EPIDEMIOLOGY

UVEITIS IN CHILDHOOD IN SÃO PAULO

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Uveitis is far less common in children than in adults.It is more serious, frequently leads to blindness and comprises 8% of all patients with uveitis, according to extrapolations from the current available literature.
Almost all forms of uveitis that occur in adults can occur in children but there are some syndromes that are more common.
The purpose of the present study is to analyse all cases of childhood uveitis seen in our region and observe its incidence clinically and epidemiologically.
We reviewed 1690 charts of uveitis patients who were examined at the Escola Paulista de Medicina, São Paulo,Brazil, from 1974 to 1985.From these, 194 were 16 years old or less(11.48%).They were divided into three groups according to their age:Group I 0 to 7 years old(19.59%); Group II 8 to 12 years old(35.05%) and Group III 13 to 16 years old(45.36%).We classified the uveitis cases according to predominant site of inflammation into Anterior(19.58%),Intermediate(4.13%) ,Posterior(46.39%) and Diffuse(27.31%).They were divided into Acute(22.16%), Chronic(62.37%), Recurrent(12.89%), and into Granulomatous(64.94%) and Non Granulomatous(30.92%) according to their clinical aspect.The patients were divided into two ethnic groups:White(72.68%) and Non White(27.32%).The sex distribution was the following :Male(48.45%) and Female(51.55%)
The more common uveitis observed was Granulomatous,Posterior, Chronic, in White Girls from 13 to 16 years of age.The more common diagnosis were Toxoplasmosis(31.44%),Intermediate Uveitis(2.57%), Tuberculosis(2.06%) and Juvenile Rheumatoid Arthritis(1.54%).

PREVALENCE OF UVEITIS IN A MIDWEST UNITED STATES REFERRAL HOSPITAL FROM 1972-1987: DIFFERENTIAL DIAGNOSES OF 1577 CASES

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All charts from patients seen in the veitis Clinic at the University of Illinois Eye and Ear Infirmary from 1972 to 1987 were reviewed for diagnosis and for demographic characteristics (age, sex, race). Of the 1795 patients seen, 88% were confirmed to have uveitis. Patients range in age from 2 to 83 years, with a median of about 37 years. The racial composition of the population is about 59% white, non-hispanic, 30% black, 6% hispanic, and 5% other. Approximately 60% of the population is female.

Preliminary analysis of the data revealed that 53% of all patients had anterior uveitis, 23% had predominantly posterior uveitis, 8% had intermediate uveitis, and 17% had panuveitis. Of those with anterior disease, 57% were found to be idiopathic, compared to 3% of those with posterior uveitis and 18% of those with panuveitis. The most common single diagnosis of those with anterior uveitis was Fuch's heterochromic iridocyclitis (11%), and HLA-B27-positive iridocyclitis (8%). The most frequent cause of posterior uveitis was toxoplasma retinochoroiditis (47%). Of those with diagnosed panuveitis, 42% had sarcoidosis, 16% had Vogt-Koyanagi-Harada disease, and 9% had sympathetic ophthalmia. These diagnoses are similar to other published reports from London, Iowa and Minnesota, but differ from a recent report from the University of Southern California.

We will also report on the diagnostic and demographic trends seen over the 16-year period that the patients were first seen in the Uveitis Clinic.

DIAGNOSIS OF UVEITIS: A RETROSPECTIVE STUDY

By C.E.HIRATA, J.H.YAMAMOTO, S.H.C.WARREN, C.M. CAMPAGNE, I.A.GARCIA, M.J.HASHIMOTO, V.R.CASTANHEIRA, E.OLIVALVES AND J.A.F.CALDEIRA.

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1043 cases of uveitis were seen at the Uveitis Service, Division of Ophthalmology, between January 1973 and September 1987, and their records were reviewed.

According to the anatomic classification of uveitis, there were 262 cases (25.12%) of anterior uveitis, 59 cases (5.66%) of intermediate uveitis, 640 cases (61.36%) of posterior uveitis and 82 cases (7.86%) of diffuse uveitis.

Considering the etiological diagnosis, the main causes of anterior uveitis were: tuberculosis (6.87%), rheumatoid disease (4.20%), ankylosing spondilitis (4,20%), herpes simplex (4.20%), Fuchs' heterochromic iridocyclitis (2.67%) and others (7.27%). In 70.61% the etiology was undetermined.

In only two cases (3.38%) of intermediate uveitis the etiological diagnosis was established (one had tuberculosis and the other one syphilis).

The main causes of posterior uveitis were: toxoplasmosis (52.19%), tuberculosis (8.28%), syphilis (2.03%) and others (1.40%). In 36.09% the etiology was not established.

The main causes of diffuse uveitis were: Vogt-Koyanagi-Harada syndrome (32.93%), Behçet's disease (28.05%), sympathetic ophthalmia (8.54%), tuberculosis (7.32%), sarcoidosis (6.10%) and syphilis (1.22%). In 15.85% the etiology was not determined.

Among 1043 patients, in 46.60% it was impossible to ascertain a diagnosis.

ENDOGENOUS UVEITIS IN CHINA

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In May 1983, the Uveitis Service was established at Hunan Medical College in the Department of Ophthalmology

of the Second Affiliated Hospital. A specific study was instituted and separated uveitis patient records were kept. Under the cooperative study with Dr.Abrahams, the Chairman of the Uveitis Service of Yale University School of Medicine, 212 consecutive patients included in the clinical uveitis were studied during the past four years. This report revealed a more representative picture of the types and their relative incidence of uveitis in Hunan province in Southern China.

Clinical Diagnosis in 212 Patients With Uveitis

DIAGNOSIS	No.(%) of Patients
Pars Planitis	61 (28.8)
Vogt-Koyanagi-Harada syndrome	44 (20.8)
Herpes Keratouveitis	12 (5.7)
Behçet's syndrome	8 (3.8)
Toxoplasmosis	4 (1.9)
Acute Retinal Necrosis	3 (>1)
Pan Uveitis	
Disseminated	15 (7.1)
Vasculitis	2 (<1)
Posterior Uveitis	
Disseminated	9 (4.3)
Vasculitis	1 (<1)
Focal	12 (5.7)
Acute Anterior Uveitis	
Non-granulomatous	21 (9.9)
Granulomatous	8 (3.8)
Sympathetic Ophthalmia	4 (1.9)
Parasite	6 (2.8)
Fungus	1 (<1)
Episcleritis	1 (<1)
Retinal Detachment, idiopathic	1 (<1)

Uveitis in China differs form the pattern in the West. Due to geographic environmental factors and common gene pool, the Chinese are probably different form the Westerners.

RELATIONSHIP BETWEEN UVEITIS AND SYSTEMIC DISEASE IN TURKEY

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The etiology of uveitis was investigated in 64 patients who came to the Ondokuz Mayis University Medical Center in Samsun, Turkey between the years 1980 and 1983. 44 (68.75%) patients were males and 20 (31.25%) were females. 47 out of 64 cases revealed anterior uveitis, 12 cases had posterior uveitis and 5 had combined inflammation both in anterior and posterior segments. Clinical, radiological and laboratory studies could not be completed in 26 (40.7%) patients because of their refusal of further investigation.

The most commonly encountered systemic condition associated with uveitis was Behcet's disease in 18 patients (28.1%), followed by parasitic infestation which was seen in 3 patients (4.7%). Other systemic diseases encountered in this series included juvenile rheumatoid arthritis, tuberculosis, toxoplasmosis and urinary tract infection in 2 patients each. In addition, one case of rheumatoid arthritis and one case of akylosing spondylitis associated with uveitis were seen. In 7 (11%) patients the uveitis was present without a systemic etiology.

