Results

Patients Characteristics

Age and Sex distribution

This study included 20 patients; 7 males and 13 females, (Fig. 3). Mean age of male patients was 42±10.4 years, whereas that of female patients was 41.6±9.2 years, with a non-significant difference (P>0.05) between both sexes as regards age distribution, (Table 1).

The highest frequency of recurrent pterygia preoperatively was found in age group of 30-40 years old, where there was 8 patients (40%) within this age range, followed by age group of 40-50 years, 6 patients (30%), while there were 4 patients (20%) aged above fifties and 2 patients (10%) below thirties, (Table 2, Fig. 4).

Occupation

Nine female patients (45%) were farmers working with unprotected eyes during daytime in their lands; while the other 4 female patients (20%) were housewives. Five male patients were workers and 2 patients were soldiers. No patient used eye protecting glasses, (Table 3, Fig. 5).

Table (1): Patients' distribution according to sex and age

	Males	Females
Number	7 (35%)	13 (65%)
Age (years)	42±10.4 (31-57)	41.6±9.2 (28-52)

Data are presented as number & mean±SD*, percentages & ranges are in parenthesis*

Table (2): Patients' distribution according to age groups

Age group	Patients' number (%)
<30	2 (10%)
30-40	8 (40%)
40-50	6 (30%)
50-60	4 (20%)

Table (3): Patients' distribution according to their occupation

Sex Occupation	Males		Females	
	No.	%	No.	(%)
Farmer	-	-	9	45%
Workers	5	25%	-	-
Housewives	-	-	4	20%
Soldiers	2	10%	-	-

Fig. (3): Patients' distribution according to sex

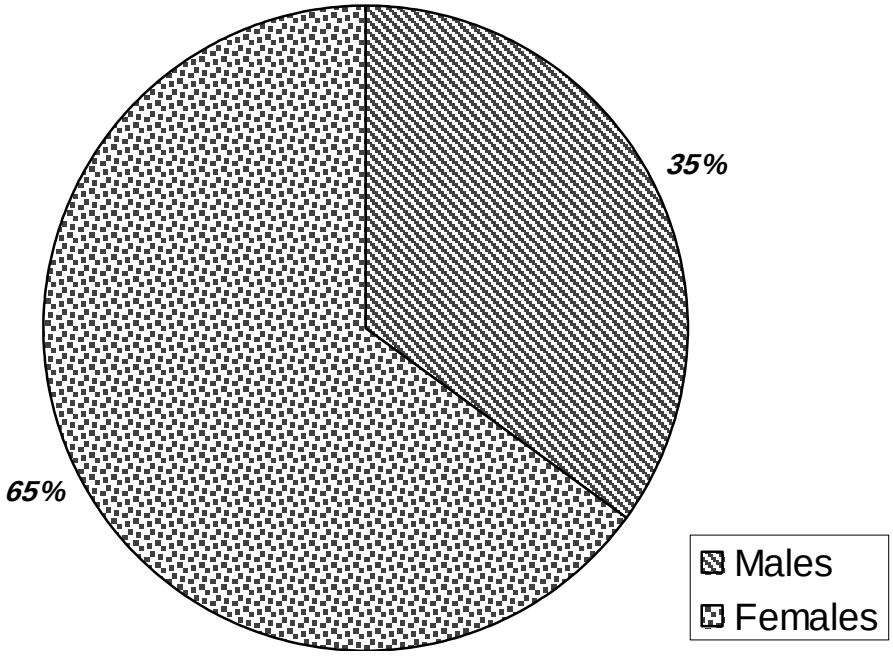


Fig. (4): Patients' distribution according to age groups

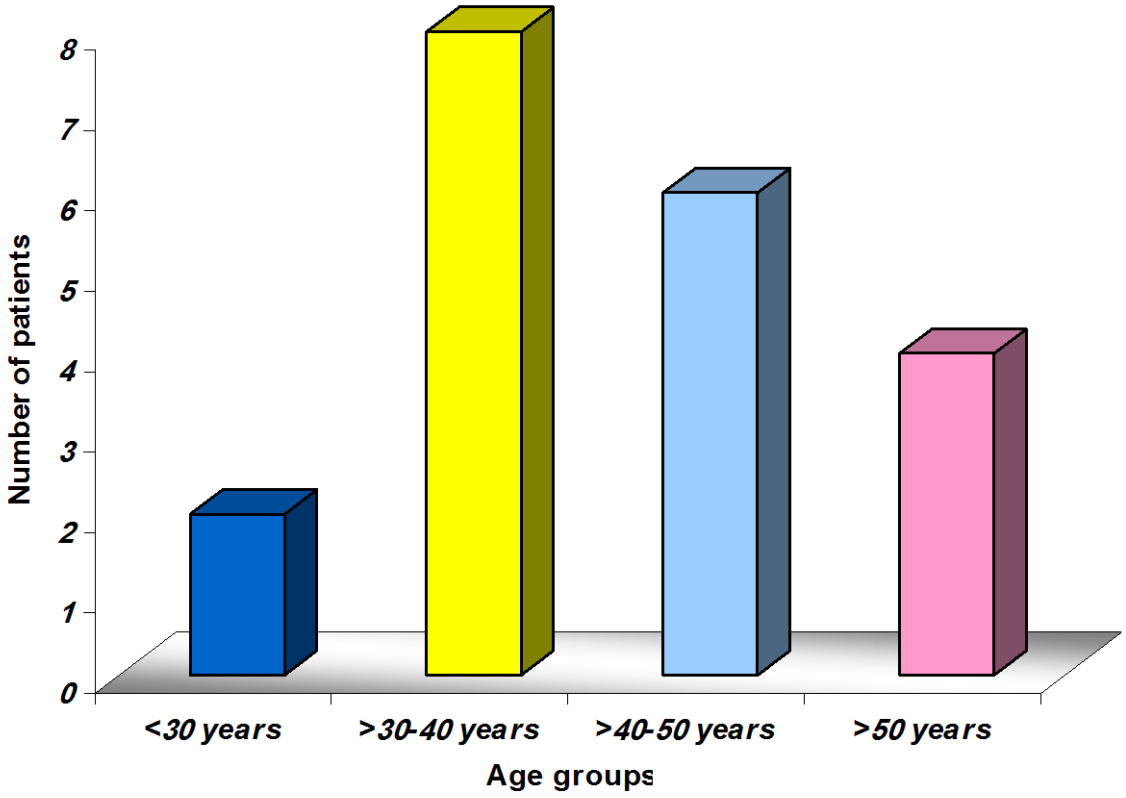
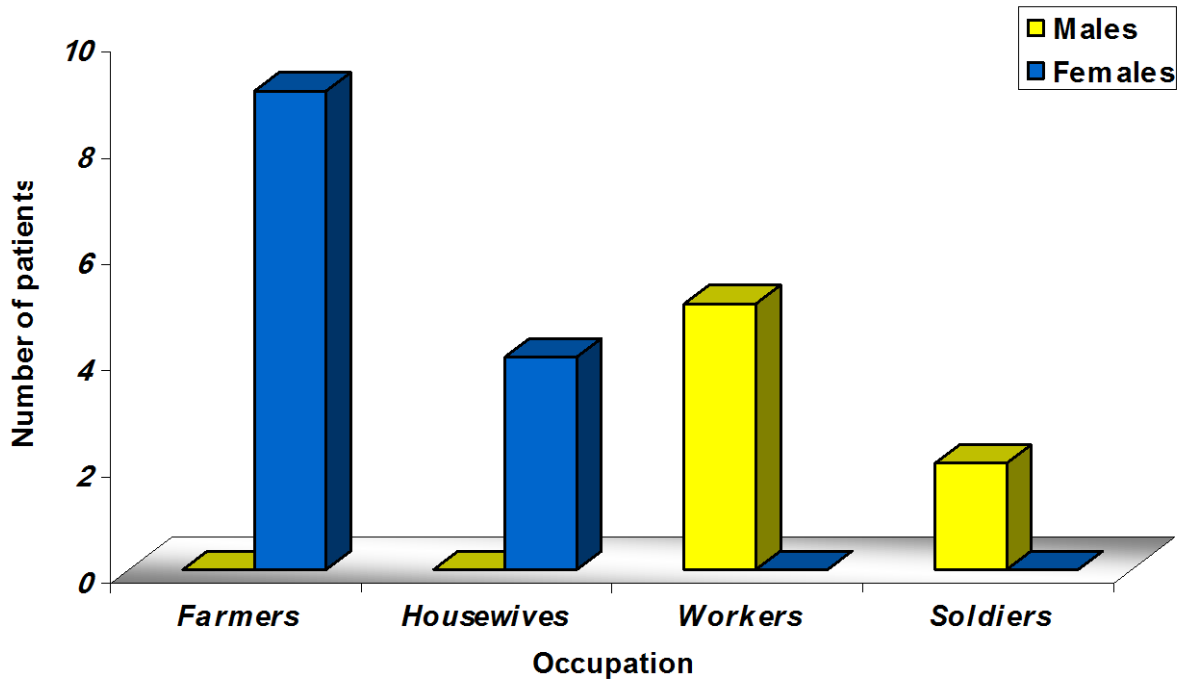


