RESULTS

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Table (1): Patient characteristics.

Patient characteristics / No. of patients (50)	No. of eyes (60)
Sex	
- Males (28)	33 (55.0%)
- Females (22)	27 (45.0%)
Age	
- Range	30-70
- Mean	54.3
- ± SD	9.33
Type of glaucoma	
- Chronic narrow-angle-glaucoma	27 (45.0%)
- Primary open angle glaucoma	25 (41.7%)
- Secondary glaucoma	8 (13.3%)

The procedure was performed in sixty eyes of fifty patients. The range of patient's age was 30-70 years with a mean of 54.32 years old.

Thirty three eyes (55%) of male patients and twenty seven (45%) eyes of female patients.

Regarding diagnosis, twenty five eyes had primary open angle glaucoma (41.7%), twenty seven eyes had chronic angle closure glaucoma (45%), and eight eyes had secondary glaucoma (13.3%).

All patients had elevated IOP despite maximum tolerated medical therapy.

The preoperative IOP range was 20 to 64 mmHg. With mean of 36.27 mmHg.

The patients were divided into three groups.

Group I: (Low risk group)

Thirty three eyes had had microtrabeculectomy without the use of antimetabolities.

Group II: (High risk group)

Seventeen eyes were scheduled as high risk of scarring. Nine with previous failed glaucoma surgery, two aphakic, three pseudophakic two traumatic angle recession glaucoma and one with previous posterior segment surgery (post vitrectomy). Antimetabolities were used in this group of eyes either in the form of 5 flourouracil or mitomycin-C.

Group III: (Combined group)

Ten cases were diagnosed as having cataract and glaucoma & underwent combined cataract extraction and micro trabeculectomy at the same sitting either in the form of phaco microtrabeculectomy or Extra capsular cataract extraction with microtrabeculectomy.

Table (2): Pre and post operative IOP in all eyes (n = 60).

IOP	Range	Mean	± SD	Paired t	P-value
Pre	20-64	36.27	9.93		
1st sitting	4-18	8.63	2.72	20.46	< 0.001 *
Iw	4-30	10.63	4.46	17.51	< 0.001 *
Im	8-24	13.00	3.38	17.18	< 0.001 *
2m	10-24	13.70	3.19	16.93	< 0.001 *
4m	10-22	13.87	2.55	17.52	< 0.001 *
6m	10-22	14.03	2.69	17.83	< 0.001 *

* Significant

Pre-operative IOP in all eyes:

Preoperative IOP range was 20-64 mmHg with a mean of 36.27 mmHg.

Post operative IOP in all eyes:

At the end of the 1st post operative week, the IOP range was 4-30 mmHg with a mean of 10.63 mmHg.

At the end of the 1st month, the IOP range was 8-24 mmHg with a mean of 13.0.

At the end of the 2nd month, the IOP range was 10-24 mmHg with a mean of 13.7.

At the end of the 6th month. The IOP range was 10-23 mmHg with a mean of 14.03 and it is significantly decreased than the pre operative IOP.

According to paired-t test there is a significant decrease in IOP post operatively.

