post operative (1 month) after complete resolution of the hemorrhage.