

OCULAR ADNEXAL LYMPHOID PROLIFERATIONS: CLINICAL, HISTOLOGIC, FLOW CYTOMETRIC, AND MOLECULAR ANALYSIS OF FORTY-THREE CASES

BY *Nariman Sharara, MD* (BY INVITATION), *Jeannine T. Holden, MD* (BY INVITATION), *Ted H. Wojno, MD* (BY INVITATION), *Andrew S. Feinberg, MD* (BY INVITATION), AND *Hans E. Grossniklaus, MD*

Purpose: To describe the clinical features, histologic findings, flow cytometric immunophenotypes, and molecular profiles of ocular adnexal lymphoid proliferations.

Methods: Patients suspected of having ocular adnexal lymphoid proliferations underwent biopsy and prospective evaluation. Provisional diagnoses were made on the basis of routine histology and immunohistochemistry for B and T cells. Results of flow cytometric immunophenotyping (FCI) and molecular assessment using polymerase chain reaction for immunoglobulin heavy chain (IgH) and T-cell receptor gamma chain gene rearrangement and bcl-2/IgH translocation were then incorporated into a final diagnosis. Demographic and clinical outcome data were collected.

Results: Forty-three cases were studied. Final diagnoses included lymphoma in 17 cases, chronic inflammation in 18, reactive lymphoid hyperplasia in 4, and atypical lymphoid infiltrates in 4. Preliminary evaluation accurately categorized all 43 cases as either lymphoma or nonlymphoma. FCI permitted more precise subclassification of the lymphomas according to the Revised European American Lymphoma (REAL) system of nomenclature as follows: 8 cases of marginal zone B cell (MALT-type), 3 cases of mantle cell, 2 cases of follicular, 3 cases of large cell, and 1 case of lymphoplasmacytoid lymphoma. FCI showed a clonal B-cell proliferation in 94% (16/17) of the lymphomas; FCI identified a clonal B cell population in 4% (1/25) of the nonlymphomas. Molecular evidence of clonality was identified in 88% (15/17) of lymphomas, 39% (7/18) of chronic inflammations, and 50% (4/8) of reactive lymphoid hyperplasias and atypical lymphoid infiltrates.

Conclusions: The histologic diagnosis of ocular adnexal lymphoid lesions is highly accurate when determined by an experienced pathologist. FCI refines the histologic diagnosis and classification. Results of molecular studies should be interpreted in conjunction with clinical, histologic, and immunophenotyping findings.

RECURRENT CAPSULAR OPACITY AND ERYTHROPOIETIN

BY *James S. Kelley, MD*

Purpose: To note an association between erythropoietin use and recurrent capsular opacity.

Methods: Case report of a 75-year-old patient in whom cellular debris developed and occluded a previous YAG capsulotomy.

Results: The patient had been taking erythrocyte-stimulating agents weekly for 5 years. Repeated use of YAG laser in patients at this age is required in less than 1 in 5,000 cases. The debris had the typical appearance of Elschnig's pearl.

Conclusion: The proliferation of capsular debris may be related to the use of erythropoietin.

COMBINED CENTRAL RETINAL ARTERY AND VEIN OCCLUSION AND SIMULTANEOUS ANTERIOR ISCHEMIC OPTIC NEUROPATHY FROM BEHCET'S DISEASE

BY *Rohit R. Lakhanpal, MD* (BY INVITATION), *Vinod Lakhanpal, MD*, *Shalom E. Kelman, MD* (BY INVITATION), AND *Stanley S. Schocket, MD*

Purpose: To report a case of Behcet's disease in which combined central retinal artery (CRA) and vein (CRV) occlusion occurred simultaneously with anterior ischemic optic neuropathy (AION) in a previously unaffected eye.