EXPERIMENTAL UVEITIS

INDUCTION OF EXPERIMENTAL AUTOIMMUNE UVEORETINITIS BY SYNTHETIC PEPTIDES DERIVED FROM INTERPHOTORECEPTOR RETINOID-BINDING PROTEIN. By

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Interphotoreceptor retinoid-binding protein (IRBP) is a 140 kDa glycoprotein which localizes specifically in the retina and pineal gland. When injected to various animals, IRBP induces experimental autoimmune uveoretinitis (EAU) and pinealitis (EAP). We have identified in an ealier study three cyanogen bromide cleavage fragments with uveitogenic capacity. These fragments were localized to segments of IRBP with known amino acid sequence. In order to identify the epitope(s) responsible for the immunopathogenic capacity of IRBP, ten peptides were synthesized from the sequenced segment and tested in rats for their capacity to induce EAU and EAP and to provoke immune responses. Two synthetic peptides, designated R4 and R9, were found to reproducibly induce EAU and EAP in immunized Lewis rats. The disease induced by the peptides differed from that induced by the whole protein by being less severe and less acute. No disease was induced by the other tested peptides. However, three non-immunopathogenic peptides were found to resemble R4 and R9 in their capaclty to provoke considerable specific cellular immune responses, measured by the lymphocyte proliferation assay. On the other hand, only rats immunized with R3 showed high levels of antibody production, measured by ELISA; very low or no responses were detected in rats immunized with the other nine peptides. EAU and EAP were adoptively transferred into naive recipient rats by lymphocytes sensitized with R4. This finding indicates that cellular immunity plays the major role in the etiology of R4-induced disease.

NON MHC-RESTRICTED CYTOTOXICITY STIMULATED IN MONKEYS IMMUNIZED WITH S-ANTIGEN. BY

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The cellular mechanism which brings about the damage in eyes affected by uveitic processes has not been completely defined. Non MHC-restricted cytotoxiciity has been implicated in the Injurious mechanism of other immunopathogenic processes (e.g.,the GVH reaction). This study was aimed at monitoring the development of non MHC-restricted cytotoxicity in monkeys in which uveitis(EAU) is induced by immunization with S-Antigen (S-Ag). The cytotoxicity was measured using human cell lines as target (K-562, Daudi and a melanoma-derived line).

Monkeys injected with S-Ag in adjuvant, along with B.pertussis bacteria, exhibited a remarkable increase in the cytotoxic activity of their blood lymphocytes against the three target cell lines. This increase was noted as soon as 5 days after injection and was accompanied by lymphocytosis.The cytotoxic

activity of blood lymphocytes from the immunized monkeys increased profoundly following incubation with S-Ag, PPD,or recombinant interleukin 2. A correlation was found between the increase in cytotoxicity and the level of lymphocyte proliferation stimulated by these agents. These cytotoxic activities are assumed to be related to the lymphokine activated killing (LAK) mechanism. It is conceivable that lymphocytes with such activity play a certain role in the pathogenesis of EAU in these animals.

RESPONSE OF GUINEA PIGS TO SYNTHETIC PEPTIDE-M OF UVEITOGENIC RETINAL S-ANTIGEN: IMMUNOGENICITY AND UVEITOGENICITY BY C.M.Kalsow and L.A.Donoso, University of Rochester, Rocheseter, NY, and Wills Eye Hospital, Philadelphia, PA, USA.

S-antigen can induce an experimental autoimmune uveoretinitis and pinealitis in laboratory animals. Synthetic peptide-M corresponding to amino acids 303 to 320 of bovine S-antigen can induced an experimental autoimmune uveoretinitis and pinealitis in Lewis rats. We have examined the immunogenicity and uveitogenicity of peptide-M in guinea pigs.

Female Harley guinea pigs were given single footpad injections of 50 ug of peptide-M in complete Freund's adjuvant. By 21 days postinjection these guinea pigs showed minimal clinical or histological signs of uveitis or pinealitis. They had skin test reactivity to peptide-M but not to S-antigen, and had immunofluorescent antibody reactivity to Muller cells of normal retina. In contrast, guinea pigs given 50 ug of S-antigen in adjuvant responded as prevously described with severe experimental autoimmune uveoretinitis and pinealitis, as well as, skin test reactivity to S-antigen and immunfluorescent antibody reactivity to photoreceptor cells of normal retina.

These results suggest that the peptide-M amino acid sequence is present both in bovine S-antigen of photoreceptor cells and in a molecule of the Muller cells. This amino acid sequence may be held in different tertiary structures in these two molecules, or it may be accessible at the surface of the molecule in the Muller cell but not in the molecule in the photoreceptor cell. These results are consistent with previous obervations in human and animal uveitides and would suggest a role for Muller cells in autoimmune uveitides. (This reasearch was supported by grants from the National Eye Institute EY06866 and EY05095.)

PHYSIOPATHOLOGIC MECHANISMS IN ENDOTOXIN-INDUCED UVEITIS BY C.P. HERBORT, A. OKUMURA AND M. MOCHIZUKI, University of Tokyo School of Medicine, Department of Opthalmology, TOKYO, JAPAN.

Endotoxin-Induced Uveitis (EIU), has been proposed as a possible animal model which might lead to better understanding of certain forms of human endogenous uveitis.In this perspective we explored EIU in rats by correlating anterior segment inflammatory response, aqueous arachidonic acid metabolites and immunohistochemical analysis of ciliary body.EIU was induced by footpad-injection of Salmonella endotoxin(100 μg/rat).Ocular inflammation was evaluated 1,6,18,24, and 72 hours post-injection, by measuring aqueous protein content,aqueous inflammatory cell content and pupillary size. At the same time-intervals, class 2 major histocompatibility complex antigen (Ia-Ag) and presence of γ-interferon in ciliary body were assessed by immunohistochemistry. Prostaglandins E2 & F2α(PGE2 & PGF2α), leukotriene B4 (LTB4), thromboxane B2(TXB2) and substance P were measured in aqueous humor concomittantly. Inflammation peaked at 18 hours post-injection. PGF2α was never significantly elevated over control values and does not seem to play a role in EIU. All other mediators were already elevated after 6 hours, TXB2 being the first detected mediator at 1 hour. PGE2 peak occured at 18 hours and paralleled protein concentration in aqueous. LTB4 and Substance P were respectively associated with PMN-accumulation in anterior chamber and with pupillary constriction. Ia-Ag-expression was first detected 6 hours post-injection in a few vessels of the ciliary body stroma but was strongly expressed in the epithelium after 18 hours. At no time could any γ-interferon be detected by our method. In conclusion, TXB2 was an early mediator in this model; PGE2 was related to Blood-ocular-barrier(BOB) disruption;LTB4 seemed to be the chemotactant for PMNs and substance P the main miotic agent. Ia expression in ciliary body epithelium seemed to be a secondary phenomenon, reflecting morphological changes which might account for loss of BOB; it might furthermore explain the elective ocular location of this inflammatory process. Ia expression did not seem to be mediated by γ-interferon.

LOCAL ANTIBODY PRODUCTION IN THE EYE

BY A.KIJLSTRA*, L.LUYENDIJK*, O.H.E.VISSER**, J.C.M.v.d.VOET*, A.ROTHOVA*, S.G.BAARSMA***, M.E.H.M.FORTUIN*, C.M.C.SCHWEITZER**, P.M.E.WERTHEIM*** and W.E.v.EDEN*

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Difficulties are often encountered in diagnosing certain infectious uveitis entities. Assessment of local antibody production against suspected microorganisms by means of paired aqueous and serum analysis has already proven helpful in confirming the diagnosis of ocular toxoplasmosis. We have recently expanded these tests and have evidence that these tests are very useful in diagnosing AIDS patients with a suspected CMV retinitis. The availability of a purified and well characterised m.tuberculosis antigen now also enables the analysis of local antibody production against this bacterium in suspected tuberculoid uveitis. The performance of these tests has markedly improved in the last years due to an increase in the sensitivity and reliability of the assays used. Until recently local antibody synthesis was calculated by determining the Goldman-Wittmer coefficient. Based on theoretical reasoning and on experimental studies in rabbits with uveitis it appears that this calculation, although practical in certain clinical cases, is not alwasys valid. The animal experiments showed that the uveitis induces a local immunoglobulin production, whereby only less than 10% of the produced antibodies is directed against the inciting antigen. These findings indicate that correction for leakage of the uveal aqueous barrier should not be performed by total IgG messurements in blood and aqueous but should incorporate an uninvolved protein such as albumin.

