

## Clinical Evaluation of Uveitis In Kashmir

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### **Abstract:**

**Purpose:** To evaluate the cases of uveitis with regards to age of presentation, type, clinical presentation and etiology.

**Material and Methods:** A total 130 eyes of 100 patients of uveitis, with average age of 36.5 years, were selected consecutively to find out the clinical presentation of uveitis and its possible etiological factors. Detailed present, past and family history was taken from all the patients. The patients were examined from head to toe and help of other specialists was also sought when required. Relevant laboratory investigations were also done to reach the final etiological diagnosis.

**Observations:** The total of 130 eyes of 100 patients were chosen for the study which included 49 males and 51 females. Anterior, posterior, intermediate and pan-uveitis was seen in 66(87 eyes), 32(40 eyes), 0 and 2(3eyes) patients respectively. The total of 70 cases had unilateral and 30 had bilateral involvement. Among the above cases, 44.83% eyes (39/87 eyes) had acute anterior uveitis and 20% eyes (8/40 eyes) had acute posterior uveitis whereas rest had chronic form. 72% cases (n=72) were between 20 – 60 years of age, 1% (n=1) below 10 years and 12% (n=12) above 60 years of age. Most of the cases were idiopathic in nature. Toxoplasmosis was found as etiology in 6 out of 100 cases (2 in anterior and 4 in posterior uveitis series).

**Conclusion:** Uveitis is rare in children but common in working age group so early and proper diagnosis and treatment is necessary in this age group. There is increase in incidence in elderly, so early and appropriate work up and treatment is needed in them to prevent visual disability in them. The etiology of uveitis varies with geographical region and race.

**Key words:** Anterior uveitis, Posterior uveitis, Panuveitis, Idiopathic, Toxoplasmosis

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### **I. Introduction**

Uveitis means inflammation at any point of the uveal tract, with and without inflammation of neighbouring structures (eg. Retina and vitreous). It can be classified in many ways, the commonest being by anatomical location of the pathology – anterior, posterior, intermediate and panuveitis. It can also be classified as acute/subacute / chronic/ recurrent and granulomatous/ non-granulomatous.

The etiology of uveitis may be broadly categorized as Autoimmune disorders, infective, infiltrative, traumatic and idiopathic (commonest). Regardless of the etiology and the mechanism leading to inflammation, the eye's ultimate response is the same characterized by classical signs on the slit-lamp – AC flare, synechia, keratic precipitates, cells in vitreous, retinal lesions etc.

It is a relatively common condition thought to account for 10% of blindness in the working age group in the western world. There also exist self limited forms meaning that true incidence is unknown.

The epidemiology varies with age, race and geographical location. Although regarded as disease of adults of working age (20-50 yrs), recent studies have shown incidence to be higher in elderly as previously thought [6, 7, 8].

### **II. Material And Methods**

This is the descriptive type of study carried out in the Department of Ophthalmology, Government Medical College, Srinagar between Dec. 2011 and July 2013, to find out the clinical presentation of uveitis in Kashmir valley and its possible etiological factors. The study included 100 consecutively selected

patients. Cases were divided into Anterior uveitis, Posterior uveitis, Panuveitis, and Intermediate uveitis. Diagnosis of uveitis was made on the basis of history and examination.

All cases were subjected to detailed history with regards to age, sex, occupation, geographical area to which the patient belonged, race, history of recent travel etc. Detailed past and family history suggestive of tuberculosis, leprosy, syphilis, Rheumatoid arthritis, ankylosing spondylosis, focus of infection (sinusitis, dental infection, tonsillitis, UTI) etc., was taken. Ophthalmological history included Diminution or blurring of vision, floaters, photophobia, micropsia, macropsia, metamorphopsia, pain, lacrimation, redness, history of symptomatic attacks in chronic cases. The uveitis was considered to be acute if it was < 3 months duration, chronic if > 3 months and recurrent if there were  $\geq 2$  acute episodes separated by disease free period.

General physical examination from head to toe was done and ancillary consultation by Physician, Otorhinolaryngologist, Orthopaedician, Dentist etc. was also sought when required and necessary investigations as advised by them were performed. Further examination included Visual acuity by Snellen's chart, IOP measurement with Goldman Applanation tonometry, Face (for evidence of herpetic eruptions, lepromatous nodules, vitiligo etc.), Lids (for sarcoid nodules, lagophthalmos, poliosis, vitiligo, madarosis, herpetic eruptions etc.), and lacrimal gland enlargement.

