CASE REPORT

Serratia marcescens endogenous endophthalmitis in an immunocompetent host

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SUMMARY

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A systemically well 66-year-old white Caucasian man presented to the urgent care department with a short history of progressive pain and blurring of vision in his left eye. He denied a history of trauma, intraocular surgery or use of illicit drugs. He was diagnosed with endogenous endophthalmitis. Vitreous biopsy grew Serratia marcescens, a Gram negative bacteria. In spite of extensive investigation, there was no obvious source of infection. He had an indwelling urine catheter for prostate hypertrophy, but urine culture was negative. There was no evidence of immunocompromise. He was treated with systemic as well as intravitreal antibiotics. In spite of appropriate treatment, the patient lost vision. S. marcescens endophthalmitis, seen even in immunocompetent people, carries a poor visual prognosis.

BACKGROUND

Endophthalmitis by this organism is very rare, and more so in an immunocompetent host.

CASE PRESENTATION

A systemically well 66-year-old Caucasian man presented to the urgent care department with a 10 h history of progressively worsening redness, purulent discharge, eye ache, photophobia, blurring and lid swelling in his left eye. His ocular history was unremarkable. His medical history included a rightsided nephrectomy due to malformed kidney at 24 years of age. He also had been using a long-term indwelling urinary catheter for the preceding 2 months from biopsy-proven benign prostatic hypertrophy. He denied trauma and history of ocular surgery or illicit drug use. He did not have diabetes mellitus or systemic hypertension. Visual acuity at presentation was 'hand movements' in the left eye. A relative afferent pupillary defect was noted. Anterior segment examination revealed a diffuse corneal oedema with flare and 4+ cells in the anterior chamber (AC). There was 1.5 mm hypopyon with a pupillary membrane in the AC, which precluded a fundal view. Intraocular pressure was 42 mm Hg by applanation tonometry. Limitation of extraocular movement was seen in all directions of gaze. The best-corrected Snellen visual acuity of the right eye was 6/6 and examination of the right eye was within normal limits. B-scan ultrasonography revealed vitreous debris with an attached retina. The patient was afebrile, but leucocytosis and neutrophilia were noted on full blood count. The clinical features suggested a diagnosis of enodegous endophthalmitis. The patient was

started on intravenous levofloxacin as well as hourly topical guttae ofloxacin and guttae ceftazidime. He underwent urgent AC tap and vitreous biopsy with intravitreal injection of ceftazidime and vancomycin. The bacterial culture was positive, with a heavy inoculum of Serratia marcescens. There was no contaminant and the instrument ID reported a confidence value of 99% (BD Phoenix automated microbiology system Version 6.01A). The organism was reported to be sensitive to ceftazidime, quinilones and gentamicin. Blood and urine cultures showed no growth. The patient was started on topical guttae prednisolone 1% six times a day, in addition to guttae ofloxacin. Systemic work up did not reveal any evidence of immune compromise. Despite prompt recognition with timely, appropriate and aggressive treatment, the patient lost light perception in that eye over the course of a week. Persistent proptosis and orbital inflammation was noted on MRI scan and choroidal effusion on ultrasound B-scan of the left eye. Discomfort and proptosis resolved by the end of the second week. The patient was offered the option of evisceration of the left eye due to marked thinning of the inferior cornea with risk of perforation and spread of infection into the orbital tissue, but elected against it.

INVESTIGATIONS

- 1. B-scan ultrasound of the eye.
- 2. Blood and urine culture.
- 3. Full blood count.
- 4. Vitreous biopsy for culture and sensitivity.
- 5. MRI Scan.

TREATMENT

- 1. Intravenous levofloxacin.
- Topical guttae ofloxacin hourly and guttae ceftazidime hourly.
- 3. Topical guttae prednisolone 1% after results of intravitreal biopsy were obtained.
- 4. Intravitreal injection of ceftazidime and vancomycin.

OUTCOME AND FOLLOW-UP

The patient lost light perception, in spite of adequate treatment.

DISCUSSION

S. marcescens is a Gram-negative, red-pigment (prodigiosin)-producing saprophytic bacillus. This organism accounts for 4% of cases of endogenous endophthalmitis.^{1 2} It can also cause conjunctivitis and keratitis, and systemically it can cause



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Unusual association of diseases/symptoms

meningitis, otitis media, endocarditis, pneumonitis and septicaemia. It is generally sensitive to quinolones, aminoglycosides and third-generation cephalosporins, although resistance to the latter has been reported.^{1 3 4} Serratia endophthalmitis, endogenous or otherwise, is associated with poor visual prognosis.⁵ Intense AC reaction precluding a fundal view was cited in most reported cases. Other features include intense purulent discharge and hypopyon, which may be white, dark or pink.^{1 6} Despite aggressive medical/surgical treatment, the vast majority of patients ultimately lose light perception in the affected eye, requiring either evisceration or enucleation. All reported cases

Intraocular Serratia marcescens infection is usually

S. marcescens endophthalmitis can be seen in an immune

aggressive intervention, with frequent intraocular antibiotics

injections combined with pars plana vitrectomy once the

S. marcescens endophthalmitis probably requires more

associated with poor visual prognosis.

aetiological agent is identified.

of Serratia endogenous endophthalmitis have had underlying systemic pathology, such as immune compromise or sepsis along with established intravenous access. The case reported here is unique in that no immune compromise, no systemic infection and no IV access were found. The patient, however, did have a long-term urinary catheter due to prostatic hypertrophy.

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Competing interests None declared.

Patient consent Obtained.

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