RESULTS

Results

Patients classification

Patients could be grouped into one of five distinct groups based on clinical evaluation alone as described by Dunlap (1978).

Table 2 shows the classification of 130 case with blepharitis according to clinical signs and sex.

They were 62 males and 68 females.

- Cases with seborrhoeic blepharitis were 29 cases 14 males and 15 females.
- Cases with staphylococcal blepharitis were 19 cases 14 males and 5 females.
- Cases with mixed blepharitis were 58 cases 24 males and 34 females.
- Cases with angular blepharitis were 24 cases 10 males and 14 females.
- Those due to other causes including fungal, viral, parasitic and other bacterial causes are 0.0%.

It is noted that the mixed seborrhoeic ulcerative blepharitis is the commonest type (44.6%) and blepharitis due to viral, fungal and parasitic causes is 0.0%.

It also appears that no prevalence of either sex males (47.7%) while females (52.3%).

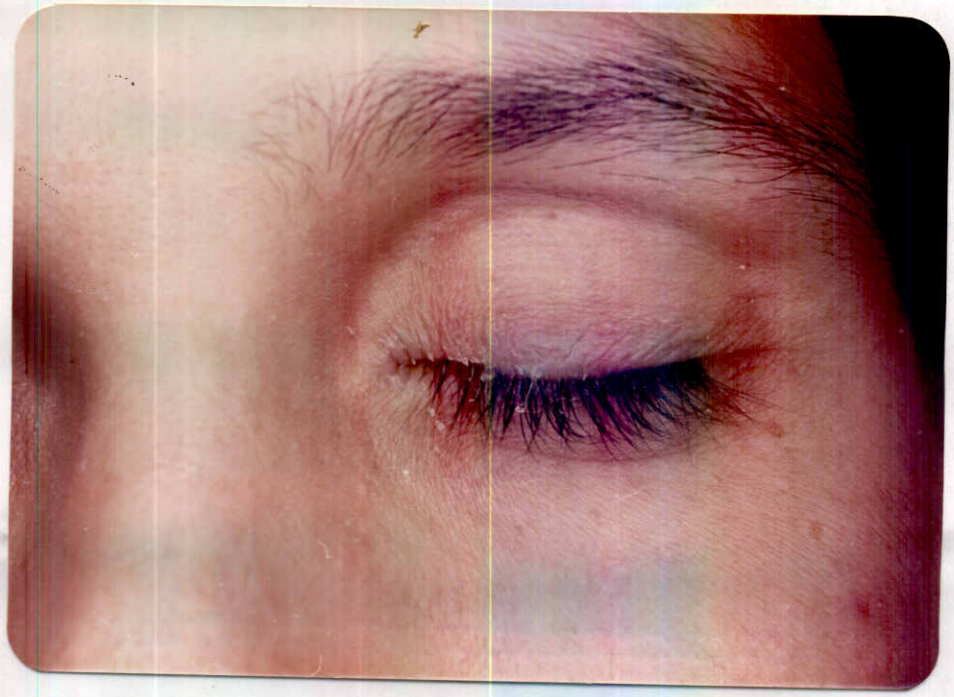


Fig. (12) : Scaly blepharitis

Fig. (13) : Sebaceous horn in a child 5 years old

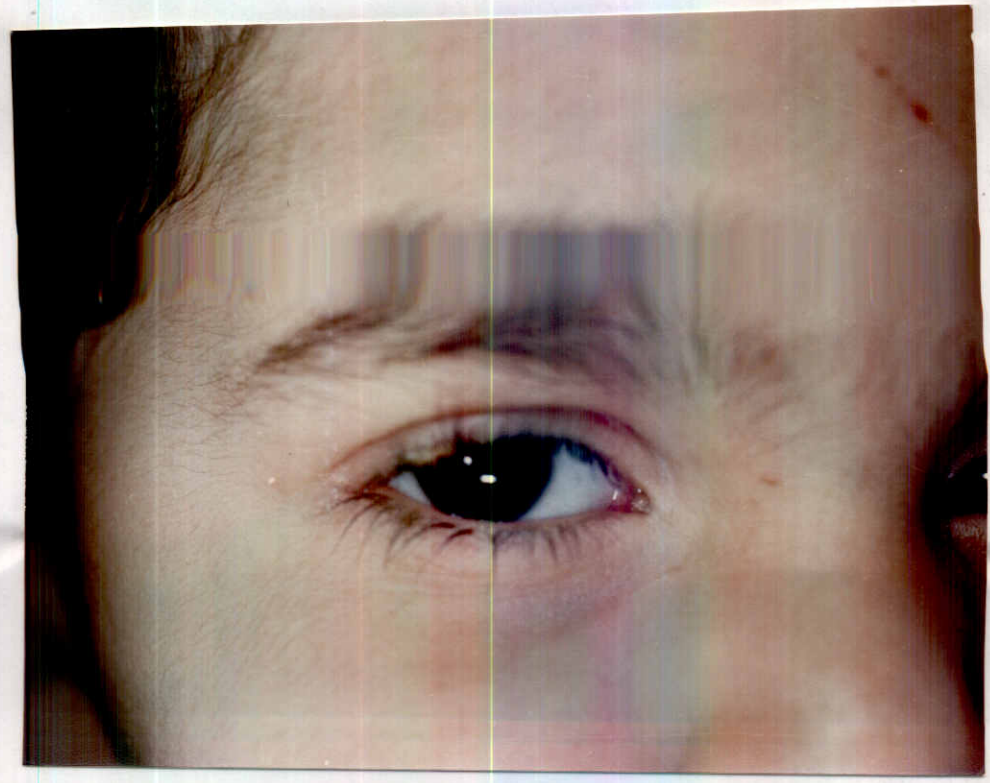


Fig. (14) : A case of seborrhoeic blepharitis in a child 5 years old

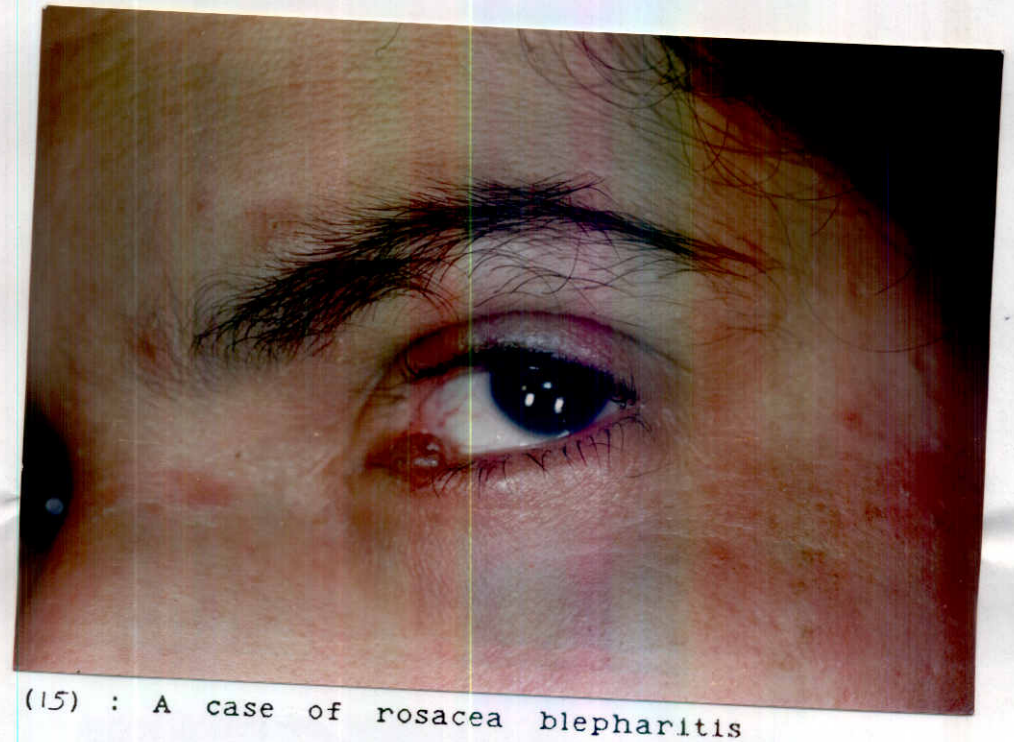


Fig. (15) : A case of rosacea blepharitis

Fig. (16) : A case of ulcerative blepharitis in a child 6 years old

Fig. (17) : A case of mixed blepharitis with loss of lashes

Fig. (18) : A case of angular blepharitis in a female 7 years old

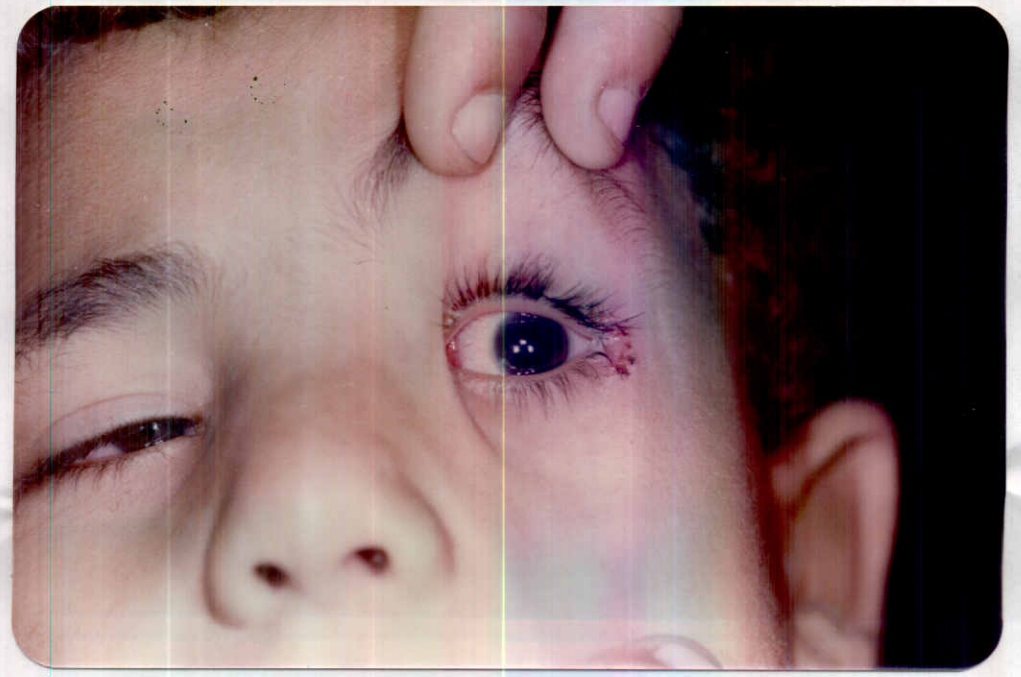


Fig. (19) : A case of angular blepharitis in child 11 years old