Thorough **Slit-Lamp** examination, which formed the backbone of our examination, was performed that included:- Conjunctiva (for congestion, sensation, nodules, ulceration etc.), sclera (for evidence of episcleritis and scleritis), cornea (for haziness, bullae, epithelial lesions like dendritic/ geographical ulcers, infiltrates, vascularisation, keratic precipitates etc.), Anterior chamber (for depth, flare, cells, hypopyon etc.), Iris (for texture, nodules, synechia), Lens (for complicated cataract, pigments on its surface), Anterior vitreous (for cells, membrane). **Fundus examination** was performed by direct, indirect, slit-lamp biomicroscopy to look for vitreous opacities and any lesions.

A short differential diagnosis was made and tailored **laboratory investigations** were carried out which included:- complete haemogram, ESR, urine examination, stool for ova and cysts, mantoux test, X-ray chest, serological tests for Toxoplasma, syphilis, HIV, Rheumatoid factor and other relevant investigations as advised by specialists. Final etiological diagnosis was made on the basis of history, clinical features, laboratory investigations and evaluation by other medical specialities.

### III. Observations

Total of 100 patients (130 eyes) were included in the study which included 49 males and 51 females. Anterior uveitis was found in 66% (n=66), posterior uveitis in 32% (n=32) and panuveitis in 2% (n=2) cases. No case of intermediate uveitis was found in our study (Table 1).

Majority of the cases 78% (n=78) were found to be between 20 – 60 years of age. Only 1 case, 3 year old female baby with central choroiditis, was recorded below 9 years of age. No significant variation was noted between various anatomical categories in all age groups (Table 1A, Fig. 1).

No. of cases from rural and urban areas was almost same with very few (10 cases) were from backward areas (Table 1B, Fig. 2).

70% (n=70) cases had unilateral and 30% (n=30) had bilateral involvement. In anterior uveitis group, 68.18% (45/66 cases) and in posterior group 75% (24/32 cases) had unilateral and rest had bilateral involvement. In 2 cases of panuveitis, 1 had unilateral and other bilateral involvement (Table 1C, Fig. 3).

Out of 130 eyes of 100 patients, presentation was acute and chronic in 49 and 81 eyes respectively. Number of eyes with acute anterior uveitis were 44.82% (n=39, 22 unilateral, 7 bilateral and 3 cases with acute and chronic presentation in either eye). Total no. of eyes in anterior uveitis series were 66.92% (n=87). Similarly in 40 eyes in posterior uveitis series, 20% (n=8) eyes had acute presentation (4 unilateral and 2 bilateral cases) and 80% (n=32) had chronic presentation (20 unilateral and 6 bilateral cases) (Table 1D, Fig. 4 & 5).

**Visual acuity** of  $\leq 6/60$  at presentation was recorded in 57.47% eyes (50 out of 87 eyes) with anterior uveitis and 20% eyes (8 out of 40 eyes) in chronic uveitis patients. Visual acuity depended on severity of acute attack and chronicity of the disease (Table 1E).

**Intraocular pressure** of > 25mmHg was found in 11 patients (10 anterior and 1 posterior uveitis). 10 patients had marked symptoms and IOP > 30mmHg. Majority had IOP in the normal range (Table 1F).

**Fundus lesions** in posterior uveitis were seen in 85% eyes (34 out of 40 eyes). 15 eyes had diffuse choroiditis, 5 had peripapillary lesion, 6 had central choroiditis and 5 had peripheral lesions. Retinal vasculitis was seen in 3 eyes. Grade 1 to 3 vitreous haze was seen in 17 eyes. Bilateral diffuse choroiditis was seen in 2 patients and 1 patient had bilateral central choroiditis, while another patient with bilateral choroiditis had central lesion in one eye and peripheral in the other.

**Regarding etiological diagnosis**, in cases of **anterior uveitis** (Table 2), Fuch's heterochromic iridocyclitis was seen in 3 cases (females aged 20, 35 and 48 years) and toxoplasmosis in 2 cases. One case of juvenile chronic arthritis was recorded as unilateral case in 14 years old. Leprosy was found in 2 cases aged 20

and 40 years as bilateral involvement. Traumatic iridocyclitis was found in 17 year old male. IOL related uveitis was seen in 60 year old male.

