Case study

Foveal atrophy as asequalaeto traumatic central serouschorioretinopathy

ABSTRACT

A 40-year-old female had severe blunt trauma to her right eye and presented to the emergency unit of a specialized ophthalmic hospital with severe decreased vision (OD counting fingers for 1 meter, OS 6/6). Fundus examination reveals obvious OD macular neurosensory retinal detachment with subretinal fluid that was confirmed by OCT.After 1 month, another OCT was performed to show totally resolved subretinal fluid, but with foveal atrophy and visual acuity remain counting fingers for 1 meter distance.

Trauma as a cause for CSR is highly unusual or rare, although foveal atrophy as a result of that traumatic CSR in a one-month follow-up was not previously reported in the literature.

Keywords:*Central serous chorioretinopathy, Trauma, Foveal atrophy, Traumatic CSR*

INTRODUCTION

The literature provides a thorough description of central serous chorioretinopathy (CSR), characterized by localized serous detachment of the macula, along with established causes including idiopathic,stress,systemic steroid use and pregnancy[1].

The pathophysiology of CSR is not fully understood but is thought to involve choriocapillaris hyperpermeability and/or retinal pigment epithelium (RPE) dysfunction resulting in sub-retinal fluid accumulation.

It is quite uncommon for blunt trauma to be linked as a cause to CSR[3,4,5]. Fundus examination,optical coherence tomography (OCT) and fluorescein angiography, is commonly used to diagnose CSR[2].

CASE REPORT

A 40-year-old female had severe blunt trauma to her right eye and presented after less than 24 hours to the emergency unit of a specialized ophthalmic hospital with severe decreased vision (OD counting fingers for 1 meter, OS 6/6). Shestatesthat her previous visual acuity was equal to that of both eyes and that she had no previous complaints from her eyes.

On the second day , she was referred to retina clinic.An ophthalmic examination of anterior segment revealed severe ecchymosisin the right eye and mild to moderate lid swelling.She had mild anterior uveitis (1+ cells) with no hyphema.Thereis no relative afferent pupillary defect. The intraocular pressures were OD 16 mmHg OS 19 mmHg.

Fundus examination reveals obvious OD macular neurosensory retinal detachment with subretinal fluid, normal optic disc, no pit, no evidence of vitritis, breaks, choroidal rupture or commotio retinae.

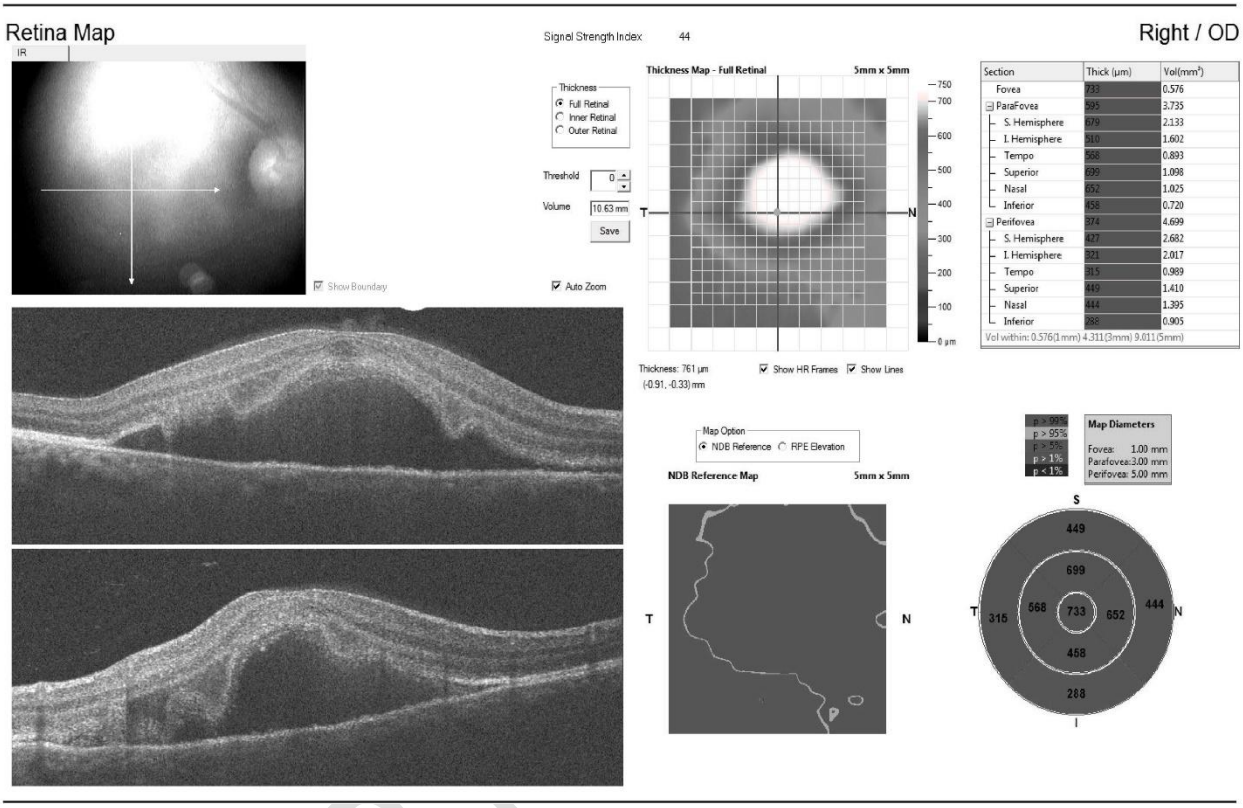
Past ophthalmic history was unremarkable, and past medical history also unremarkable, with no medications intake, no alcohol, and no smoking.

