Commentary: Controversies related to endogenous endophthalmitis

Endogenous endophthalmitis (EE) is an infrequent condition caused by hematogenous dissemination of microorganisms from a remote infectious site to the "immune privileged" ocular environment.[1-4] Although first reported in 1856, it still remains a diagnostic and therapeutic dilemma. The authors of the manuscript "Clinical presentations, microbiology and management outcomes of cultureproven endogenous endophthalmitis in India" have correctly highlighted the various controversies related to the topic.[5]

Clinical profile of patients shows immense disparity throughout the world. The most common co-morbidities associated with EE include old age; immunocompromised states such as diabetes mellitus, malignancy, and human immunodeficiency virus infection; extraocular foci of infection; long-term hospitalization; indwelling catheter(s); and intravenous drug abuse. Liver abscess has been reported as the most common infection focus in East Asian countries.[1-4] However, young apparently healthy and ambulatory individuals have also been reported to fall prey to the disease.[6] Many authors have reported factors like preceding episode of febrile illness and administration of IV fluid in rural settings for minor ailments. We also have encountered a number of patients presenting with EE after a minor febrile illness. Hence, a permanent source of a microbial load may not always be necessary to cause EE.

Clinical presentation, especially in apparently healthy individuals, masquerades as noninfectious uveitis. The masquerading nature of the disease causes a high initial misdiagnosis rate, 16%–63% reported in the literature.[1-4] The rate is especially high in case of anterior focal disease, which may present as iris nodules or microabscesses. Unless the ophthalmologists approach the patients with high index of clinical suspicion, diagnosis of EE can be easily missed.

The body fluid of choice to be cultured remains equally contentious. Greenwald *et al*. recommended that ocular fluids should be cultured only if all extraocular cultures are negative.[7] Conventionally, blood has been the most reliable source for isolation of microorganisms, providing positive cultures in 33%–94% cases.[1-4] On the contrary, studies have shown low blood culture positivity rates in apparently healthy patients developing EE.[6] It has been suggested that both vitreous and aqueous humor should be cultured, because occasionally organisms are isolated from one but not the other.

Prognosis in cases of endophthalmitis depends on how effectively the infection, as well as infection-induced inflammation, is controlled. Studies, where the patients treated with only intravitreal and intravenous antibiotics, have reported that mere 5% patients achieved final BCVA ≥ 20/200, 44% completely lost vision, and 25% had to be enucleated or eviscerated.[1] Late vitrectomy has been found to increase the probability of salvaging the globe; however, there is no evidence that it improves visual prognosis also.[1-4] On the contrary, primary vitrectomy has been shown to improve visual prognosis as well, with 38%–45% eyes attaining BCVA ≥ 20/200.[4,8]

As correctly highlighted by the authors, EE in the Indian subcontinent presents a unique clinicodemographic profile. Most patients are young and immunocompetent without any underlying systemic focus of infection. Due to the high rate of blood and urine culture negativity, vitreous should always be sent for microbiological culture.

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