

Complete Remission of Recurrent Scleritis after Diet Modification

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Abstract

Purpose: To report a case of a patient with recurrent scleritis who achieved complete remission of symptoms after diet modification.

Case Report: A 46-year-old female with a several-year history of recurrent, intermittent eye soreness and redness had failed to improve with conservative management and steroid drops. The patient underwent a full autoimmune work-up, which was negative. Her scleritis symptoms continued to recur after several courses of oral steroids, and she did not improve on methotrexate or mycophenolate mofetil. An anti-inflammatory diet of eliminating all wheat, dairy, and refined sugar was attempted and her ocular symptoms completely resolved, with no signs of ocular inflammation.

Conclusion and Importance: This is a unique case of a patient with medication-refractive recurrent scleritis whose ocular inflammation and symptoms completely resolved after switching to an anti-inflammatory diet. The role of diet on systemic and ocular inflammation is an emerging topic and further research should be conducted to evaluate the impact of addressing lifestyle factors to modulate the body's inflammatory response.

Keywords: Ocular Inflammation; Scleritis; Diet; Anti-Inflammatory Diet; Lifestyle Modifications

Introduction

Scleritis is an inflammatory condition of the eye, resulting in a spectrum of clinical presentations depending on the region of the eye affected and severity of inflammation. The etiology of scleritis has been linked to a variety of pathologies including autoimmune diseases such as rheumatoid arthritis, lupus, infectious microorganisms such as viruses and bacteria and other conditions such as rosacea and foreign bodies [1]. However, the literature reports that roughly half of all diagnosed scleritis cases are idiopathic, and not associated with an underlying systemic cause. We report a case of recurrent bilateral scleritis that was medication resistant and negative for all etiological workup but responded well to diet modification.

Case Report

A 46-year-old female was referred for a several-year history of recurrent, intermittent eye soreness and redness. Her ocular profile included high myopia and dry eye, and she had attempted treatment with warm compress, lid massage, artificial tears, and loteprednol

drops with her optometrist with minimal improvement. Previous NSAID challenges and high frequency Prednisolone 1% administration failed. The patient had a past medical history of hypertension, GERD, focal nodular hyperplasia, hysterectomy, removal of the right lobe of the liver, breast reduction surgery and MCL tear. At the time of referral, she was taking estradiol, pantoprazole, perindopril, loteprednol drops, calcium and magnesium.

At the initial consult, the patient had evidence of deep scleral inflammation in the right eye and upper quadrant of the left eye. There was also 6/10 pain on palpation of both eyes. An OCT macula did not show any evidence of posterior scleritis (Figure 1). The rest of the ocular exam was within normal limits, and she was diagnosed with bilateral scleritis. Subsequently, a full autoimmune work-up was initiated (Table 1), and she was trialed on an oral steroid pulse. Dietary changes and lifestyle were discussed but not implemented.

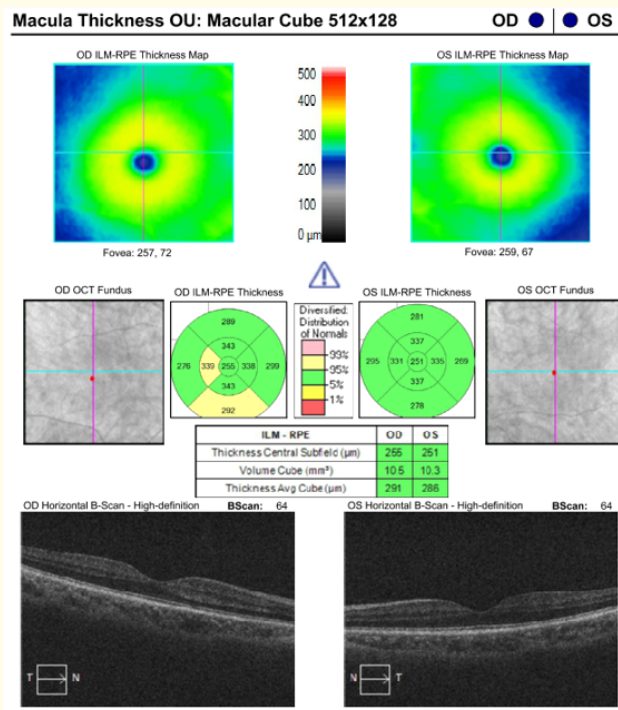


Figure 1: (RTVue-100 Fourier-Domain OCT System) OCT macula, showing no evidence of posterior scleritis.