However it is observed that ulcerative blepharitis is more common in males while mixed blepharitis is more common in females.

Table (4) : Classification of 130 patients with blepharitis according to clinical signs and sex

Type of blepharitis	Males	Females	Total	
			No	%
Seborrhoeic blepharitis	14	15	29	22.3
Ulcerative blepharitis	14	5	19	14.6
Mixed blepharitis	24	34	58	44.6
Angular blepharitis	10	14	24	18.5
Other causes	-	-	-	-
Total	62	68	130	100

Age :

Table 3 shows the incidence of different types of blepharitis according to age groups. it is noted that blepharitis is common under the age of 20 years (76 cases) its incidence is 58.46 %.

The distribution of blepharitis in different age groups was illustrated in Fig. (20) and it is noted that the highest number was under the age of 10 years followed by the age group of(10- 20) years.while the lowest number was at the age of 50- 60

Fig. (21) shows the distribution of various types of blepharitis in various age groups.

Table (3) : Incidence of different types of blepharitis according to age groups

Types of blepharitis	<10		10-<20		20-<30		30-<40		40-<50		50-<60		60-<70		total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Seborrhoeic blepharitis	3	2.3	8	6.2	7	5.4	4	3.1	2	1.5	1	0.8	4	3.1	29	22.3
Ulcerative blepharitis	9	6.9	5	3.9	5	3.9	-	-	-	-	-	-	-	-	19	14.6
Mixed blepharitis	27	20.81	15	11.5	4	3.1	3	2.3	5	3.9	1	0.8	3	2.3	58	44.6
Angular blepharitis	1	0.77	8	6.2	6	4.6	1	0.8	2	1.5	2	1.5	4	3.1	24	18.5
Total	40		36		22		8		9		4		11		130	

Fig (20) : Histogram representing the distribution of blepharitis in different age groups

