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N Kumaran and R Girgis

Department of Ophthalmology, Worthing Hospital, Worthing, UK
E-mail: neruban@doctors.org.uk

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Sir,

Microbial profile and antibiotic susceptibility of culture-positive bacterial endophthalmitis

I read the interesting paper by Melo *et al*,[1] highlighting the threats posed by bacterial endophthalmitis and the importance of microbiological susceptibility surveillance for its treatment. I would like to share my point of view regarding the concern of increasing antimicrobial resistance arising from this study. As the most important factor to avoid permanent damage of retina is an early appropriate antibiotic therapy, systemic and intravitreal are the preferred route of antibiotic administration for endophthalmitis. Intravitreal injection is a key component of clinical management of exogenous endophthalmitis. It warrants predictable intravitreal levels, especially for hydrophilic antibiotics, such as aminoglycosides, beta-lactams, and glycopeptides, diffusion of which from plasma to vitreous cavity is insufficient to achieve target-site concentration attainment.[2] However, systemic therapy is required for endogenous endophthalmitis, in which bacteraemia is followed by ocular seeding, to avoid further embolic complications. Pharmacodynamics of conventionally administered systemic antimicrobials show that intravitreal levels vary substantially, but remain below the MIC for many ocular pathogens in most cases. Indeed, very few drugs (mostly lipophilic antibiotics) achieve appropriate concentration within the vitreous cavity, where targeted exposure is required. Inappropriate administration of antimicrobials has been shown not only to worsen clinical outcomes, but also to drive resistance—and meticillin resistance often means quinolone or multidrug resistance.[2,3] Even if antimicrobial susceptibility testing remains to be of great value for epidemiology and surveillance, optimised management of endogenous endophthalmitis should no longer rely only on static definitions, such as susceptible, intermediate, and resistant,[4] but requires now the inclusion of pharmacodynamic indices into prophylactic and therapeutic protocols and the integration of different fields of expertise—ophthalmic surgery, infectious diseases, microbiology, and clinical pharmacology—to promote antimicrobial stewardship. Improving patient safety is a multifaceted task requiring multidisciplinary and organisational commitment.[5] The appropriate antibiotic, administered to the target site, in the right concentration, in a timely manner could be both one therapeutic challenge and one goal for the future. In my opinion, it would be more worthwhile attempting to improve the management of such a severe infection through demanding, but shared efforts, rather than passively recording a progressive increase of antimicrobial resistance, too often coupled with unsatisfying clinical outcomes.

Conflict of interest
The author declares no conflict of interest.

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L Pagani

Antimicrobial Management Program, Bolzano Central Hospital, Bolzano, Italy
E-mail: leonardo.pagani@asbz.it

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Sir,

Spectral domain optical coherence tomography macular cube scans and retinal pigment epithelium/drusen maps may fail to display subretinal drusenoid deposits (reticular pseudodrusen) in eyes with non-neovascular age-related macular degeneration

As subretinal drusenoid deposits, also known as reticular pseudodrusen, carry an increased odds ratio for the development of choroidal neovascularization (2.6),[1] the recognition of this finding is warranted in clinical evaluations of non-neovascular age-related macular degeneration (AMD).

Imaging subretinal drusenoid deposits requires optical coherence tomography (OCT) resolutions adequate to determine the retinal pigment epithelium (RPE) position relative to drusen and OCT algorithms that include subretinal structures. As the low reflectance of retinal tissue limits OCT resolution, subretinal drusenoid deposits are more easily detected with high-resolution