THE EFFECT OF LIGHT ON INTRAOCULAR IMMUNE RESPONSES BY T. FERGUSON, J. HAYASHI, AND H. KAPLAN, EMORY UNIVERSITY, ATLANTA, GEORGIA, U.S.A.

Recent studies have demonstrated that various antigens (tissue allografts, viruses, tumor cells and hapten coupled spleen cells) placed in the anterior chamber of the eye evoke a unique pattern of immunological responses - namely, the induction of antigen specific suppressor T-cells for delayed type hypersensitivity (DTH) with normal antibody and cytotoxic T-cell responses. In order to better understand the regulation of intraocular inflammation we have studied the effect of injecting 2,4,6-trinitrophenol (TNP)-coupled spleen cells (TNP-Spl) into the anterior chamber. We present evidence that visible light has a direct

effect on this intraocular immune reaction. Our results show that if light is prevented from reaching the eye the suppression of DTH following the AC injection of TNP-Spl is not seen. Further, we have shown that light is responsible for establishing the milieu within the eye for the induction of Ts-cells and that this effect is not linked to maturation of the visual system but is inducible in adult animals. Evidence is presented that visible light and not ultraviolet or infrared is responsible for the observed effects. Our experiments demonstrate that light entering the eye has a direct effect on the intraocular environment such that the systemic immune response can be modulated. These studies have important implications for understanding intraocular immune responses, and possibly, the treatment and management of uveitis and other eye diseases.

ROLE OF FREE IRON AND HYDROXYL RADICALS IN EXPERIMENTAL UVEITIS

By: J.L. ROMERO, L.L. CID and N.A. RAO
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The damaging effects from release of oxygen metabolites have been documented in experimental uveitis. These metabolites include univalent and divalent products of oxygen, superoxide, hydrogen peroxide, hypochlorous acid and highly reactive hydroxyl radicals. Hydroxyl radicals are generated primarily by iron catalyzed Haber-Weiss reaction, and are believed to cause extensive tissue damage by peroxidation of lipid cell membranes. In order to determine in vivo the role of free iron in generation of hydroxyl radicals, in perpetuation of inflammation and in initiation of lipid peroxidation, we evaluated the effect of treatment with iron chelator, deferoxamine, on experimental uveitis.

Thirty-six female Lewis rats sensitized with 50 ug of S-antigen were divided into three groups. Twelve rats were treated with deferoxamine mesylate (250 mg/ml); 12 rats (controls) were treated with iron-saturated deferoxamine delivered through subcutaneous osmotic pumps; the remaining 12 animals (controls) were sham operated. All animals were killed on day 16; the eyes were enucleated and processed for morphometric analysis and to detect lipid peroxidation products in the retina. In addition, ocular tissue was processed for measurement of lipoxygenase (LO) and cyclo-oxygenase (CO) metabolic products. In vitro T-cell response, antibody production and chemotaxis of phagocytes were also determined in animals from the above three groups.

Animals treated with deferoxamine showed markedly less retinal vasculitis, perivasculitis and choroidal inflammation ($P < 0.05$). Animals in both control groups had lipid peroxidation products in the retina. There were significantly fewer such products in animals treated with deferoxamine ($P < 0.05$). All animals showed similar levels of LO and CO products in the inflamed choroid; the only exception was PGE_2, which was diminished in the deferoxamine-treated group. Similary, there was reduction in chemotaxis of leukocytes, antibody production and T-cell response in treated animals.

The above results clearly indicate that free iron accentuates the inflammatory process and enhances chemotaxis. Such a prophlogistic effect appears to be mediated by generation of hydroxyl radicals, as indicated by the excessive lipid peroxidation detected in the retina.

TISSUE NECROSIS FACTOR (TNF) AND THE EYE

By: V.G. WONG

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Effect of the immune modulator TNF is dose dependent when administered intracamerally in the eye. Acute inflammation usually develops within 24 hours after inoculation and can lead to severe necrosis and phthisis bulbi.

Initial studies indicate local and systemic TNF to have a definite inhibitory effect on transplantable adenocarcinoma in the eye.

The histopathology of TNF induced inflammation will be presented and its anti-tumor effect will be discussed.

EFFICACY OF ORAL CYCLOSPORIN A ON EXPERIMENTAL AUTOIMMUNE UVEITIS BY S.M. ROBERTSON, K.R. AOKI, L.A. SMITH, W.E. HOWE, H.M. KUNKLE, AND A.F. CLARK. ALCON LABORATORIES, INC. FORT WORTH, TEXAS. USA.

The efficacy of oral cyclosporin A (CSA) in treating experimental autoimmune uveitis (EAU) was evaluated in 14 and 28 day studies of Lewis rats injected with S-antigen (SAG). Cyclosporin A was administered daily beginning on the day of injection and usually continued throughout the study. Drug efficacy was measured by the suppression of clinical signs and symptoms using a quantitative scoring system (Invest. Ophthal. (87)28:200a). Other parameters evaluated included the serum and aqueous humor anti-SAG antibody titers, the lymph node (LN) proliferative response to SAG and mitogens, retinal histology using anti-SAG monoclonal antibodies (MAB; Invest. Ophthal. 987)28:17Ba), and the extent of polymorphonuclear cell infiltrate measured by ocular myeloperoxidase (MPO) enzyme levels. The clinical symptoms of EAU, which demonstrate the gross changes in ocular structures, peaked at 12-14 days post injection (dpi). Some retinal cellular infiltrate was evident by 6-7 dpi; by 12-14 dpi retinal structure was totally disorganized. Immunohistochemical analysis of the retinal disease progression using anti-SAG MABs indicated marked changes in retinal architecture by 7 dpi and complete loss of staining by 11 dpi. The ocular levels of MPO confirmed the histological observations. The loss of retinal architecture and the peak ocular MPO levels preceded the clinical signs of disease progression by one and two days, respectively. Oral CSA suppressed the clinical signs of EAU in a dose related manner (1-10mg/kg/day); the highest dose suppressed EAU symptoms by 99%. Serum and aqueous humor anti-SAG antibody titers were dramatically reduced in CSA treated animals as compared to the untreated controls. The proliferative response of LN cells to SAG was also greatly reduced. Histological examination of CSA treated eyes revealed normal architecture, with retinal SAG staining present. In a single study, discontinuation of CSA treatment at day 14 resulted in the rebounding of the clinical EAU signs within 7 days to a level similar to untreated controls. The serum and aqueous antibody titers and the LN response to SAG also reflected active disease. In summary, daily oral CSA treatment reduced not only the clinical symptoms and cell mediated immune response, but also the antibody response associated with experimental autoimmune uveitis.

LABORATORY

VALUE OF BIOLOGICAL TESTS IN UVEITIS : AN IUSG STUDY.

by

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In management of uveitis patients it is difficult for ophthalmologists to determine which biological tests are to be used. Then, two kinds of mistakes are often made. One of these mistakes is to ask systematically a lot of laboratory tests prior to any clinical investigation. A second mistake is to abstain from any laboratory investigation because one is convinced that such investigations are unhelpful.

Therefore it has been decided at the International Uveitis Study Group to send a questionnaire to all members of the group (in about 15 countries) in order to obtain their advice about diagnostic and/or pronostic value of certain biological tests to be used by general ophthalmologists (not specialists in uveitis) at the first examination of uveitis patients.

This study will concern (1) general laboratory tests; (2) specificity of antibodies, (3) cellular immunity; (4) HLA system and (5) analysis of aqueous humour. From the first informations obtained, there appear differences in approach of uveitis patients between the Europeans and the Americans.