Investigation	Result
Autoimmune	Within normal limits
Jo-1	
PCNA	
Ribosome P	
Anti-RNP	
Anti-Sm	
Anti-SSA/Ro60	
Anti-SSB/La	
Ro 52	
Anti-DsDNA	
ENA	
ACE	5 µg/L (low)
ANA	Positive in titer of 1:80 in homogenous pattern

Infectious	Negative
Syphilis	
Lyme	
Hepatitis B	
Hepatitis C	
HIV	
Mantoux	
Chest x-ray	Normal

Table 1: Autoimmune and inflammatory work-up for patient.

Two months later, during the follow-up appointment, the patient reported that she experienced significant improvement after a two-week course of prednisone (70 mg daily for one week, then 30 mg daily for one week), but her symptoms recurred one month later. All of the infectious and immunological bloodwork was negative at this point. Risks of repetitive oral steroid use were acknowledged, and she was referred to a rheumatologist for possible long-term immunomodulation.

The rheumatologist’s assessment of the patient’s review of systems and physical exam did not elicit any abnormal findings. Since the patient did continue to experience 1 - 2 acute symptomatic flare ups per month, she was determined to be a good candidate for a steroid-sparing immunosuppressive regimen of weekly 20 mg methotrexate injections and oral 5 mg folic acid.

Ten months after the patient’s initial ophthalmology consult, the patient was still experiencing recurrent scleritis flares. She required a four-week course of oral prednisone for symptom control, and her exam still showed ocular inflammation. Methotrexate dose was increased to 25 mg weekly. Although she did not experience any side effects from methotrexate, the frequency of her symptomatic flareups did not change after one year on the medication. She was switched to oral mycophenolate mofetil 1000 mg twice daily and started on a topical prednisolone daily for one week with a tapering dose thereafter.

Unfortunately, mycophenolate mofetil also failed to control her scleritis and she experienced another flare three weeks after starting the medication. An exceptional drug therapy access application was submitted to trial rituximab, but she was denied coverage. Having failed to achieve symptom control after all her medication trials, the patient and her care team were understandably frustrated and unhappy. Discussion regarding dietary and lifestyle changes was revisited. She agreed to trial an anti-inflammatory diet approach by attempting to eliminate all wheat, dairy, and refined sugar for one month from her current diet.

Remarkably, her ocular inflammation settled down completely over the next 4 weeks. Furthermore, she continued to not have any symptoms and had not been using any drops for several weeks when she next saw her rheumatologist. She also lost 15 pounds and had no systemic complaints. For the first time in 7 - 8 years, she did not have ocular symptoms or signs of inflammation. One year after her diet change, she has remained free of scleritis flareups, and her ocular exams have been quiet. She reported no symptoms as long as she adheres to her diet and “cheat meals” result in mild eye soreness. She has not required any eyedrops since this lifestyle modification.

Discussion

The role of diet on inflammation is an emerging topic that has gained increasing attention in the medical research community. Data suggests that the short-term acute hyperglycemic state incurred after eating refined grains and sugar may increase circulating levels of

free radicals and pro-inflammatory cytokines such as TNF- α , IL-6 and IL-18 [2]. For dairy products, the data on their role in inflammation is more contradictory; a systematic review of 78 studies found that 32 studies reported anti-inflammatory activity of dairy products, while 19 studies showed pro-inflammatory properties, and 27 studies showed no change in inflammatory activity [3].

As for the role of diet on ocular inflammation, the literature is sparse. An animal study showed increased levels of pro-inflammatory markers IL-1 β , IL-6 and IL-8 in both serum and vitreous humor for Sprague-Dawley rats that were fed a high fat/high sucrose diet compared to rats that were fed a chow-controlled diet [4]. Additionally, there is a case report describing a complete remission of severe scleritis and psoriasis in a 26-year-old woman with active Crohn's disease when she was switched to a Modulen IBD diet, which is rich in anti-inflammatory TGF- β cytokines [5].

To our knowledge, this is the first reported case of a complete resolution of scleritis flare ups following a diet change to exclude wheat, dairy and refined sugar after all medical treatments had failed. This case demonstrates that addressing lifestyle factors may modulate the inflammatory response of the body and clinicians should consider a holistic, multi-modal approach to managing chronic inflammatory ocular pathologies such as scleritis or episcleritis, especially if all other therapies and investigations have yielded no results.

Conclusion

This is a unique case of a patient with medication-refractive recurrent scleritis whose ocular inflammation and symptoms completely resolved after switching to an anti-inflammatory diet. The role of diet on systemic and ocular inflammation is an emerging topic and further research should be conducted to evaluate the impact of addressing lifestyle factors to modulate the body's inflammatory response.

Patient Consent

Consent to publish the case report was not obtained. This report does not contain any personal information that could lead to the identification of the patient

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