

THE TWO-MINUTE APPROACH TO MONOCULAR DIPLOPIA

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ABSTRACT

Objective: To describe a quick and simple diagnostic approach to monocular diplopia.

Background: Diplopia is a common visual complain in casualty departments, general practice clinics, neurologic clinics as well as ophthalmic clinics. Monocular diplopia, however, is uncommon. Many well established clinical examination methods are available to address diplopia. Some require special equipments which are not easily available or unfamiliar outside of ophthalmic clinic. We describe a simple two-minute diagnostic approach to monocular diplopia.

Conclusion: Basic knowledge and understanding of simple clinical examination techniques enhances diagnostic skill and allow proper localization of underlying disorders.

Keywords: Monocular diplopia, metamorphopsia, pinhole, red reflex.

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INTRODUCTION

Diplopia is a common visual complain in casualty departments, general practice clinics, neurologic clinics as well as ophthalmic clinics. The causes of diplopia are multitude and can range from simple benign refractive error to life threatening intracranial aneurysm. As with any neurologic complains, localization is the foremost task in the management of diplopia. Monocular diplopia, however, is uncommon and presents a diagnostic challenge to most general practitioners. In order to make things simpler for the busy practitioners, we describe a simple two-minute diagnostic approach to monocular diplopia.

Pathophysiology of diplopia

Diplopia or double vision is the visualization of object in two different spatial locations. Diplopia can occur during monocular viewing (monocular diplopia) or binocular viewing (binocular diplopia). Monocular diplopia occurs when two images are viewed by a single eye. Monocular diplopia can result from three conditions; light diffraction, metamorphopsia and cerebral polyopia. The fovea consists solely of cone photoreceptors and is responsible for fine vision and colour vision. Other parts of the retina (extra-foveal retina) are responsible for peripheral vision. Light diffraction causes images of a single object to fall on the fovea and the extra-foveal retina of the same eye. The

images are of different clarity, with the extra-foveal ghost-image overlapping the clear foveal image. Monocular diplopia due to light diffraction resolves with viewing through a pinhole (Figure 1).¹ Metamorphopsia or distortion of retinal images is due to maculopathies such as macular edema or epiretinal membrane. Metamorphopsia is frequently reported as double vision. A good historian will be able to distinguish between the two, but this can sometimes be difficult. Metamorphopsia does

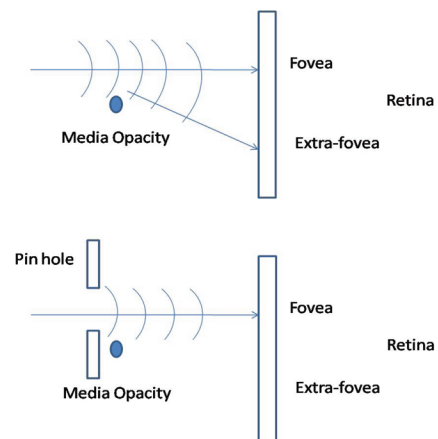


Figure 1: Monocular diplopia due to light diffraction resolved with pinhole