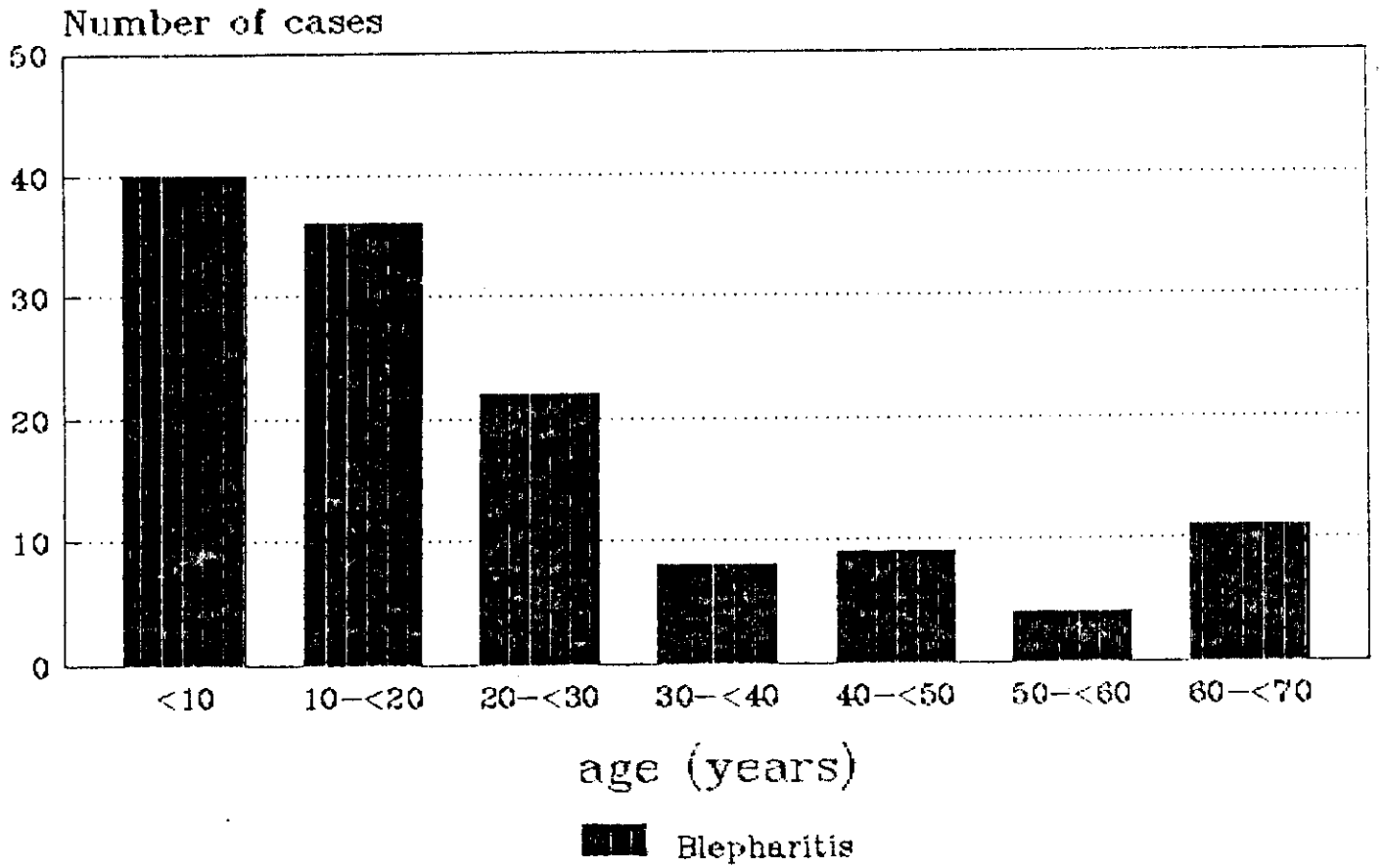


Fig (21) : Histogram representing the distribution of various types of blepharitis in various age groups

