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Original Research Article

Clinical profile of retinal vasculitis in a tertiary eye care Centre in South Kerala

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ABSTRACT

Objectives: Objective is to study the clinical profile of retinal vasculitis in a tertiary eye care Centre in South Kerala.
Materials and Methods: All consecutive patients diagnosed with retinal vasculitis in a tertiary eye care Centre over a period of one year were evaluated for ocular and systemic risk factors for developing the disease. Patients more than 10 years of age were included in the study. Patients with diabetic and hypertensive retinopathy were excluded from the study. Data was collected using a pretested proforma. Demographic variables, risk factors, symptoms, clinical signs and visual acuity at presentation were studied. Examination tools used were Log MAR chart, slit lamp, direct & indirect ophthalmoscope.
Results: 38 eyes of 28 patients were included in the study. Defective vision and floaters were the main symptoms whereas vitritis and vascular sheathing were the most common signs. Secondary retinal vasculitis (82.2%) was more common than primary retinal vasculitis (17.8%). Also infectious etiology was commoner than autoimmune diseases. Unilateral disease was common in secondary retinal vasculitis. Toxoplasma gondii was the most common agent associated with secondary retinal vasculitis in our hospital.

1. Introduction

Retinal vasculitis may occur as a primary syndrome called idiopathic retinal vasculitis, which affects the eye vasculature without evidence of any systemic, or eye disease.[1] More commonly, it is seen as a manifestation of systemic diseases including sarcoidosis, collagen vascular diseases, malignancy, neurologic conditions and systemic diseases. It also occurs in ocular conditions like parsplanitis or birdshot retinochoroidopathy. The various stages of disease can be described as stage of inflammation, stage of ischemia, stage of neovascularization and stage of complications.[2]

Inflammation of peripheral retinal vessels may be completely asymptomatic even in patients with associated systemic disease. They often complain of painless loss or blurring of vision. Areas of retinal infiltrates or haemorrhage can cause scotomata or floaters.[2] Anterior uveitis if present may be associated with redness, pain and photophobia. Some patients may present with sudden loss of vision due to vitreous haemorrhage.

Systemic examination should be done to look for associated systemic features like skin rashes, orogenital ulceration, arthritis, thrombosis, and lymphadenopathy, neurologic and respiratory symptoms.

2. Materials and Methods

A cross sectional study was done in which all consecutive patients diagnosed with retinal vasculitis in our centre over a period of one year were studied. They were evaluated for ocular and systemic risk factors for developing the disease.

Patients more than 10 years of age were included in the study. Patients with diabetic and hypertensive retinopathy and those who were not willing to participate in the study were excluded. Data was collected using a pretested proforma.

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Demographic variables, risk factors, symptoms, clinical signs and visual acuity at presentation and treatment received were studied. Examination tools used were Log MAR chart, slit lamp, direct & indirect ophthalmoscope. Investigations were done in a patient tailored manner considering history and clinical features. Serology was done for all patients. Imaging was done in indicated patients which included OCT, FFA, Chest X-ray and HRCT.

Patients who were suspected of ocular TB (presumptive ocular TB)[3] underwent Mantoux test, Chest X-ray and further investigations as advised by respiratory physician. Molecular diagnostic tests were not used in this study. Serum ACE and chest X-ray/HRCT were the tests done to rule out sarcoidosis.

3. Results

38 eyes of 28 patients with retinal vasculitis were studied. Among the 28 patients studied, 15(53.5%) were females and 13 (46.4%) were males.22 patients (78.5%) had secondary retinal vasculitis were as 6 patients had primary retinal vasculitis (21.4%). 10 (35.7%) patients had bilateral disease among which 6 were females. Unilateral disease was common in secondary type (15 patients, 68.1%). But both unilateral and bilateral disease were seen equally in primary retinal vasculitis (3 patients each, 50%). Range of age of the patients was 11-50 years (Table 1) with mean age at presentation as 29±12.75 years.

Table 1: Age and sex distribution of study participants

Age group(yrs.)	Males n=13(%)	Females n=15(%)
11-20	6(46.1)	4(26.6)
21-30	3(23.0)	2(13.3)
31-40	Nil	5 (33.3)
41-50	4(30.7)	4(26.6)

Table 2: istribution of symptoms among study participants

Symptom	No. of eyes N=38(%)
Defective vision	22 (57.8)
Floaters	14(36.8)
Pain	7(18.4)
Redness	10(26.3)
Photophobia	8(21.0)
Flashes	2(5.2%)

numerates the common symptoms noted. The most common presenting symptom was defective vision seen in 22 eyes (57.8%), followed by floaters in 14 eyes (36.8%). Other symptoms were pain reported in 7 eyes (18.4%), redness in 10 eyes (26.3%), photophobia in 8 eyes (21%) and flashes in 2 eyes (5.2%).

