

# Optical coherence tomography findings in a child with posterior scleritis

H. ERDÖL, M. KOLA, A. TÜRK

Department of Ophthalmology, Karadeniz Technical University, School of Medicine, Trabzon - Turkey

**PURPOSE.** *To present the findings of optical coherence tomography (OCT) in a child with posterior scleritis.*

**METHODS.** *A 13-year-old boy was admitted to our clinic with symptoms of low degree of vision and ocular pain. Ophthalmologic examination, ocular ultrasonography, magnetic resonance imaging, fundus fluorescein angiography (FFA), and OCT investigations were carried out and the results were evaluated.*

**RESULTS.** *Visual acuity was 10/10 in the right eye, and finger counting at 1 meter in the left eye. Anterior segments and vitreous were normal in both eyes. Fundus examination revealed the edema on the macula and the normal disc margins on the left eye, while the right eye was normal. The FFA revealed the leakage on the macula. Posterior scleral thickening, choroidal effusion, and serous retinal detachment were determined in ocular ultrasonography, suggesting posterior scleritis. There were interesting cystic forms underneath the retina and serous macular detachment (SMD) in the first OCT examination. The patient was treated with oral prednisolone for 10 days and then with oral indomethacin for 20 days. Following the systemic treatment the visual acuity of the left eye improved, subjective signs disappeared, and the OCT manifestations returned to normal.*

**CONCLUSIONS.** *In this case report, OCT provided new information about the retinochoroidal structure in posterior scleritis. These findings may be helpful for the diagnosis of this rare condition, but further studies are needed. (Eur J Ophthalmol 2008; 18: 1007-10)*

**KEY WORDS.** *Optical coherence tomography, Low vision, Retinal detachment, Scleritis, Treatment*

*Accepted: June 2, 2008*

## INTRODUCTION

Posterior scleritis is an uncommon but serious ocular inflammation. It is defined as scleral inflammation primarily located posterior to the equator. The disease most frequently affects middle-aged women, while the idiopathic form occurs in younger individuals. About 50% of patients are affected bilaterally. It exhibits different clinical courses, and some complications might occur, affecting visual acuity (1, 2).

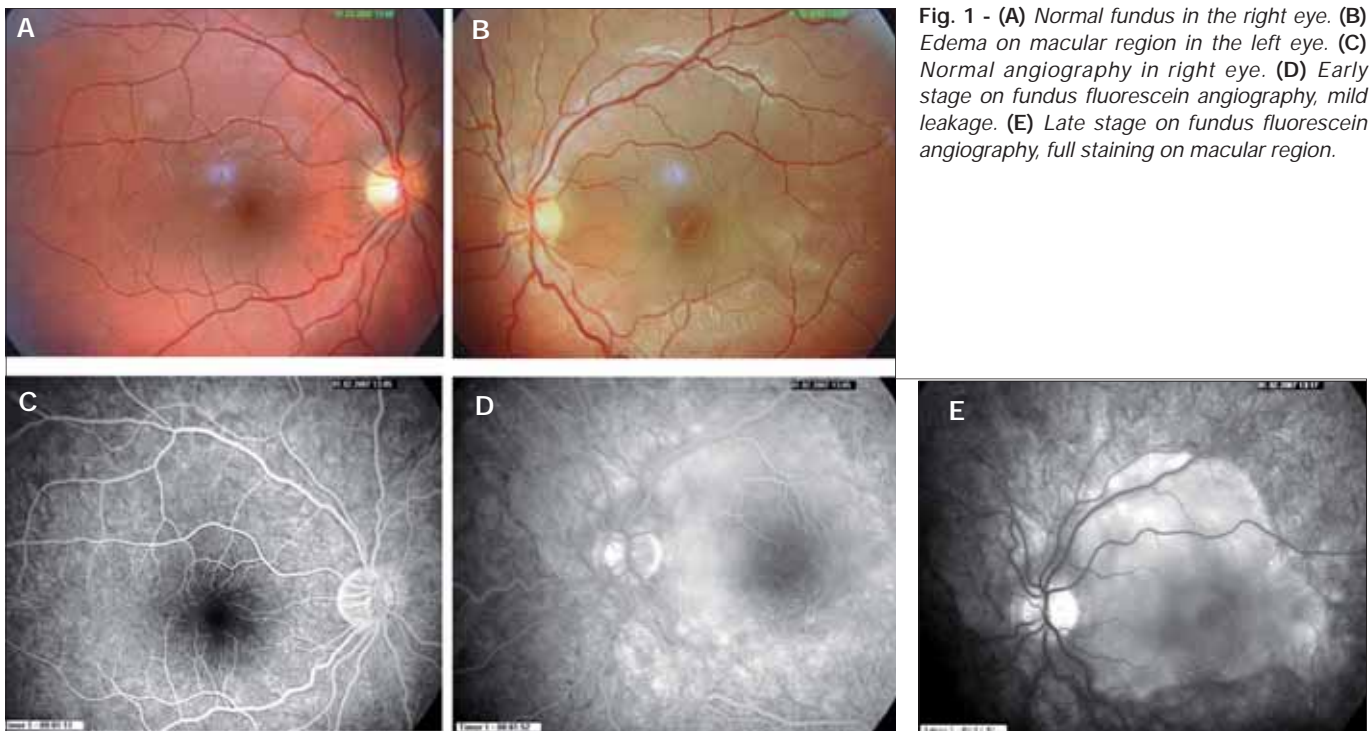
Due to the severe clinical course of the disease, early diagnosis and treatment are of priority. Ocular ultrasonography, computerized tomography (CT), magnetic resonance imaging (MRI), and fundus fluorescein angiography (FFA)

