An unusual cause for subconjunctival haemorrhage: Pilates

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Introduction
Subconjunctival haemorrhage occurs when a blood vessel ruptures and blood accumulates in the subconjunctival space. It is generally seen as a result of a trauma in young patients; spontaneous haemorrhages, particularly as a suspected complication of hypertension, are common in older ages. In addition, Valsalva manoeuvre, haemorrhage diatheses, leukaemia, hereditary haemochromatosis, atherosclerosis, medications that prolong clotting time, contact lens trauma, conjunctivitis, cavernous haemangioma of the conjunctiva, and eye surgery are proposed as other causes.2,3 We report a case of subconjunctival haemorrhage with suspected unusual aetiology managed in primary care.

Case description
The 40-year-old female health worker attended our family medicine outpatient clinic in September 2019 with a complaint of surface bleeding in the right eye (Figure 1). The ocular history revealed that a similar event had occurred five to six times before, each event lasting around five to six days before wearing off. She had not previously sought medical attention and therefore had no treatment for previous ocular haemorrhages.

In relation to systemic health, the patient had asthma and atopic dermatitis and she irregularly used budesonide and fluticasone. She had had three problem-free pregnancies. In her family history, her father had been diagnosed with diabetes mellitus and hyperlipidaemia and her mother diagnosed with hypothyroidism and migraine. The patient started doing Pilates four months prior to presentation, typically three or four a days a week, for 30 to 40 minutes each session. She stated that her ocular haemorrhages started within this period. There were no other symptoms such as headache, nasal symptoms, or endaural haemorrhage.

Blood pressure was 115/70 mmHg, radial pulse was 74 beats/minute, and a thorough physical examination revealed no abnormal findings. The visual acuity was 10/10 right and 10/10 left. A light-red subconjunctival haemorrhage was present in the nasal aspect of the right eye. Pupillary reflexes and fundoscopic examination were normal.

A complete blood count, biochemistry, bleeding times, coagulation factors, and urinalysis were performed, and no abnormal findings were found. The patient was referred to cardiology and ophthalmology clinics. An eye drop containing fluorometholone 0.1%, a low potency corticosteroid, was prescribed two times per day to the right eye. Echocardiography and 24-hour ambulatory blood pressure measurement were performed through the cardiology clinic and no abnormal findings were noted.

When she attended for her most recent haemorrhage, we recommended she stop doing Pilates temporarily, as no other clear aetiology was identified upon examination. She has had no further complaints of subconjunctival haemorrhage over four months since giving up Pilates. Therefore, we postulate that Pilates might be the reason for the episodes of subconjunctival haemorrhage.

Discussion
Subconjunctival haemorrhages are mostly harmless. They do not cause pain or vision loss and the accumulated blood is reabsorbed in a few weeks. However, it can be the first sign of systemic diseases in a minority of patients. Some studies found that the aetiology of almost half of the cases was related to hypertension.4,5

Subconjunctival haemorrhage is not a frequent diagnosis in primary care. Its prevalence is less than 1% even in ophthalmology outpatient clinics, and most of these patients are female.1–6 Patients often observe subconjunctival haemorrhages when they wake up in the morning and the presence of a haemorrhage in the eye may worry many patients. The condition generally presents unilaterally in the eyes.7

Such subconjunctival haemorrhages typically require only symptomatic treatment: a warmish compress and topical tear supplements (hydroxypropyl cellulose, methyl cellulose, and synthetic tears) can be useful. Doctors should take action according to aetiology. If the complaint persists, doctors should investigate if there is another pathology and refer the patient to an ophthalmologist immediately.3,7,8

Detailed medical history taking, physical examination, and assessment of coagulation tests are required in primary care. Our patient was examined in detail and referred to ophthalmology and cardiology due to unexplained aetiology. Subsequent assessment did not yield any results indicative of an aetiology. Therefore, after due consideration of history and investigations we suspect that the repeated subconjunctival haemorrhages were most probably associated with Pilates.

Pilates is a set of mind-body exercises that was developed by Joseph Pilates and includes posture stability focused on strength, flexibility and posture, muscle control, and breathing techniques. Nowadays, it has increased in popularity all over the world, especially among women. In the literature, there are many studies on its benefits. Pilates increased intraocular pressure or minor trauma due to some exercises in Pilates may theoretically cause rupture of conjunctival blood vessels.1 The patient presented here appears to be an uncommon case, possibly indicating that Pilates could cause subconjunctival haemorrhage.
Conclusion
Pilates is increasingly becoming one of the most popular exercise methods internationally. Our case indicates that Pilates may be an unexpected and uncommon cause of subconjunctival haemorrhage.

References

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Patient consent
Individual patient consent was obtained for this case report.

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