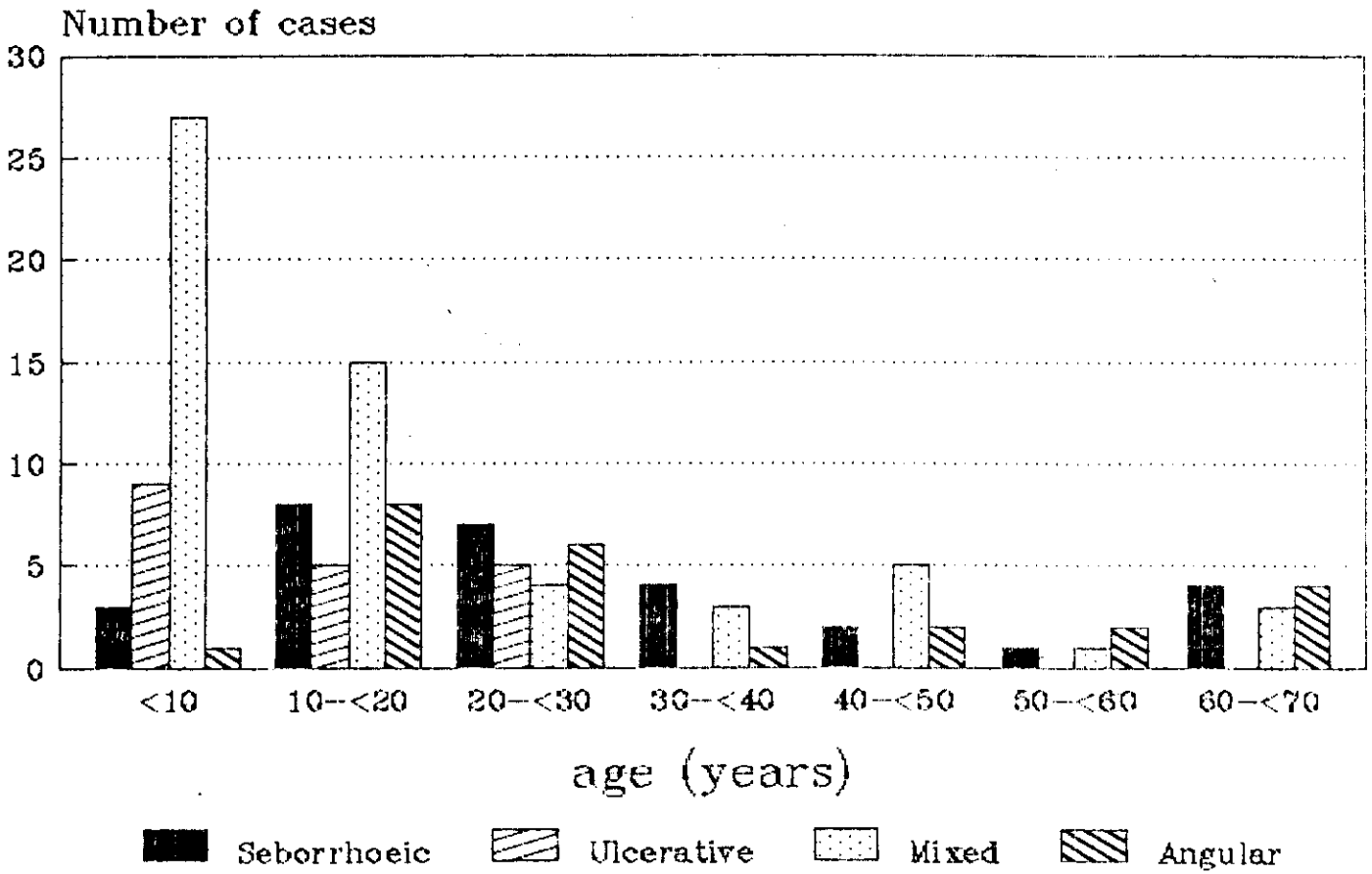


Table 4 shows age distribution in 29 cases with seborrhoeic blepharitis.

It is noted that seborrhoeic blepharitis is commonest in the age group of (10-<20) years its incidence is 27.6%.

Table 5 shows age distribution in 19 cases with ulcerative blepharitis.

It appears that it is commonest under the age of 10 years (47.4%).

Table 6 shows the age distribution in 58 cases with mixed blepharitis and it appears that the condition is commonest under the age of <10 years (46.5%).

Table 7 shows the age distribution in 24 cases with angular blepharitis and it appears that the condition is commonest in the age group of (10-<20) years, its incidence is 33.3%.

Table (4) : Age distribution in 29 cases with seborrhoeic blepharitis

Age in years	No.	Percent
<10	3	10.3
10 - < 20	8	27.6
20 - < 30	7	24.1
30 - < 40	4	13.8
40 - < 50	2	6.9
50 - < 60	1	3.4
60 - < 70	4	13.8
Total	29	100

Table (5) : Age distribution in 19 cases with ulcerative blepharitis

Age in years	No.	Percent
<10	9	47.4
10 - < 20	5	26.3
20 - < 30	5	26.3
30 - < 40	-	-
Total	19	100

Table (6) : Age distribution in 58 cases with mixed blepharitis

Age in years	No.	Percent
<10	27	46.5
10 - < 20	15	25.9
20 - < 30	4	6.9
30 - < 40	3	5.2
40 - < 50	5	8.6
50 - < 60	1	1.7
60 - < 70	3	5.2
Total	58	100

Table (7) : Age distribution in 24 cases with angular blepharitis

Age in years	No.	Percent
<10	1	4.2
10 - < 20	8	33.3
20 - < 30	6	25.0
30 - < 40	1	4.2
40 - < 50	2	8.3
50 - < 60	2	8.3
60 - < 70	4	16.7
Total	24	100

Occupation

Table 8 shows the occupation of 62 males included in the study. It is noted that 19 cases out of 29 working males suffering from blepharitis were exposed to dust or chemical fumes. 7 farmers, 4 labourers, 2 carpenters, 3 mechanics and 3 wall painters.

Table (8) : Occupation in 62 males suffering from blepharitis

Male occupation	Exposed	Non exposed	Total	
			No	%
Working	19	10	29	46.8
Non working		33	33	53.2
Total			62	100

Bilaterality

Table 9 shows the incidence of bilaterality in 130 cases with blepharitis . It appears that most cases of blepharitis come with bilateral representation except in cases with ulcerative blepharitis in which unilateral representation is more common (52.6 %).

Table (9) : Incidence of bilaterality in 130 cases with blepharitis

Type of blepharitis	Total No	No. of bilaterality	%
Seborrhoeic blepharitis	29	29	100
Staphylococcal blepharitis	19	9	47.4
Mixed blepharitis	58	50	86.2
Angular blepharitis	24	23	95.8
Total	130	111	85.4

Retinoscopy

Table 10 shows the results of refraction performed for 39 patients (78) eyes with marginal blepharitis under the age of 10 years. We found that 30 eyes (38.5%) were emmetropic and 48 eyes (61.5%) were ametropic.

Table 11 shows the results of refraction performed for 28 patients with marginal blepharitis in the age of (10-<20) years. We found that 26 eyes (46.4%) were emmetropic and 30 eyes (53.6%) were ametropic.

Table 12 shows the results of refraction performed for 25 controls (50) eyes under the age of 10 years and 35 controls their ages ranges from (10-<20) years.

We found that in 25 controls under the age of 10 years 38% were emmetropes, 46% were hypermetropes, 8% were myopes and 8% were astigmatic.

In 35 controls in the age group of (10-<20) years, 44.3% were emmetropes, 28.6% were hypermetropes, 17.1% were myopes and 10% were astigmatic.

Table (10) : Refractive errors in 39 patients with blepharitis under the age of 10 years

Type of blepharitis	Error of refraction								Total
	Emmtropic eyes	Ametropic eyes							
		Hypermetropic			Myopic			Astigmatic	
		Low	Moderate	High	Low	Moderate	High		
Seborrhoeic blepharitis	4	-	2	-	-	-	-	-	6
Ulcerative blepharitis	8	-	6	-	2	-	-	2	18
Mixed blepharitis	18	-	25	-	2	2	-	7	54
Total	30		33		4	2		9	78

Table (11) : Refractive errors in 28 patients with blepharitis in the age group of (10-<20) years

Type of blepharitis	Error of refraction								Total
	Emmtropic eyes	Ametropic eyes							
		Hypermetropic			Myopic			Astigmatic	
		Low	Moderate	High	Low	Moderate	High		
Seborrhoeic blepharitis	10	-	2	-	2	-	-	2	16
Ulcerative blepharitis	4	2	-	-	3	-	-	1	10
Mixed blepharitis	12	3	7	-	2	2	-	4	30
Total	26	5	9		7	2		7	56

Low hypermetropia means less than 1 D
Moderate hypermetropia ranges from 1-4 D
High hypermetropia means over +4 D
after Duke Elder (1970)

Low myopia means less than 1 D
Moderate myopia means (1-6 D)
High myopia means over 6 D
after Vaughan et al., (1971)

Table (12) : Refractive errors of control group :

- in 50 eyes under the age of 10 years
- in 70 eyes between (10-<20) years

Age groups	Error of refraction								Total
	Emmtropic eyes	Ametropic eyes							
		Hypermetropic			Myopic			Astigmatic	
		Low	Moderate	High	Low	Moderate	High		
25 controls under age of 10 years	19	10	13	-	4	-	-	4	50
35 controls between (10-<20)years	31	14	6	-	12	-	-	7	70
Total	50	24	19		16			11	120

Low hypermetropia means less than 1 D

Moderate hypermetropia ranges from 1-4 D

High hypermetropia means over +4 D

after Duke Elder (1970)

Low myopia means less than 1 D

Moderate myopia means (1-6 D)

High myopia means over 6 D

after Vaughan et al., (1971)

Bacteriological results

Table (13) and figure (22) show that in seborrhoeic blepharitis there is no significant difference in the bacteriological findings between cases and controls.