can be used in differential diagnosis. Furthermore, optical coherence tomography (OCT) shows us the status of the affected retina (2, 3).

We present a 13-year old boy with serous retinal detachment due to posterior scleritis and the OCT findings in posterior scleritis during follow-up and treatment of the disease.

## Case report

A 13-year-old boy with left ocular pain and loss of visual acuity for 2 days was admitted to our clinic. On ophthalmic examination, visual acuity was 10/10 in the right eye (RE) and finger



**Fig. 1 - (A) Normal fundus in the right eye. (B) Edema on macular region in the left eye. (C) Normal angiography in right eye. (D) Early stage on fundus fluorescein angiography, mild leakage. (E) Late stage on fundus fluorescein angiography, full staining on macular region.**

counting at 1 meter in the left eye (LE). There was no hyperemia or conjunctival injection in either of his eyes. Anterior segments and vitreous were normal in both eyes; intraocular pressure was 16 mmHg in RE and 15 mmHg in LE. Fundus oculi examination revealed edema on the macula and normal disc margins on the left eye, while the right eye was normal. The FFA revealed leakage on the macula (Fig. 1). Posterior scleral thickening, choroidal effusion, and serous retinal detachment were determined in ocular ultrasonography, suggesting posterior scleritis. There was no obvious finding except minimal scleral thickening in LE on MRI (Fig. 2). The right eye was overall normal as shown by FFA, OCT, ocular ultrasonography, and MRI. In OCT, we observed interesting cystic forms underneath the retina and serous macular detachment (SMD) in the first examination. The cyst formation appeared during 2 weeks with OCT. The cyst and the SMD disappeared completely at the end of treatment (Fig. 3).

In laboratory examination routine blood tests were normal, and he had no other systemic diseases like connective tissue disease.

The patient was treated with prednisolone at a dose of 1 mg/kg orally. Ophthalmic examinations were performed at weekly intervals. After 10 days, prednisolone was changed to indomethacin tablet 400 mg tid. The treatment was stopped a month later.