HLA-A,B,C,DR,DQ FREQUENCIES IN ANTERIOR AND INTERMEDIATE UVEITIS

BY: E.AROCKER-METTINGER, W.R.MAYR, G.GRABNER and A.HAJEK-ROSENMAYR
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We have studied the frequencies of 61 human leucocyte antigens (15 HLA-A, 23 HLA-B, 8 HLA-C, 12 HLA-DR, 3 HLA-DQ) in 138 patients with anterior uveitis (AU) and 25 patients with intermediate uveitis. The AU group consisted of 45 patients that were HLA-B27 positive with acute anterior uveitis (AAU), 15 patients (HLA-B27 +) with rheumatological manifestations, 58 AAU patients, that were HLA-B27 negative, as well as 16 patients with heterochromic cyclitis Fuchs and 4 patients with juvenile rheumatoid arthritis. As a control the antigen distribution in a large adult caucasoid population was used. For statistical analysis we applied the Chi-square test and the corrected p value (p_c from the x^2-square test was multiplied with 61, the number of antigens studied). A significant increase of HLA-B27 (x^2=176.42 $p_c < 10^{-6}$ RR=11.10) was found in AU patients, due to linkage disequilibrium an increase of Cw1, Cw2 was also detected. In the intermediate uveitis group we observed an increased incidence of HLA-B17 (x^2=14.16 p_c<0,01 RR=5.20); to confirm this finding, more patients will be tested. In the other studied subgroups no statistically significant alteration in the HLA-A,B,C,DR,DQ - frequencies were noted.

CLASS II HISTOCOMPATIBILITY COMPLEX ANTIGENS ON THE RETINAL VASCULAR ENDOTHELIUM IN UVEITIS

BY Leslie S. Fujikawa, Smith-Kettlewell Eye Research Foundation, Pacific Presbyterian Medical Center, San Francisco, California, USA.

Class II histocompatibility complex antigens play a crucial role in the triggering of the immune response. For example, expression of class II molecules on the retinal vascular endothelium may allow these cells to function as antigen-presenting cells (accessory cells) to circulating T cells. Consistent with this hypothesis, we have shown previously that class II antigens are expressed on the retinal vascular endothelium during experimental autoimmune uveitis. In addition, retinal vascular endothelium express class II antigens in retinochoroidal biopsy specimens taken from uveitis patients, indicating that similar mechanisms may be important in human disease. In the present study, we evaluated the expression of class II antigens on the retinal vascular endothelium in vitro to characterize the response under controlled conditions. Retinal vascular endothelium from Lewis and Brown-Norway rats were exposed to medium containing recombinant rat gamma interferon or Concanavalin A (Con A) spleen supernatant. Peritoneal macrophages and retinal pericytes were assayed under identical conditions for comparison. Results show that retinal vascular endothelium expresses very little class II antigen under normal conditions. However, upon exposure to recombinant gamma interferon or Con A supernatant, it is induced to express very high levels of both I-A and I-E class II antigens. The levels of class II antigen expression approached that of the traditional antigen-presenting cell, the macrophage, and were much higher than levels for pericytes. These results indicate that the retinal vascular endothelium may be induced to express class II molecules at levels equal to or greater than the macrophage and that gamma interferon may induce this response. Therefore, the retinal vascular endothelium may play an active role in the generation of the local immune response in uveitis by functioning as an antigen-presenting cell in uveitis.

SERUM AUTOANTIBODIES IN UVEITIS

BY

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Sera of 124 uveitis patients were examined for various autoantibodies. The patients were divided into five groups: iritis (23), iridocyclitis (46), pars planitis (18), chorioretinitis (12) and panuveitis (25). Indirect immunofluorescence tests were performed on cryostat sections of kidney, heart, stomach, liver and thyroid tissue. ELISA was used to detect autoantibodies to cytoskeleton and basement membrane antigens (laminin, keratin, elastin, fibronectin, microsomes). In the iritis group during the acute phase, anti-sarkolemma antibodies (ASA) were found in 54% of the patients, antivascular endothelial antibodies (AEA) in 31% and sinusoid antibodies in 17% (each antibody is found in only 5% - 10% of the normal population). In the iridocyclitis group we found only 26% ASA. AEA were elevated to 50% in the chorioretinitis group. In the panuveitis group AEA were at 16%, ASA at 36%. In the pars planitis group the autoantibodies were not significantly higher than in the normal population, and in only 22% of the patients were any autoantibodies detectable. No association with cytoskeleton antibodies was found among the uveitis patients. The combination of AEA/ASA with sinusoid antibodies, most prominent in the iritis group, and the elevated AEA in the chorioretinitis group are strong indications of a virally induced immune response. Very similar profiles are known in viral diseases. The diminished autoantibody profile in pars planitis may point to an immune reaction which originates in and is limited to the eye. This supports theories which postulate that pars planitis is an autoimmune reaction to vitreous components.

CLINICAL AND IMMUNOLOGICAL FEATURES OF 150 PATIENTS WITH RETINAL VASCULITIS BY E. GRAHAM, E. KASP, M. STAMFORD, M.D. SANDERS AND D.C. CURNOW, Department of Immunology and The Medical Eye Unit, St Thomas' Hospital, United Medical & Dental Schools, London, SE1, England.

67 patients with isolated retinal vasculitis (RV) and 83 patients with retinal vasculitis in association with systemic inflammatory disease (RV+SID) (including 39 with Behcet's disease and 17 with sarcoidosis) have been studied. Statistically significant findings are that peripheral vascular sheathing is the characteristic feature of idiopathic disease, whereas retinal vein occlusion and retinal infiltrates are characteristic of Behcet's disease and periphlebitis characteristic of sarcoidosis. The most important cause of visual loss is macular oedema which occurs in all patient groups; however Behcet's disease had the worst visual prognosis and 80% of patients had vision of less than 6/18 in one or both eyes.

Retinal antibodies (by indirect immunofluorescence and PHA) and circulating immune complexes (C1q and PEG) were estimated in 142 of these patients. 58% of patients had retinal auto-antibodies and 39% had circulating immune complexes.

In RV alone severe disease was associated with presence of retinal autoantibodies. In both groups RV and RV+SID, macular oedema and vein occlusions were associated with retinal autoantibodies, particularly when circulating immune complexes were absent, in contrast, periphlebitis occurred when circulating immune complexes were raised but retinal antibodies were absent. The significance of these correlations will be discussed.

DISTINCT IMMUNOCHEMICAL LOCALIZATION PATTERNS OF CORNEAL PROTEIN IN EPITHELIAL CELLS BY A.S. KONG, W.L. HENLEY and M.H. LUNTZ Department of Ophthalmology and Pediatrics, Mount Sinai School of Medicine, CUNY and Beth Israel Medical Center, New York, U.S.A.

Serum antibodies to purified bovine corneal protein (BCP 54) has been reported in patients with anterior uveitis, ocular injuries and corneal melting disease. Although BCP 54 appears to be tissue specific, the localization of this protein in isolated cells remains unknown. In this investigition, we sought to determine the distribution of BCP 54 by indirect immunofluorescence on isolated corneal epithelial cells and also whether it can be found in other normal and tumor cells.

Primary antibodies directed against BCP 54 were raised in rabbits. No detectable BCP 54 reactivity was observed on the cell surface of bovine epithelial cells. This protein was found almost exclusively in the inner surface of the plasma membrane. Furthermore, immunofluorescence staining revealed that BCP 54 was present in only some corneal epithelial cells. Similar staining patterns of BCP 54 were demonstrated by human corneal epithelial cells. In contrast, there was no detectable BCP 54 in skin keratinocytes. Studies on other human cells showed that this protein was absent in fibroblasts, glioma cells and cells from rectal carcinoma and retinoblastoma.

The findings reported here thus provide new support for the tissue specificity of BCP 54 and that it presents as an intracellular protein in corneal epithelial cells. The localization of BCP 54 may reflect the possible role of this protein as an autoantigen in the initiation and development of immunopathological processes in uveitis and some chronic keratopathies.

METHODS TO DEMONSTRATE SPARSE MICROBIAL POPULATIONS IN INTRAOCULAR INFECTIONS

BY

K.F.MANTHEY

Univ.of Kiel, Kiel, W-Germany

Microbiological diagnosis in cases of presumed endophthalmitis or toxic-lens-syndrome is of great importance to establish effective therapy. Different methods are available, so

- Gram-staining of smears
- Agglutination
- Immunodiffusion
- Counterimmunoelectrophoresis
- Immunofluorescence
- Immunoperoxidase
- ELISA
- Radioimmunoassay

Advantages and disadvantages of these methods are discussed. Immunofluorescence seems the method of choice to demonstrate even very few microorganisms in aqueous humor or vitreous when combined with short-term culture, membrane-filtration or cytocentrifugation.

