Anterior Subcapsular Cataract Formation with Pupil Sphincter Tear after Using Massage Device Over the Globe

The causes of cataract are diverse, including genetic, sociodemographic, behavioral and environmental factors.\textsuperscript{[1,2]} Anterior subcapsular cataract (ASC) is marked by opacity in the lens located posterior to the anterior lens capsule. ASC has been linked to inflammation, amiodarone, trauma, miotics and atopic dermatitis.\textsuperscript{[2]} Here, we report a case of a rare condition involving ASC and sphincter pupillae rupture in the right and left eyes, caused by the use of a body massage device.

A 57-year-old male with a known history of primary open angle glaucoma presented with bilateral decreased vision that developed 1 week after using a body massage device with two pivoting heads that work up to 300 pulses/min over both eyes. There is no history of prior ocular trauma. In terms of medication, he used topical travoprost (Travatan®), and was not on any other medication, with no history of atopic disease or uveitis.

On examination, his visual acuity was 20/50 (right eye) and 20/40 (left eye). The intraocular pressure (IOP) was 18 mmHg in both eyes. Anterior segment examination revealed bilateral anterior subcapsular cataract [Figure 1]. Gonioscopic examination showed that normal open angle bilaterally without synechiae. The fundus examination was unremarkable with a cup–disc ratio of 0.7 in both eyes. The patient underwent phacoemulsification with posterior chamfer intraocular lens combined with minimally invasive glaucoma surgery (iStent® inject) in the left eye followed by the right eye [Figure 2]. On post-operative follow up, his visual acuities was 20/20 (in both eyes), IOP was 10 mmHg (right eye) and 12 mmHg (left eye) with no use of topical antiglaucoma medications. His visual acuity and IOP remained stable over the following months.

To the best of our knowledge, this is the third case of massager-induced traumatic anterior subcapsular cataract being reported.\textsuperscript{[3]} However, this is the only recorded incidence of a glaucoma patient presenting with rapid onset symptoms of traumatic cataract with sphincter pupillae rupture; the patient had used a massage device, which was not designed for ocular use. The literature describes numerous potential complications arising from ocular massage. These include corneal abrasion, corneal ectasia, developing cataracts, endophthalmitis arising from bleb rupture, hypotony and hyphema.\textsuperscript{[4]}

Wolter\textsuperscript{[5]} provides countercoup injury as a plausible mechanism for the pathogenesis of a cataract with the magnitude of trauma such as this. The anterior lens capsule is damaged by the impact from the massaging device’s constant, low-energy repetitive action sending shockwaves along the plane of trajectory into the globe. This, in turn, causes the lens epithelium to proliferate and a contusional cataract to develop. Our patient’s lens neither subluxated nor dislocate as a consequence of the separation of the lens.
zonular fibers, which occurred when the countercoup mechanism caused the equatorial sclera to stretch.

This case highlights the importance of ensuring that massaging devices are labelled clearly and prominently, warning consumers not to use such devices on or around eyes. The available evidence suggests that currently, massage devices do not include such warning labels.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate consent forms from the patient. The patient has given his consent for images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published, and due efforts will be made to conceal the identity.

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There are no conflicts of interest.

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**REFERENCES**
1. Klein BE, Klein R, Lee KE, Meuer SM. Socioeconomic and lifestyle factors and the 10-year incidence of age-related cataracts. Am J Ophthalmol 2003;136:506-12.
2. Ishida I, Saika S, Okada Y, Ohnishi Y. Growth factor deposition in anterior subcapsular cataract. J Cataract Refract Surg 2005;31:1219-25.5.
3. Tang J, Salem IJ, Sable MD. Traumatic cataract formation after vigorous ocular massage. J Cataract Refract Surg 2003;29:1641-2.
4. Baldassare RD, Brunette I, Desjardins DC, Amyot M. Corneal ectasia secondary to excessive ocular massage following trabeculectomy with 5-fluorouracil. Can J Ophthalmol 1996;31:252-4.
5. Wolter JR. Coup-contrecoup mechanism of ocular injuries. Am J Ophthalmol 1963;56:785-96.

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