Journal of Research in Medical and Dental Science
2022, Volume 10, Issue 10, Page No: 147-150

Available Online at: www.jrmds.in
eISSN No. 2347-2367: pISSN No. 2347-2545

An Unusual Case of Severe Bilateral Anterior Uveitis as the Initial Presentation of Tuberculosis in a Young Male

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ABSTRACT

The most frequent type of intraocular inflammation with potentially sight threatening consequences is anterior uveitis. Anterior uveitis has a variety of signs and symptoms, and the diagnosis is relatively easy but the cause is often more difficult to clarify, while chronic iridocyclitis has an insidious onset and difficult diagnosis. A case of 38-year-old male patient was referred to Ophthalmology OPD with chronic anterior uveitis and was later diagnosed as tuberculosis during complete investigations for uveitis. A young male patient with severe case of anterior uveitis and no signs and symptoms of tuberculosis was a rare presentation. He complained of bilateral diminution of vision since two months, which was insidious in onset and gradually progressive in nature. On local examination, anterior segment findings were mild conjunctival congestion, multiple nebular corneal opacities, mutton fat keratic precipitates were seen, festooned pupil was observed and complicated cataract was seen. Patient was tested positive for Mantoux during investigations and was started on antitubercular treatment on a prompt basis. Regular follow up was kept.

Key words: Granulomatous uveitis, Chronic iridocyclitis, Tuberculosis, Festooned pupil

HOW TO CITE THIS ARTICLE: Piyush Kathane, Keta Vagha, An Unusual Case of Severe Bilateral Anterior Uveitis as the Initial Presentation of Tuberculosis in a Young Male, J Res Med Dent Sci, 2022, 10 (10): 147-150.

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Received: 03-Oct-2022, Manuscript No. jrmds-22-76716;

Editor assigned: 05-Oct-2022, PreQC No. jrmds-22-76716 (PQ);

Reviewed: 19-Oct-2022, QC No. jrmds-22-76716(Q);

Revised: 24-Oct-2022, Manuscript No. jrmds-22-76716(R);

Published: 31-Oct-2022

INTRODUCTION

The most frequent type of intraocular inflammation with potentially sight threatening consequences is anterior uveitis. Anterior uveitis has a variety of signs and symptoms, and the diagnosis is relatively easy but the cause is often more difficult to clarify, while chronic iridocyclitis has an insidious onset and difficult diagnosis.

CASE REPORT

A 38-year-old male patient presented to ophthalmology OPD with chief complaints of diminution of vision in both eyes since 2 months, insidious in onset and gradually progressive in nature. It was associated with redness and tenderness in both the eyes. There were no complaints of watering, sticky discharge, photophobia, coloured halos, diplopia in both the eyes. There was no history of trauma in the recent past. Patient did not give history of cough, cold or fever. There were no associated systemic complaints. The patient had no history of diabetes, hypertension, syphilis, any previous drug use, previous trauma, leprosy.

On Systemic examination, the patient was well oriented to time, place and person. His pulse rate was 72 beats/minute. Blood pressure recorded was 120/80 mmHg. His chest was clear bilaterally and per abdomen examination was within normal limits.

The right eye visual acuity on ophthalmic examination was counting fingers 1.5 meters, with accurate projection of rays in all four quadrants. The patient could perceive hand movements close to face and accurate projection of rays in all four quadrants, with his left eye.

On local ocular examination, both the lids were normal. Right and left conjunctiva was mildly congested. On examination of cornea over the slit lamp, nebular opacities were seen with mutton fat keratic precipitates in the lower half of the corneal endothelium in both the eyes. The depth of the anterior chamber was irregular in the right eye and irregular and deep in the left eye. On iris examination atrophic patches were seen in both of the iris stroma. Festooned pupil was observed in the left eye indicating chronic case. Posterior synechiae were seen. Right eye pupil showed 360° synechiae. Both eyes had a complicated cataract (Figures 1 and 2).