Diabetes mellitus was reported in 3 patients. Two patients had history of antituberculous treatment in the past. One patient was diagnosed with acute retinal necrosis and he had a history of recent viral fever. One patient was on immunosuppressant (post renal transplant). Majority of the patients did not have any systemic illness.

Table 3: Istribution of clinical findings in study participants

Signs	No.of eyes. N=38(%)
Vascular sheathing	32(84.2)
Vitritis	20(52.6)
Anterior uveitis	10(26.3)
Macular oedema	8(21)
Retinochoroidal patch	7(18.4)
Vitreous haemorrhage	4(10.5)
Branch retinal vein occlusion	5(13.1)
Neovascularization elsewhere	5(13.1)
Arterial occlusion	1(2.6)
Retinal necrosis	1(2.6)

Table 4: Istribution of eyes based on type of vessels involved

Type of vessel involved	No. of eyes N=38(%)
Periphlebitis	34(89.4)
Arteritis	2(5.2)
Both arteries and veins	2(5.2)
Total	38

numerates clinical signs in retinal vasculitis. Most common sign was vascular sheathing found in 32 eyes (84.2%), followed by vitritis (20, 52.6%). Other clinical findings were anterior uveitis (10 ;26.3 %), disc oedema (9;23.6%), chorioretinal scars (6;15.7%), chorioretinal patch (7;18.4%), macular oedema (8;21%), retinal neovascularization (5;13.1%), vitreous haemorrhage (4;10.5%). Disc granuloma was found in one eye. Acute retinal necrosis with exudative retinal detachment and multifocal choroiditis were noted in one patient each. Branch retinal vein occlusion due to occlusive vasculitis was found in 5 eyes (13.1%). 3 patients had frosted branch angiitis (Figure 1), two were idiopathic and one was CMV IgG positive. Majority of eyes (89.4%) had predominantly periphlebitis (Table 4). Two eyes (5.2%) had arteritis predominantly.

Table 5: Etiology of retinal vasculitis among study participants

Etiology of Retinal vasculitis	No. of patients (%) N=28
Infectious	
Toxoplasma	14(50)
CMV	2(7.1)
HSV	1(3.5)
Presumed tuberculous vasculitis	4(14.2)
Non-infectious	
SLE	1(3.5)
Idiopathic	6(21.4)

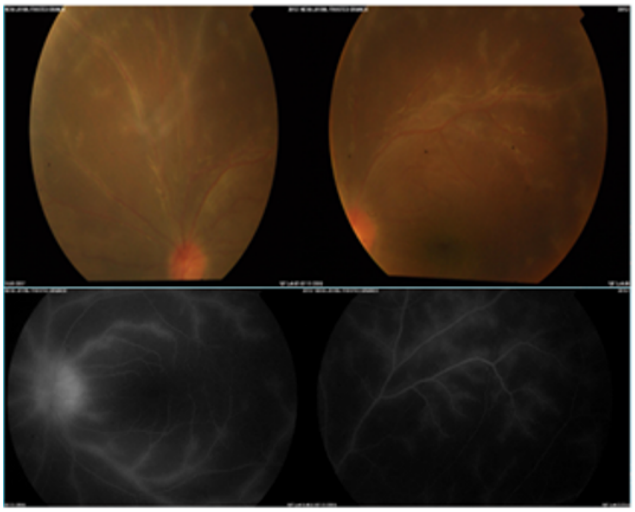

Fig. 1: Frostedbranch angiitis

hows etiological distribution of retinal vasculitis in our study. 14 out of 28 patients were presumed to have toxoplasma retinal vasculitis based on clinical findings and serological testing. Four patients were diagnosed with possible ocular tuberculosis (WHO guidelines).[3] Mantoux test was positive (11.7%), out of which only one had received ATT in the past. All 4 patients had normal chest X-ray and sputum examination. CMV IgG was positive in 2 patients. Both of them were immunocompetent . HSV IgM was positive in one patient (4.1%). ANA and ds DNA were positive in one patient and was diagnosed to have SLE. One patient had history of TB colon in the past who received ATT, was now Mantoux negative and no other investigations were positive. All investigations were found to be normal in 6 patients (21.4%). Vasculitis cases were no etiology could be found out were presumed to be idiopathic.