In ulcerative and mixed blepharitis there is increase in the percentage of isolation of staphylococcus aureus as compared with controls.

In angular blepharitis patients table (13) shows high incidence of isolation of moraxella (29.2%) as compared with controls (16%). Otherwise there is no difference in the bacteriological findings.

Table (13)* : Bacterial isolates from the diseased cases and control

Organism isolated	100 control		Seborrhoeic		Ulcerative		Mixed		Angular		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Neisseria catarrhalis	67	67	21	72.4	15	79.0	45	77.6	18	75.0	99	76.2
Moraxella	16	16	5	17.2	4	21.1	9	15.5	7	29.2	25	19.2
Staph. epidermidis	18	18	6	20.7	3	15.8	10	17.2	4	16.7	23	17.7
Staph. aureus	1	1	1	3.4	7	36.8	8	13.8	2	8.3	18	13.8
Diphteroids	8	8	2	6.9	2	10.5	5	8.6	3	12.5	12	9.2
Micrococcus	7	7	2	6.9	1	5.3	3	5.2	2	8.3	8	6.2
Anthracoids	1	1	1	3.4	1	5.3	2	3.4	1	4.2	5	3.8
Streptococci	2	2	1	3.4	1	5.3	1	1.7	1	4.2	4	3.1
Gram -ve bacilli	-	0	-	0	-	0	-	0	-	0	-	0
No growth	6	6	-	0	1	5.3	5	8.6	2	8.3	8	6.2

* N.B. More than one organism is detected in each case

Fig (22) : Percent of organisms isolated from cases with blepharitis and controls