The Trans illumination test was positive for both eyes. Fundus examination of both eyes could not be performed due to hazy media. On laboratory investigations, complete blood count, blood glucose, liver and renal function test were within normal limits. Erythrocyte sedimentation rate was 26 mm/hr, patient tested positive for Mantoux test. Tests for Covid antigen were negative. The X-ray of the chest was within normal limits. On further investigations, patient tested negative for rheumatoid factor and CRP was normal. HLA B-27 was negative. Patient tested negative for serological tests. B-scan for the patient was within normal limits, thus ruling out intermediate and posterior uveitis (Figure 3).

Therapeutic interventions

In Ophthalmology, topical corticosteroids are widely used to suppress intraocular inflammation and are applied topically or systemically.(1) For chronic anterior uveitis the patient was given atropine eye drops 3-4 times a day. By virtue of its strong mydriatic action atropine breaks the synechiae, and relaxes the muscles and thus relieves pupillary block. It also gives rest to the inflamed ciliary body and iris by its cycloplegic action. Predforte eye drop was given 2 hourly to reduce inflammation in the eye. The patient was given subconjunctival injection of dexamethasone with 0.5cc lignocaine and 0.25cc gentamicin on stat basis. The patient was started on anti-tubercular treatment for 6 months. AKT 4 kit tablet consists of a combination of four anti-tubercular drugs, rifampicin, isoniazid, pyrazinamide and ethambutol.

Follow up

Patient was kept on regular follow up. Symptomatically improvement was seen. Anti-Tubercular treatment was strictly monitored and was referred to DOTS centre. Cataract extraction was planned on follow up.

DISCUSSION

Uveitis is a condition in which the uveal tissue becomes inflamed. Anatomically it is classified as - Anterior uveitis, Intermediate uveitis, Posterior uveitis, and Panuveitis. Uveitis is classified as Acute, Chronic or Recurrent on clinical terms [1]. And on the basis of cause, it is classified

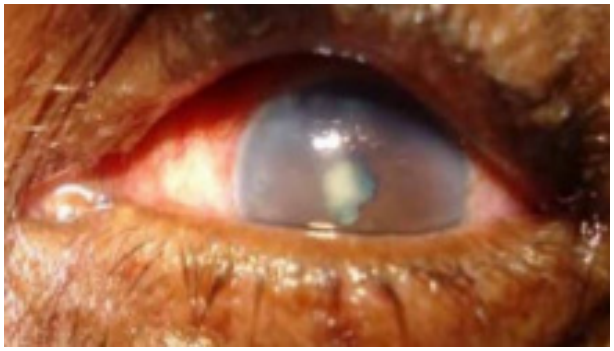

Figure 1: Shows congested eye with festooned pupil on torch light examination.

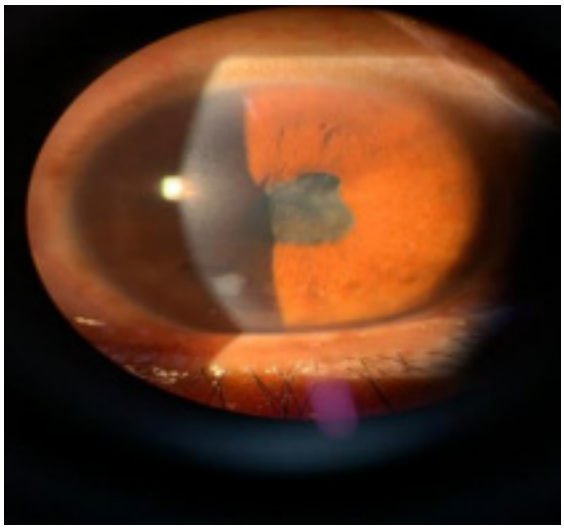

Figure 2: Shows congested eye with keratic precipitates, iris pigments, posterior synechiae and festooned pupil on Slit lamp examination.