Optical Coherence Tomography (OCT) was performed toshow serous neurosensory detachment of macula. (Figure 1)

A B-scan performed showed elevated retina temporal to optic disc. (Figure 2)

Fundus Fluorescein Angiography (FFA) performed showed smokestack leakage.

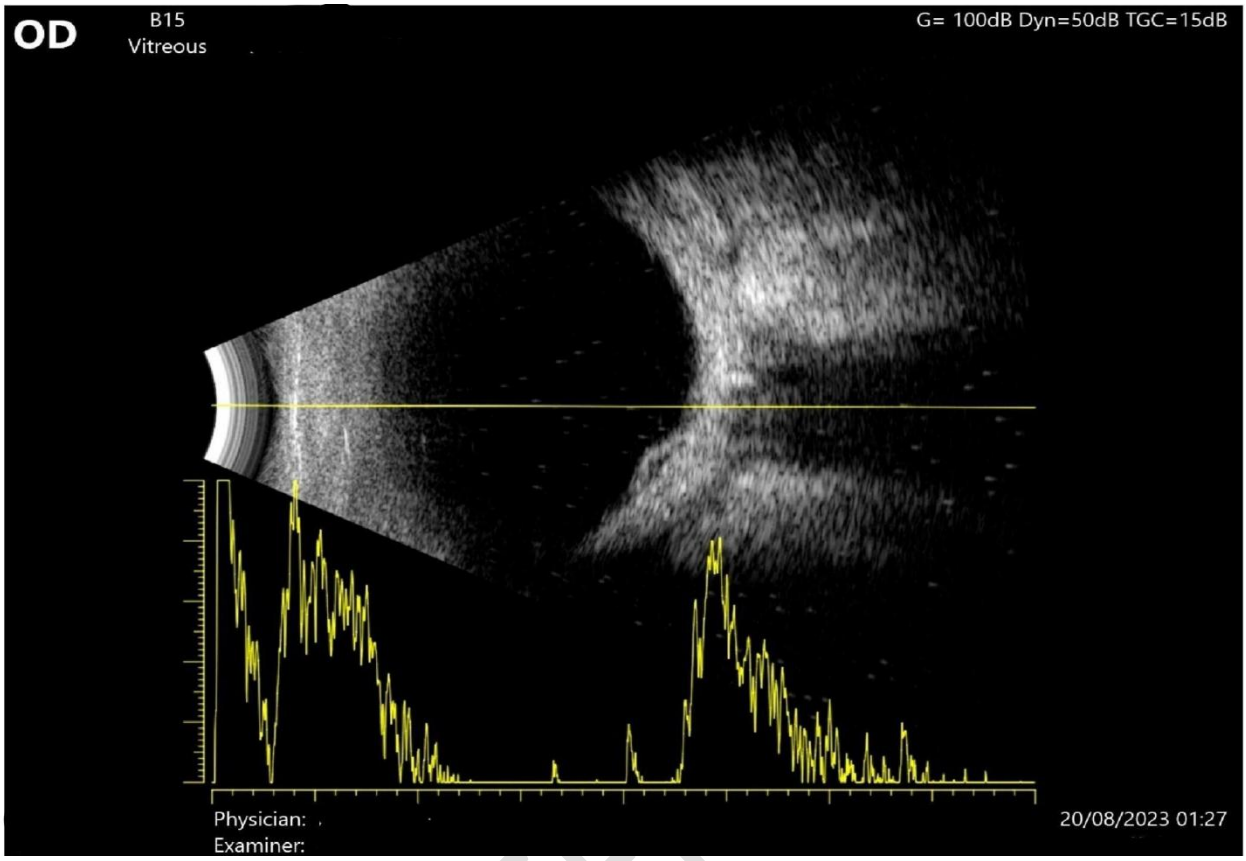
An eyedrop of non-steroidal anti-inflammatory drugs (NSAID) is prescribed (Ketorolac eye drop), and she is followed up for 1 month. A new OCT is performed, which shows subretinal fluid is totally resolved, but unfortunately, foveal atrophy is observed, and the visual acuity remains, counting fingers for 1 meter.(Figure 3)



LEGEND 1

Figure (1) Optical Coherence Tomography (OCT) shows significant macula subretinal fluid

