JK SCIENCE pISSN: 0972-1177

CASE REPORT

Atypical Corneal Infiltrates and Posterior Scleritis in a Case of Rheumatoid Arthritis

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Abstract

Rheumatoid arthritis (RA) is a chronic autoimmune disorder which can present with ocular complications like peripheral corneal ulcer, dry eye or scleritis. We report a rare case of posterior scleritis in a female with RA who was misdiagnosed as episcleritis. She presented with pain and redness in right eye for 2 months associated with atypical corneal infiltrates which were different from the typical peripheral ulcerative keratitis of RA. Prompt diagnosis and treatment in consultation with rheumatologist led to resolution of infiltrates and scleritis in a month. This case highlights the association of atypical corneal infiltrates and posterior scleritis with RA.

Key Words

Atypical Corneal Infiltrates, Rheumatoid Arthritis, Posterior Scleritis

Introduction

Rheumatoid arthritis (RA) is a systemic inflammatory autoimmune disorder affecting the joints, and can have several extra-articular manifestations, among which inflammatory ocular diseases are very common but they are usually overlooked and underdiagnosed. Ocular manifestations, including episcleritis, scleritis, peripheral ulcerative keratitis, and dry eye disease, are found in as many as 39% of patients of RA. [1]

These ocular manifestations are sight threatening and demand aggressive management to provide optimum care to the patients. Here, we report a case with multiple ocular manifestations of rheumatoid arthritis with special reference to posterior scleritis and atypical peripheral corneal infiltrates.

Case Report

A 55 years old female presented to us with complaints of pain, redness and blurring of vision in right eye for last 2 months. She was being treated as a case of episcleritis elsewhere and was on topical steroids. Although the episcleral congestion reduced, the pain persisted in right eye. She was diagnosed with RA 4 years back and was currently on disease modifying anti-rheumatic drugs (DMARDS) and maintenance dose of steroids.

On examination, her best corrected visual acuity (BCVA) was 6/12 and 6/6 in right and left eye respectively. Her intra-ocular pressure (IOP) was 10 and 11 mm of Hg in right and left eye respectively. Schirmer's was reduced in both eyes (8mm and 6mm in right and left eye respectively). Scleral tenderness was present on right side. Slit lamp examination of right eye revealed sectoral episcleral congestion in the superior quadrant which subsided to some extent on 10% phenylephrine test. There

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Manuscript Received: 03.06.2022; **Revision Accepted**: 06.08.2022;

Published Online First: 10 Jan 2023

Open Access at: https://journal.jkscience.org

Cite this article as: Dhiman R,Sharma N. Atypical Corneal Infiltrates and Posterior Scleritis in a Case of Rheumatoid Arthritis. JK Science 2023;25(1): 57-59

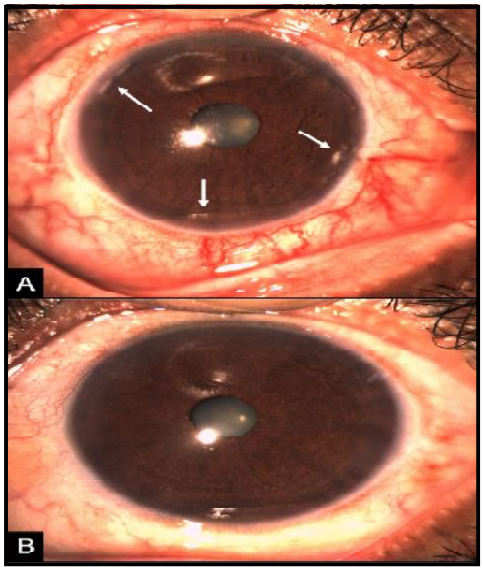

Fig 1. Slit Lamp Photograph of Right Eye Showing (A) Multiple Whitish Peripheral Corneal Infiltrates with no Epithelial Defect (white arrows)(B) Resolution of Corneal Infiltrates at 1 Month of Treatment.

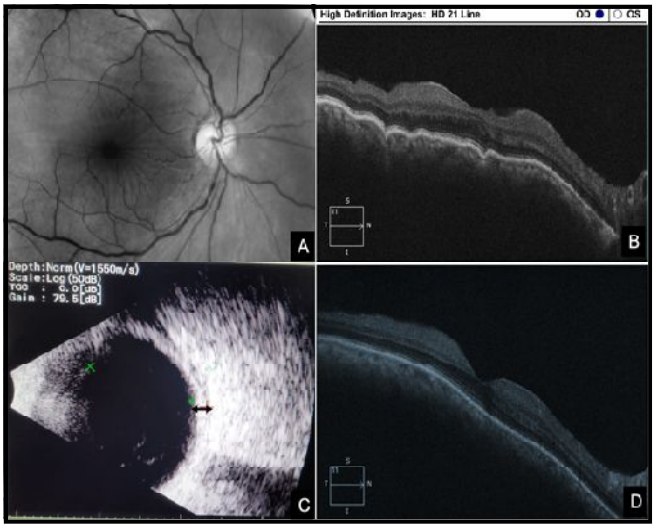

Fig 2.(A)Red Free Fundus Photograph of Right Eye Showing Multiple Radiating Retinal Folds (B) OCT Picture of Right Eye Showing Chorio-Retinal Folds with Increased Central Macular Thickness (C) B-scan Showing Increased Scleral Thickness(black arrow) (D) OCT Picture Showing Resolution of Chorio-retinal Folds after one month of Treatment.