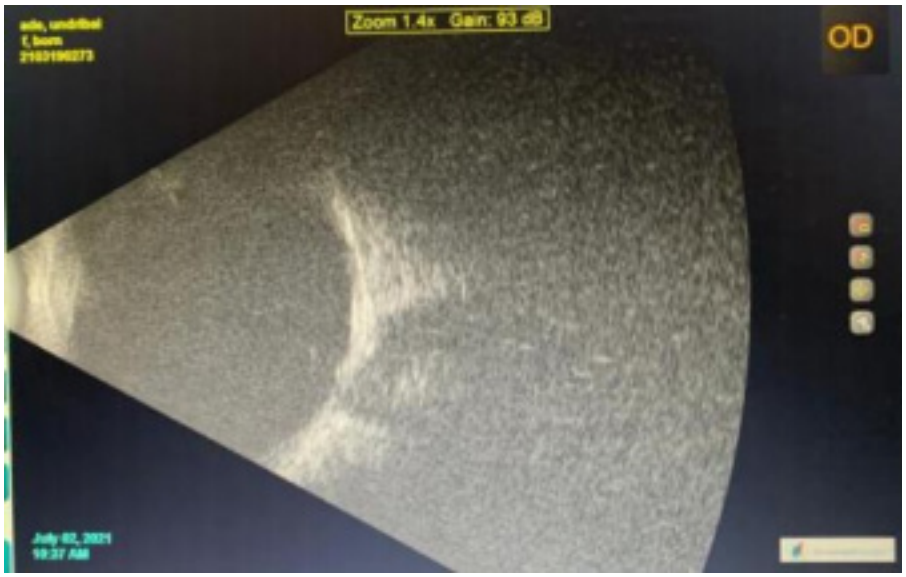

Figure 3: B-scan ultrasound showed no abnormality in posterior segment.

as granulomatous or non-granulomatous. For uveitis, the average annual incidence reported is around 14-17 per 100,000. The prevalence of uveitis in India is estimated to be around 730 per 100,000 [2]. Uveitis represents 10% of legal blindness in industrialized countries and is sight threatening potentially [3].

Our case report represents a case of anterior uveitis which was chronic and having granulomatous presentation. Anterior uveitis is also called iridocyclitis because it affects the iris and pars plicata (of the ciliary body). Chronic uveitis is the one which persists for more than 3 months and relapses in less than 3 months i.e in other words each episode lasts for more than 3 months and relapsing in less than 3 months. Pathologically, inflammation of uveal tract is divided into suppurative, which is purulent type and non-suppurative, which is further subdivided into granulomatous and non-granulomatous by Wood.

Granulomatous uveitis is a chronic proliferative inflammation that occurs in response to irritating foreign bodies, organic or inorganic material or specific non-suppurative and relatively non virulent organisms. It may be due to live organisms invading the eye or having an autoimmune aetiology, usually a type IV hypersensitivity reaction. Common microorganisms that cause such inflammation are the ones which are responsible for tuberculosis, leprosy, syphilis, brucellosis, leptospirosis as well as other viral, protozoal, fungal and helminthic infections. In granulomatous uveitis, infiltration of lymphocytes and plasma cells is observed, as well as the mobilization and proliferation of large mononuclear cells that become epithelioid cells and giant cells and aggregate into nodules, called Busacca nodules (if present near collarette) or Koeppe's nodules (if present near pupillary margins). Mutton fat keratic precipitates (KP's) can also be seen in corneal endothelium, which are deposits of white blood cells (mostly lymphocytes) derived from aqueous .There is insidious onset of inflammation with a chronic course and quiescent inflammatory reaction. Chronic inflammations are characterized by dense nodular infiltration of the tissues typically due to direct infection from the organism. On the other hand, non-granulomatous uveitis has acute onset and short duration, with fine keratic precipitates, and no focal lesions in the iris. The symptoms with which the patient presented to Ophthalmology OPD was diminution of vision for which the factors responsible may be corneal haze due to oedema and KP's, aqueous turbidity and complicated cataract. Another complaint was redness which may be due to circumcorneal congestion due to active hyperaemia of anterior ciliary vessels.

Slit lamp examination is necessary to draw out most signs of uveitis. On slit lamp examination of the patient, we got circumcorneal congestion; in corneal signs we observed keratic precipitates (KP's) which are proteinaceous cellular deposits found at the back of cornea. Mutton fat

Table 1: Cause of anterior uveitis [4-6].