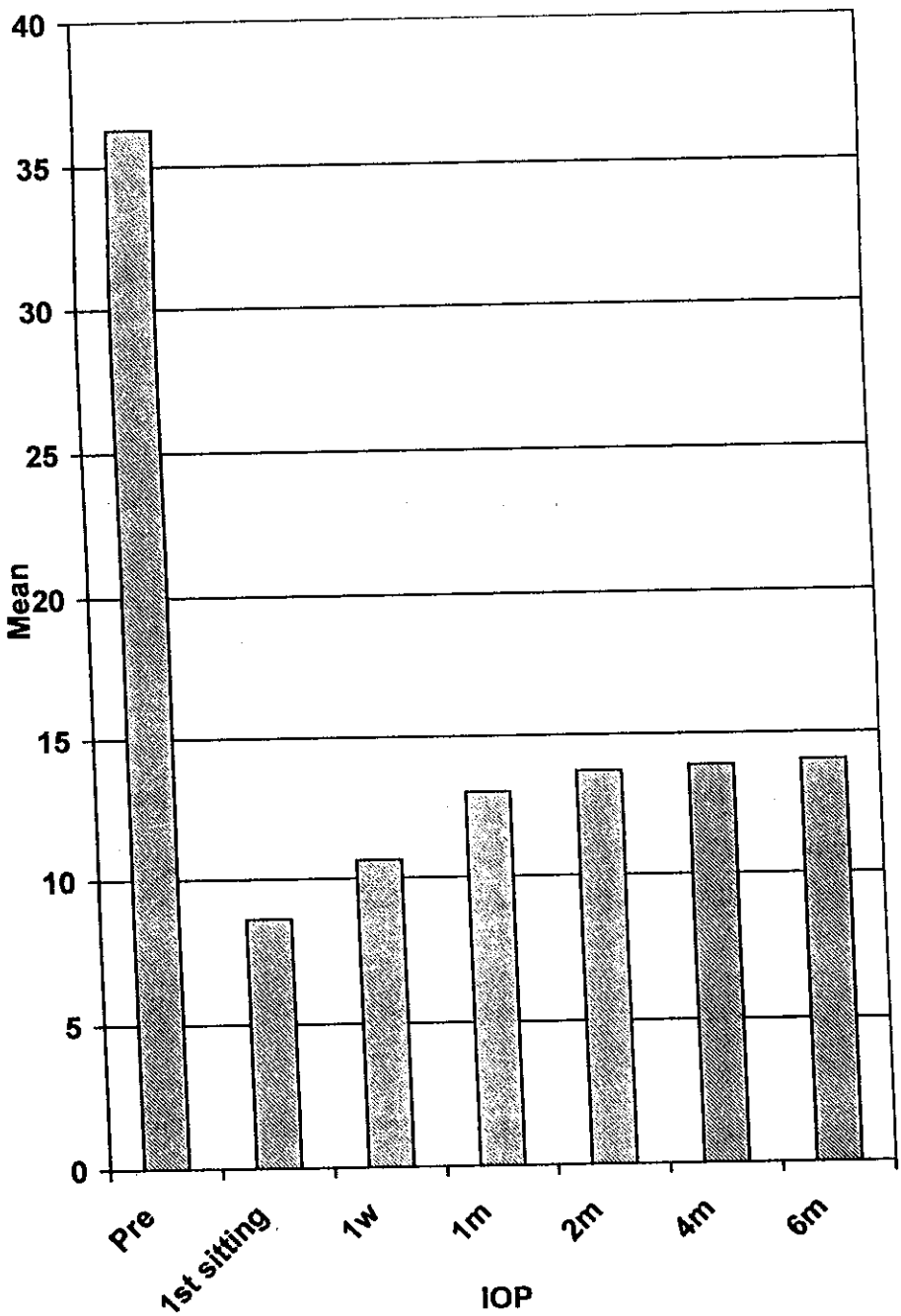

Fig. (26): Pre and post operative IOP in all eyes (n = 60)

Table (3): Pre and post operative IOP in low risk group (n = 33 eyes).

IOP	Range	Mean	± SD	Paired t	P-value
Pre	20-64	37.88	9.75		
1st sitting	6-18	9.21	2.60	16.24	<0.001*
Iw	6-30	11.15	4.47	14.21	<0.001*
Im	10-24	13.15	3.08	14.05	<0.001*
2m	10-24	14.12	3.57	13.56	<0.001*
4m	10-18	13.88	2.39	14.34	<0.001*
6m	10-22	14.00	2.78	14.39	<0.001*

* Significant

Pre-operative IOP in low risk group:

Preoperative IOP range was 20-64 mmHg with a mean of 37.88.

Post operative IOP in low risk group:

At the end of the 1st post operative week, the IOP range was 6-18 mmHg with a mean of 9.21.

At the end of the 1st month, the IOP range was 10-24 mmHg with a mean of 13.15.

At the end of the 2nd month, the IOP range was 10-24 mmHg with a mean of 14.12.

At the end of the 6th month. The IOP range was 10-22 mmHg with a mean of 14.00 and it is significantly decreased than the pre operative IOP.

According to paired-t there is a significant decrease in IOP post operatively.