In case of **posterior uveitis** (Table 2), Toxoplasma as cause was found in 4 patients (3 females and 1 male). Diagnosis of tubercular choroiditis was made in a 17 year old boy with unilateral marked vitreous haze and peripapillary lesion, who responded to anti-tubercular treatment.

In case of **panuveitis** (Table 2), sympathetic ophthalmia was found in a 18 year old male who has sustained injury in left eye 10 years back and who belonged to migratory population.

**Overall**, after idiopathic etiology, Toxoplasmosis was the common etiological factor diagnosed in 6 patients (2 anterior and 4 posterior uveitis series).

## **IV. Discussion**

### **4.1 Anatomical categories**

In our study, anterior uveitis constituted 66%, posterior 32%, panuveitis 2% and none had intermediate uveitis. In surveys of patients referred to tertiary centres, anterior uveitis has been shown to account for 28 – 66%, intermediate uveitis for 5 – 15%, posterior uveitis for 19 – 51% and panuveitis for 7 – 18% (1,2). In a large community-based study, the vast majority of uveitis cases were anterior (71%), followed by posterior uveitis (5%) and intermediate and panuveitis (1% each) (3).

### **4.2 Age distribution**

The distribution of patients in different age groups was more or less same as compared to studies conducted by Schelegel (4) and Darell RW (5). Uveitis as in other studies was more common in middle age group between 30-45 years of age (4, 5,6,7,8, 9, 10, 11). However above 60 years of age, we had 12% cases which is higher than past studies (4,5). In past decades, endogenous uveitis was considered to have a peak incidence in middle aged individuals and to be less likely to occur in elderly (4,5,). More recent studies have including ours have shown incidence of uveitis increasing above 60 years of age (6,7,8). This may be due to the fact that for the past few decades due to better health care facilities, life expectancy has increased, and so also debilitating diseases like malignancies, Tuberculosis, diabetes etc. where patients are more prone to develop uveitis.

Uveitis is rare below 16 years of age (Duke Elder) which is 4% in our study which is in accordance with other studies (1-7).

### **4.3 Sex distribution**

There were 49 males and 51 females in our study. As in all previous studies from different regions of the world, no significant sex predominance was seen.

### **4.4 Geographical location**

Anterior uveitis was more common than posterior uveitis in both rural and urban areas and incidence of uveitis was almost same in both rural and urban areas, 43% & 47% respectively. In our study, posterior uveitis is present in 42% in urban areas compared to 20% in rural areas. Woods (10), Schelegel (1) and Handery Dale (4) found no definite relationship to geographical location except for certain diseases like Toxoplasmosis, which was also found in various studies (9, 11-16). This can be explained by the fact that ours was a hospital-based study with smaller sample size compared to above mentioned studies.

### **4.5 Laterality**

In our study, 70% cases were unilateral and 30% bilateral which is comparable to all other studies. As in our study, unilateral anterior uveitis was the commonest type as in other studies also.

### **4.6 Clinical presentation**

In our study, 32% of the total series were patients with acute anterior uveitis in one of the eyes and chronic anterior uveitis was found in 34% of the total cases. Acute posterior uveitis accounted for 6% of all the cases in the series chronic posterior uveitis constituted 26% of all the cases. Overall chronic cases dominated in both anterior and posterior uveitis which was also shown by previous studies (9-27).

### **4.7 Secondary glaucoma**

16 patients (16%) had IOP > 21mmHg on at least 2 occasions. All had anterior uveitis except 1 who had posterior uveitis. Other studies have shown secondary glaucoma in 18.2%, 9.6% and 24% cases (28, 29, 30) and majority had anterior uveitis. These findings are consistent with our findings.

#### 4.8 Etiology of anterior uveitis

In our study, majority of the cases were idiopathic which corresponds to other studies (1, 3, 4, 9, 13, 16, 31). Most remarkable difference in the present study was Toxoplasma iridocyclitis (2%) as opposed to no such case reported in previous studies. No case of ankylosing spondylitis was reported in the present series as opposed to 0.7%, 5.7%, 1.5%, 7.1 % (1, 3, 4, 9). Only 1% patients had trauma as etiology in our study. Handerly DL et al and Rathinam P reported trauma as etiology in 5.7% and 7.1% respectively (1,9) which is quite higher than in our study. This may be due to the fact these studies were conducted in rural areas where rural agricultural population has more predilection to trauma.