Acute Anterior Uveitis	Chronic Anterior Uveitis
HLA-B27 associated uveitis positive	Juvenile rheumatoid arthritis/ Juvenile idiopathic arthritis (JIA)
Ankylosing spondylitis	Anterior uveitis associated with
Inflammatory bowel disease (Crohn's disease and ulcerative colitis)	Primary posterior uveitis
Reactive arthritis	Tuberculosis
Idiopathic (HLA-B27 negative)	AIDS
Psoriatic arthropathy/ arthritis	Fuch's heterochromic iridocyclitis
Syphilitic uveitis	Idiopathic
Sarcoid uveitis	Cytomegalovirus (CMV)
Lens-associated anterior uveitis	Sarcoidosis
Behcet's disease	Syphilis
Reiter's syndrome	Lupus
Posner-Schlossmann Syndrome	Herpes (zoster/simplex)
UGH syndrome	
Trauma	

Table 2: Systemic diseases associated with uveitis and their respective laboratory tests [4,7-9].

Diseases	Laboratory tests
HLA-B27 Positive	HLA-B27
Tuberculosis	Chest X-Ray, PPD skin test, Interferon gamma release assay
Ankylosing Spondylitis	HLA-B27, ESR, RF Spine and sacroiliac X Ray
Inflammatory Bowel Disease	ANA positive, HLA-B27, Endoscopy
Multiple Sclerosis	MRI, HLA-DR2, CSF Examination
Reactive Arthritis	HLA-B27, Joint X-Ray
Psoriatic Arthritis	HLA-B27, Joint X-Ray
Reiter's Syndrome	ANA, HLA-B27, ESR
Behcet's Disease	HLA-B51, Skin, Positive pathergy test
Sarcoidosis	Serum ACE level, Lysozyme, chest radiography or CT
Juvenile Idiopathic Arthritis	RF, ANA

KP's composed of macrophages and epithelioid cells has been observed and is known to be seen in granulomatous iridocyclitis. They are large, fluffy, thick, lardaceous KP's having waxy or greasy appearance. In anterior chamber signs, the depth of anterior chamber was deep and irregular in posterior synechiae.

Atrophic changes were seen as iris signs in chronic phase and posterior synechiae were observed, indicating granulomatous uveitis. Posterior synechiae formation leads to irregular shape of pupil and festooned pupil was observed on dilatation with atropine (mydriatic). In the lens, a complicated cataract was observed which may have developed as a complication of persistent iridocyclitis. And it progresses rapidly to maturity due to the presence of posterior synechiae. Complicated cataract is one of the complications of Anterior uveitis (Table 1).

Treatments are modified according to the etiology and severity of the disease. For the acute phase of iridocyclitis, cycloplegic drugs are most effective. 1% atropine sulfate in the form of eye ointment or eye drops are administered 2-3 times a day. 2% homatropine or 1% cyclopentolate can also be used. Corticosteroids are also effective and have anti-inflammatory effect in case of iridocyclitis when given locally. Broad spectrum antibiotics drops are prescribed with topical steroids which gives a shielding effect to them, though they are of no use in iridocyclitis [4-9]. Few of the interesting cases and studies on extra pulmonary tuberculosis were reviewed [10-14]. When steroids are contraindicated, Non-steroidal anti-inflammatory drugs can be given. Immunosuppressive drugs can be used in extremely serious cases where steroids have failed and there is danger of blindness. Other specific treatment should also be given for associated diseases so as to prevent relapse.

CONCLUSION

This was a case of chronic anterior uveitis presenting with grave diminution of vision and in a severe form in a young male associated with granulomatous infection; tuberculosis which was detected while doing investigations of the patient. The patient was immediately started on anti-tubercular treatment. Chronic uveitis is a diagnosis of high importance, and should be heavily investigated in time. Treatment related to the cause should be started. Our patient showed considerable improvement on follow up. This particular case was peculiar due to its unusual TB presentation with severe bilateral uveitis, hence it has been reported.

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