Fig. (5): Patients' distribution according to their occupations



Disease Characteristics

Site of pterygium

Twelve patients (60%) had left sided pterygia, while the other 8 patients (40%) had right sided pterygia, (Fig. 6). Nineteen patients (95%) had nasal pterygia, while only one patient (5%) had temporal pterygium, (Fig. 7).

History of Previous Treatment

All patients had recurrent pterygia preoperatively and gave past history of previous surgery for pterygium; however, no patient gave history of ocular trauma.

Eighteen patients had previous one trial for surgical removal of pterygium; 12 on left and 6 on right side but had recurrence, the other two patients had two trials for right pterygium removal but recurred, (Table 4 Fig. 8).

The mean duration till recurrence after the first trial was 3.7±1.7; range: 1-5 year, on right side, and was 4.3±4.3; range: 0.75-12 years on the left side, whereas, two pterygia had recurred 10 months and 2 years, respectively, after the second surgery, (Table 4, Fig. 9).

Clinical types and Length of pterygium

There were 20 pterygia with a mean length of 3.24±0.53; range 3-5.1 mm, with a significant variance in length between it, ($t=29.26$, $P<0.001$). There were 7 mildly progressive pterygia (35%), while there were 13 progressive pterygia (65%), (Table 5, Fig. 10).

Progressive pterygia had extended for a mean distance of 3.47±0.3; range 3-5.1 mm, while mildly progressive pterygia had extended for 3.21±0.13; range 3-3.6 mm, with a significant increase in case of progressive pterygia compared to mildly progressive ones, ($t=2.69$, $P<0.05$), (Table 5, Fig. 11).

There was a positive significant correlation between age and the length of extension of the pterygia, ($r=0.662$, $P<0.01$), (Fig.11) Moreover, there was a relation between patients' occupation and progression and length of the pterygia; where 8 farmers, 3 workers and only 2 housewives had progressive pterygia, while 2 workers, 2 housewives and the two soldiers and only one farmer had mildly progressive pterygia. There was a significant difference in clinical types of pterygia according to patients' occupation, ($X^2= 7.99$, $P<0.05$), with a non-significant difference as regards the length of the extension within each occupation category, (Table 6, Fig. 12 &13).

Table (4): Number of previous surgeries and duration till recurrence according to side of pterygia

		Rt	Lt
No. Of pterygium		8 (40%)	12 (60%)
No. Of trials	Once	6 (30%)	12 (60%)
	Twice	2 (10%)	-
Mean duration (years) till	1st recurrence	3.7±1.7 (1-5)	4.3±4.3 (0.75-12)
	2nd recurrence	1.41	-

Table (5): Clinical types and extension of pterygia

	Progressive	Mildly progressive
No.	13 (65%)	7 (35%)
Length (mm)	3.47±0.3 (3-5.1)	3.21±0.13 (3-3.6)
T=	2.69	
P	<0.05	

Table (6): Clinical type and extension of pterygia according to patients' occupation

Occupation	Progressive		Mildly progressive	
	No.	Length (mm)	No.	Length (mm)
Farmer	8 (40%)	3.48±0.3	1 (5%)	3.4
Workers	3 (15%)	4.07±0.9	2 (10%)	3.4±0.28
Housewives	2 (10%)	3.6±0.28	2 (10%)	3.3
Soldiers	0		2 (10%)	3.05±0.07
X^2=	7.99			
P	<0.05			