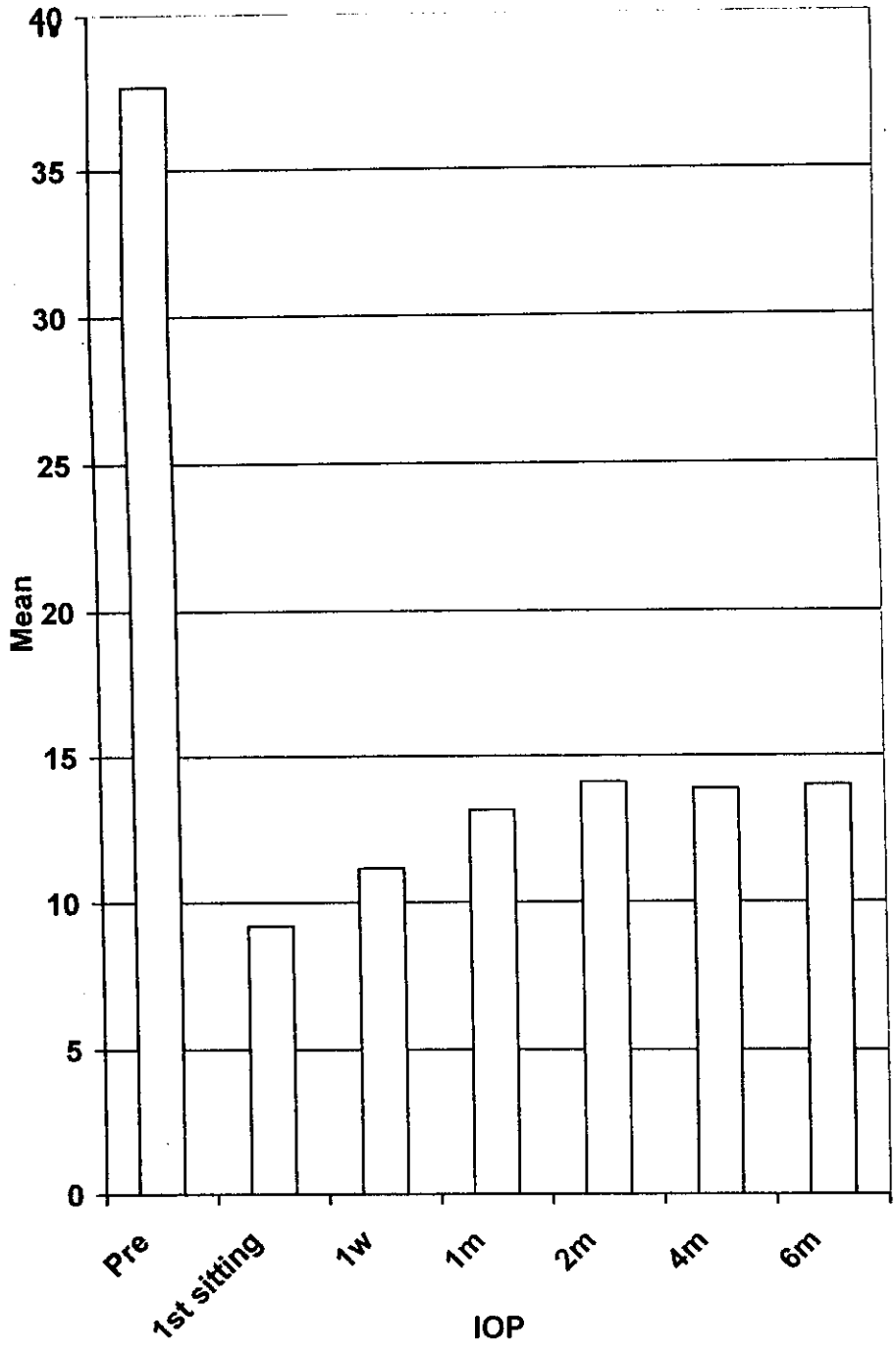

Fig (27): Pre and post operative IOP in low risk group (n = 33 eyes).

Table (4): Pre and post operative IOP in cases with high risk (n = 17).