GRANULOMATOUS UVEITIS: HISTOPATHOLOGIC FEATURES IMMUNOHISTOCHEMICAL STUDY IN 15 EYES.

BY

M.N.N. BURNIER Jr., M.P. RIGUEIRO., R.A. NEVES., J. FERRAZ AND V.N. ALBERTI.

BRAZILIAN REGISTER OF OPTHALMIC PATHOLOGY
ESCOLA PAULISTA DE MEDICINA, SÃO PAULO - BRAZIL.

The relevance of the histopathologic diagnosis in the granulomatous uveitis is increased, concerning to the confirmation of the clinical findings.

We reviewed the histopathologic features of the granulomatous uveitis and performed immunohistochemical study by peroxidase antiperoxidase method for macrophages and sub-typing lymphocites in 15 eyes which diagnoses were made by routine stains.

Also, a morphologic study of the granulomatous reaction was performed.

CYTOPATHOLOGY DIAGNOSIS OF VITREOUS FLUID SPECIMENS
BY R.C.A. PLUT; P.P BONOMO AND M.N.N. BURNIER JR.

Sao Paulo - Escola Paulista de Medicina

Before the development of vitreous surgery and newer methods of processing ocular fluids the diagnosis of several pathological ocular conditions could only be made by histopathological study. With these new procedures it is possible to come to etiologic diagnosis at the beginning of the process.

The purpose of this paper is to demonstrate that cytopathologic study of vitreous fluid is now

reliable and helpful in establishing and confirming diagnosis in a variety of ocular conditions. Twenty seven vitreous fluid specimens were obtained by vitrectomy or vitreous aspiration and treated by standard methods to be analised by light microscopy.

The analysis of vitreous fluids could often give a precise diagnosis. Acute, chronic, granulomatous and nongranulomatous endophtalmitis were readly recognised. The etiological agents like fungi and parasite could be demonstrated. This procedure was useful to show atypical spindle cells characteristic of melanoma and the degenerated ghost cell glaucoma, as well as lens fragments in cases of ocular trauma.

The cytologic findings of vitreal and periretinal membranes removed from eyes with diabetic retinopathy, proliferative vitreoretinopathy and macular pucker were also identified.

Therefore, we consider this procedure to be of great help in confirming clinical diagnosis, demonstrating etiological agents and dictating the prognosis in melanoma.

COMPUTERIZED FLUOROPHOTOMETRY TECHNICAL PROBLEMS CLINICAL INTEREST IN UVEITIS

BY

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Computerized fluorophotometry using the fluorotron represents currently the best way for a quantitative evaluation of blood-ocular barriers.

This method has been developed in our department along the past years.

Many parameters are taken in account to obtain the "optimized protocol",and later on a standardized curve which allows an easy lecture of the state of the barriers in posterior vitreous, mid vitreous, anterior vitreous and anterior chamber.

In uveitis the aspect of curves of intra ocular fluorescence is quite different according to the cases. Some typical examples will be presented.

Finally Fluorophotometry allows to follow the spontaneous evolution of disease ; it also allows to quantifying the evaluation of the effect of antiflammatory drugs.

LEUKOTRIENES IN THE AQUEOUS HUMOR AND SERUM OF PATIENTS WITH UVEITIS AND OTHER NON-INFLAMMATORY OCULAR DISEASES

By M.T.Abreu, N.G. Bazan, H.E.P. Bazan, T. Guidugli and R. Belfort Jr..

Escola Paulista de Medicina - São Paulo - Brazil
Louisiania State University Eye Center - New Orleans - U.S.A.

Leukotrienes (LT) are biologically active arachidonic acid metabolites, that play an important role in inflammatory and allergic responses. Little is known about LT in the eye. Injection of LTB4 in the anterior chamber in rabbit, resulted in polymorphonuclear leukocyte recruitment in the aqueous humor. The sulfopeptide LTs, LTC4 and LTD4 cause intense miosis in cats after intracorneal injection.

In the present study, LTC4 was quantified in human aqueous humor and serum of 47 patients with different uveitis and compared with 16 patients with other non-inflammatory ocular diseases (mainly cataract) , using radioimmunoassay with a cross reactivity with LTD4 of 11,6%. Same samples were also purified by high-performance liquid chromatography. In the majority of the cases, LTC4 was also quantified in anterior chamber cells by radioimmunoassay.

In the patients with cataract there were not LTC4 detectable, except in the samples in which iris trauma was produced during paracentesis. In toxoplasmosis, anterior granulomatous and non-granulomatous uveitis the values ranged from 100-600 pg/ml of LTC4, while in some cases of Behçet the values were consistently higher.

Proteins were also measured in some of the samples.

CLINICAL ENTITIES

THE EYE AND CONNECTIVE TISSUE DISEASES BY W.V. EPSTEIN, Professor of Medicine, University of California, San Francisco, United States of America

The eye's involvement in rheumatic diseases has provided great therapeutic and diagnostic challenges. Ocular disease may be the presenting manifestation of a rheumatic disorder, may develop into the most disabling expression of the disease even when the musculoskeletal manifestations are fully developed, and may provide unique insights into the etiology and pathogenesis of the entire disease complex. The eye may be involved in forms of synovitis associated with lymphocytic infiltration, as in the Sjögren-sicca syndrome, as well as in those rheumatic conditions associated with immune complex formation such as the nodular scleritis of rheumatoid arthritis.

The eye is subject to the same forms of immunologic attack as the other target organs of the body. The eye may be irreversibly injured by such an attack. The interaction between the ophthalmologist and those treating rheumatic diseases calls for a common vocabulary and mutual appreciation of diagnostic and therapeutic problems. As the eye does not allow biopsy examination of involved tissues in most cases, so the musculoskeletal system does not afford repeated direct observation of the level of inflammation. Frequent slit lamp examination may provide a highly responsive expression of the underlying inflammatory process and, as such, can be a guide to the institution and continuation of drug therapy.

The incidence (not severity) of inflammation of ocular structures in common rheumatic diseases is shown in the following table: (see attached)

Advances in three areas of rheumatology are of particular interest to ophthalmologists:

* Diagnostic criteria for rheumatic diseases have clarified early diagnosis and therefore allow for early detection of ocular manifestations.
* Clinical and laboratory tests provide guides to the activity of the underlying disease process and thereby anticipate tissue injury as well as acting as a guide to therapy.
* New modes of therapy at both the anti-inflammatory and immunosuppressive level allow for a structured approach to treating the joint and ocular inflammatory process.

Specific cases illustrative of these advances will be presented.

TABLE 1
Incidence of Ophthalmic Manifestations of Rheumatic Diseases*

	Structure Involved							
Diagnoses	Conj.	Episclera	Sclera	Cornea	Iris	Ciliary Body	Choroid	Retina
Adult RA	0	+++	+++	+	+	+	+	++
Juvenile RA	0	0	0	+++	+++	+++	+	+
Sjögren's syndrome	++++	0	0	++++	0	0	0	0
Ankylosing spondylitis	0	0	0	0	++++	++	0	0
Reiter's syndrome	++++	0	0	0	++	0	0	0
Arthritis with colitis	0	0	0	++	+++	+++	0	0
SLE	++	0	0	0	0	0	0	++++
Giant cell arteritis	+	+	++	0	0	0	0	+++
Behçet's syndrome	0	+	+	0	++++	+++	0	++++
Periarteritis	++	+++	+++	++	+	+	+	+++
Wegener's granulomatosis	0	0	+++	++	0	0	0	++
Polychondritis	++	++++	++	+	+++	0	0	++

(Scale 0 - ++++ refers to incidence, not severity.)

JUVENILE ANKYLOSING SPONDYLITIS - A STUDY OF 12 PATIENTS BY M. A. P. CARVALHO, F. ORÉFICE and R. P. DAMASCENO G. X. Fº. Uveitis Service of the School of Medicine of the Federal University of Minas Gerais State and of the Rheumatology Service of the School of Medicine of the College of Medical Sciences of Minas Gerais State, Brasil.