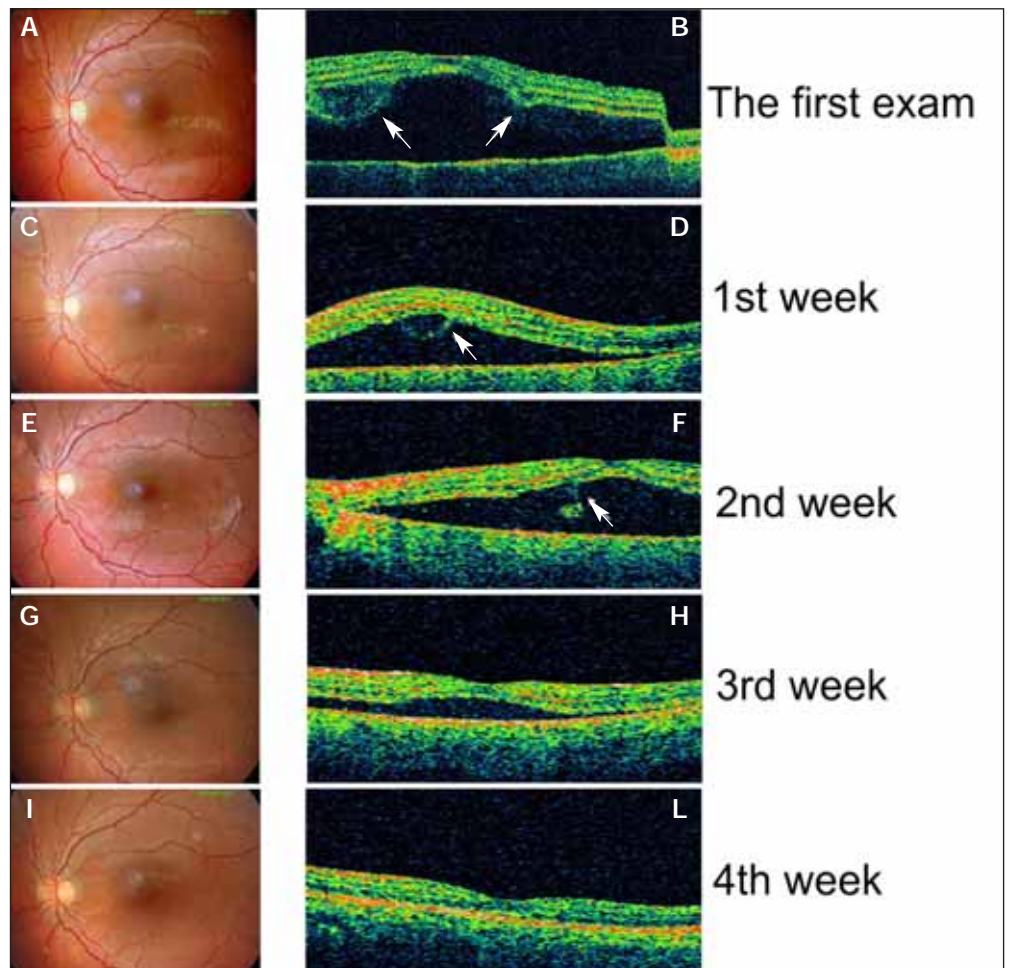
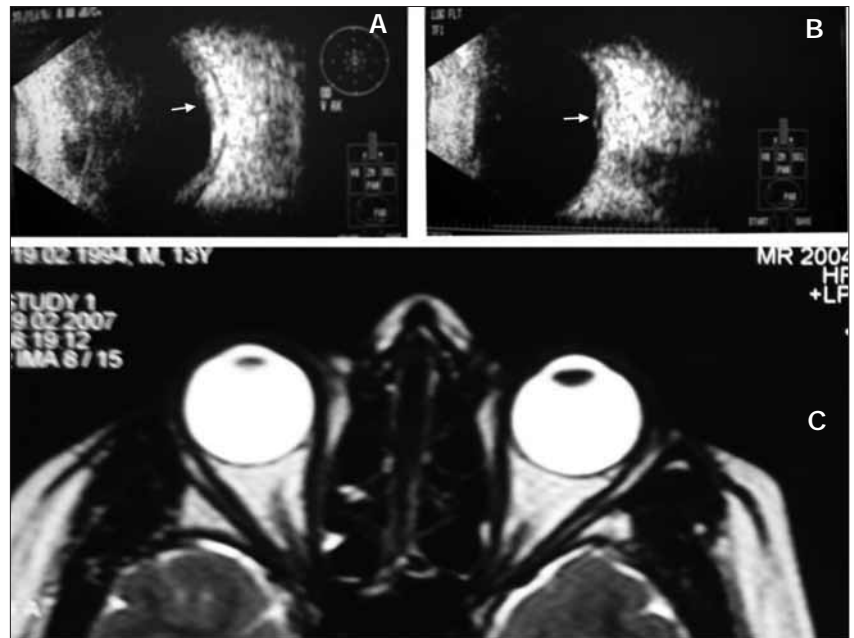
Ocular pain was relieved on the third day. Visual acuity was finger counting at 1 meter at the beginning of the disease, 20/60 after a week, 20/50 after 2 weeks, 20/40 after 3 weeks, and 20/20 at the end of treatment (1 month later). Serous macular detachment of the macula in OCT showed decreases parallel to improvements in visual acuity (Fig. 3). Fundus examination was normal and ocular ultrasonography findings also improved at the end of the treatment.

## DISCUSSION

Posterior scleritis is a rare pathology and it can be misdiagnosed as other diseases. Although pain is the most prominent finding, visual impairment is a severe complication; fortunately it does not occur in every patient. In ophthalmic examination, posterior segment can be normal, while chorioretinal granulomas, serous retinal detachment, optic disc edema, and soft exudates can also be observed (4, 5).

Posterior scleritis is sometimes seen during the course of uveitis. Posterior scleritis is reported to be associated with systemic diseases in 39–50% of the cases. These diseases are rheumatoid arthritis, Wegener granulomatosis, recurrent polychondritis, systemic lupus erythematosus, inflammatory bowel diseases, and polyarteritis nodosa. Therefore, the differ-

**Fig. 2 - (A, B)** Obvious choroidal effusion in ocular ultrasonography (arrows). **(C)** Magnetic resonance imaging in both eyes; scleral thickening was minimal in the left eye.



