

Endogenous endophthalmitis following computerised tomography colonography

Deepesh Mehta, Helen Long, Neil Aburn

Endogenous endophthalmitis is a rare and potentially blinding condition resulting from infection within the ocular tissues and accounts for 10% of all endophthalmitis cases.¹ In contrast to exogenous endophthalmitis, which typically results from external ocular procedures such as cataract surgery, endogenous endophthalmitis usually occurs in immunocompromised patients.¹ Gram-positive species are the predominant causative organisms in bacterial endogenous endophthalmitis, with streptococcal and staphylococcal bacteria being the most commonly isolated species.^{1,2}

Case report

A 64-year-old male presented to the acute eye clinic with a one-day history of right loss of vision, chills and muscle aches, after having undergone computerised tomography colonography (CTC) two weeks prior for investigation of gastrointestinal (GI) bleeding while on anticoagulation. On examination, best corrected visual acuity (BCVA) in the right and left eye was 6/18 and 6/9 respectively. Additionally, there was evidence of bilateral anterior chamber inflammation, with keratic precipitates more severe in the right eye relative to the left. Furthermore, a 0.2mm hypopyon was evident in the right eye with mild vitritis. Right fundus examination showed solitary white-yellow fluffy lesions in the periphery and white-centred retinal haemorrhages. A diagnosis of possible endogenous endophthalmitis was made and the patient underwent inflammatory blood tests, blood cultures, right vitreous tap, chest x-ray and trans-oesophageal echocardiogram (TOE) to rule out infective endocarditis (IE). He

was given intravitreal ceftazadime and vancomycin to both eyes prophylactically and started on intravenous acyclovir. The patient was found to be anaemic and to have an elevated erythrocyte sedimentation rate and C-reactive protein. The remainder of the blood tests were unremarkable. The vitreous PCR was negative for any organisms and the TOE showed no evidence of valvular vegetation. The blood culture was positive for *Streptococcus dysgalactiae*, and the patient was subsequently started on intravenous ceftriaxone, to which he responded well. He was discharged on oral amoxicillin, prednisone acetate eye drops and dexamethasone eye ointment. At one-week follow-up, examination the BCVA improved to 6/6 and 6/9 in the right and left eye respectively, with improving inflammation. At the final six-month follow-up, his visual acuity was stable with no signs of inflammation in either eye and he was discharged.

Discussion

The pathophysiological mechanism of endogenous endophthalmitis usually results from bacteraemia secondary to seeding from other infected organs.¹ Interestingly, the right eye is more commonly affected compared to the left, likely because it has a more direct arterial supply from the internal carotid artery.¹

Streptococcus dysgalactiae is a type of pyogenic beta haemolytic streptococci that rarely causes endogenous endophthalmitis, with reported cases being more common in the elderly.³ It forms part of the natural human microflora, occupying areas such as the skin and the gastrointestinal tract.³

Owing to its high virulence, infection of ocular tissues can have devastating visual consequences.³ Infection of ocular tissue by this organism warrants investigation of underlying IE.³ Additionally, infection of ocular tissues can cause secondary IE.³

Patients undergoing CTC have a small risk of acquiring transient bacteraemia secondary to colonic insufflation causing local ischaemia, thereby allowing translocation of enteric pathogens into the bloodstream and potential infection of distant tissues.⁴ However, the risk of bacteraemia is very low, and routine antibiotic

prophylaxis prior to CTC is not recommended.⁴ Thus, colonic ischaemia secondary to CTC could have been the reason for development of endogenous endophthalmitis in the present case.⁴

In conclusion, endogenous endophthalmitis may present in patients following CTC secondary to colonic insufflation. We illustrate a novel case where *Streptococcus dysgalactiae*, which forms part of the normal GI microflora, resulted in endogenous endophthalmitis. Thus, clinicians should be aware of CTC as a rare cause of endogenous endophthalmitis.

Competing interests:

Nil.

Author information:

Deepesh Mehta: Ophthalmology Non-Training Registrar,
Ophthalmology Department, Capital and Coast District Health Board, Wellington.

Helen Long: Consultant Ophthalmologist,

Ophthalmology Department, Capital and Coast District Health Board, Wellington.

Neil Aburn: Consultant Ophthalmologist,

Ophthalmology Department, Capital and Coast District Health Board, Wellington.

Corresponding author:

Deepesh Mehta, Ophthalmology Non-Training Registrar,
Ophthalmology Department, Capital and Coast District Health Board, Wellington
mehde493@gmail.com

URL:

www.nzma.org.nz/journal-articles/endogenous-endophthalmitis-following-computerised-tomography-colonography

REFERENCES

1. Ness T, Pelz K, Hansen LL. Endogenous endophthalmitis: microorganisms, disposition and prognosis. *Acta ophthalmologica Scandinavica*. 2007;85(8):852-6.
2. Mak CY, Sin HP, Chan VC, Young A. Klebsiella endophthalmitis as the herald of occult colorectal cancer. *BMJ* case reports. 2018;2018.
3. Hagiya H, Semba T, Morimoto T, Yamamoto N, Yoshida H, Tomono K. Panophthalmitis caused by *Streptococcus dysgalactiae* subsp. *equisimilis*: A case report and literature review. *Journal of infection and chemotherapy : official journal of the Japan Society of Chemotherapy*. 2018;24(11):936-40.
4. Ridge CA, Carter MR, Browne LP, Ryan R, Hegarty C, Schaffer K, et al. CT colonography and transient bacteraemia: implications for antibiotic prophylaxis. *European radiology*. 2011;21(2):360-5.