The study consists of an analysis of carrier patients of Juvenile Ankylosing Spondylitis with regard to the clinical, ophthalmological, radiological and laboratory manifestations.

Twelve patients bearing Juvenile Ankylosing Spondilitis were observed following the New York criteria.

The patients were submitted to clinical, ophthalmological, electrocardiographical, radiological (X-ray of the Sacroillium and Thorax), laboratoty (Hemogram, RHS, HLA-B27) tests.

It was concluded that children between the ages of 8 and 16 years of age, especially of the male sex, having peripherical arthritis of the great articulations, presenting complaints of entesitis, in the presence of nongranulomatous acute anterior uveitis, rheumatoide factor and negative antinuclear antibodies and in the presence of HLA-B27, should be studied in search of Juvenile Ankylosing Spondilitis.

HLA-B27 ASSOCIATED ACUTE ANTERIOR UVEITIS

BY T.E.W.FELTKAMP, P.J.F.M.DERHAAG, A.LINSSEN and A.ROTHOVA

Department Ophthalmo-Immunology, The Netherlands Ophthalmic Research Institute, Amsterdam, The Netherlands

Half of the Dutch patients with acute anterior uveitis (AAU) are HLA-B27 positive. The frequency of B27 in the normal population is only 8%. $B27^+$ patients with AAU show in general an onset at a younger age, a more severe acute uveitis and a somewhat better ophthalmological prognosis than their $B27^-$ fellow-sufferers. Of the $B27^+$ AAU patients 50% has or will develop ankylosing spondylitis (AS). Since the clinical picture of AAU, AS, Reiter's syndrome or reactive arthritis in $B27^+$ individuals differs from the picture of $B27^-$ patients with the same diseases, the existence of a group of "B27 associated diseases" is proposed.

The prevalence of AAU in an open population is 0.2%. Of the $B27^+$ part of such a population 1% develops AAU. The prevalence, however, of $B27^+$ AAU patients among the first degree relatives of $B27^+$ AAU patients, is 10%. Other factors, therefore, probably play a role in the pathogenesis. Such factors are probably genetic and not environmental in the pathogenesis. These genetic factors are not found on the short arm of chromosome 6, neither on the tip of chromosome 14q. Subtypes of B27 have been detected, but they did not play a particular role in the pathogenesis either.

A characteristic structure of the B27 molecule represented by the amino-acid residues 67 and 70, at the innerside of the α helix of the α1 domain, is probably of pathogenetic importance. Whether particular association capacities between the α chain and β2 m play a role in the pathogenesis is a subject of further study.

FUCHS' HETEROCHROMIC IRIDOCYCLITIS IN BLACKS

BY

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Fuchs' Heterochromic Iridocyclitis (FHI) is a frequently overlooked cause of anterior uveitis. Although the etiology is unknown, recognition of FHI is important because improper diagnosis may lead to unnecessary therapy. While FHI is a well recognized entity in Caucasians, it has not been previously reported in blacks. We feel that FHI is an overlooked diagnosis in blacks, in part because of the frequent lack of obvious heterochromia. As previously reported by Kimura, FHI may be diagnosed in brown eyed individuals, even without heterochromia, by attention to the other clinical features of the syndrome. We report 13 blacks with FHI and contrast their findings with 54 whites. In our series of patients, heterochromia was present in 76% of blacks with FHI as contrasted to 92% of whites.

STUDY OF 132 CASES OF HETEROCHROMIC CYCLITIS OF FUCHS

BY H. F. SILVA, F. ORÉFICE and S. R. A. PINHEIRO from the Service of Uveitis, Federal University of Minas Gerais Medical School, Belo Horizonte, M.G. Brasil.

The study consisted of an analysis of cases of Heterochromic Cyclitis of Fuchs examined during the period from 1972-1987.

The results obtained in the study of 132 patients were as follows:

The minimum age was 11 years and the maximum age was 75 years, with an average age of 38.65 years

55 patients (41.67%) were of the male sex and 77 patients (58.33%) of the female sex.

Non granulomatous unilateral keratic precipitates were found in 102 cases (77.27%) and non granulomatous bilateral keratic precipitates were found in 28 cases (21.21%); 2 cases (1.51%) did not present keratic precipitates.

The inflammatory reaction of the anterior chamber was found unilaterally in 63 cases (47.72%) and bilaterally in 17 cases (12.88%); in 52 cases (34.39%) inflammatory reaction was not found.

Iridian heterochromia was present in 45 cases (34.09%) and was absent in 87 cases (65.90%).

Unilateral Posterior synechiae were found in 6 cases (4.55%), and bilateral posterior synechiae were found in 2 cases (1.50%). There was an absence of synechiae in 124 cases (93.93%).

The unilateral atrophy of the iris was found in 31 cases (23.49%) and the bilateral atrophy of the iris was found in 6 cases (4.55%); 95 cases (71.96%) did not present iridian atrophy.

Iridian nodules, of the Koeppe type, were unilaterally present in 14 cases (10.61%) and they were bilaterally present in 3 cases (2.27%). Nodules of the Koeppe and Busacca associate type were found unilaterally in 8 cases (6.05%) and in no cases were they found bilaterally. 107 cases (81.06%) did not present nodules.

In relation to cataracts: there were found 74 cases (56.06%) of cataract unilaterally and 19 cases (14.39%) of bilateral cataract. There were no cataracts found in 39 cases (29.55%).

In relation to glaucoma (with pressure equal or greater than 21mm Hg) 8 unilateral cases (6.30%) were found while there was 1 bilateral case (0.79%). 118 cases (92.91%) did not present glaucoma, and in 5 cases (4.95%) there was no registration.

The anterior vitreous body was studied in 130 cases (2 cases without registration) presenting the following results:

Cells found unilaterally in 8 cases (6.15%) and bilaterally in 6 cases (4.62%).

In the association of cells + opacities, there were found 23 unilateral cases (17.69%) and 3 bilateral cases (2.31%); 47 cases (36.15%) presented normal results and in 2 cases(1.51%) there were no registration.

In relation to the fundoscopy: there were studied 28 bilateral cases of Fuchs with the following results:

25 cases (89.29%) did not present retinal alterations, 2 cases(7.14%) presented unilateral scars and 1 case (3.57%) with unilateral scar and active lesion

In 101 of unilateral Fuchs, 67 cases (66.34%) were found by using normal fundoscopy; 21 cases (20.79%) presented scars in the cyclitic eye; 3 cases (2.97%) with scars and active lesion in the cyclitic eye and 1 case (0.99%) with active lesion in the cyclitic eye. In 3 cases (2.99%) normal fundoscopy was presented in the cyclitic eye and scars were seen in the contralateral eye; 5 cases (4.95%) presented scars in the cyclitic eye as well in the contralateral eye; 1 case (0.99%) bore an active lesion in the cyclitic eye and scars in the contralateral eye.

In addition to these cases, there was a case of bilateral pigmentary retinitis with unilateral Fuchs' and there were two cases in which fundoscopy was not viable.

Still within this work, 5 fragments of the iris in 5 cases of cyclitic eye were studied, and finally, an iridian angiography in a cyclitic eye was performed.

GLAUCOMATOCYCLITIC CRISIS AND SYSTEMIC DISEASE: PEPTIC ULCER, OTHER GASTROINTESTINAL DISORDERS, ALLERGY AND STRESS

David L. Knox, M.D.
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Personal experience with 32 patients seen from 1961 to 1987 was reviewed. Sixteen patients had either a firm past history or currently active peptic ulcer at the time of their ocular syndrome. Five other patients had been suspected of ulcer. Nine patients had other gastrointestinal disease such as hiatus hernia, gastritis, colitis, constipation, spastic colon or intestinal parasites (Entamoeba histolytica, Endolimax nana, Entamoeba coli, Giardia lamblia). Four other patients had either disorders such as trichomona vaginitis, bronchiectasis, recurrent urinary tract infection, secondary to urethral stenosis and two with severe stress. Thirteen patients had either family or past medical histories of major allergy (hay fever, asthma, or eczema). The author was unable to find any evidence of coincidental disease in only one patient.