Table 6: atterns in Toxoplasma retinal vasculitis among study participants

Type of presentation	No. of eyes (n=17) (%)
Satellite lesion with vasculitis	3(17.6)
Denovo foci with vasculitis	3(17.6)
Intermediate uveitis with vasculitis	2(11.7)
Retinochoroidal scar with vasculitis (no active patch)	2(11.7)
BRVO	2(11.7)
Vascular sheathing alone(no patch or scar)	5(29.4)

escribes the most common patterns found in toxoplasma retinal vasculitis. 17 eyes of 14 patients were presumed to have toxoplasma retinal vasculitis based on clinical finding and serological testing. Out of 28 patients, toxoplasma IgG test was positive in 13 patients (46.4%). One patient (7.1%) had IgM positivity only. Two had both IgG and IgM positivity. 3 patients had bilateral disease (17 eyes). Five eyes (29.4%) had vasculitis alone without patch or scar. One patient had evidence of systemic toxoplasmosis. 3 out of 17 eyes with toxoplasma retinal vasculitis (17.6%) eyes had satellite lesion, 3 (17.6%) eyes had de novo foci. 2 (11.7%) eyes had intermediate uveitis with retinal vasculitis . 2 eyes (11.7%) presented with occlusive vasculitis.

Capillary non-perfusion areas were found in 31.5% of eyes (12 eyes) in FFA. Neovascularisation else were found in 4 eyes (10.5%). Severe macular ischaemia was found in one eye, with SLE vasculitis.

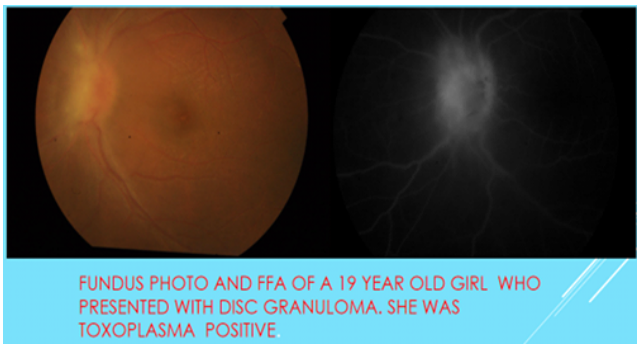

Fig. 2: Disc granuloma

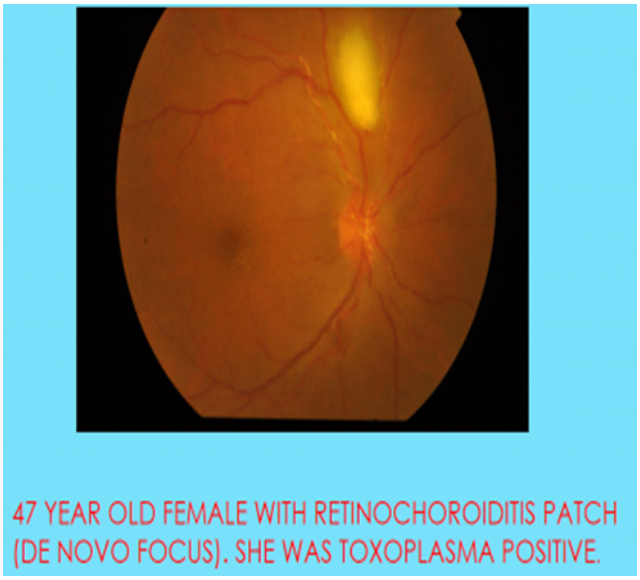

Fig. 3: Toxoplasma retinochoroiditis denovo focus

Corticosteroids were the mainstay of treatment. 25 (89.2%) patients received systemic steroids. Out of 38 eyes 2 eyes (5.2%) received laser treatment. 14 patients (50%) received antitoxoplasma treatment. One patient received intravitreal Ranibizumab for NVE and VH in a

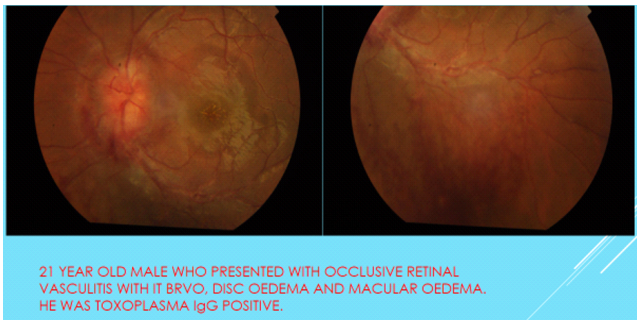

Fig. 4: Occlusive vasculitis

case of occlusive vasculitis with Mantoux positivity. Three patients (10.7%) received systemic antivirals (acyclovir, Val ganciclovir). Three patients (10.70%) received ATT. None of the patients received steroid sparing agents.

