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Hypopion as Initial Manifestation of Endocarditis

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Introduction: Endocarditis can manifest in a multitude of ways, with septic emboli affecting organs throughout the body. We describe a case in which a patient presented with acute decrease in visual capacity of the right eye and hypopion visible upon examination as the initial presentation of his then diagnosed endocarditis. Blood cultures grew both *Streptococcus pneumoniae* and *Pseudomonas putrida*. This is to our knowledge the first case report in which endocarditis was caused by two infective agents and that presented with hypopion as its initial manifestation.

Case Report: A 69 year-old with a past medical history encompassing non-oxygen dependent COPD, remote tobacco usage history, chronic back pain, hyperlipidemia and impaired vision of his left eye due to trauma at the age of 19 had presented twice to an outside urgent care center for progressive back pain. Despite prescription of antispasmodics, non-steroidal and opioid pain medications, the symptoms failed to improve. No other symptoms such as a cough, fevers, chills or dyspnea were noted. About two weeks after onset of symptoms, the patient awoke to discover a significant reduction of visual capacity to his right eye, prompting presentation to the emergency room.

Hypopion and endophthalmitis were noted with only light perception of the left eye. The patient received intravitreal instillation of antibiotics and both vitreal as well as blood cultures were obtained. The patient was admitted to the hospital, and a new murmur appreciated. Transthoracic echocardiogram imaging revealed a 1cm aortic vegetation with severe aortic regurgitation. CT scanning of the patient’s chest showed pulmonary infiltrates in the right middle and upper lobe, possibly the cause of the patient’s worsened back pain. Careful physical inspection and head imaging did not show additional septic emboli. Although vitreal cultures remained negative, blood cultures grew *Streptococcus pneumoniae* and *Pseudomonas putrida*. The patient had been placed on appropriate antibiotics, ultimately tailored to cefepime and levofloxacin.

The patient underwent urgent bioprosthetic aortic valve replacement and intraoperatively an abscess cavity was noted between the left and right coronary cusps of the aortic valve. Pathology was consistent with numerous pockets of degenerating weakly gram-variable coccobacillary bacteria. The patient also underwent vitrectomy and intravitreal injection, intraoperative cultures failed to grow bacteria. He completed a course of six weeks of antibiotics. Since discharge and at a six-month follow-up, he has regained only minimal vision to his right eye and has light perception in it. His formerly weak, his left eye, has now become his good eye with a vision of 20/50. He remains visually impaired.
We report this case for several reasons. First, hypopion as an initial presentation remains a rare event and has only infrequently been reported in the literature. Although hypopion is generally not caused by a cardiac etiology, careful evaluation is necessary and the new murmur in this patient prompted work-up that ultimately led to the successful diagnosis and treatment. No other stigmata of endocarditis were found and subsequent blood cultures rapidly became negative once appropriate antibiotic therapy had been instituted. In the patient’s case, it was felt that bacterial infection of the lungs caused the endocarditis which then led to hypopion affecting the right eye.

Second, to our knowledge no single case has been published in two organisms were found, namely *Streptococcus pneumoniae* and *Pseudomonas putrida*. It remains speculative which of these two bacteria caused the hypopion as intravitreal and intraoperative cultures during ocular surgery remained negative. Streptococcus pneumonia, Enterococcus and Candida species have been implicated in causing opthalmitis as a result of endocarditis, especially coming from the aortic valve, but *Pseudomonas putrida* might have been causative in this case.

Third, this case highlights that the right eye seems to more frequently be affected due to a more proximal arterial supply via the innominate artery. The two case reports cited in this publication all involve the right eye and although there do not appear to be sufficient numbers to quantify this association, there does seem to be a predilection to the right eye.

Images:

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1 Barge S et al, Enterococcus faecalis Endogenous Endophthalmitis from Valvular Endocarditis. Case Rep Ophalm Med 2013; 13, epub
References:
