Macular ischemia after intravitreal amikacin on patient with intraocular foreign body

Abstract

Background: Although still used in third world countries, amikacin has a harmful effect to be used intravitreally.
Purpose: To report macular ischemia after an intravitreal injection of amikacin
Methods: A case report regarding a traumatized eye of a 26-year-old man that was injected intravitreally with amikacin due to intraocular foreign body endophthalmitis
Results: Angiography and OCT show macular ischemia due to amikacin toxicity.
Conclusion: The case reported here is to alert about the potential harmful effect of intravitreally injected amikacin despite its role as an accepted regimen for endohthalmitis cases.

Arief Kartasasmita[1]
Susi Mona[1]
Erwin Iskandar[1]
Iwan Sovani[1]
Djonggi Panggabean[1]

1 Faculty of Medicine, Universitas Padjadjaran/Cicendo National Eye Hospital, Bandung, Indonesia

Introduction

Ocular trauma is the leading cause of monocular visual loss and a major cause of ocular morbidity. It is estimated that 500,000 blinding ocular injuries occur globally each year. The intraocular foreign body (IOFB) represents one form of open globe injury commonly described, especially in developing countries and rural areas. A variety of reports note that retained foreign bodies occur in 5–40% of all penetrating eye injuries [1], [2]. This is cause for concern as retained foreign bodies are associated with increased risk of endophthalmitis [3], [4]. The incidence of infectious endophthalmitis after penetrating injury with IOFB ranges from 0% up to 16.5% [5].
Broad-spectrum antibiotic intravitreal injection is the mainstay therapy following IOFB injury. To provide adequate Gram-negative and -positive bacterial cover in endophthalmitis cases, a currently accepted therapeutic regimen includes aminoglycosides [6]. In developing countries, aminoglycosides have become a favorable drug of choice due to their ease of access and reduced cost. However, these treatments are not without side effects: retinal vascular infarction is commonly described after gentamicin administration, and has been noted after use of amikacin [7]. While previously noted as a rare complication, the reported frequency of macular ischemia following amikacin intravitreal injection for the treatment of endophthalmitis has increased recently [6], [8]. This report describes a case of macular ischemia following intravitreal amikacin injection.

Case description

A 26-year-old man came to the emergency room in our tertiary eye hospital 1 day after his right eye was hit by a nail while hammering. The patient was referred from a district hospital with an IOFB in the right eye. He received an injection of anti-tetanus serum at initial admission.
The general examination was within normal limits. An ophthalmological examination was conducted; best corrected visual acuity (VA) was 6/5 in each eye, ocular motility was full in all directions, and digital intraocular pressures were normal for both eyes. The anterior segment of the right eye showed a hyperemic conjunctiva with a nail lodged at the temporal limbus (Figure 1). Corneal edema was present, but other anterior segment findings were normal (round pupil, no synechiae or lens opacities, and anterior chamber formed with no flare or cells). The anterior segment of the left eye was within normal limits. Fundoscopic examination of the right eye revealed clear media with a visible foreign body (nail) in the vitreous, a round and sharp border of the optic disc, a flat retina, and good foveal reflex. The posterior segment of the left eye was within normal limits.