Recognition of associated disorders has increased the therapeutic possibilities in these patients. Management of peptic ulcer shortened the time course or prevented recurrences in one patient followed for 25 years. Management of allergies has prevented recurrences in other patients.

GLAUCOMATOCYCLITIS CRISES. CLINICAL STUDY OF 26 CASES (28 EYES)

By: Nassim Calixto; Sebastião Cronemberger and Fernando Orefice
Serviço de Glaucoma do Hospital São Geraldo.
Universidade Federal de Minas Gerais.

We studied 28 eyes of 26 patients with GCC (Glaucomatocyclitic Crises).

The age span varied from 18 to 63 years. We had a discrete majority of male patients (58%). Two patients presented GCC in both eyes alternatively.

The mains symptons were:

1. Cloudy vision in the cyclitic eye	88.5%
2. Ocular pains	42.3%
3. Halos' vision	38.5%
4. Ocular hyperhaemia	26.9%
5. Nauseas	15.4%
6. Headache	11.5%

Six patients (23%) presented a history of emotional stroke preceding or following the attacks: in 3 patients the crises began in the morning when the patients woke up.

The authors emphasized that a good visual acuity in the cyclitic eye was found during the crises (equal or better to 20/35 in 86% of the cases).

The most important biomicroscopic findings were:

Keratic white precipitates	93%
Keratic fibrinoid network	50%
Flare in the anterior chamber	57%
Microbollous keratitis	25%
Discrete conjunctival hyperhaemia	21%

The camerular sinus was wide in the majority of the eyes (77%) with blood influx into the Schlemm's canal (59%) in the cyclitic eye. A very interesting finding was that the Po is always lower

in the cyclitic eye when not in crisis: the Po difference between the eyes in the intercrises is statistically significant.

During the crisis the Coefficient of outflow facility in the normal eye is diminished (ophthalmotonic consensual reaction?). We were unable to demonstrate by tonography a hypersecretion of the Aqueous Humor during the crisis but truly a big diminution of the outflow facility. In the intercrisis the outflow facility was bigger in the cyclitic eye in relation to the normal eye.

In all patients we had complete remission of the crises with treatment. It disappeared in the first week in 23 patients and in three patients it took 2 weeks for remission.

VISUAL PROGNOSIS OF PARS PLANITIS BY P.PIVETTI PEZZI,A.MONCADA, S.TAMBURI,S.BROCATO and M.PILERI
Istituto di Oftalmologia - Universaità "La Sapienza" di Roma Italy

The para planitis may have a aevere courae due to complicationa auch aa cystoid macular edema, cellophane macular syndrome, retinal detachment and cataract.

The Authors report the results of a retrospective atudy carried out on 58 patienta affected by para planitia, conaidering the incidence of the complicationa and evaluating their correlation with age, aeverity degree of the diaeaae and with the prescribed therapy.

The reaulta confirm that periocular repoaitory corticoateroids treatment may lead to a better visual prognoaia, having a protective role on macular area.

TUBERCULIN INQUIRY - STUDY PERFORMED ON PATIENTS ' SUFFERING FROM UVEAL, SCLEROTIC AND EPISCLERAL LE - SIONS DUE TO ENDOGENOUS CAUSES BY A. Z. CARVALHO and F. ORÉFICE. From the Service of Uveitis, Federal University of Minas Gerais, Medical School, Belo Horizonte, M.G., Brasil.

The author performed the tuberculin test (PPD' Rt 23 - 2 UT - Mantoux) on 180 patients suffering ' from uveal, sclerotic, episcleral lesions, due to ' endogenous causes, for purpose of evaluationg the hiperergy of individuals (39) suffering lesions that ' suggest tubercular etiology, against those suffering lesions other etiologies, grouped according to careful clinical evaluation. The first group showed tuberculin test results with minimum scores of 15mm ,' maximum 30mm, average 21mm, standart deviation 4mm ; the second showed results with minimum of zero, maximum 20mm, average 6mm, standart deviation 7mm. The' same test was conducted on another 180 individuals ' healthy with minimum of zero, maximum 21mm, average' 6mm, standart deviation 7mm.

Adult melanodermic individuals who reported positive contacts with tubercular patients performed ' variables that were statistically significant in results of tuberculin test.

The parameters observed in this study associa - ted with parameters recognised in literature demonstrat the clinical diagnostic methods for tubercular etiology in this country.

SARCOIDOSIS WITH NEOVASCULARIZATION OF THE RETINA AND OPTIC NERVE HEAD
BY S.KOTAKE and S.OHNO
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Sarcoidosis is a systemic disease and ocular lesions are frequently seen. Iridocyclitis is the most common ocular manifestation and other features such as retinal periphlebitis, vitreous cell infiltration and retinal exudates are found in the ocular fundus. However, neovascularization of the retina and/or optic nerve head is thought to be rare. In this paper we report six cases who showed a vitreous hemorrhage with neovascularization of the retina and/or optic nerve head. Four cases were males and two were females. All of them were young (16-22 years old). Both of their eyes had uveitis, and in 8 eyes, neovascularization of retina and/or optic nerve head were found. No cases showed avascular areas by fluorescein angiography. Systemic steroid therapy was effective in 5 cases and neovascularization disapeared.

TEAR ANGIOTENSIN CONVERTING ENZYME (ACE) LEVELS IN SARCOIDOSIS AND CHALAZION PATIENTS

BY G.L. Karcioglu*, S.A. West+, and Z.A. Karcioglu+

Departments of Medicine* and Ophthalmology+, Tulane University Medical School, New Orleans, LA, USA+

Among other biochemical abnormalities of sarcoidosis, ACE activity is frequently raised in the serum and granulomatous tissue. Although the source of elevated ACE levels in sarcoidosis is not clear, it is thought to be related to monocyte-macrophage system and abundant ACE activity has been documented within the epithelioid cells of sarcoid granulomas by immunofluorescence techniques.

This study was designed to compare the tear ACE levels in 9 sarcoidosis and 9 chalazion patients in whom the chalazion is selected as another common granulomatous lesion of the conjunctiva. The tear ACE levels from these 2 groups were compared with age and sex matched controls.

Mean tear ACE concentrations were 32.48 ± 22.74 nmole/min/mL, 13.81 ± 4.30 nmole/min/mL and 11.76 ± 3.14 nmole/min/mL in sarcoidosis, chalazion and control groups respectively. The statistical analysis revealed that tear ACE concentrations in sarcoid eyes were significantly higher than the eyes harboring chalazions. The tear ACE concentrations in the eyes with chalazions, on the other hand, were not significantly higher than the control group.

PANUVEITIS IN LYME DISEASE WITH POSITIVE LUES TEST

BY

M. ZIERHUT, J. FAILER, and I. KREISSIG

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A 64-year-old woman developed panuveitis for the first time in April, 1986. After three recurrences she was referred to us in February, 1987. Serologic titers were as follows: TPHA 1:10.240 (high positive); complement fixation reaction 1:20; FTA absorption 1:16. These results correspond to uveitis

at stage 3 of lues. Since there were no clinical signs of such an infection in the past, however, her blood serum was tested for the highly lues-specific 19S-IgM antibody and for antibodies to borreliae. While the first test was negative, the second was clearly positive (720 units, borderline titer 200 units). Finally, the Western Blot Test detected no IgM antibodies to lues and only weak reactions of IgG antibodies to 14 antigens. The immune test with borreliae antigens, on the other hand, showed IgG and IgM antibody reactions to more than 20 partial borreliae antigens, indicating an active borreliosis. A corresponding penicillin therapy was waived, since the inflammation had already been subdued with corticosteroids by the time the final results became available. Borreliae are also spirochetes and are transmitted in the Federal Republic of Germany by the endemic, widely distributed tick Ixodes ricinus. Under questioning, the patient mentioned that she had been bitten several times by ticks in the previous year. The conclusion: a test for 19S-IgM antibody and borreliae serology are called for whenever a lues infection is not clinically unequivocal. There is, after all, a crucial difference for the patient's psychic well-being, which must also be considered, between an infectious venereal disease requiring disclosure by law and a systemic anthropozoonosis.

