

## 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<sup>1</sup>. However, the literature reports that roughly half of all diagnosed scleritis cases are idiopathic, and not associated with an underlying systemic cause.

## Objective

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 - History

- A 46-year-old female was referred for a several-year history of **recurrent, intermittent eye soreness and redness**
- Ocular profile: **high myopia and dry eye**
- Previously attempted treatment with warm compress, lid massage, artificial tears, and loteprednol drops **with minimal improvement**
- Previous NSAID challenges and high frequency Prednisolone 1% administration **failed**.
- Past medical history: hypertension, GERD, focal liver nodular hyperplasia with removal of the right lobe, hysterectomy, breast reduction surgery, and MCL tear.

## Case Report - Presentation

- **Examination:** deep scleral inflammation in the right eye and upper quadrant of the left eye
- 6/10 pain on palpation of both eyes. The rest of the ocular exam was within normal limits
- **OCT macula** did not show any evidence of posterior scleritis (Figure 1).
- **Diagnosis:** **bilateral scleritis**
- A full autoimmune work-up was initiated (Table 1)
- Treatment: she was trialed on an oral steroid pulse.
  - Prednisone 70 mg daily for one week, then 30 mg daily for one week
- Dietary changes and lifestyle were discussed but not implemented.

## Case Report - Presentation

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

Investigation	Result
<b>Autoimmune:</b>	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
<b>Infectious:</b>	Negative
Syphilis	
Lyme	
Hepatitis B	
Hepatitis C	
HIV	
Mantoux	
Chest x-ray	Normal

- **2-month follow up:** significant improvement after initial steroid dose, then symptoms recurred. **Patient was referred to a rheumatologist.**
  - Methotrexate 20 mg weekly
- **8-month follow up:** recurring scleritis flares, multiple steroid pulses with ongoing ocular inflammation.
  - Mycophenolate 1000 mg BID
- The patient **failed to achieve symptom control after all her medication trials**
- Diet and lifestyle changes were recommended: anti-inflammation diet (eliminate wheat, dairy, refined sugars)
- **Ocular inflammation settled completely over 4 weeks; patient free of scleritis flareups with quiet exams for one year after diet change.**

## Discussion

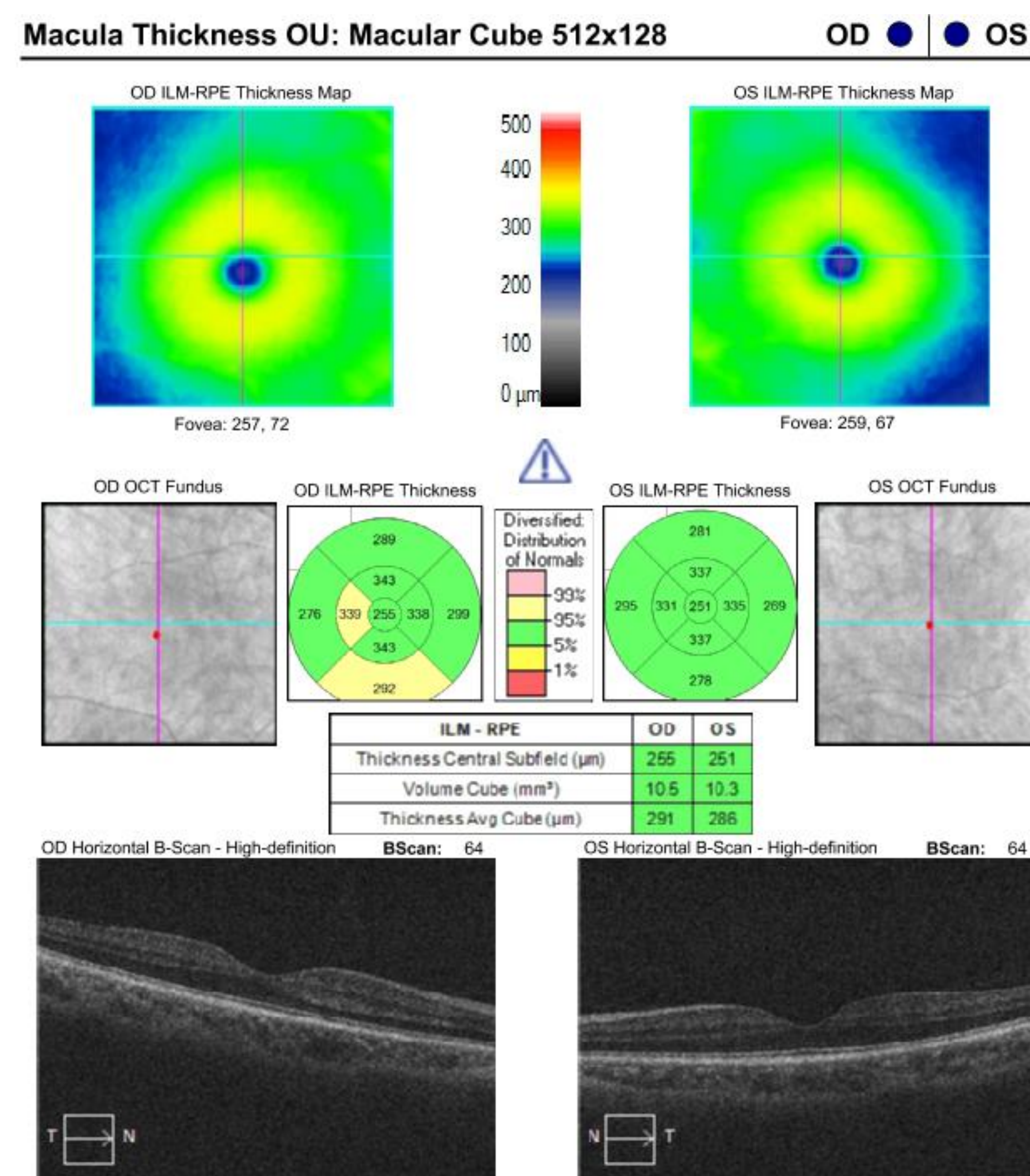
The role of diet on inflammation has gained increasing attention in research: Short-term acute hyperglycemic state incurred after eating refined grains and sugar may increase circulating levels of free radicals and pro-inflammatory cytokines such as TNF- $\alpha$ , IL-6, and IL-18<sup>2</sup>. The role of dairy products on inflammation is controversial; a systematic review of 78 studies found 32 studies showing an anti-inflammatory link, 19 studies with pro-inflammatory properties, and 27 studies with no link to inflammation<sup>3</sup>.

An animal study showed increased levels of pro-inflammatory markers IL-1 $\beta$ , 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<sup>4</sup>.

**Conclusion:** 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.

## References

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2. Giugliano D, Ceriello A, Esposito K. The Effects of Diet on Inflammation. Emphasis on the Metabolic Syndrome. *J Am Coll Cardiol*. 2006;48(4):677-685. doi:10.1016/j.jacc.2006.03.052
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4. Collins KH, Herzog W, Reimer RA, Reno CR, Heard BJ, Hart DA. Diet-induced obesity leads to pro-inflammatory alterations to the vitreous humour of the eye in a rat model. *Inflamm Res*. 2018;67(2):139-146. doi:10.1007/s00011-017-1102-y



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