were multiple whitish peripheral corneal infiltrates with no epithelial defect and mild peripheral corneal guttering (*Fig 1*), mild anterior chamber reaction (1+) and mid dilated pupil (5-6mm) not reacting to light in right eye. Tear breakup time (TBUT) was less (7 sec and 6 sec) while tear meniscus height (TMH) was normal in both eyes. Early lenticular changes were present in both eyes. Fundus examination of right eye revealed a normal disc with tortuous vessels and multiple radiating chorioretinal folds with dull foveal reflex while left eye was normal. B-scan ultrasonography showed sclera thickening in right eye (*Fig 2*). Patient was advised for fundus fluorescein angiography (FFA) but she refused for the same. Ocular coherence tomography (OCT) macula of right eye revealed multiple chorioretinal folds with central macular thickness of 324 µm (*Fig 2*). A complete systemic work-up was done after taking appropriate consent from the patient. Erythrocyte sedimentation rate (ESR) was 118 mm/hr, Rheumatoid factor (RA Factor) was more than 90 and anti-citrullinated protein antibody (anti CCP) was positive.

Based on clinical findings and investigations, a diagnosis of posterior scleritis and peripheral corneal infiltrates with secondary Sjogren's in RA was made and she was started on oral prednisolone 1mg/kg/day and eyedrops prednisolone 1% eight times/day. Rheumatologist consultation was sought in view of uncontrolled RA and her dose of methotrexate was hiked up to 10mg/week from 7.5mg/week with folinic acid along with addition of tablet hydroxychloroquine 200mg once daily. On follow-up visit, one week later, patient was symptomatically better with decreased pain and redness. Slit lamp examination revealed no episcleral congestion, corneal infiltrates decreased, pupillary reaction in right eye was sluggish (pupil size- 4mm) and BCVA of right eye improved to 6/6. Fundus examination, OCT macula showed decrease in macular edema and chorioretinal folds. In next one-month, peripheral corneal infiltrates resolved, pupillary size and reaction became normal and fundus examination, OCT macula showed resolution of macular edema and chorioretinal folds (*Fig 2*).

Discussion

Rheumatoid arthritis can have various ophthalmological manifestation which include dry eye, peripheral ulcerative keratitis (PUK) and scleritis leading to ocular morbidity.

Almost 80% of the patients of RA have positive rheumatoid factor but auto-antibodies called as anti-CCPs are specific for the diagnosis of the disease. A strong correlation between ocular manifestations of rheumatoid arthritis and anti-cyclic citrullinated peptide antibodies has been found. [1,2]

The most frequent ophthalmological condition associated with RA is Sjogren's syndrome, present in one out of four patients. RA may also be associated with internal ophthalmoplegia caused by inflammatory damage to the ciliary ganglion and short ciliary nerves located around the optic nerve.[3] This explains the mid-dilated, non-reacting pupil in our case which responded well to steroids. In cases of RA, anterior scleritis is more common than posterior scleritis mostly involving the superior sclera.[4] However, we found both anterior as well as posterior scleritis in the same patient. Scleritis is often associated with corneal lesions and there exists positive correlation between activity of inltrative keratitis and scleritis. [5,6] It is reported that severity of the corneal inflammation in RA is often related to the activity of the systemic vasculitis and scleritis.[7] It has been found that, 20%-30% of the patients with posterior scleritis have an association with systemic rheumatic disease and this demands aggressive management by both ophthalmologist and rheumatologist. Corneal involvement usually occurs in the form of peripheral ulcerative keratitis and seen in approximately 3% of the cases, arising as a complication of scleritis or independently of this condition. [8,9] However, in our patient, corneal involvement in the form of atypical corneal infiltrates which were subepithelial, perilimbal, discontinuous with no epithelial defect were noted. There is only one case report in the literature describing such atypical corneal infiltrates along with anterior scleritis which was treated with infliximab.[10]

Our case highlights the presence of rare ocular manifestations of RA like posterior scleritis, internal ophthalmoplegia and atypical corneal infiltrates which are different from the typical PUK. These atypical infiltrates are believed to be caused by an immunologic mechanism as explained by Hata et al Such associations if identified early can be treated adequately with steroids and DMARDs, thereby avoiding the ocular morbidity.[10]

Conclusion

The corneal involvement in RA can be in the form of atypical corneal infiltrates which are different from typical PUK. Moreover, it is very important to look for posterior scleritis in a patient of RA as these manifestations are indicators of uncontrolled RA which can be satisfactorily managed with proper collaboration of an ophthalmologist and rheumatologist.

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