

Abstract

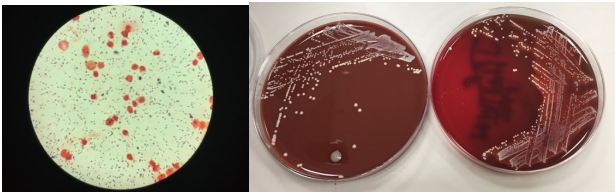
Staphylococcus lugdunensis is a rare causative organism of endophthalmitis following intravitreal injections. It presents an aggressive disease course with potentially devastating outcomes. In this case the patient presented late with a severely painful, red eye with reduced vision following bilateral intravitreal injections of anti-vascular endothelial growth factor. Strict adherence to the bilateral intravitreal injection protocol meant prevention of infection in the right eye. Intravitreal vancomycin was administered without delay and an emergency vitreous biopsy was performed, confirming Staphylococcus lugdunensis as the causative organism. An intense course of oral and topical steroids was chosen due to the aggressiveness of this organism. Early vitreo-retinal opinion was sought but the patient was deemed not suitable for vitrectomy. The patient has shown improvements in visual acuity to 1/60 and remains on a weaning regime of oral and topical steroids with no further complications.

Case Presentation

An elderly female presented to the ophthalmology clinic with a three-day history of pain, redness and reduced vision in her left eye. Five days prior to presentation, she had received bilateral intravitreal injections with Eylea (2mg/0.05ml aflibercept) for wet age-related macular degeneration (AMD). This was the most recent of multiple intravitreal injections she had received for wet AMD in both eyes.

Assessment and investigations

Slit lamp examination of the left eye revealed extensive conjunctival hyperaemia, a hazy and oedematous cornea with a 1.2mm hypopyon and 4+ cells in the anterior chamber. Fundal view was challenging due to the degree of corneal oedema and the presence of a cataract. The visual acuity was light perception only (pre-injection best-corrected visual acuity was 6/18). The patient underwent an emergency vitreous biopsy and injection of intravitreal antibiotics. The vitreous sample demonstrated heavy growth of Gram-positive cocci and numerous white cells and isolated a coagulase negative staphylococcus lugdunensis, illustrated in Fig 1.



[Fig 1]

Treatment

Intravitreal administration of vancomycin (0.1ml, 1mg/0.1ml) and ceftazidime (0.1ml, 2mg/0.1ml) was performed and the patient was commenced on an initial treatment regime of oral and topical antibiotics and topical steroid. Early specialist input was sought from the vitreo-retinal surgeons whom opted not to perform vitrectomy as there were mild improvements in the clinical condition; her visual acuity had improved to hand movements. The patient also reported less pain in the eye. Instead, she was admitted for intensive topical steroids (preservative free dexamethasone 0.1%, 1mg/ml eye drops, every two hours) and an additional 1mg dose of intravitreal vancomycin. The patient was discharged with a modified treatment regime as illustrated in Table 1. Further review demonstrated persistently low vision and on-going inflammation in the anterior chamber. The patient was commenced on oral prednisolone (once daily at 1mg/kg body weight) with gastro-protection.

Table 1: Modified treatment regime
Moxifloxacin oral tablets, 400mg once daily
Dexamethasone 0.1%, 1mg/ml eye drops (preservative-free) one drop into left eye every 2 hours
Chloramphenicol eye drops, one drop into left eye four times a day
Cyclopentolate 0.5% eye drops, one drop into left eye twice daily

Outcome

The patient is currently on a weaning regime of oral and topical steroids. Six weeks following the acute presentation; the eye is comfortable with a visual acuity of 1/60. On examination, there is vitreous debris otherwise there are no signs of on-going inflammation.

LEARNING POINTS

- Post Intravitreal injection endophthalmitis caused by Staphylococcus lugdunensis follows an acute and aggressive course of disease, highlighting the importance of prompt recognition and management
- Vitrectomy should be undertaken in these patients even though, due to the virulence of Staphylococcus lugdunensis, there may be an increased the rate of post-vitrectomy retinal detachment. Additionally, in accordance with the landmark Endophthalmitis Vitrectomy study, vitrectomy should be considered at the time of vitreous biopsy
- Oral steroids are unlikely to be of benefit and are more likely to cause complications due to pre-existing comorbidities that are typical of these patient populations
- Conducting same-day bilateral intravitreal injections does not mean complications of endophthalmitis will occur in both eyes when they are treated as two separate and sterile procedures