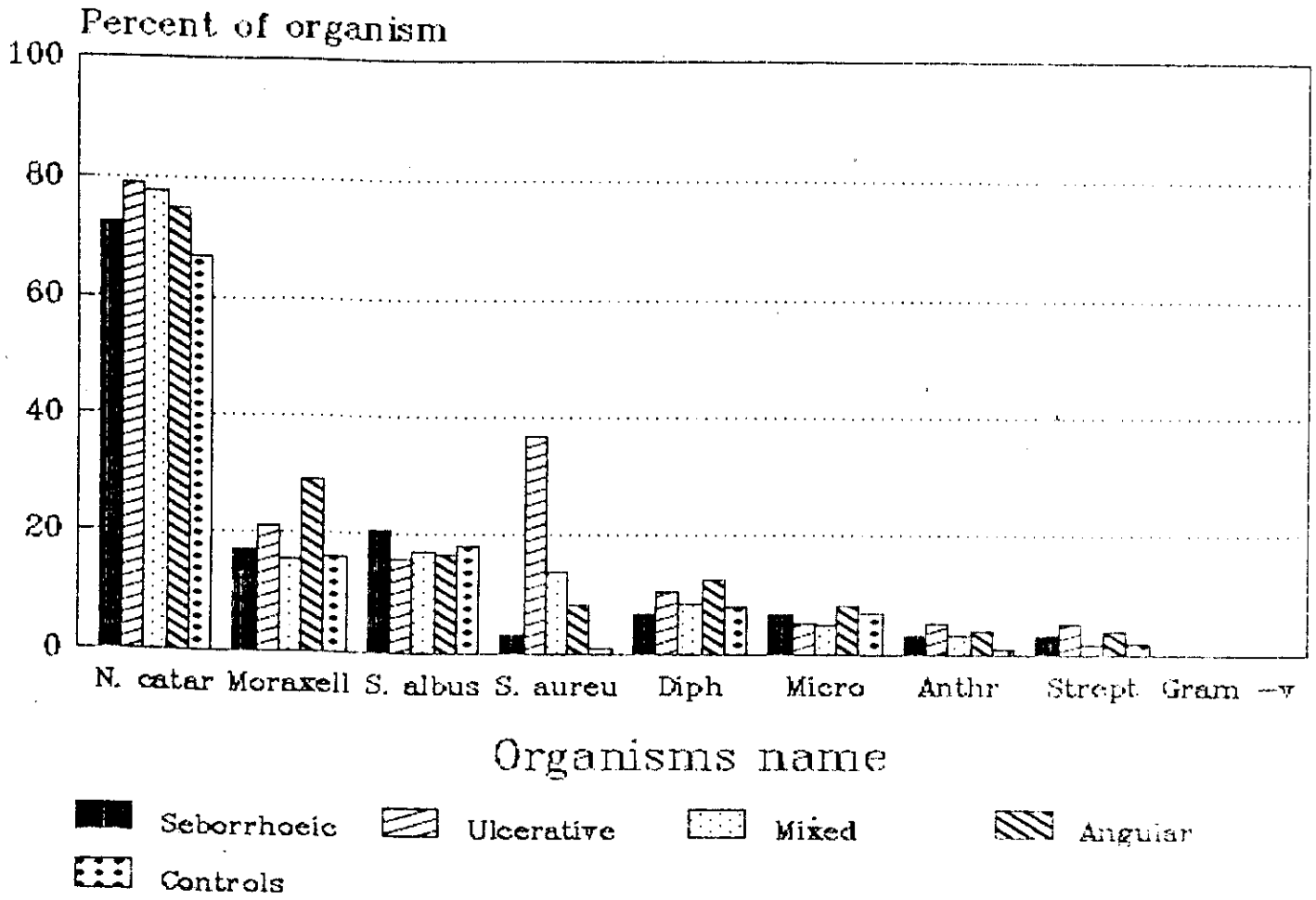


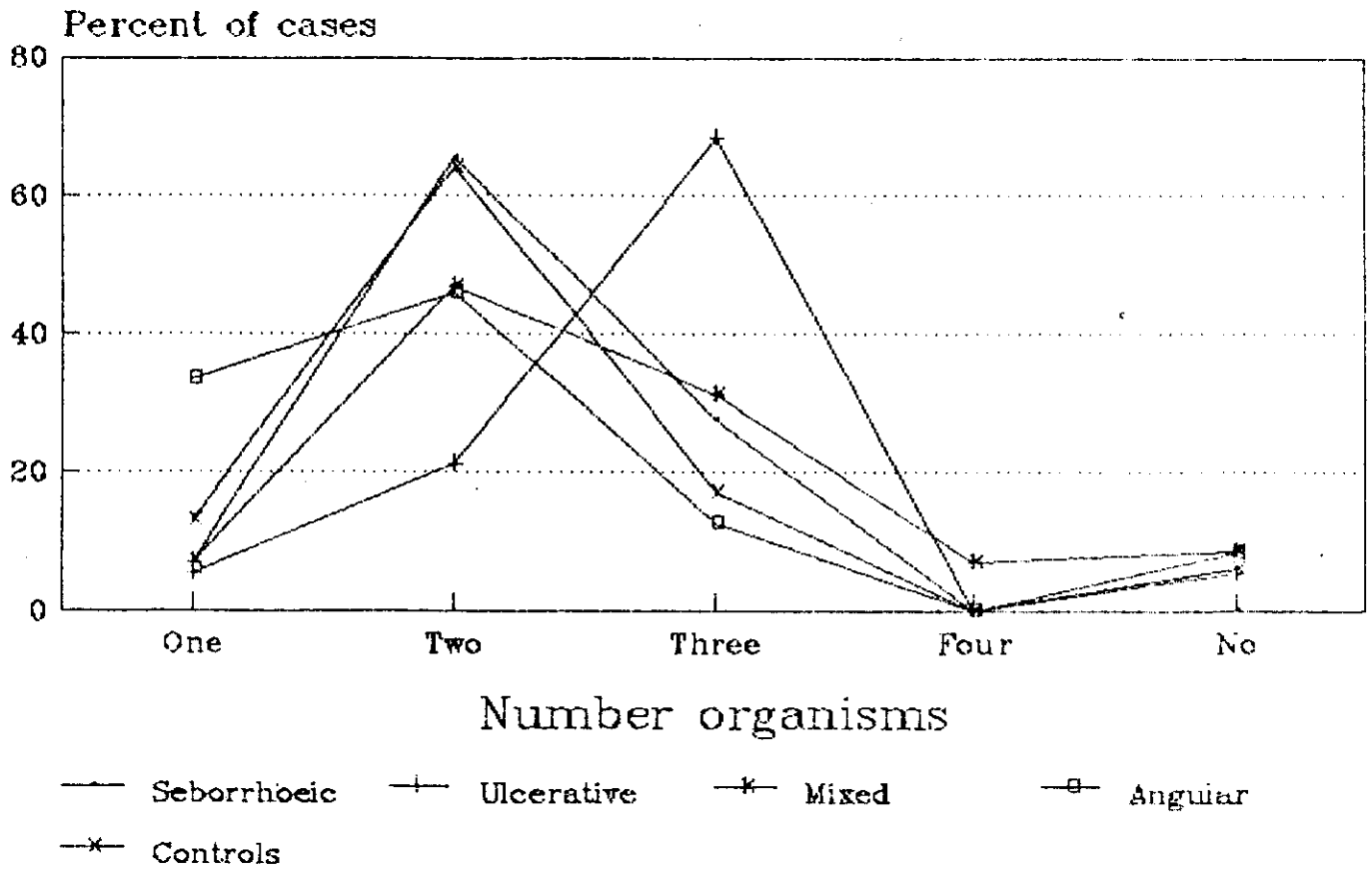
Table (1) and figure ( ) show number and percentage of cases and controls affected by one or more organisms.
It is found that there is shift of the curve to the right.

The shift is mild in seborrhoeic blepharitis, moderate in mixed blepharitis and maximum in ulcerative blepharitis.

Table (14) : Number of cases and controls affected by one or more organisms

No. of organism	Seborrhoeic	Ulcerative	Mixed	Angular	Total	Control
One	2	1	4	8	15	13
Two	19	4	27	11	61	64
Three	8	13	18	3	42	17
Four	-	-	4	-	4	-
No	-	1	5	2	8	6
Total	29	19	58	24	130	100

Fig (23): Number of cases and controls affected by one or more organisms



Mycological results

Table (15) shows the mycological findings in 130 cases with blepharitis and 100 controls.

In this study pityrosporum species was isolated in high frequency from both patients and controls.

It was detected in 79.3% of patients with seborrhoeic blepharitis, 73.7% in patients with ulcerative blepharitis, 77.6% in patients with mixed blepharitis and in 70% of controls.

The table also shows that 2 controls out of 100 show fungi other than pityrosporum species namely :

* Penicillum
* Aspergillus flavus

Three cases out of 130 cases with blepharitis show fungi other than pityrosporum species namely :