IOP	Range	Mean	± SD	Paired t	P-value
Pre	20-59	37.06	10.70		
1st sitting	4-14	7.29	3.00	10.41	< 0.001 *
Iw	4-16	8.35	3.95	9.48	< 0.001 *
Im	8-24	12.24	3.93	8.69	< 0.001 *
2m	10-20	12.59	2.72	9.14	< 0.001 *
4m	10-22	13.65	3.10	9.40	< 0.001 *
6m	10-22	13.88	2.87	10.13	< 0.001 *

* Significant

Pre-operative IOP in high risk group:

Preoperative IOP range was 20-59 mmHg with a mean of 37.06.

Post operative IOP in high risk group:

At the end of the 1st post operative week, the IOP range was 4-16 mmHg with a mean of 8.35.

At the end of the 1st month, the IOP range was 8-24 mmHg with a mean of 12.24.

At the end of the 2nd month, the IOP range was 10-20 mmHg with a mean of 12.59.

At the end of the 6th month. The IOP range was 10-22 mmHg with a mean of 13.88 and it is significantly decreased than the pre operative IOP.

According to Paird-t test there is a significant decrease in IOP post operatively.

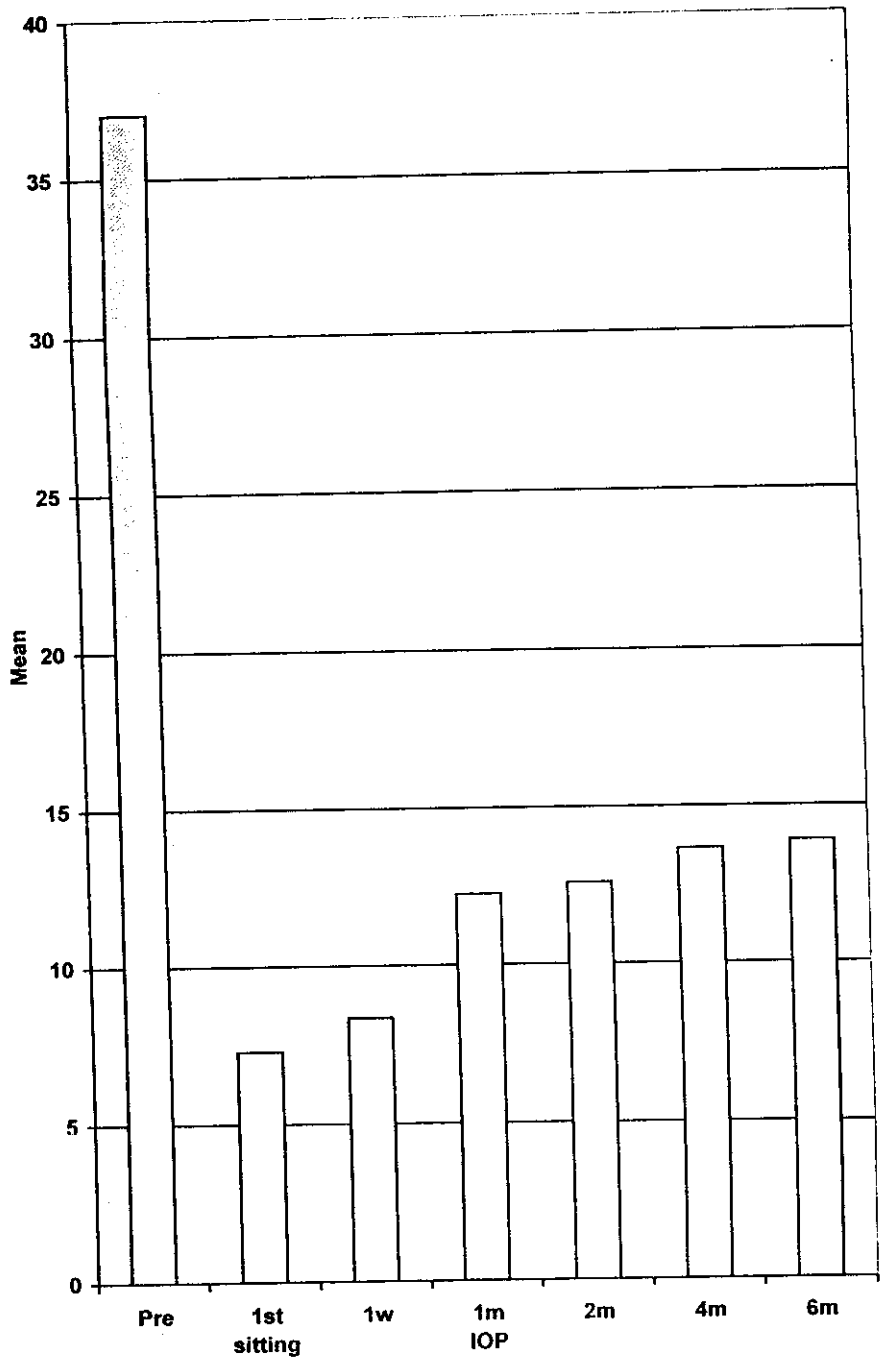

Fig. (28): Pre and post operative IOP in cases with high risk (n = 17).