Fig. (6): Patients' distribution according to side of pterygium

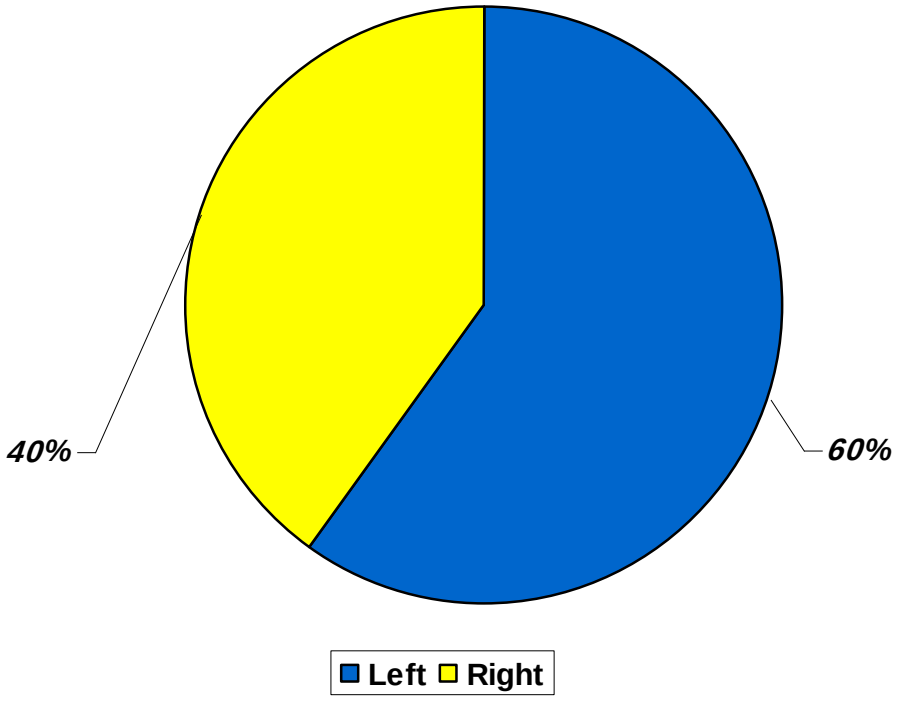


Fig. (7): Patients' distribution according to site of pterygium

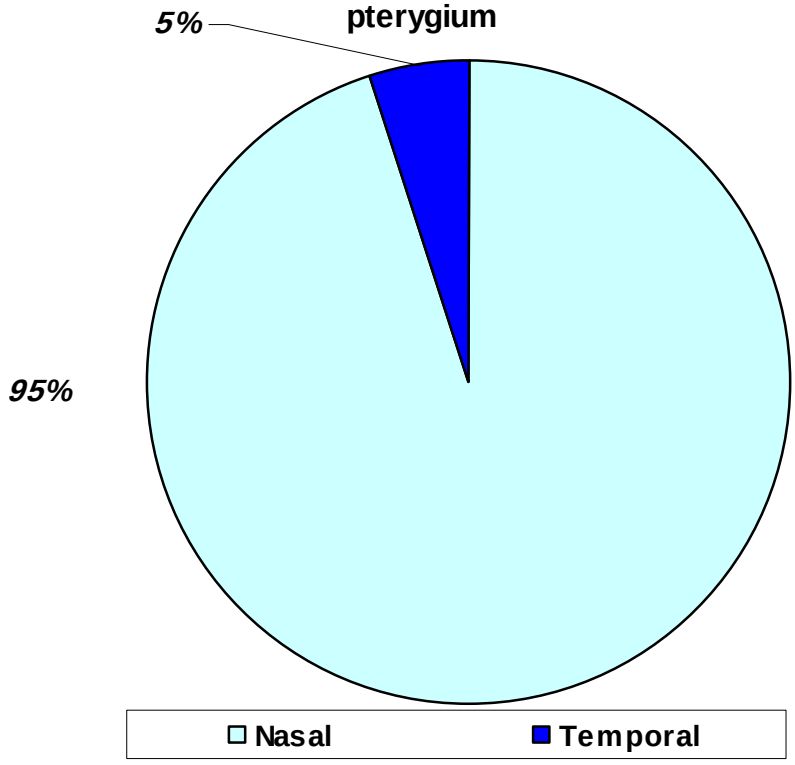


Fig. (8) Number of pterygia according to number of previous surgical trials of treatment

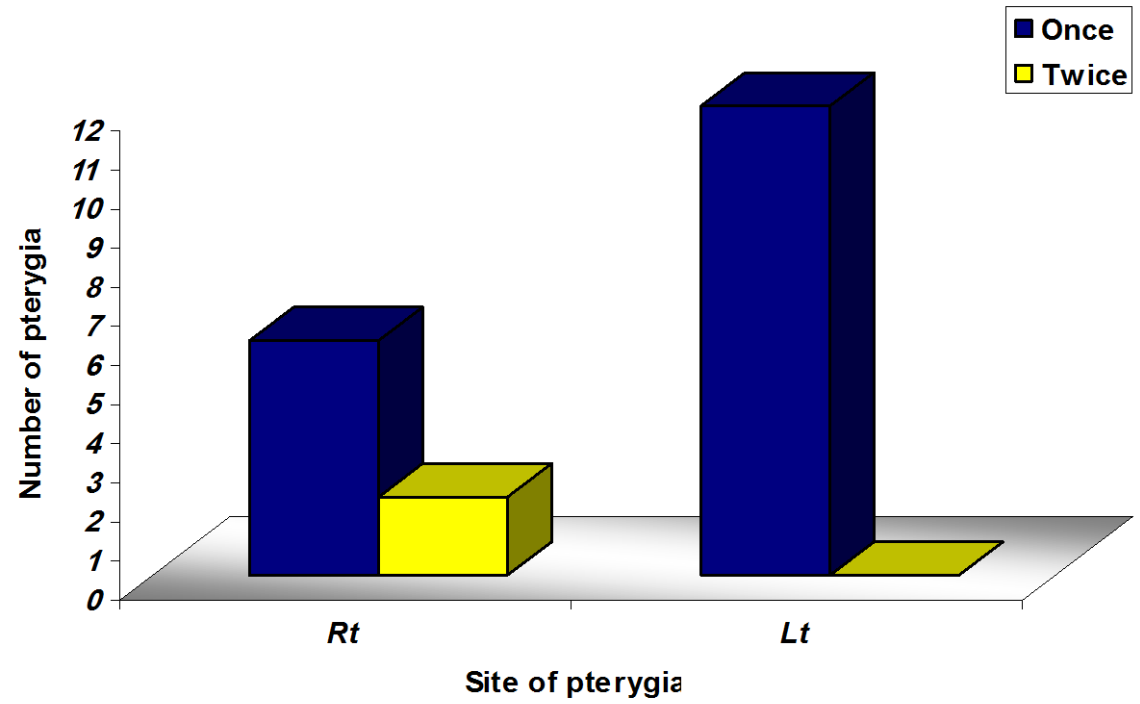


Fig. (9): Duration till recurrence of pterygia after previous surgical trials of treatment

