

Myopia

Seraph Shi Kei Wu¹ and Sunny Chi Lik Au^{2*}

¹LKS Faculty of Medicine, University of Hong Kong, Hong Kong, China

²Department of Ophthalmology, Tung Wah Eastern Hospital, Hong Kong, China

*Corresponding Author: Sunny Chi Lik Au, Department of Ophthalmology, Lo Ka Chow Memorial Ophthalmic Centre, Tung Wah Eastern Hospital, Hong Kong, China.

Received: June 27, 2021

Published: July 17, 2021

© All rights are reserved by Seraph Shi Kei Wu and Sunny Chi Lik Au.

Keywords: Myopia; Myopic Maculopathy; Staphyloma; Atropine

Affecting all ages, myopia is considered as a global epidemic [1] with particular prevalence in Asian countries [2]. Despite the vision is correctable simply by glasses or with more advanced refractive surgeries [3], myopic patients do suffer from irreversible structural changes of the eyeball, including the retina [4], macula [5] (Figure 1), choroid [6] and sclera [7] (Figure 2). These changes are the culprits for blinding myopic complications in adulthood [8] such as retinal detachment, myopic maculopathy and choroidal neovascularization.

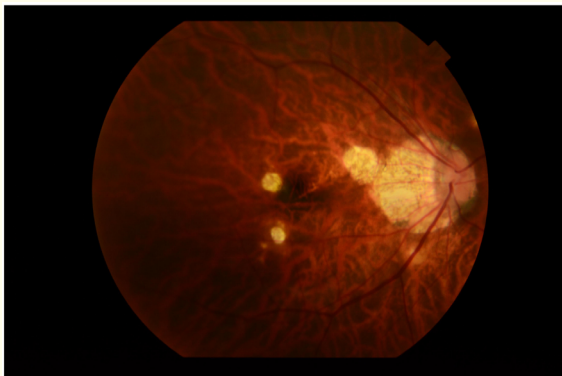


Figure 1: Fundus photo of the right eye showing myopic maculopathy changes with patchy choroidoretinal atrophy on top of the tessellated fundus. The optic disc also showed myopic changes with temporal tilting and peripapillary atrophy.



Figure 2: Computed tomography of the orbit showing bilateral elongated eyeball over 26.5 mm (definition of pathological myopia) with staphyloma. Right cataract lens was present while the left eye one was extracted. Note also the hypodensity over the right temporal lobe, as this patient suffered from subdural haemorrhage before.

Our eye simulates a convex lens optical system that allows light to pass through [9]. Anatomical pathologies like keratoconus [10],

cataract [11], long axial length [12], could all contribute to myopia; whereas environmental factors such as prolonged reading also played an important role [13]. Once considered incurable, myopia progression is now controllable with low dose atropine eye drops [14]. This advance would definitely benefit the next generation of Asian people, especially with the raised awareness of myopia prevention nowadays and prevention since their childhood.

Author's Contribution

Seraph Shi Kei Wu: Concept and design of study, drafting the article.

Sunny Chi Lik Au: Concept and design of study, acquisition of image, revising article critically for important intellectual content.

Previous Publication/Presentations

Nil.

Source of Funding

Nil.

Conflicts of Interest

Nil.

Bibliography

- Flanagan J., *et al.* "Myopia: a growing epidemic". *Community Eye Health* 32.105 (2019): 9.
- Mak CY., *et al.* "Epidemiology of myopia and prevention of myopia progression in children in East Asia: a review". *Hong Kong Medical Journal* 24.6 (2018): 602-609.
- Farooqui JH., *et al.* "Current trends in surgical management of myopia". *Community Eye Health* 32.105 (2019): S5-S6.
- Samarawickrama C., *et al.* "Myopia-related optic disc and retinal changes in adolescent children from Singapore". *Ophthalmology* 118.10 (2011): 2050-2057.
- Ruiz-Medrano J., *et al.* "Myopic maculopathy: Current status and proposal for a new classification and grading system (ATN)". *Progress in Retinal and Eye Research* 69 (2019): 80-115.
- Hoseini-Yazdi H., *et al.* "Wide-field choroidal thickness in myopes and emmetropes". *Scientific Reports* 9.1 (2019): 3474.
- Metlapally R and Wildsoet CF. "Scleral Mechanisms Underlying Ocular Growth and Myopia". *Progress in Molecular Biology and Translational Science* 134 (2015): 241-248.
- Dhakal R., *et al.* "Patterns of posterior ocular complications in myopic eyes of Indian population". *Scientific Reports* 8.1 (2018): 13700.
- Oommen V and Kanthakumar P. "A simple model of the accommodating lens of the human eye". *Advances in Physiology Education* 38.2 (2014): 183-184.
- Omar IAN. "Keratoconus Screening Among Myopic Children". *Clinical Ophthalmology* 13 (2019): 1909-1912.
- Pan CW., *et al.* "Myopia, axial length, and age-related cataract: the Singapore Malay eye study". *Investigative Ophthalmology and Visual Science* 54.7 (2013): 4498-4502.
- Tideman JWL., *et al.* "Axial length growth and the risk of developing myopia in European children". *Acta Ophthalmologica* 96.3 (2018): 301-309.
- Huang HM., *et al.* "The Association between Near Work Activities and Myopia in Children-A Systematic Review and Meta-Analysis". *PLoS One* 10.10 (2015): e0140419.
- Li FF and Yam JC. "Low-Concentration Atropine Eye Drops for Myopia Progression". *The Asia-Pacific Journal of Ophthalmology* 8.5 (2019): 360-365.

Volume 2 Issue 8 August 2021

© All rights are reserved by Seraph Shi Kei Wu and Sunny Chi Lik Au.