Table (5): Pre- and post-operative IOP in eyes of microtrabeculectomy combined with cataract surgery (Group III) (n = 10).

IOP	Range	Mean	± SD	Paired t	P-value
Pre	20-38	29.60	6.72		
1st sitting	8-14	9.00	1.94	10.66	< 0.001 *
Iw	10-22	12.80	3.91	8.20	< 0.001 *
Im	10-22	13.80	3.46	8.23	< 0.001 *
2m	12-18	14.20	2.20	6.72	< 0.001 *
4m	12-18	14.20	2.20	6.22	< 0.001 *
6m	12-18	14.40	2.27	6.04	< 0.001 *

* Significant

Pre-operative IOP in combined group:

Preoperative IOP range was 20-38 mmHg with a mean of 29.60.

Post operative IOP in combined group:

At the end of the 1st post operative week, the IOP range was 10-22 mmHg with a mean of 12.80.

At the end of the 1st month, the IOP range was 10-22 mmHg with a mean of 13.80.

At the end of the 2nd month, the IOP range was 12-18 mmHg with a mean of 14.20.

At the end of the 6th month. The IOP range was 12-18 mmHg with a mean of 14.40 and it is significantly decreased than the pre operative IOP.

According to Paired-t test there is a significant decrease in IOP post operatively.