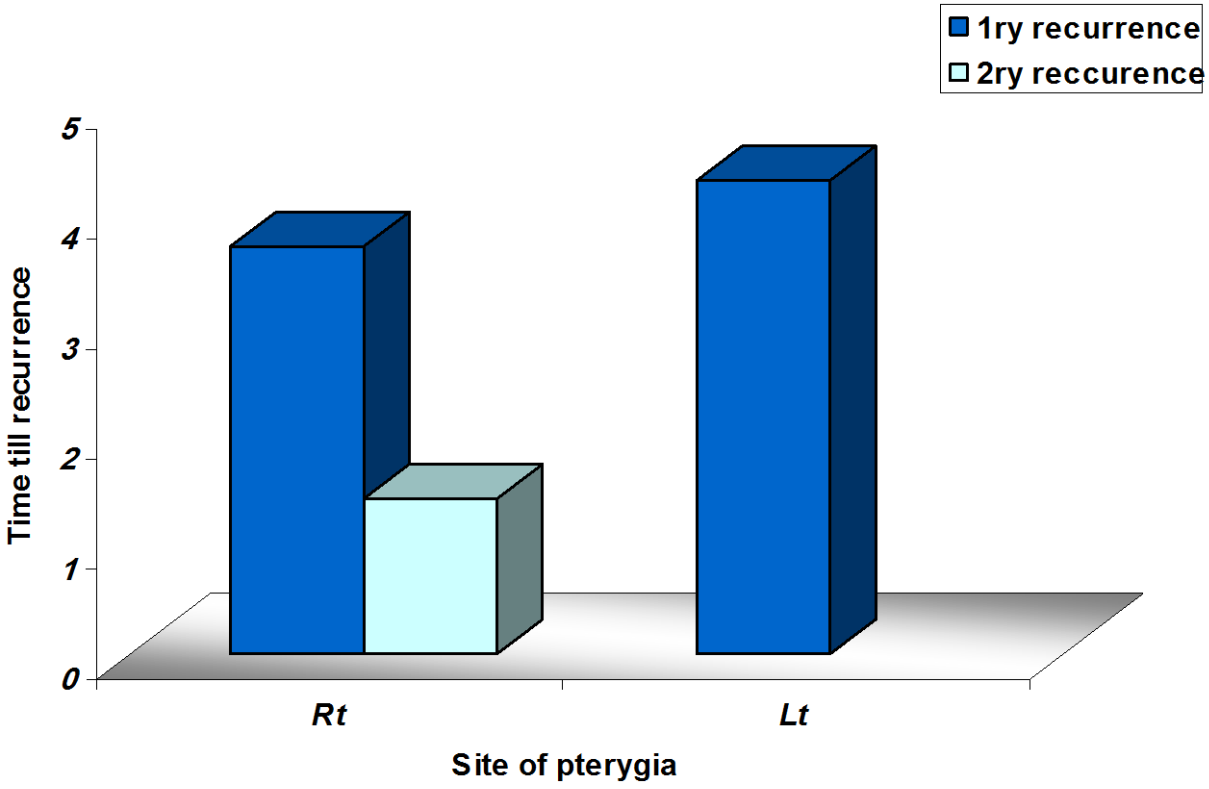
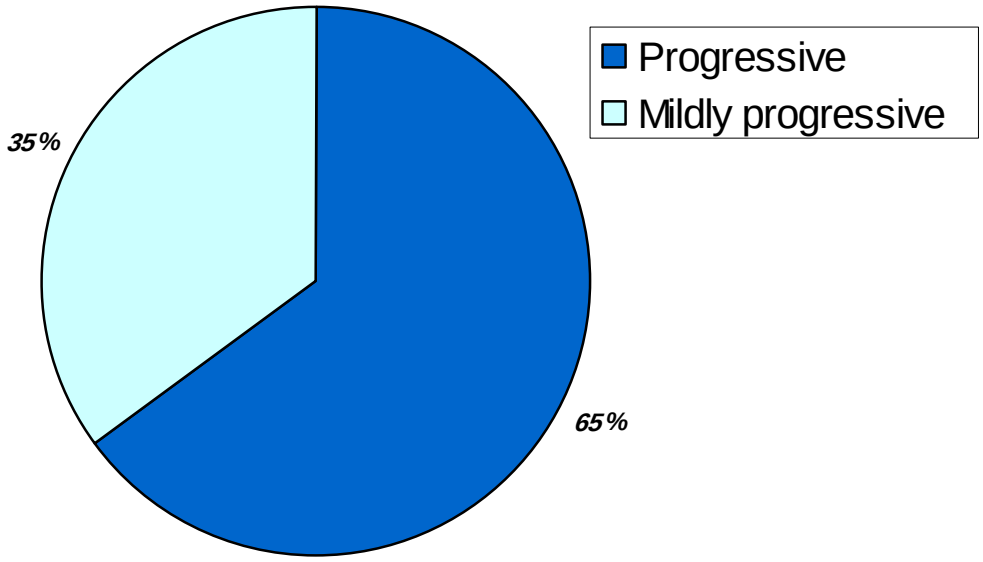