* Penicillum
* Aspergillus flavus
* Paceliomyces

Fig. (24) : A colony of Penicillium' 2 days after inoculation

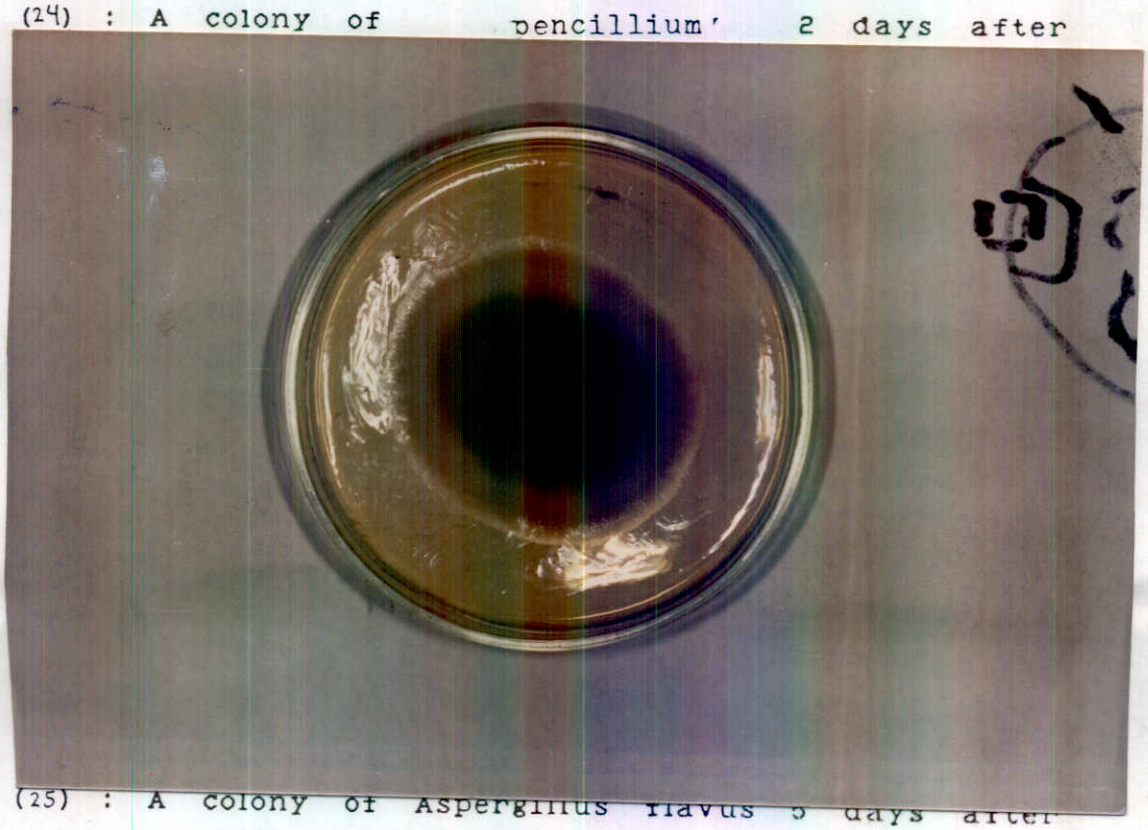


Fig. (25) : A colony of Aspergillus flavus 5 days after inoculation

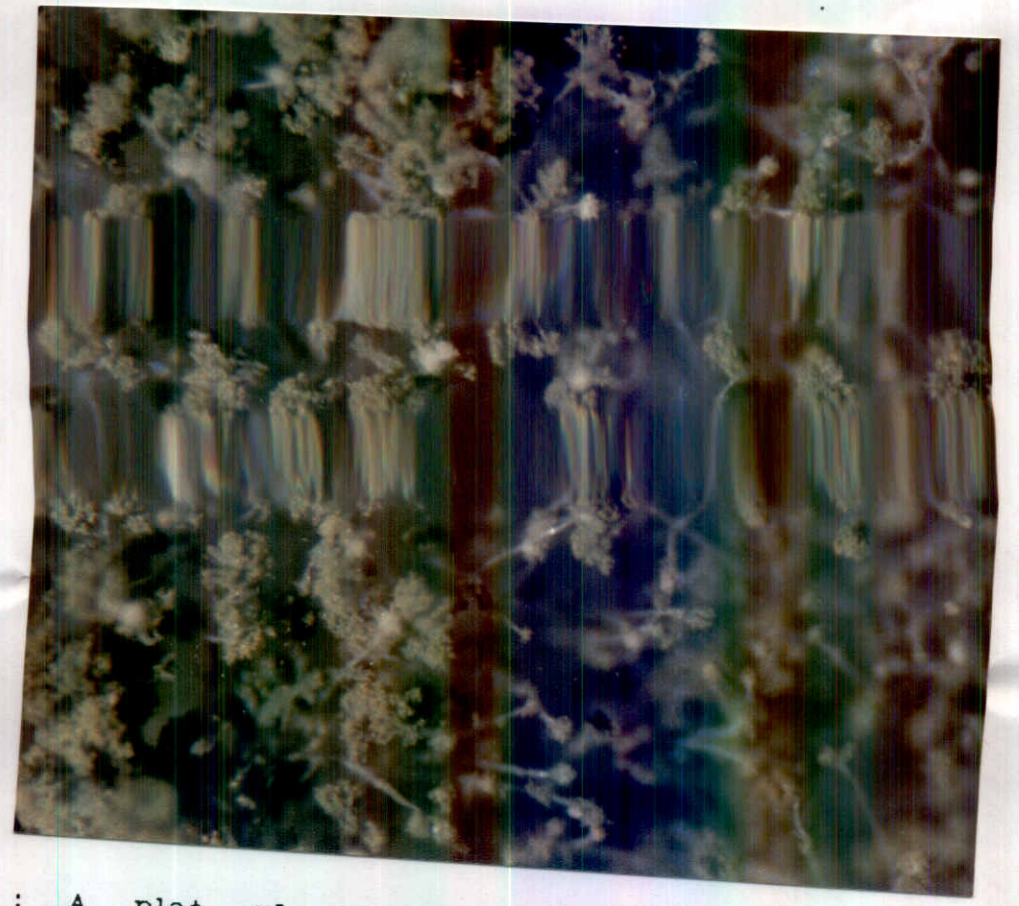


Fig. (26) : A plat of aspergillus flavus under the

Fig. (27) : A slide of aspergillus flavus showing conidiospores and stalks

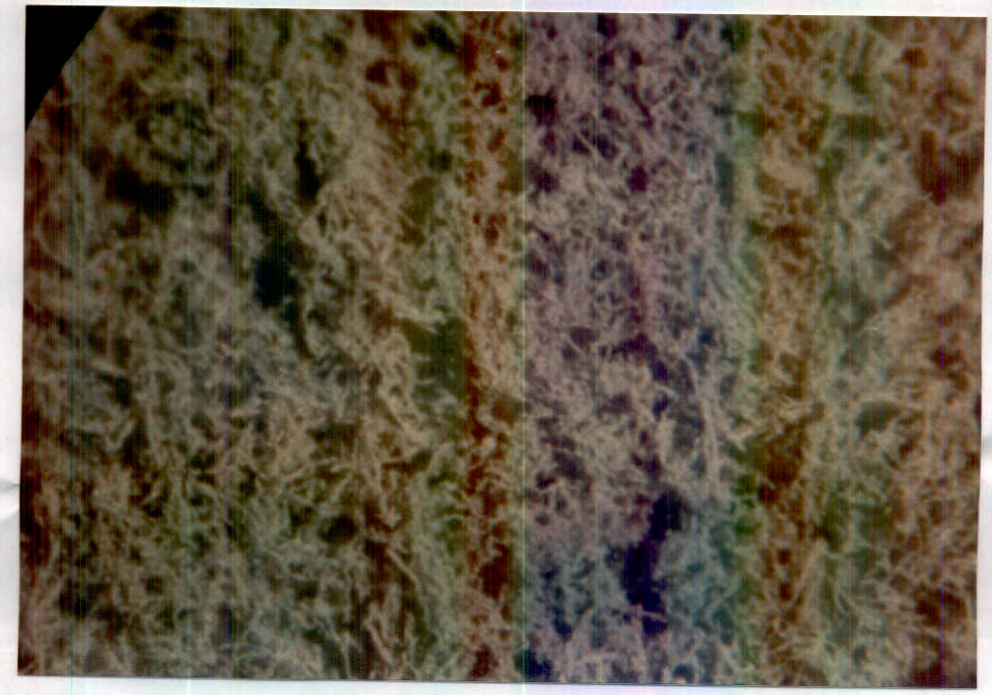


Fig. (23) : A plate of penicillium under the microscope

Table (15) : Mycological study of 130 cases with blepharitis and 100 control

Groups	Fungus			Total
	Pityrosporum	others	no fungus	
Control	70	2	28	100
Seborrhoeic blepharitis	23	1	5	29
Ulcerative blepharitis	14	-	5	19
Mixed blepharitis	45	1	12	58
Angular blepharitis	-	1	23	24
Total	82	3	45	130

The results of antimicrobial sensitivity

Table (16) shows percentages of sensitivities of most commonly pathogenic lid bacteria to antimicrobials.

It is observed that staphylococcus aureus shows high degree of sensitivity to bacitrcin 94.4% followed by chloramphenicol 88.8%, tetracyclin 83.3%, tobramycin and gentamycin 77.7%.

The study also shows that more than 65% of all staphylococcus isolates are resistant to sulphonamides.

It is also observed that moraxella is highly sensitive to chloramphenicol, tetracycline 100% followed by bacitricin 96%, tobramycin gentamycin 92%, sulphonamides 84% and lastly penicillin 80%.

Streptococci shows uniform sensitivity to penicillin, chloramphenicol, tobramycin, gentamycin and bacitricin.

Table (16) : Percentage of senstivities of most commonly pathogenic lid bacteria to antimicrobials

Organism isolated	Total culture	P		C		TE		NN		GM		B		SXT	
		No	%	No	%	No	%	No	%	No	%	No	%	No	%
Moraxella	25	20	80	25	100	25	100	23	92	23	92	24	96	21	84
Staph. aureus	18	1	5.5	16	88.8	15	83.3	14	77.7	14	77.7	17	94.4	6	33.3