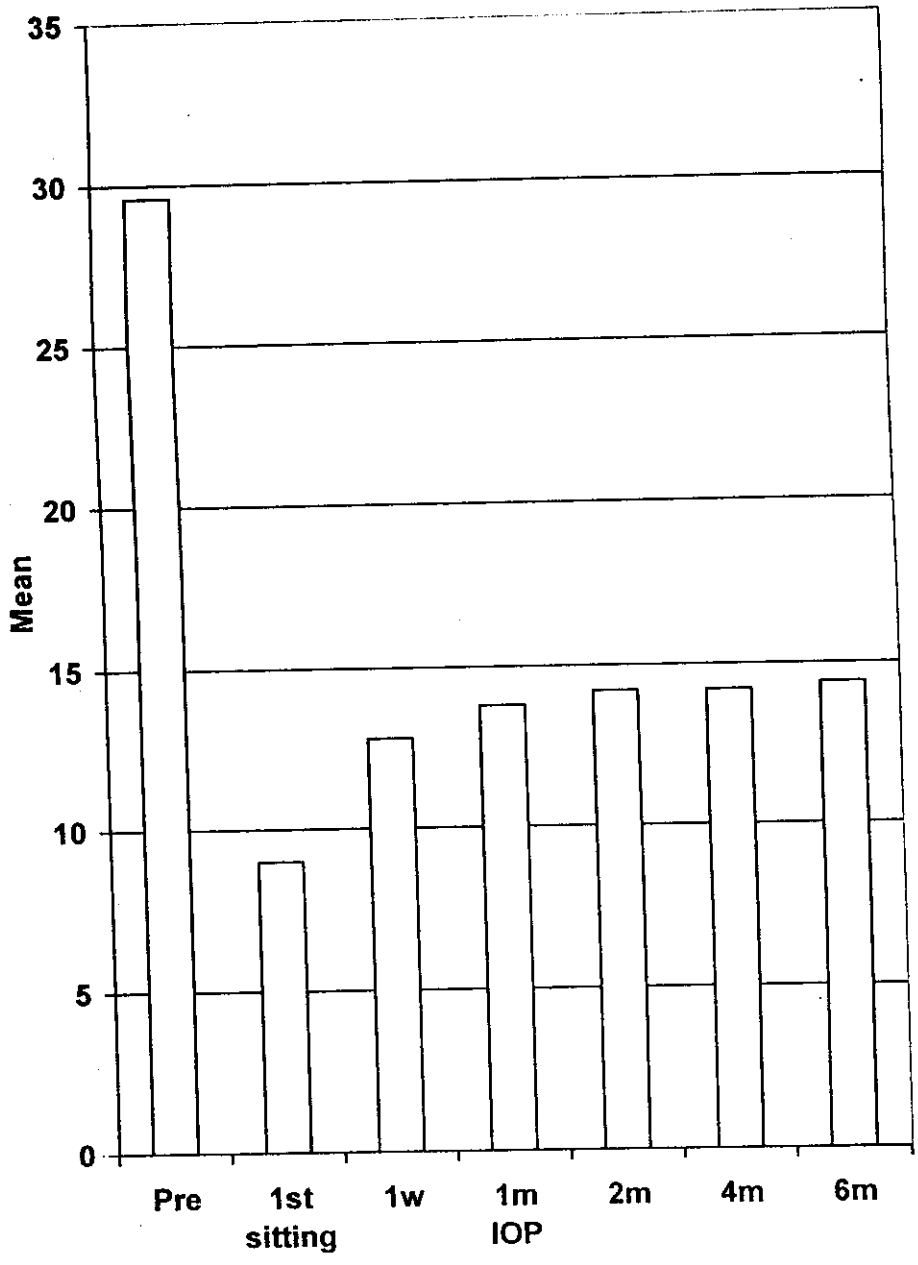

Fig. (29): Pre- and post-operative IOP in eyes of microtrabeculectomy combined with cataract surgery (Group III) (n = 10).

Table (6): Pre and post operative glaucoma medications.

Glaucoma (No. 60)	Pre	1st sitting	1st W	1st m.	2nd m	6th m	P-value
Low risk glaucoma cases (No = 33)	2.7	0.3	0.1	0.1	0.03	0.03	<0.001*
High risk glaucoma cases (No. = 17)	3.2	0.7	0.8	0.4	0.1	0.1	<0.001*
Combined cataract and glaucoma (No. = 10)	2.8	0.4	0.6	0.4	0.3	0.1	<0.001*

* very highly significant

Pre-operatively most cases were treated topically with two medications (e.g. β-blocker and pilocarpine 2%), some of them were treated additionally with topical carbonic anhydrase inhibitors.

Post operatively, there is no need of glaucoma medications in 91% of cases in the low risk group, 82.4% in the high risk group, and 90% in the combined group.

Table (7): Success rate in the three groups.

Glaucoma (No=60)	Complete success		Qualified success		Failure rate	
	No.	%	No.	%	No.	%
Low risk cases (No = 33)	30	91	1	93.9	2	6.1
High risk cases (No = 17)	14	82.4	2	94.1	1	5.9
Combined cases No = 10	9	90	1	100	0	0

- Complete success (IOP≤20 mmHg without therapy) was achieved in 91% of eyes in the low risk group, 82.4% in the high risk group, and 90% in the combined group.
- Qualified success (cases that needed antiglaucoma therapy to reach IOP ≤ 20 mmHg) was 93.9% in the low risk group, 94.1% in the high risk group and 100% in the combined group.
- Failure rate was 6.1% in the low risk group, 5.9% in the high risk group and no cases failed in the combined group.

Table (8): Complications in the three groups.