Fig. (10): Patients' distribution according nature of pteryg



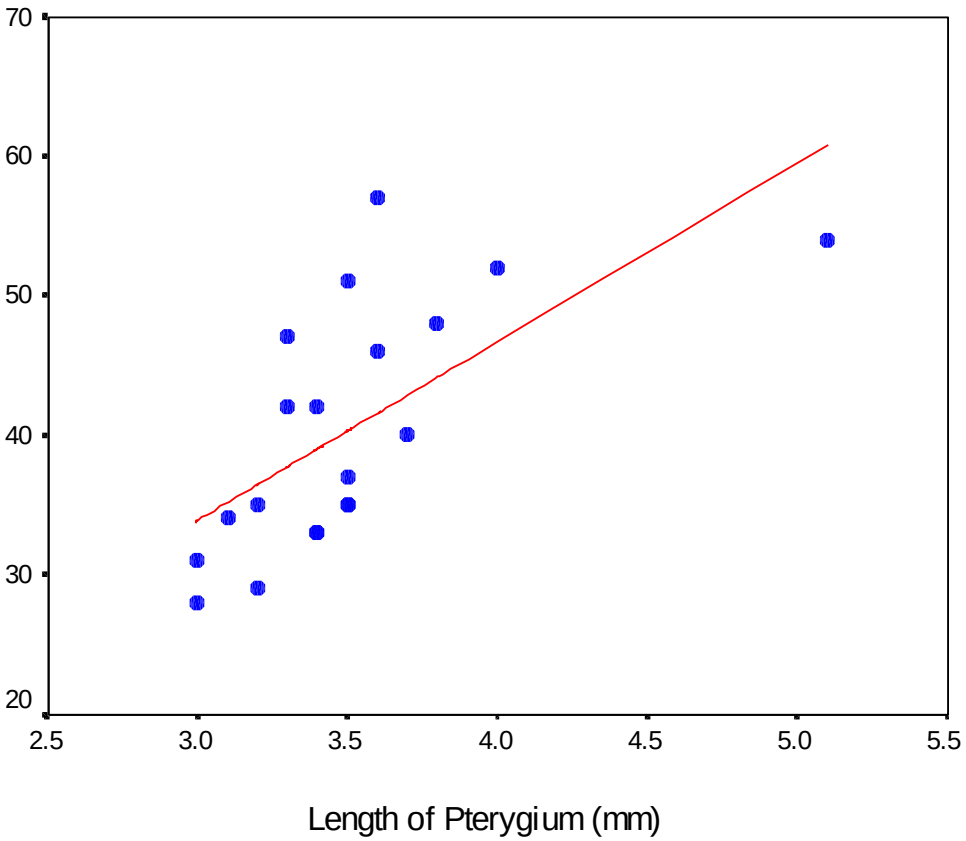


Fig. (11): Correlation between patients' age and length of the pterygia

Fig. (12): Clinical types of pterygia according to patients' occupations

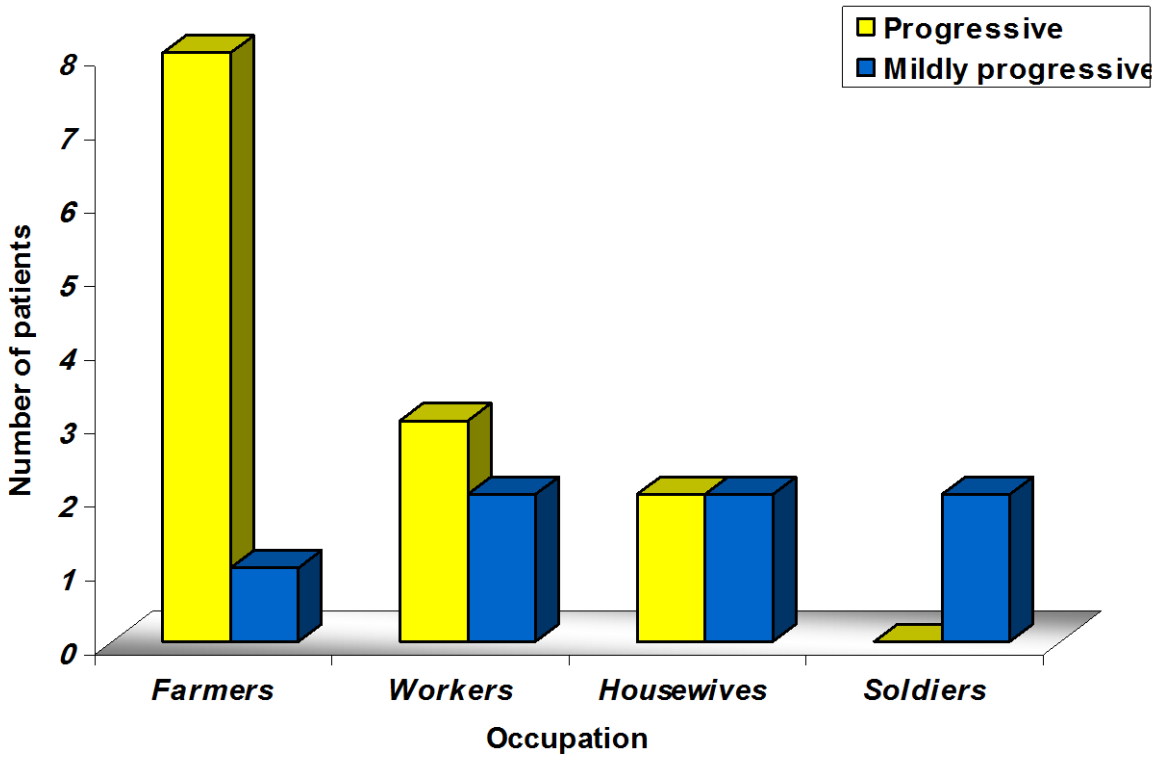
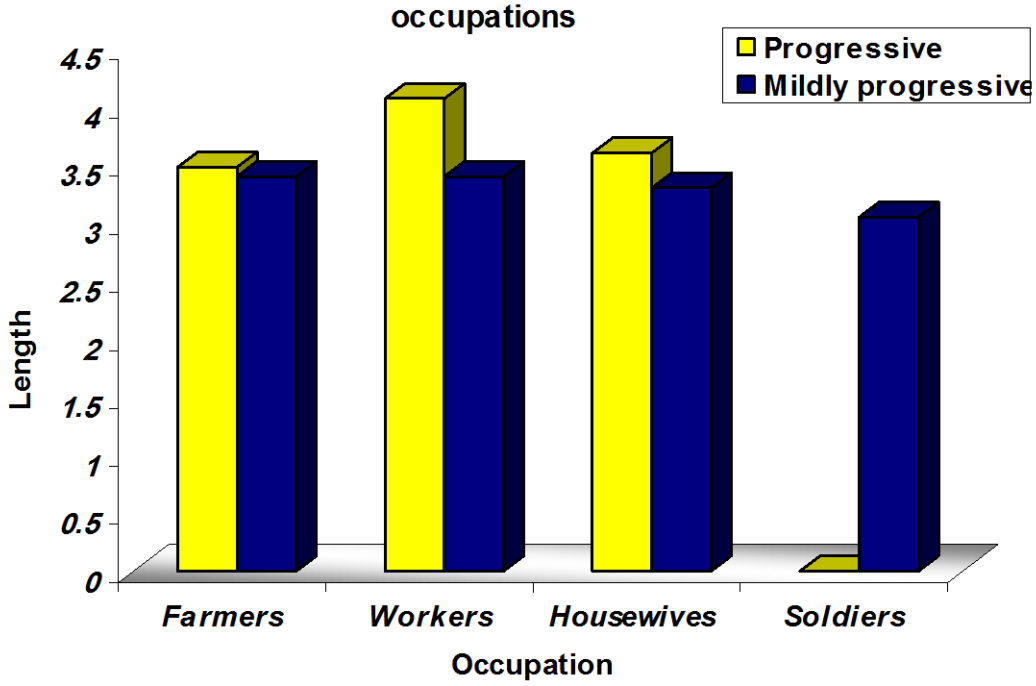


Fig. (13): Length of pterygia according to patients' occupations



Postoperative Examination

Symptomatic complaints

A) Pain

Ocular pain evaluated using verbal pain analogue scale (0=no pain, 1: mild tolerable pain, 2: pain necessitating analgesia, 3: intolerable pain relieved with analgesia). Throughout the first postoperative day, no patients experienced pain grade-0, only 3 patients (15%) had pain grade-2, and 15 patients (75%) experienced pain grade-1, while the remaining 2 patients (10%) experienced pain grade-3, (Fig. 14). Pain was resolved gradually and by the end of the first postoperative week, there was 12 patients (60%) having no pain (Grade 0), 7 patients (35%) had pain grade-1, and only one patient (5%) had pain grade-2, and no patient had pain grade-3. By the end of the second week, only one patient (5%) had pain grade-1, and the reminders (95%) had no pain, (Table 7, Fig. 15).

