Commentary

Changing patterns in uveitis South India: Comparison between two decades

Uveitis is a complex intraocular inflammatory disease that results from several causes: infections – endogenous and exogenous, systemic diseases, organ-specific autoimmune processes (primarily to T-cell-mediated Th2 and or Th17 processes), trauma, and masquerade syndromes presenting with clinical features of uveitis. About 3%–10% of blindness in developed countries and 25% of blindness in India and other developing countries are attributed to uveitis and its complications such as secondary cataract, glaucoma, cystoid macular edema, or retinal photoreceptor or optic nerve damage. Infections are a leading cause of uveitis in India and other developing countries, whereas idiopathic uveitis, believed to be an organ-specific immune inflammatory process, is a leading cause in developed countries and account for only 30% of patients.[1] Compared to previous decades, now one is able to arrive at a specific etiology in about 55.4%–60.6% of patients in India.[2,3] This is due to awareness of changing demographic features, recognition of specific uveitis entities, and prompt and better reporting of newer etiologic agents – West Nile Virus (WNV), chikungunya, and Rickettsia-induced uveitis. Now, we have well-defined diagnostic criteria for entities – ocular tuberculosis (TB), Vogt–Koyanagi–Harada (VKH), and ocular sarcoidosis. In the past two decades, other factors that have led to a fall in incidence of idiopathic uveitis and an increase in specific diagnosis are wide-field imaging, optical coherence tomography, autofluorescence, increased availability of nucleic acid amplification techniques, such as polymerase chain reaction (PCR) for infectious uveitides, such as TB, toxoplasmosis, viral uveitis (herpes simplex virus [HSV], varicella zoster virus [VZV], and cytomegalovirus [CMV]), and bacterial/fungal infections, high-resolution computerized tomography, positron-emission tomography scan, and magnetic resonance imaging.[1,3]

Anterior uveitis is the most common uveitis presentation in most published studies and regional change in patterns of anterior uveitis have been reported from tertiary eye care centers in India. From Northeast India, Das *et al*. have recognized an increase in the diagnosis of HLA-B27-associated acute anterior uveitis in 2012 and a sharp decrease in the number of idiopathic anterior uveitis compared to 2005.[4] They have also shown that diagnosis of herpetic uveitis (HSV, VZV, and CMV) and Fuchs' uveitis syndrome was on the rise when compared to their 2005 study.[5] A similar finding is also reported by Dogra *et al*. and they attribute the increased incidence of the viral disease may be attributed to high clinical suspicion, based on classic signs (iris changes/high intraocular pressure) and the recent availability of PCR-based diagnosis.[3] Regional differences exist – Rathinam and Namperumalsamy have a higher incidence of trematode and leptospira-induced anterior uveitis compared to studies from Northern India.[2,3] Other causes of anterior uveitis reported are TB, sarcoidosis, leprosy, juvenile idiopathic arthritis (JIA), phacolytic uveitis, syphilis, and masquerade uveitis.[2] Ocular manifestations of parasitic infections – gnathostomiasis and dirofilariasis have been reported from Northeast India.[6]

Less common are incidences of intermediate, posterior, and panuveitis, not necessarily in that order. Older studies showed TB as the most common cause of intermediate uveitis in North India,[7] while sarcoidosis and leptospiral uveitis were more common causes in South India.[2] Other less common entities seen in this anatomical site are uveitis due to idiopathic, multiple sclerosis, and JIA.[2]

Toxoplasmosis, TB, leptospirosis, sarcoidosis, and viral uveitis (acute retinal necrosis and CMV) account for majority of the posterior uveitis. TB is the most common cause of choroiditis and vasculitis, while viral and toxoplasmosis are common causes of retinitis in North India. White dot syndromes such as acute posterior multifocal placoid pigment epitheliopathy, multiple evanescent white dot syndrome are less commonly seen in this part of the world. Rare causes reported were Behçets disease, neuroretinitis, masquerade syndromes, metastasis, and cysticercosis.[3]

Diffuse or panuveitis can be caused by TB, sarcoidosis, VKH, sympathetic ophthalmitis, Behcet's disease, viral (VZV, CMV), and endophthalmitis – both exogenous and endogenous and sympathetic ophthalmitis.

Syphilis as an etiologic agent (0.2%–1.6%) ranks low in the list of infectious cause of uveitis in many studies across India. Endophthalmitis accounted for 10% and idiopathic panuveitis for 32.7% of panuveitis in South India, while in the North, it was 14.5% and 23.5%, respectively.[2,3]

Since the mid-2000's, newer uveitic entities of infectious etiology have been reported from South India – WNV-associated uveitis,[8] chikungunya-associated uveitis,[9] and Rickettsiosis-associated retinitis.[10] One often encounters these patients in clusters, most of them following a presumed outbreak of the disease in the community.

We treated 254 eyes of 248 patients with acquired ocular toxoplasmosis between October 2004 and May 2005 caused by a presumed outbreak of Toxoplasmosis from a contaminated water source in South India.[11] We also recently treated a cluster of 12 patients (23 eyes) with retinitis due to *Rickettsia conorii* infection proved serologically (unpublished data).

In conclusion, causes of uveitis differ in developed and developing countries and such etiologic differences could play a significant role in the high levels of blindness that occur in developing countries. Periodic epidemiological studies can show changing patterns in uveitis. Awareness of such regional variations of disease patterns is imperative to arrive at a differential diagnosis and do tailored laboratory investigations.[12] Ocular TB remains the most common infective etiology of uveitis, the emergence of new infectious causes of uveitis which can also occur in clusters – WNV, chikungunya, and Rickettsiosis needs to be kept in mind. There is a notable decreasing trend toward the diagnosis of idiopathic uveitis. Local drug delivery and use of biological agents are providing novel approaches to the management of recalcitrant noninfectious uveitis.

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