

Considering micropulse laser therapy for central serous retinopathy

Laser therapy offers quicker resolution of central serous retinopathy

By Dr Munir Escaf

Central serous retinopathy (CSR) is distinguished by a vascular focal leakage occurring through the retinal pigment epithelium (RPE), which results in serous detachment of the neurosensory retina. This condition may be instigated or exacerbated by corticosteroid use or stress.

This disease is typically self-healing within a few months and, although patients are generally left with good visual acuity, chronic CSR may develop in 33-50% of cases, which can lead to other issues such as progressive RPE atrophy and permanent visual impairment.

Discontinuing corticosteroid use will aid in disease resolution; however, postponing more effective and immediate treatment may intensify patient stress levels, further aggravating the disease.

Treatment options

Aside from waiting for the disease to self-resolve, treatment options typically include oral and topical medications, photodynamic therapy (PDT), laser photocoagulation, and anti-VEGF injections.

Some doctors advocate the use of bevacizumab (Avastin, Genentech) injections; however, this use is off-label and I have found no evidence of any beneficial use. Spirinolactone, an aldosterone antagonist, can be effective but it may result in gynecomastia, a side effect that most men will not tolerate.

PDT and conventional, continuous-wave laser photocoagulation have been successful but are not ideal as they may result in negative side effects.

PDT can cause photosensitivity and choroidal hypoperfusion while continuous-wave laser photocoagulation can cause central or paracentral scotomas, contrast sensitivity loss, foveal damage, retinal distortion and thermal damage to photoreceptors.

MicroPulse laser therapy

MicroPulse technology chops a continuous-wave laser beam into short on and off pulses, which enables the clinician to finely regulate and maintain temperature

rise at the target tissue without causing lethal damage to the RPE or surrounding tissue.

MicroPulse laser therapy triggers an anti-angiogenic and restorative biological response resulting in the re-absorption of subretinal fluid through the restoration of the RPE cells. With no lethal damage to the RPE or retina, I can confidently provide a safe treatment with significant beneficial effects.

‘With no lethal damage to the RPE or retina, I can confidently provide a safe treatment with significant beneficial effects.’ – Dr Escaf

I have found utilising the MicroPulse laser treatment mode of the IQ 577 yellow laser (IRIDEX) to be the best option for my acute and chronic CSR patients as MicroPulse laser therapy is highly beneficial without the safety concerns of continuous-wave laser treatment.

As an example, I performed MicroPulse laser therapy on a 52-year-old female patient with CSR and a substantial amount of subretinal fluid in her right eye that had caused loss of vision for 3 weeks (Figure 1).

Two weeks following treatment, the fluid was resolved and her vision had improved from 20/150 to 20/30 (Figure 1).

Risks of a continuous-wave laser

Treatment with continuous-wave laser can cause tissue damage resulting in central visual field loss,

IN SHORT

► **Micropulse laser therapy for central serous retinopathy (CSR) offers many benefits, without the safety concerns related to continuous-wave laser treatment.**



(FIGURE 1) OCT and SLO imaging. **A,B.** A large amount of subretinal fluid and serous detachment in the right eye of a 52-year-old female patient. Her BCVA was 20/150 and she reported loss of vision for previous 3 weeks. **C,D.** Two weeks following MP laser treatment, OCT imaging shows resolution of fluid and patient's BCVA is 20/30. (Images courtesy of Dr Munir Escaf)

loss of contrast sensitivity, and other visual issues if it is delivered too near the foveal area.

Having an effective treatment option that creates immediate improvement without the risks associated with conventional laser greatly eases patients' minds.

Patient treatment results

I compared a control group of my CSR patients that I observed and a treatment group of patients who received MicroPulse laser therapy. Prior to treatment, mean best-corrected visual acuity (BCVA) of all patients was 20/50.

Four weeks after treatment, mean BCVA in the control group improved to 20/32 and mean BCVA in the treated group improved to 20/25.

'The ability to provide my patients with this quick, painless and effective treatment is invaluable.' - Dr Escaf

In addition, approximately 25% of patients in the control group had resolution of subretinal fluid, compared to more than 80% of the treatment group.

While CSR may eventually resolve with no treatment, waiting for the symptoms to improve can increase the anxiety of already overly stressed patients and put them at risk for a chronic condition. MicroPulse laser therapy offers patients a fast-acting option for a resolution in a clinical disease that typically requires us to wait of 2-4 months and hope for resolution.

Additionally, patients tolerate MicroPulse laser therapy very well as there is no discomfort, and its high safety profile allows retreatment as often as necessary. The ability to provide my patients with this quick,

painless and effective treatment is invaluable.

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