B) Photophobia

All patients had sense of photophobia through the first postoperative day, however by the end of the first week only 3 patients (15%) had sense of photophobia that resolved by the end of the second week, (Table 8, Fig. 16).

C) Lacrimation

Lacrimation was a complaint of nearly all patients during the first postoperative day, however, by the end of the first week only 5 patients (25%) had mild lacrimation on exposure to bright light, and by the end of the second week one patient (5%) only had lacrimation that persisted till the end of the second month, (Table 8, Fig. 17).

D) Foreign body sensation

Seventeen patients (85%) had a foreign body sensation during the first postoperative day, while the other 3 patients (15%) had not, by the end of the first week, only 7 patients (35%) has that sense which disappeared totally by the end of the second week, (Table 8).

Table (7): Patients' distribution according to the pain perceived severity throughout the postoperative two weeks, according to verbal analogue pain scale

	1st day		1st week		2nd week	
	No.	%	No.	%	No.	%
Grade 0	0	0	12	60	19	95
Grade 1	15	75	7	35	1	5
Grade 2	3	15	1	5	0	0
Grade 3	2	10	0	0	0	0

Table (8): Patients' distribution according to the occurrence of symptomatic complaints throughout the postoperative two weeks

Complaint	Occurrence	1st day		1st week		2nd week	
		No.	%	No.	%	No.	%
Photophobia	Present	20	100	3	15	0	0
	Absent	0	0	17	85	20	100
Lacrimation	Present	20	100	5	25	1	5
	Absent	0	0	15	75	19	95
FB sensation	Present	17	85	7	35	5	25
	Absent	3	15	13	65	15	75

Fig. (14): Patients' distribution according to the grade of postoperative pain sensation

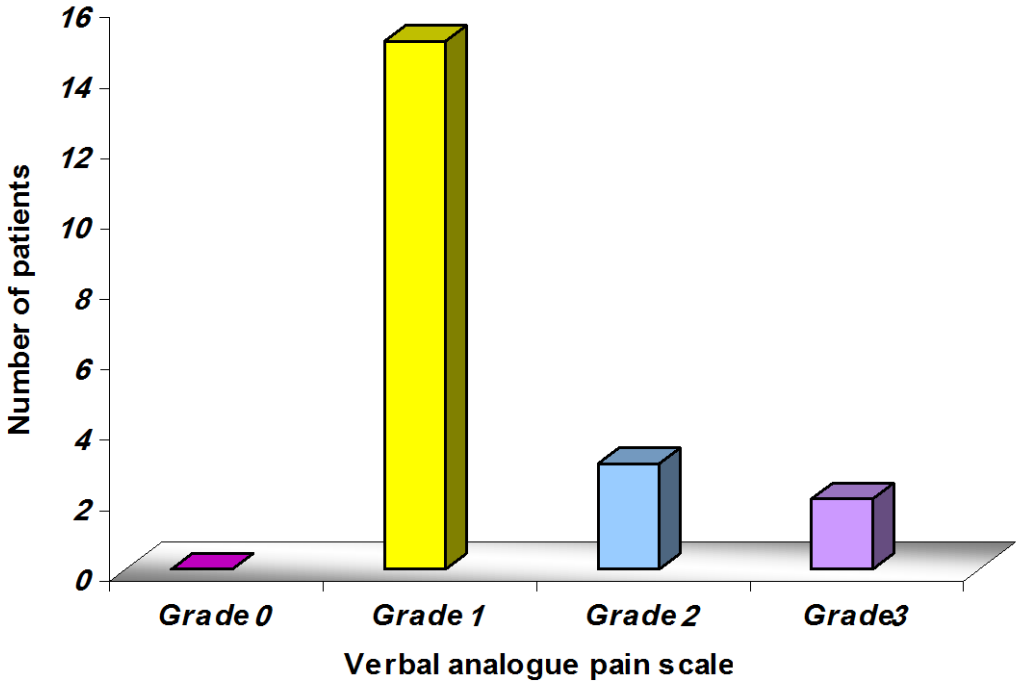


Fig. (15): Patients' distribution according to the grade of pain preceived throughout the first postoperative weeks

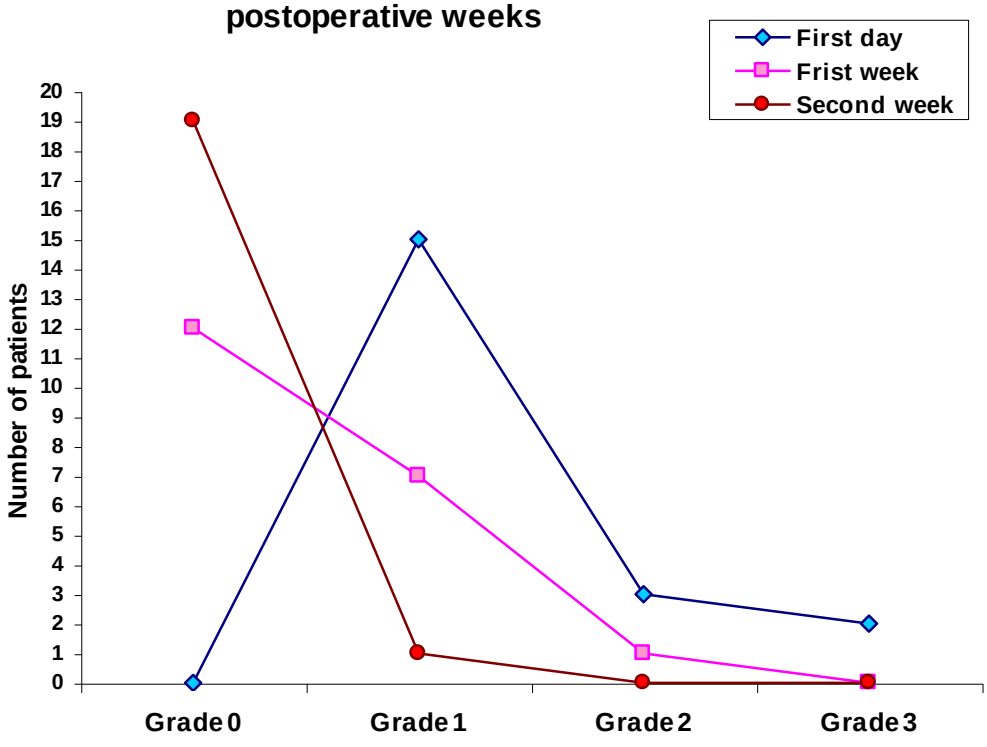


Fig. (16): Patients' distribution according to the occurrence of photophobia during the first two postoperative weeks