#### 4.9 Etiology of posterior uveitis

Toxoplasmosis was the commonest cause after idiopathic which is also reported in other studies (16, 23). In the study from North India, Singh R et al found serpinginous choroiditis as foremost cause (13). Rathiram et al reported Leptospirosis, Tuberculosis and Leprosy quite common in South Indian states (9).

#### 4.10 Etiology of panuveitis

Incidence of panuveitis was the least as is reported by previous studies. VKH is the commonest cause of panuveitis in USA, Saudi Arabia, Scotland and many European countries (6,7,9,10,11) and in many parts of India(9,13,16 31). Behcet's is common in Japan (20%) (28, 33), infrequently seen in Europe and USA (1, 33) and relatively rare in India(13,16).

So, it is clear that etiology of uveitis varies with geographical region and race. As stated by BenEzra, the cause for the variable incidence of specific uveitis etiologies reported in different studies is also due to "pattern changes in uveitis diagnosis". These pattern changes are because of multitude of factors, including genetic, ethnic, geographic and environmental factors in addition to "changing pattern of uveitis over years" (34).

### V. Conclusion

Uveitis is rare in children but more common in working age group between 20 – 60 years of age, so, early and proper diagnosis and treatment is necessary in this age group because disease if not treated early, can have economic impact on them. There has been an increasing incidence of uveitis with increasing age, so early and appropriate diagnostic work up for uveitis is recommended for the elderly. Early recognition and treatment of complications like secondary glaucoma, which can lead to irreversible blindness, is the need.

Etiology of uveitis varies with geographical region and race. Toxoplasmosis is the commonest etiological factor responsible for both anterior and posterior uveitis in our region. Anterior uveitis is more common than posterior. Acute and chronic anterior uveitis occur with equal frequency while most of posterior uveitis cases present in chronic form.

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**Table 1:**

Category	Anteroir Uveitis	Posterior Uveitis	Panuveitis	Total
<b>A) Age(yrs)/sex</b>				
0-9 M	-	-	-	-
F	-	1	-	1
10-19 M	3	2	1	6
F	3	-	-	3
20-29 M	11	1	-	12
F	6	8	-	14
30-39 M	3	1	-	4
F	6	3	-	9
40-49 M	6	5	-	11
F	12	-	-	12
50-59 M	3	6	1	10
F	3	3	-	6
≥60 M	6	1	-	7
F	4	1	-	5
Total	66	32	2	100
<b>B) Geographical Area</b>				
Urban	27	19	1	47
Rural	33	9	1	43
Hilly	5	3	-	8
Migratory	1	1	-	2
Total	66	32	2	100
<b>C) Laterality</b>				
Unilateral	45	24	1	70
Bilateral	21	8	1	30
Totals cases (eyes)	66 (87 eyes)	32 (40 eyes)	2 (3 eyes)	100(130 eyes)
<b>D) Clinical Presentation</b>				
Unilateral cases				
Acute	22	4	1	27
Chronic	23	20	-	43
Total	45	24	1	70
Bilateral cases				
Acute	7	2	-	9
Chronic	11	6	-	17
Acute/ chronic	3	-	1	4
Total	21	8	1	30
No. of eyes				
Acute	39	8	2	49

Chronic	48	32	1	81
Total eyes	87	40	3	130
<b>E) Visual Acuity</b>				
6/6	4	3	-	7
6/9	6	11	-	17
6/12	13	7	-	20
6/18	3	4	-	7
6/24	4	3	-	7
6/36	7	4	-	11
6/60	11	2	-	13
C F	24	3	2	29
HM	11	-	-	11
PL +	3	3	-	6
PL -	1	-	1	2
Total (eyes)	87	40	3	130
<b>F) IOP</b>				
< 16 mmHg	1	-	-	1
16 – 21 mmHg	50	31	2	83
22 – 24 mmHg	5	-	-	5
25 – 30 mmHg	1	-	-	1
>30 mmHg	9	1	-	10
Total cases	66	32	2	100