Methods and Results: A 40-year-old Caucasian woman who had a history of visual loss in the left eye due to retinal vasculitis and optic atrophy secondary to established Behcet's disease suddenly had complete loss of vision in the right eye. The vision gradually improved within 20 minutes. On the following day, she presented with visual acuity of 20/30 in the right eye and hand motions in the left eye. There was no afferent pupillary defect. She showed signs of anterior uveitis, vitreous cells, disc swelling with superotemporal sectoral infarct, narrowed arterioles, congested veins, and retinal hemorrhages in all quadrants. Fluorescein angiography revealed choroidal nonperfusion corresponding to the sectoral disc infarct and delayed retinal arteriolar filling. Visual field testing revealed decreased overall sensitivity and complete loss inferonasally. A diagnosis of transient CRA occlusion with visual recovery, CRV occlusion, and simultaneous AION secondary to Behcet's disease was established. The patient was hospitalized and treated with intravenous Solu-Medrol for 3 days. Follow-up examination revealed improvement of visual field, decreased anterior and posterior segment inflammation, sectoral optic atrophy, and normal retinal arteriolar filling on angiography.

Conclusions: Retinal vasculitis is one of the most blinding manifestations of Behcet's disease. Our patient presented not only with retinal vasculitis causing combined CRA/CRV occlusion, but also with simultaneous posterior ciliary involvement leading to segmental choroidal infarction and AION.

THE RELATION OF PREOPERATIVE CORNEAL ASTIGMATISM TO SURGICALLY INDUCED ASTIGMATISM AFTER CATARACT SURGERY

BY *John C. Merriam, MD*, *Lei Zheng* (BY INVITATION), *Joanna Merriam* (BY INVITATION), AND *Marco Zaider* (BY INVITATION)

Purpose: To evaluate the long-term effect of preoperative corneal astigmatism on surgically induced astigmatism (SIA) following five different incisions: extracapsular cataract extraction with a 12-mm incision (ECCE), 6-mm superior scleral tunnel (6Sup), 3-mm superior scleral tunnel (3Sup), 3-mm temporal scleral tunnel (3Temp), and 3-mm temporal corneal incision (3Cor).

Methods: This retrospective study includes 675 eyes with preoperative "with the rule" (WTR) or "against the rule" (ATR) astigmatism: 143 ECCE, 75 6Sup, 116 3Sup, 80 3Temp, and 261 3Cor. Each surgical group was divided into eyes with preoperative WTR and ATR astigmatism, and mean SIA for each subgroup was calculated at discrete intervals by using Jaffe's vector analysis, Naeser's polar coordinates, and axis-based methods.

Results: SIA in eyes with preoperative WTR or ATR astigmatism was indistinguishable after the superior incisions. Preoperative astigmatism had no effect on SIA after 3Temp, but SIA after 3Cor was slightly but significantly greater at some intervals in the eyes with preoperative ATR astigmatism. Fitting a linear equation to SIA after 3Cor also suggests that SIA is slightly greater in eyes with preoperative ATR astigmatism and that this effect is detectable immediately after surgery. This difference, if confirmed, is small and may not be clinically significant.

Conclusion: Preoperative corneal astigmatism does not appear to have a significant effect on SIA following five standard incisions for cataract. However, the ability to detect small differences in SIA may be limited by the precision and reliability with which astigmatism is measured.

A NEURO-OPHTHALMIC ILLUSION

BY *Brian R. Younge, MD*

Purpose: To explain the ophthalmoscopic stability of the fundus image in head tremor versus the great instability of the fundus image in nystagmus.

Methods: Observations of images seen through a strong plus lens system are seen to move opposite the direction of the lens movement. By using a diagram of head and eye movement, we demonstrate the real movement of the eye, and by means of optics we explain the apparent stability of the image. The opposite observations are made in a patient with nystagmus, and optics can be used to explain this as well.

Results: Optics can be used to demonstrate the phenomena of stabilized imagery during head tremor and very unstable imagery during nystagmus.

Conclusions: The stable fundus image of a patient with a head tremor is really an illusion of optics. In contrast, the exaggerated fundus movement in a patient with nystagmus is in excess of the actual movement of the fundus