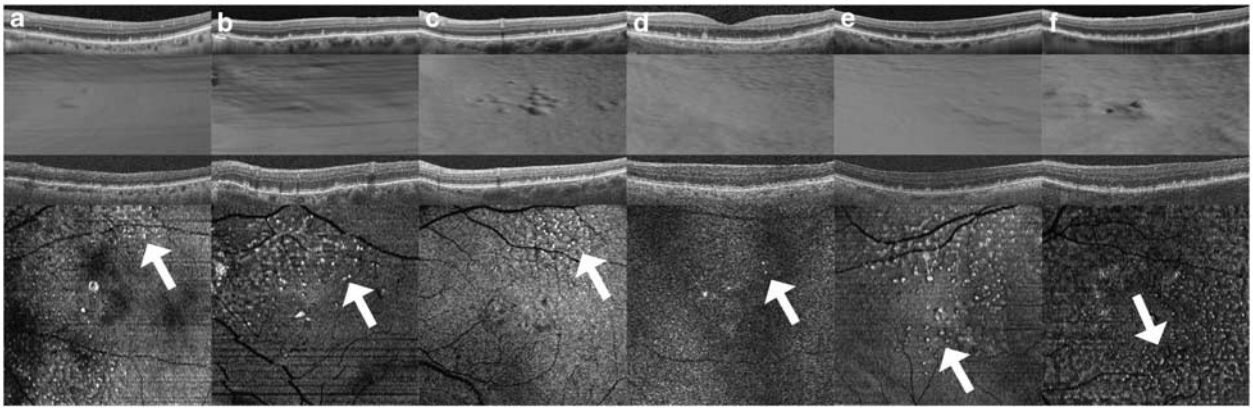

Figure 1 SD-OCT manual segmentation and subretinal drusenoid deposits (SDD). Six eyes (a–f) with SDD well demonstrated by line scan protocol (top row). SDD are absent on drusen maps (second row), and cube-scanning protocols exclude subretinal structures seen on individual B-scans (third row). However, SDD are well demonstrated through manual segmentation (arrows to representative structures, bottom row).

B-scan protocols that use line averaging to enhance detail and reduce speckle noise. Current OCT drusen detection algorithms typically use lower resolution single-line raster scans to shorten scan acquisition time and maximize the area scanned for segmentation. Segmentation protocols typically identify drusen only beneath the RPE, missing subretinal structures, such as subretinal drusenoid deposits.

In a representative series of six eyes with subretinal drusenoid deposits, macular cube scans (500×128 and 200×200 protocols) obtained with the Zeiss Cirrus HD-OCT (Carl Zeiss Meditec, Dublin, CA, USA, v4.5.1.11) failed to show subretinal drusenoid deposits with adequate resolution. However, subretinal drusenoid deposits visualization was possible with the Cirrus HD-OCT in all six of our cases if manual segmentation was performed on C-scan (advanced visualization, RPE algorithm, 37 μm slab elevated above the RPE; Figure 1).

In summary, SD-OCT macular cube scans for non-exudative AMD have a limited ability to show important subretinal structures, such as subretinal drusenoid deposits, because of inherently lower B-scan resolution and lack of analysis internal to the RPE. However, manually segmented *en face* curved C-scans on the Cirrus HD-OCT can display subretinal drusenoid deposits without changes to the protocol. With the advent of pharmacologic therapy for non-neovascular AMD, an assessment for subretinal drusenoid deposits should be included in automated macular analyses.

Conflict of interest
M Engelbert and KB Freund are consultants at Genentech. DW Switzer declared no conflict of interest.

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DW Switzer[1,2,3], M Engelbert[1,2,3] and KB Freund[1,2,3]

[1]LuEsther T. Mertz Retinal Research Foundation, Manhattan Eye, Ear, and Throat Hospital, New York, NY, USA
[2]Vitreous Retina Macula Consultants of New York, New York, NY, USA
[3]Department of Ophthalmology, New York University School of Medicine, New York, NY, USA
E-mail: kbfnyf@aol.com

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Sir,

Primary signet ring cell carcinoma of the eyelid in a young woman

The primary signet ring cell carcinoma of the eyelid (PSCE) is an extremely rare tumor. Only a few cases have been reported in the peer-reviewed literature.[1–4] Nearly all of the 23 patients reported so far were healthy middle-aged or elderly males.[2] In our clinic, however, we observed a PSCE in a young woman.

Case report

The 33-year old patient presented had an indolent swelling of the left eyelid (Figure 1a), which she had been noticing for 4 months. The skin surface and conjunctiva over the lesion were normal. The tumor was removed in the operating theater assuming that the patient was suffering from a chalazion. The removed tissue was routinely sent to the pathology department. Microscopic examination detected numerous tumor cells with accumulation of PAS-positive intracellular mucoid material and marginalized hyperchromatic nuclei (Figure 1b). These signet ring cells showed immunohistochemical positivity for cytokeratins 7 (Figure 1c) and 5/6, whereas the reaction with