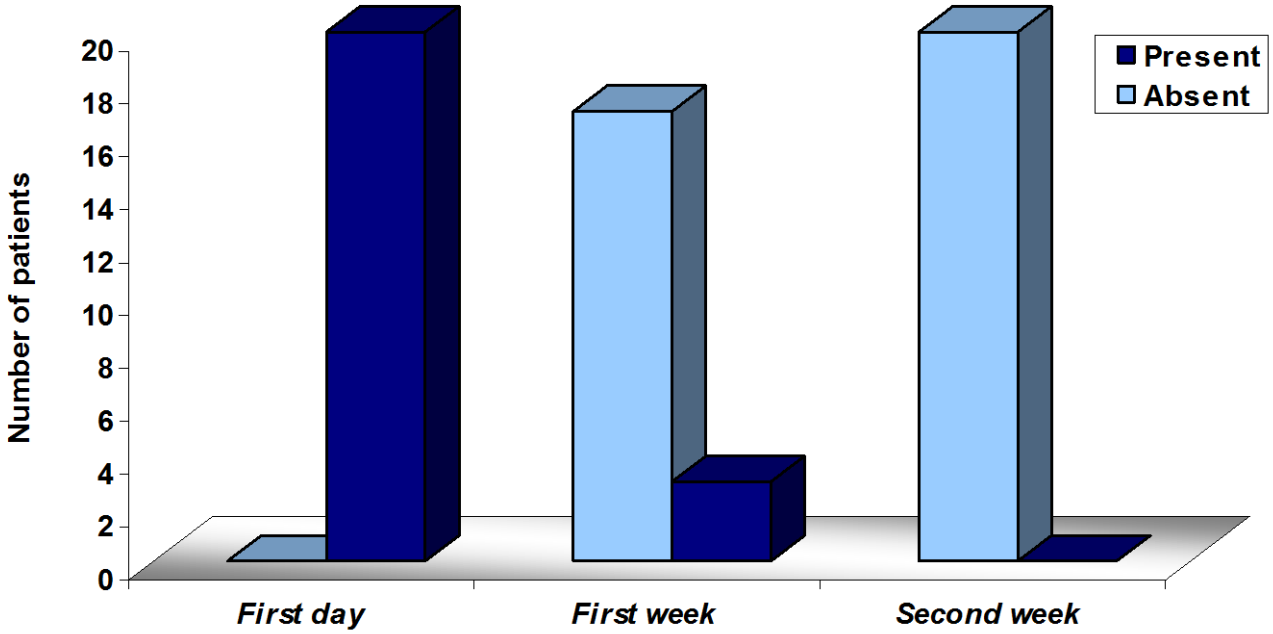
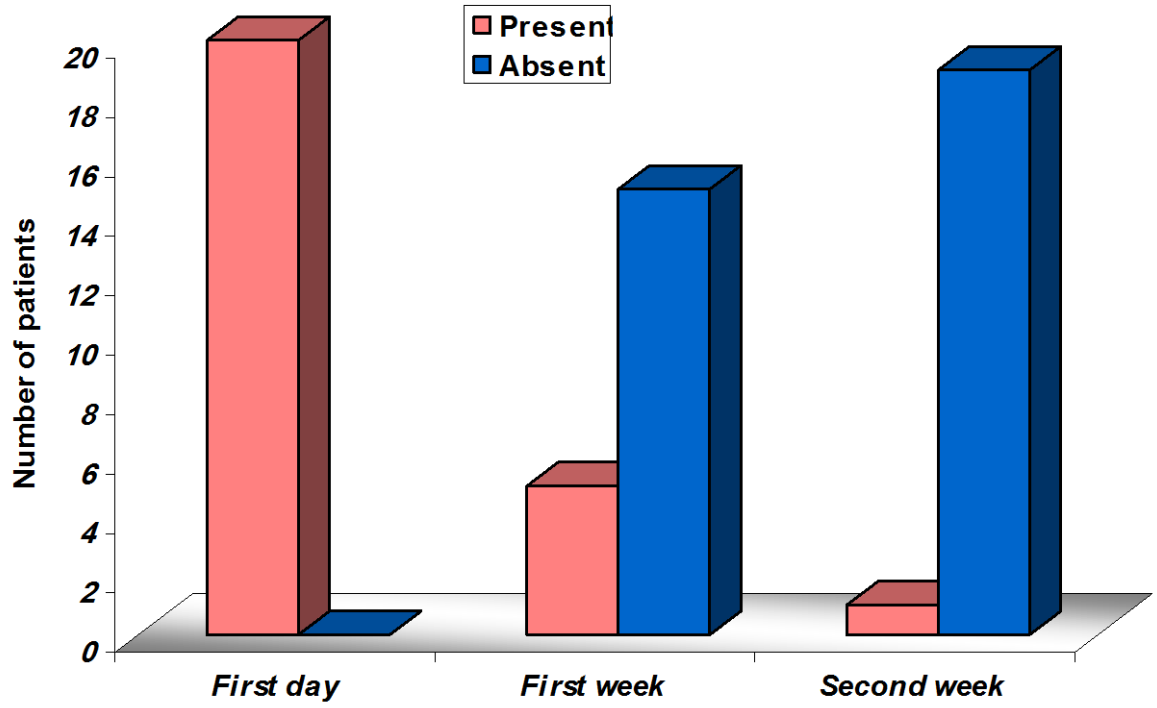


Fig. (17): Patients' distribution according to the occurrence of lacrimation during the first two postoperative weeks



Postoperative examination data

A) Graft site

- During the first postoperative week, there was contraction of the conjunctival graft and gaping between the graft and the adjacent conjunctiva. Mild to moderate degrees of edema of the graft was observed in all cases.
- During the second postoperative week, the gap between the graft and conjunctiva was obliterated and edema was subsided.
- In the third postoperative week, blood vessels on the nasal conjunctiva appeared less engorged and graft became less hyperemic with decreased conjunctival injection around the graft.
- By the fourth week, most cases showed disappearance of conjunctival hyperemia and there was faint scar marking the borders of the graft.

B) Conjunctival injection

- Postoperative conjunctival injection was mainly localized around the graft; by the end of the first postoperative week there was slight increase in graft injection with mild edema due to vascularization of the graft. The graft was mostly vascularized 3-5 days postoperatively from the surrounding conjunctiva and adjacent episclera.
- There was no failure of vascularization of the grafts.
- Graft injection gradually decreased to disappear by the end of the first postoperative month.