**Fig. 3 - (A-L)** Fundus and optical coherence tomography images on admission and at 1-week intervals in the left eye. **(B, D, F)** Cyst-like formations underneath the retina (arrows).

ential diagnosis should be performed carefully. Moreover, orbital pseudotumors, orbital vascular diseases, carotid cavernous fistulas, Tolosa-Hunt syndrome, and neoplasms should also be kept in mind in differential diagnosis (1). In young patients, optic neuritis can be misdiagnosed as posterior scleritis. In our case, we did not identify any systemic disease.

Posterior scleritis usually affects middle-aged women. However, it has been reported in younger patients (mean age 19) in western India (6). In the presented case, posterior scleritis occurred in a 13-year-old child and was associated with serous retinal detachment.

Due to severe course of the disease, it is important to arrive at an early diagnosis and administer timely treatment. In the diagnosis of posterior scleritis, especially ocular ultrasonography, CT, MRI, and FFA can be used. In this case, in addition to ocular ultrasonography, CT, MRI, and FFA, we used OCT to determine the retinal changes. These investigations are helpful in the differential diagnosis. For example, ocular ultrasonography shows both choroidal and scleral thickening in posterior scleritis, while it shows only choroidal thickening in Vogt-Koyanagi-Harada syndrome.

Although OCT is not necessary in establishing diagnosis of posterior scleritis, it is useful in the evaluation of the retina during the course of the disease. The changes in serous detachment are quantitatively followed with OCT in detail. In addition, the response to treatment can be followed with OCT. We observed the decrease in the amount of serous detachment in OCT in parallel to the improvements in visual acuity. In addition, we determined the cyst-like pathology underneath the retina during the early stages of serous detachment. This lesion disappeared after 2 weeks of treatment. We think that this cyst developed due to inflammation.

For a good prognosis, the treatment should be started immediately after the diagnosis of posterior scleritis is established (2). Although its course is severe, it usually responds well to corticosteroid treatment. In our cases, the findings were found to have completely improved a month later. Indomethacin can also be used in the treatment of posterior scleritis (7). In unresponsive cases, other immunosuppressive therapies can be used (2). Prednisolone can be used intravenously, but we used prednisolone orally in its classical dose. We changed corticosteroid to indomethacin after 10 days of use.

As recurrences might occur, it is recommended to follow up these patients carefully. To prevent such recurrences

(49% of cases), it is important to continue the treatment long enough (2). In instances of recurrence, either the current treatment should be continued long enough or should be changed with other drugs like azathioprine or cyclosporine. We did not observe any recurrences in the follow-up period of nearly 1 year.

In conclusion, OCT gives us more detailed information about posterior pole of the eye during the course of posterior scleritis. In this article, we underline the fact that posterior scleritis can occur in young people, like our case (13 years old), and that it is recommended to follow up the pathologies on macula such as serous detachments and cyst-like formation with OCT.

*The authors report no proprietary interest.*

Reprint requests to:  
Adem Turk, MD  
Karadeniz Technical University  
School of Medicine  
Department of Ophthalmology  
61080, Trabzon, Turkey  
doktorademturk@yahoo.com

---

## REFERENCES

1. Jabs DA, Mudun A, Dunn JP, Marsh MJ. Episcleritis and scleritis: clinical features and treatment results. *Am J Ophthalmol* 2000; 130: 469-76.
2. McCluskey PJ, Watson PG, Lightman S, Haybittle J, Restori M, Branley M. Posterior scleritis: clinical features, systemic associations, and outcome in a large series of patients. *Ophthalmology* 1999; 106: 2380-6.
3. Maggioni F, Ruffatti S, Viaro F, Mainardi F, Lisotto C, Zanchin G. A case of posterior scleritis: differential diagnosis of ocular pain. *J Headache Pain* 2007; 8: 123-6.
4. Gonçalves RM, Curi AL, Campos WR, Oréfice F, Machado DO. Posterior scleritis in Cogan's syndrome. *Ocul Immunol Inflamm* 2004; 12: 149-52.
5. Okravi N, Odufuwa B, McCluskey P, Lightman S. Major Review: Scleritis. *Surv Ophthalmol* 2005; 50: 351-63.
6. Calthorpe CM, Watson PG, McCartney AC. Posterior scleritis: a clinical and histological survey. *Eye* 1988; 2: 267-77.
7. Rosenbaum JT, Robertson JE. Recognition of posterior scleritis and its treatment with indomethacin. *Retina* 1993; 13: 17-21.

Copyright of European Journal of Ophthalmology is the property of Wichtig Editore and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.