**Table 2:- Etiological diagnosis**

	Ant.uveitis (n=66)(%)	Post. Uveitis (n=32)(%)	Panuveitis (n=2)(%)	Overall
1 Fuch's heterochromic Cyclitis	3(4.54)	-	-	3
2. Herpes simplex keratouveitis	3(4.54)	-	-	3
3. Herpes zoster uveitis	1(1.51)	-	-	-
3. Toxoplasmosis	2(3.03)	4(12.5)/2BL	-	6
4. Post cataract extraction	2(3.03)	-	-	2
5. lens related	1(1.51)	-	-	1
6. Ankylosing spondylosis	-	-	-	-
7. Reiter's syndrome	1(1.51)	-	-	-
8. Juvenile chronic arthritis	-	-	-	1
9. Syphilis	-	-	-	-
10. Sarcoidosis	1(1.51)	-	-	-
11. Traumatic iridocyclitis	1(1.51)	-	-	1
12. Glaucomatocyclitic crisis	-	-	-	1
13. Tuberculosis	-	1(3.12)	-	1
14. Leprosy	2(3.03)/BL	-	-	2
15. Retinal vasculitis	-	3(9.4)	-	3
16. CMV	-	-	-	-
17. Serpiginous choroidopathy	-	1(3.12)	-	-
18. Acute multifocal placoid pigment epitheliopathy	-	1(3.12)	-	-
19. Sympathetic Ophthalmitis	-	-	1(50)	1
20. Idiopathic	-	22(68.75)/ 6BL	1(50)	62
	66 (87 eyes)	32 (40 eyes)	2 (3 eyes)	100 (130 eyes)