Streptococci	4	4	100	4	100	3	75	4	100	4	100	4	100	3	75

Abbreviations : after Bio Merieux

P Penicillin
C Chloramphenicol
TE Tetracycline
NN Tobramycin
GM Gentamycin
B Bacitricin
SXT Trimethoprim sulphametoxazol

N.B. One organism is sensitive to more than one antibiotic

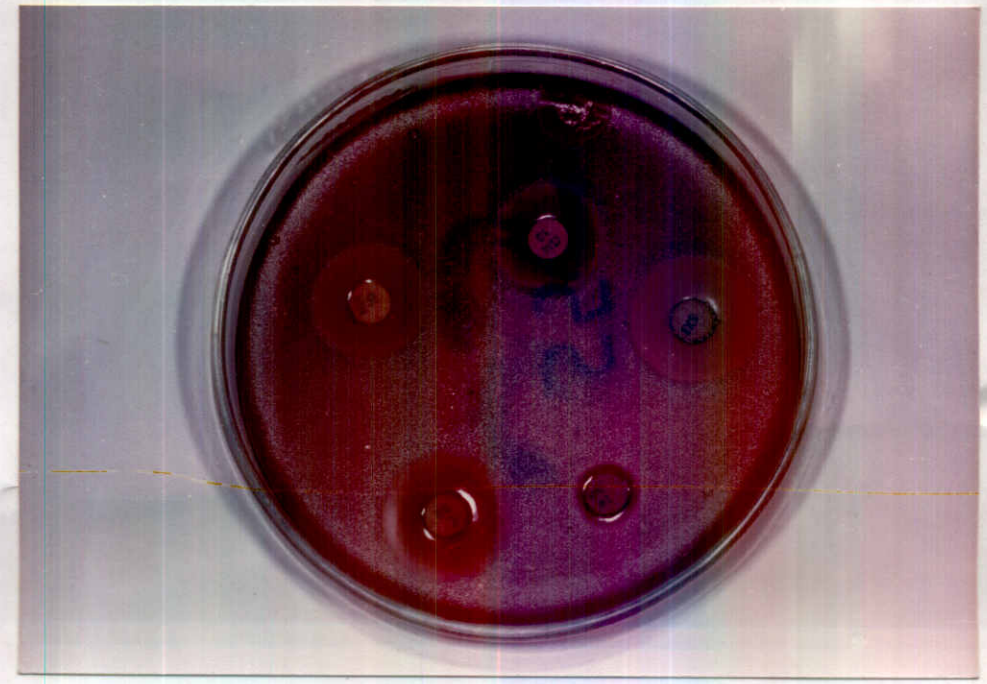


Fig. (29) : Antibiotic senstivity test using disc diffusion method

Results of treatment of 29 cases with seborrhoeic blepharitis with either sulpho-selenium ointment or hydrocortisone eye ointment 1%.

Of this 29 cases only 21 cases were available for follow up. Of these 21 cases, 10 cases were treated by sodium bicarbonate lotion 3% twice daily and sulpho-selenium ointment applied to the lid margin three times daily.

11 cases were treated by sodium bicarbonate lotion 3% twice daily and hydrocortisone eye ointment 1% three times daily. The treatment was continued for one month and follow up was done for another one month after stopping treatment.

The assessment of improvement depended on the patient subjective symptoms and clinical signs.

Table 17 shows the results of treatment of 10 patients with seborrhoeic blepharitis with sulpho-selenium ophthalmic ointment versus 11 patients treated with hydrocortisone eye ointment.

It was observed that out of 10 patients treated with selenium sulphide ophthalmic ointment, 6 patients were completely cured, 2 cases were partially improved and 2 cases were not improved, and out of 11 patients treated by hydrocortisone eye ointment 1% 5 cases were completely cured, 3 cases were partially improved and 3 cases not improved.

Table (17) : Results of treatment of 21 cases with seborrhoeic blepharitis

Drug used	Cases cured	Partially improved	not improved	Total
Selenium sulphide	6	2	2	10
Hydrocortisone 1%	5	3	3	11
Total	11	5	5	21