C) Re-epithelialization

- Re-epithelialization of the corneal defect was complete in all cases by the end of the first postoperative week.
- The sites from which grafts were taken were completely re-epithelialized in 16 eyes of the 20 eyes operated upon (80%) by the end of one postoperative week, and in the other 4 eyes (20%) by the end of the second week, (Fig 18). In one

eye, conjunctival re-epithelialization extended slightly beyond the limbus but not further than the corneal limit of the original graft site.

- There was no Tenon's granulomas or other problems in the donor areas. In addition, no significant complications occurred at the donor sites.

D) Visual acuity

- Postoperative best corrected visual acuity at three months in comparison to the preoperative best corrected acuity showed an improvement in 14 patients (70%), while remained stationary in the other 6 patients (30%).
- The visual acuity showed an improvement of one line in 12 patients (60%) and two lines in 2 patients (10%), (Fig. 19).

E) Recurrence

- There are two cases of recurrence (10%) and the remaining 18 cases (90 %) show no recurrence of pterygia or deterioration of visual acuity throughout the follow-up period of 6 months. The two cases of recurrence one of them is male (40 year) and the other is female (45 year) they report their recurrence within two months of follow up with corneal invasion about 1.5mm and the condition was stable and not in need for more surgical interference. (Fig. 20)

Fig. (18): Patients' distribution according to the time of healing of graft sites

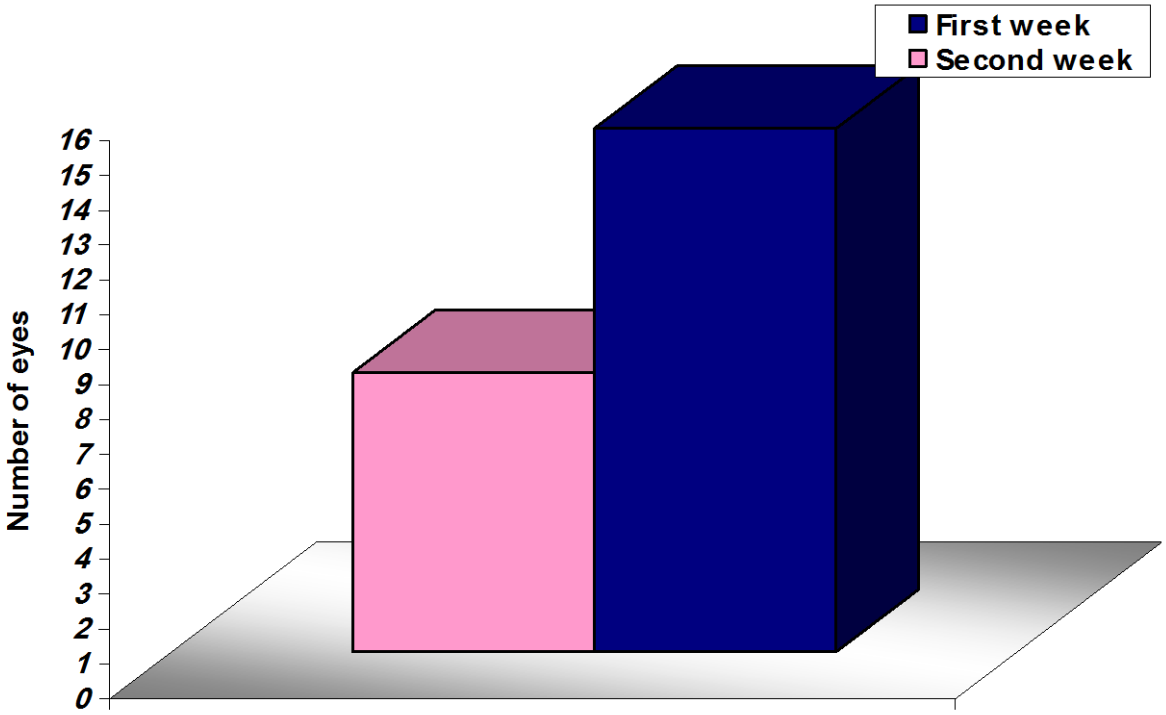


Fig. (20): Postoperative best corrected visual acuity changes

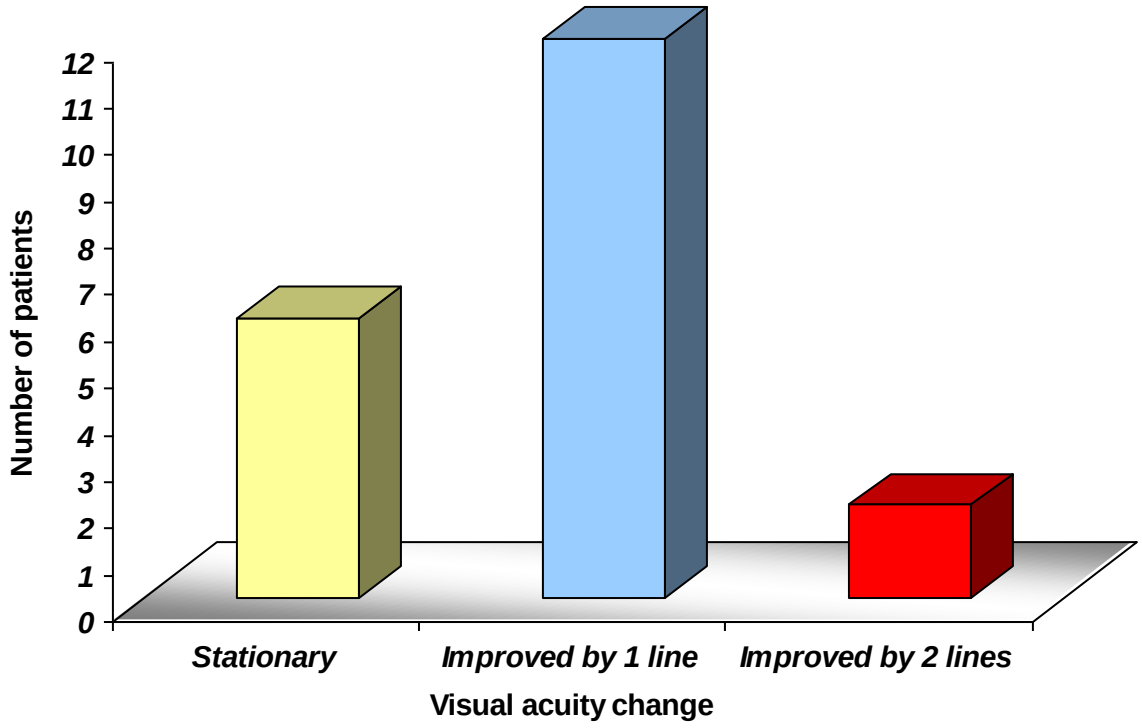


Fig .(20)patient distribution according to postoperative recurrence of the pterygium