BL= Bilateral

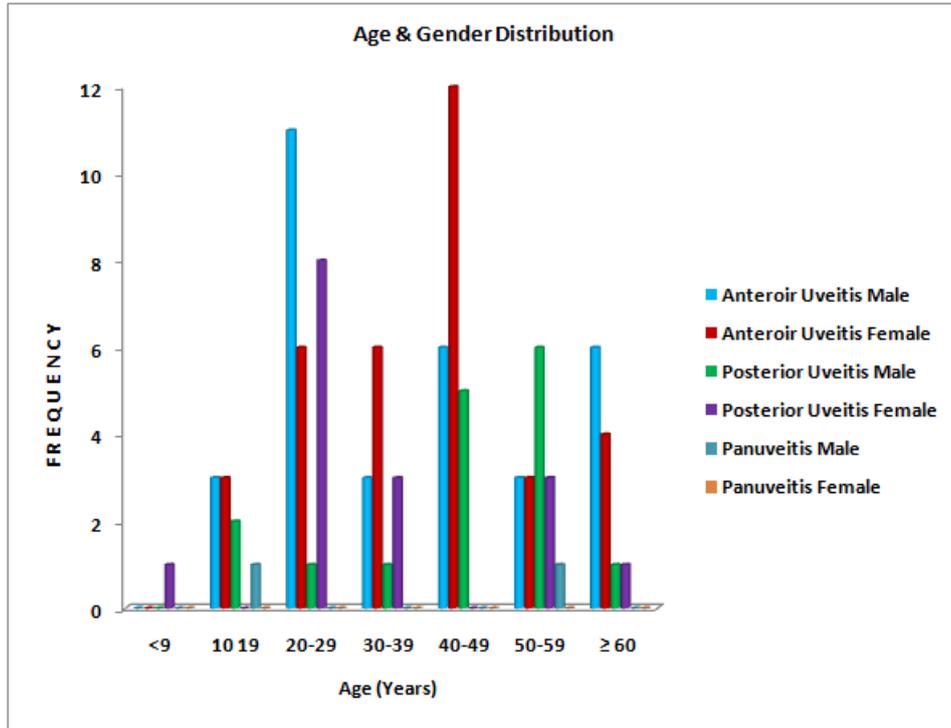


Fig.1

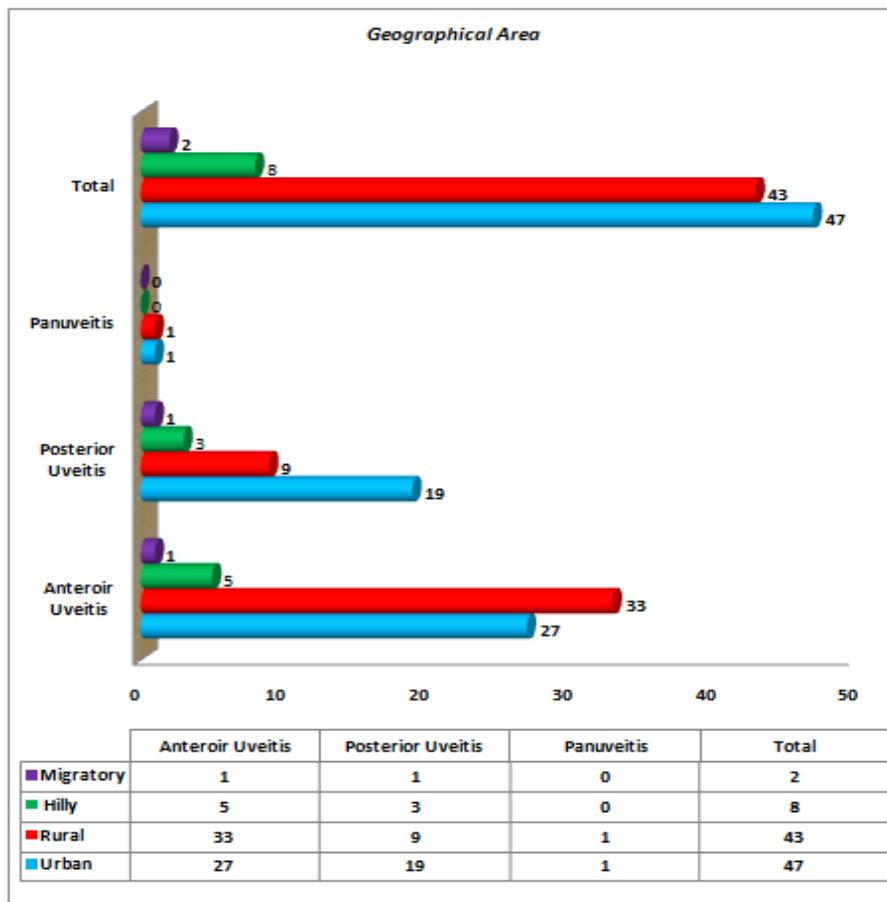


Fig.2