4. Discussion

Majority of the patients presented to our centre had unilateral disease. Unilateral disease was common in secondary retinal vasculitis. Both unilateral and bilateral disease were seen equally in primary retinal vasculitis. Most of the patients who visited our hospital were from the district of Thiruvananthapuram. There was a relative female preponderance. Among males more cases were noted in first decade. But in a similar study by Saurabh et al[1] in North eastern India, bilateral cases were more common and there was male preponderance. Defective vision was the most common symptom, whereas vascular sheathing was the most common sign noted.

Toxoplasma IgG positivity was the most common positive finding obtained in our patients. Among these cases, only one patient had evidence of systemic disease. All others had subclinical disease. Only 3% of these patients had contact with pets. Denovo foci was as common as satellite lesion. But majority of the patients (29.4%) had retinal vasculitis only, without retinochoroiditis patch. Predominantly periphlebitis was the most common type of pattern found in toxoplasma cases in our study. Azithromycin 500mg orally was the antitoxoplasma agent used in our hospital. Classically new lesions develop at the edges of old scars, but in our series de novo foci was also a common finding.

The diagnosis of ocular toxoplasmosis is clinical, based on the characteristic lesion. The serologic laboratory tests are supportive. Most commonly used serological tests for diagnosing toxoplasmosis include indirect fluorescent antibody test, immunosorbent agglutination assay and ELISA.[4] ELISA IgM and IgG was the serological test used in our patients. The rising or high titre of antibodies in serum is diagnostic as was seen in our case. In humans, the prevalence of IgG antibodies to toxoplasma increases with increasing age. On an average 20-70% adults are seropositive.[4]

Holland et al[5] reported the development of intraocular inflammatory reactions including vitritis, iridocyclitis, and retinal vasculitis without necrotizing retinal lesions in individuals with acquired systemic toxoplasmosis. These data strongly suggest that acquired systemic toxoplasmosis infection should be considered in the differential diagnosis of patients with retinal vasculitis, especially in the presence of constitutional symptoms suggesting systemic toxoplasmosis.

In the study by Saurabh et al[1] primary retinal vasculitis was more common and none of the patients were found to have a conclusively proven systemic disease. In another study conducted in Northern Thailand[6] which included 47 patients, tuberculosis was the most frequently identified infectious cause. In our series although Mantoux positivity was there in 4 patients, none of them had evidence of systemic disease at the time of presentation.

All were evaluated by respiratory physician for systemic disease. In view of ocular signs, positive Mantoux test and since no other etiology could not be found they were considered as possible ocular tuberculosis and treated with ATT.[7] None of them had associated HIV infection. One patient had received ATT 1 year back for sputum negative TB. Molecular biologic techniques were not used in our study.

Only one patient (3%) was identified with autoimmune disease (SLE). This patient's ANA was positive and subsequent evaluation by rheumatologist led to the diagnosis of SLE and was started on Ecospirin. Three patients had frosted branch angiitis (7%). Two had acute idiopathic angiitis[8] and the other was associated with very high CMV IgG titre. No risk factor was identified for CMV infection for this patient.

Corticosteroids was the mainstay of treatment. Steroid sparing agents were not used in any of the patients. Two eyes (5.2%) underwent laser treatment. Intravitreal anti-VEGF was given for one patient. All of our patients were immunocompetent except one, who was a post renal transplantation patient and was on systemic steroids.

5. Conclusion

In our study, secondary retinal vasculitis (82.2%) was more common than primary retinal vasculitis (17.8%). Also infectious etiology was commoner than autoimmune diseases. Unilateral disease was common in secondary retinal vasculitis. Toxoplasma gondii was the most common agent associated with secondary retinal vasculitis in our hospital.

6. Source of Funding

None.

7. Conflict of Interest

None.

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