	Group I N=33	Group II N=17	Group III N=10	p-value
Hypotony	5(15.2%)	7(41.2%)	1(10%)	<0.05*
Wound leak	-	-	-	-
Choriodal detachment	1(3.0%)	4(23.5%)	-	<0.05*
Hyphema	-	-	-	-
Cataract progression	1(3.0%)	1(5.9%)	-	>0.05
Shallow AC	1(3.0%)	4(23.5%)	-	<0.05*

Fisher exact test
* Significant

Complications in three groups:

- Regarding wound leak and hyphema, no cases were recorded in the three groups.
- Also, there was no cases of blebitis or intra-ocular infections.
- Cataract progression occurred in 3% in the low risk group and in 5.9% in the high risk group.
- Choroidal detachment occurred in one eye (3%) in the low risk group and resolved within four weeks, but occurred with higher

incidence (in four cases 23.5%) in the high risk group, two of them resolved after three weeks, one resolved after one month and one was severe with flat AC Grade II and needed AC reformation, with resuturing at the bleb site. It was an aphakic eye, and choroidal detachment may be due to the usage of mitomycin-C.

- No flat chambers (corneolenticular touch) Grade II were observed in the low risk group but one case in the high risk group which had flat AC with severe choroidal detachment.

- Shallow chambers (iridocorneal touch at the mid-peripheral iris) Grade I was encountered in one eye in the low risk group and three eyes in the high risk group. Normal chamber depth was maintained in all other cases possibly due to scleral pocket acting as a valved mechanism.

- Hypotony was recorded in five cases (15.2%) in the low risk group. It occurred in the 1st week with no wound leak and normal chamber depth. It was due to excess filtration. It occurred also in seven cases (41.2%) in the high risk group, four of them were associated with choroidal detachment and three were due to excess filtration and resolved after one week, and one case only (10%) in the combined group.

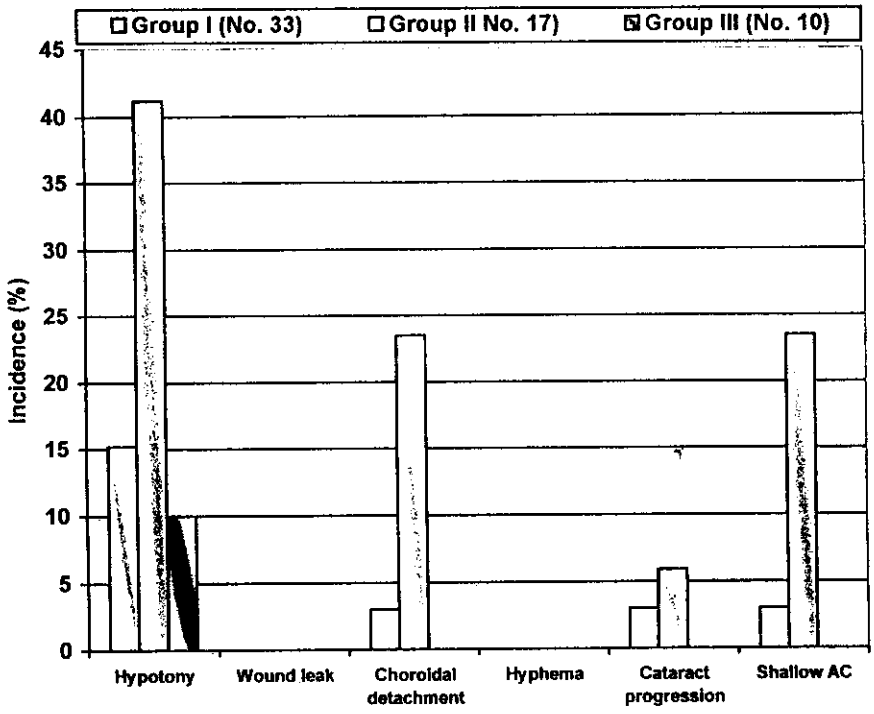

Fig. (30): Complications occurred in the three groups

Bleb appearance:

- In the low risk group, the bleb was thin, diffuse and low lying in 91% of eyes. Thin polycystic by the end of the 6th month in 3% of cases and encapsulated non filtering in 6% of cases that needed reoperation.
- In the high risk group: the bleb appeared low and fleshy in 65% of eyes and thinner and higher in the remaining eyes.
- In the combined group: the bleb appeared thin, diffuse and low lying in all cases.