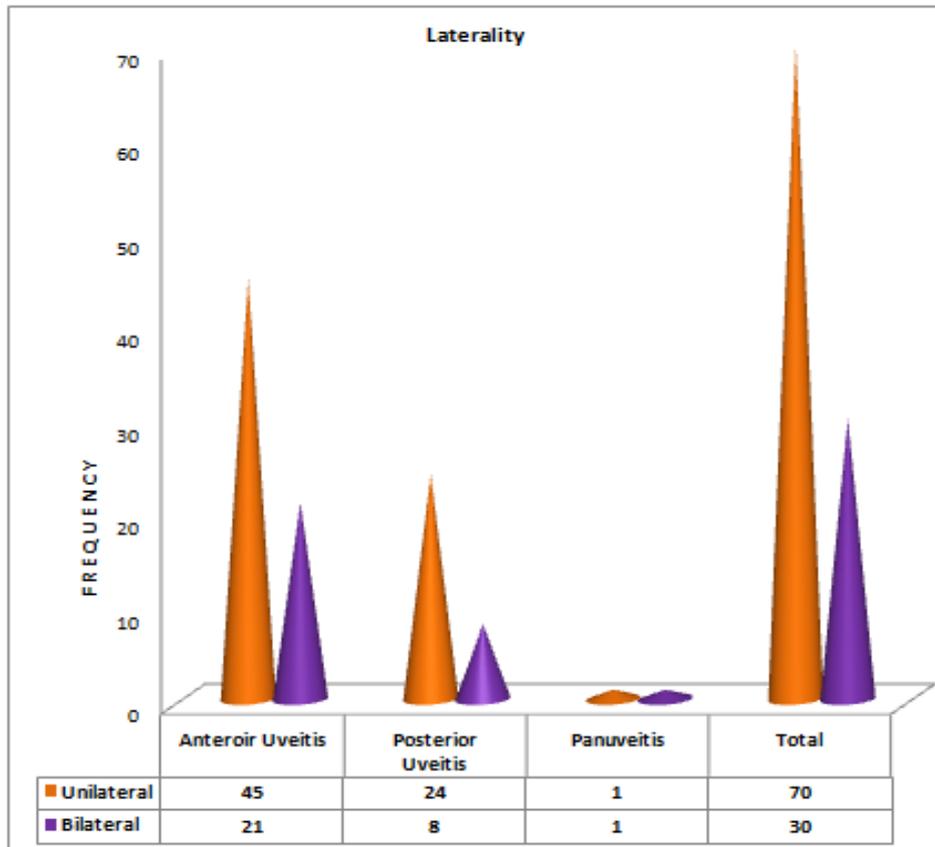


Fig.3

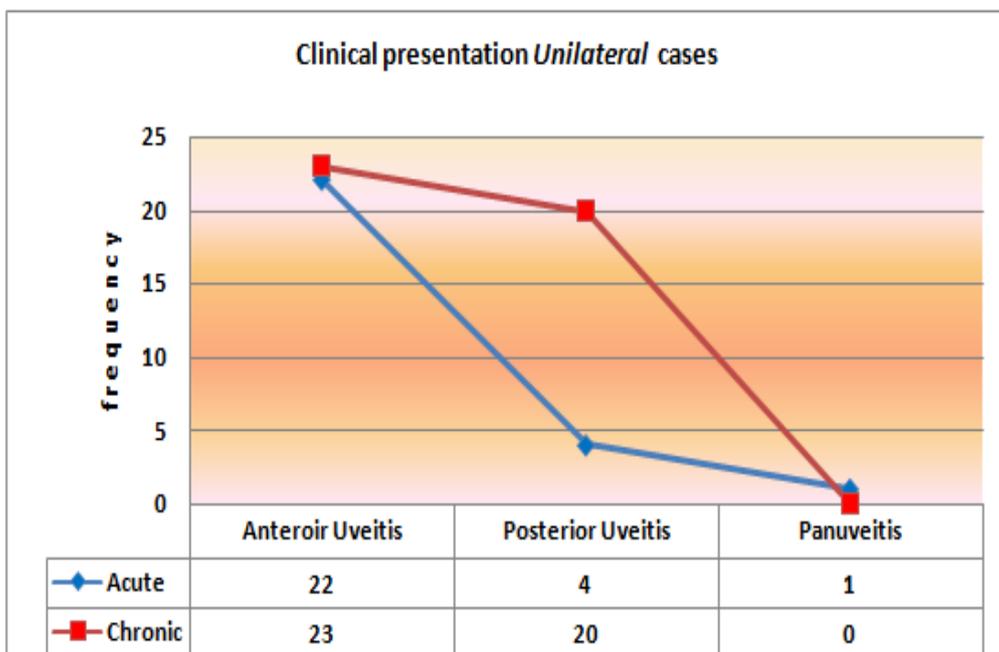
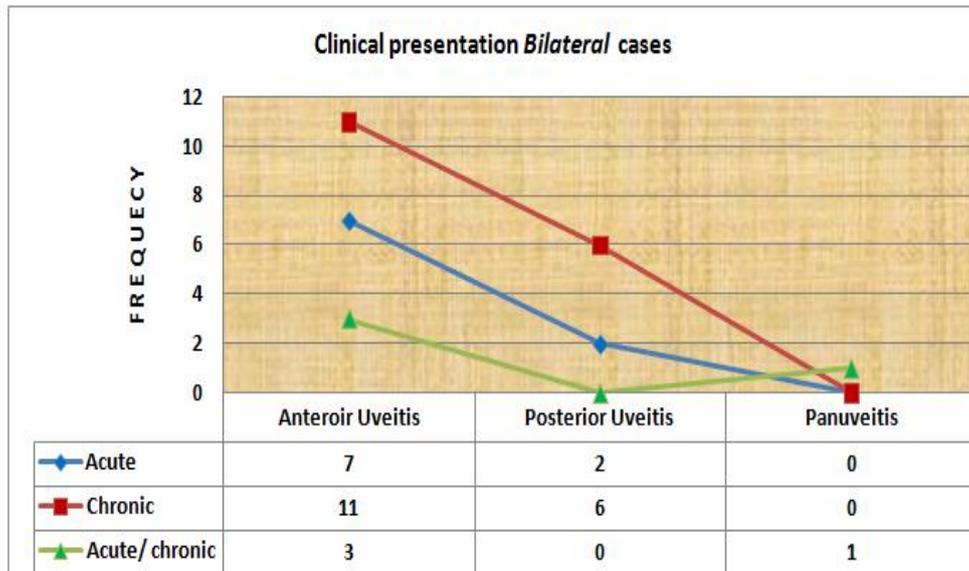


Fig.4



**Fig.5**