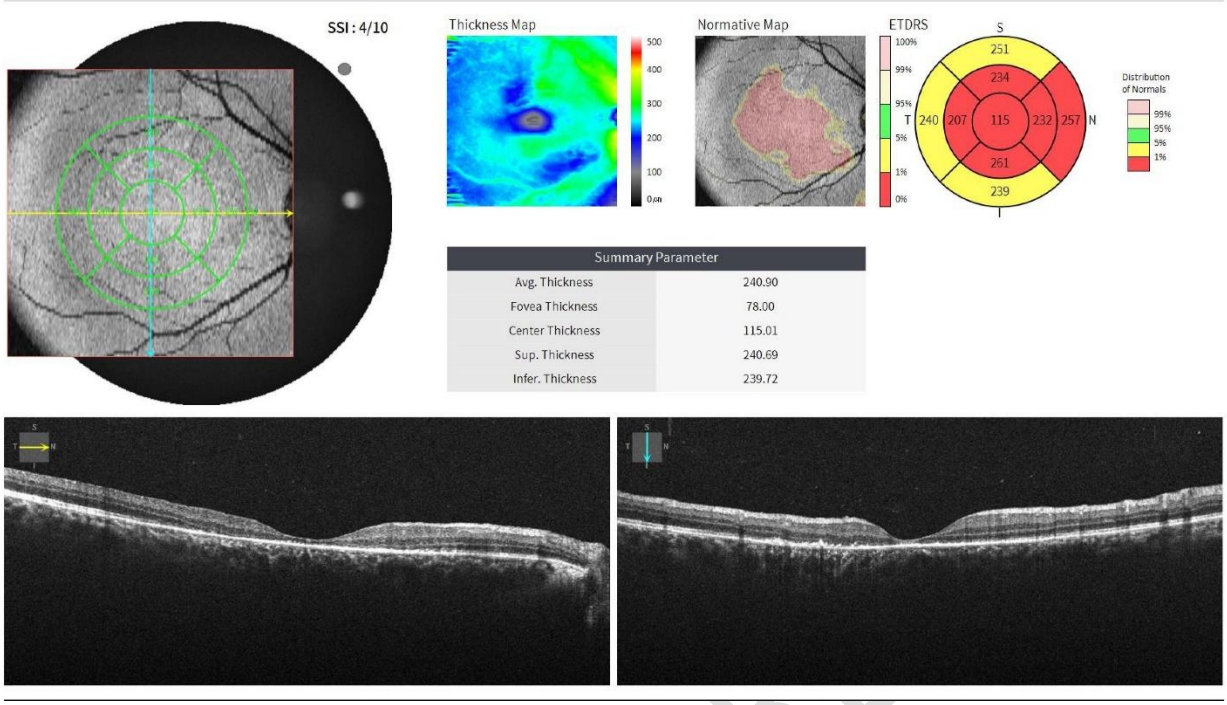
Caption 1: OCT image capturing after blunt trauma to the right eye (OD), demonstrating a notable accumulation of subretinal fluid. The high-resolution cross-sectional view of OCT.



LEGEND 2

Figure (2) B-Scan revealing elevated retina in the macula

Caption 2: B-scan image illustrating a distinct elevation of the retina in the macular region post blunt trauma to right eye.



LEGEND 3

Figure (3) Optical Coherence Tomography revealing complete resolution of subretinal fluid with foveal atrophy one month post blunt trauma

Caption 3: OCT scan captured one month after blunt trauma, revealing the complete resolution of subretinal fluid. The image further illustrates the development of foveal atrophy, disruptions in the ellipsoid zone and thinning of the foveal retinal layers. Cross-section view of OCT.

DISCUSSION

Trauma as a cause for CSR is highly unusual or rare, although foveal atrophy as a result of that traumatic CSR in a one-month follow-up was not previously reported in the literature.

The atrophic changes manifested as disruptions in the ellipsoid zone and thinning of the foveal retinal layers contributing to compromised visual acuity.

This case shows the rapid development of foveal atrophy as a course of traumatic CSR, in contrast to the previous few case reports(Jackson et al,L. Steeples et al andPonce et al) about traumatic CSR that show complete resolution of subretinal fluid and return to good visual acuity[6,7,8]. Our findings align with prior studies indicating an association between CSR and foveal atrophy[9]. While traumatic cases are less explored, existing literature underscores the importance of understanding the long-term consequences of CSR, especially when caused by trauma.

According to a review article by Liew et al. psychosocial stress, endogenous Cushing's syndrome, systemic steroid treatment, and pregnancy are the key risks factors for CSR.Collagen vascular disease and sleep apnea among less commonassociation to CSR[1],we suggest that trauma should now be regarded as anuncommon causative factor.

CONCLUSION

Trauma, as demonstrated in this case, is an uncommon but potential etiology that might cause CSRthat might have significant sequalae, such as foveal atrophy.

ETHICS APPROVAL AND HUMAN RIGHTS: This case report approved by Ethics Committee in Ibn Al Haitham Teaching Eye Hospital, Baghdad, Iraq and conducted according to the guidelines of the Declaration of Helsinki.

CONSENT FOR PUBLICATION: Verbal and writteninformed consent was obtained from the patient

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