OCULAR TOXOPLASMOSIS AND RETINOCHOROIDITIS IN EYE BANK EYES - A PATHOLOGIC STUDY.

BY M. E.W. MULLER, R. BELFORT JR., J.R.C.L. REHDER AND M. N. N. BURNIER JR.

ESCOLA PAULISTA DE MEDICINA, SAO PAULO (BRAZIL).

Previous clinical papers have estimated that up to 10% of the general population in Brazil presents with a chorioretinal lesion (Orefice F., 1986; Silveira C., 1986).

The AA studied 270 consecutive eyes from the Sao Paulo Eye Bank looking for the presence of chorioretinitis and toxoplasmic cysts in the retina.

All eyes with chorioretinal lesions were submitted to pathologic study. It was found that 18 eyes (6.7%) had retinochoroiditis. The histologic study disclosed 9 (3.3%) of them with cicatrial lesions, 8 (3.0%) with mononuclear inflammatory infiltrates and 1 (0.4%) with an acute inflammatory infiltrate.

Toxoplasmic cysts were never seen.

The role of specific and non specific mechanisms in the pathogenesis of recurrent ocular toxoplasmosis is discussed.

PECULIARITIES OF OCULAR TOXOPLASMOSIS IN RIO GRANDE DO SUL, BRAZIL

BY

J. MELAMED

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Clinical observations, serological studies, and experimental work performed during the last 10 years in R.G.do Sul, Brazil have allowed us to detect certain unusual features of ocular toxoplasmosis different from those found in other regions of the world. Epidamiologically, according to the source of the patients, the state can be divided into 3 main regions: a) Northeast Slope and Upper Uruguay, b) Middle Plateau and Central Depression, c) Plains, many more patients originating from the Slope region than from the Central Depression, and very few from the Plains. The reasons for these variables in the prevalence of the disease may be geographical and climatic as well as cultural and ethnic. However the possible presence of different strains of the parasite cannot be neglected. Another atypical fact is the large number of cases of "familial toxoplasmosis" we have found. Nine families were studied,in which several members had been affected either by active or cicatricial lesions. The possibility that many of the cases in our region may not be congenital but "late appearing acquired" ones should be taken into account. Genetic studies of the populations and families'HLA antigens may help to clarify these aspects. We have also observed that most of the lesions of retinochoroiditis begin at a small central point or area and extend concentrically, three-dimensionally to the periphery and towards the sclera, until their maximum degree is achieved. Then the healing process begins centrifugally, from the periphery towards the center, where necrosis and inflammatory phenomena are usually more intense and long-lasting. The correlation of this pathological pattern with the hetero and autoimmune phenomena which occur in this type of lesion still remains to be discovered.

NEW FINDINGS IN OCULAR TOXOPLASMOSIS

By C. SILVEIRA, R. BELFORT JR., M. BURNIER JR., R. NUSSENBLATT, M.C. MARTINS, L. JAMRA, M. RIGUEIRO, P. IMAMURA AND W. TAKAHASHI.

CLINICA SILVEIRA (EREXIM, RIO GRANDE DO SUL, BRAZIL)
ESCOLA PAULISTA DE MEDICINA (SÃO PAULO, BRAZIL)
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Familial ocular toxoplasmosis is frequent in the Southern part of Brazil where the ingestion of raw or undercooked contaminated meat is common.
Patients with acquired infections may develop ocular toxoplasmosis several months to years after a sub-clinical or mild systemic infection.
More than 40 families with multiple siblings and typical ocular toxoplasmosis are presented. In several of them the mother presented with ocular toxoplasmosis several years before marrying.
All patients have a positive serology for toxoplasmosis, a negative FTA-ABS and exclusion of other known differential diagnosis. Tipical necrotizing retinochoroiditis sometimes associated with satellite lesions are present in all cases.
Large number of Toxoplasma cysts were identified in the retina of two non-twin siblings.
Patients with Fuchs Heterochromic Cyclitis or with unilateral pseudoretinitis pigmentosa (typical visual fields and ERG) associated with ocular toxoplasmosis are also presented and may be related to secondary auto-immunity.
The possibility of acquired sub-clinical toxoplasmosis to cause late necrotizing retinochoroiditis and the role of frequent re-infections in the pathogenesis of the ocular recurrences will be discussed.

BEHAVIOR OF POSSIBLE TOXOPLASMIC CHORIORETINITIS IN MENTAL DEFICIENTS : CASE-CONTROL STUDY

BY A. R. FIGUEIREDO; F. ORÉFICE ; W. T. CAIAFFA; C. M. ANTUNES and C. CHIARI. From the Service of Uveitis , ' Federal University of Minas Gerais, Medical School, Belo Horizonte, M. G., Brasil.

The hipothesis that there exists a greater prevalence of inflamatory lesions compatible with toxoplasmosis in the population of mental deficients' as compared to the normal mental health population, and the relation that these lesions have with serology for toxoplasmosis was tested. The case-control study was used as the basis for this research.

Two groups were studied. Group I constituted 230 children - carriers of some degree of mental deficiency, and Group II constituted 173 children assumed as having normal mental health. Both groups were made up of children who frequented the state school system of Belo Horizonte, and were random samples of each population.

The average age of the children in the two groups was about 13 years old.

Healed lesions resulting from chorioretinitis were found in the two groups. They were generally less than one optic disc in diameter, and their location varied as to the quadrants but always posterior to the equator of the ocular globe: followed or not by vitreous hazzing and, or vasculites.

The presence of the chorioretinitis were significantly greater in Group I (4.8%) then in Group II (1.2%), not considering the number of lesions or if they were uni or bilateral. Another important observation was the presence of the lesions only in children who were carriers of anti-toxoplasmas antibodies, so much as in Group I as in Group II.

The behavior of the sera in the two groups of children was greatly different when submitted to Indirect Immunofluorescence for Toxoplasmosis; presenting 59.4% of positive reactions in Group I, and 29.1% of positive reactions in Group II.

The results show that the lesions are associated to a positive serology for toxoplasmosis with an odds ratio of 38.8.

AQUEOUS HUMOR ANTIBODY COEFFICIENT BY A. A. OLIVEIRA, F. ORÉFICE and E. NASCIMENTO. From the Service of Uveitis, Federal University of Minas Gerais, Medical School, Belo Horizonte, M.G., Brasil.

The authors calculated the aqueous antibody coefficiente (C) of 25 patients with active posterior uveitis, in order to confirme a clinical suspition of ocular toxoplasmosis. For this Purpose the concentration of a immunoglobulin was analysed by means of radial immunodiffusion and anti T.gondii antibodies, by means of indirect immunofluorescence reaction, in the aqueous humor and serum of these patients. The same procedure was also carried out in a group of 30 patients with any other type of uveitis.

The aqueous humor antibody coefficient (C) was calculated utilizing the following formula:

$$C = \frac{\dfrac{\text{anti-T.}\underline{\text{gondii}}\text{ titer in aqueous humor}}{\text{anti-T.}\underline{\text{gondii}}\text{ titer in the serum}}}{\dfrac{\text{concentration of immunoglobulin G in the A.H.}}{\text{concentration of immunoglobulin G in the serum}}}$$

According to DESMONTS (1966) coefficients under 2 are of no significance, the ones between 2 and 7 sugestive of toxoplasmosis and those equal or over 8 confirm the toxoplasmosis as uveitis cause.

The aqueous humor antibody coefficient was over 7 in 28% of the cases from Group I. A statistical analysis showed that the patients with the more chronic disease had higher coefficients.

When a comparison between the relative frequency of coefficients over 7 in Group I and II was carried out (Median test) it was found that they were much more common in Group I than group II. Nevertheless there was no statistical difference between the relative frequency of coefficients form 2 to 7 in the two groups. This way, in this study, these coefficients proved to be of no significance and were not considered sugestive of toxoplasmosis because all the cases from Group II could not be related to toxoplasmosis.

This study allows us to conclude that an examination of aqueous humor can be useful in diagnosing posterior uveitis specially when the disease has been present for a long time. On the other hand it does not support the opinion that coefficients between 2 and 7 should be considered sugestive of toxoplasmosis.

CLINDAMYCIN VERSUS SPIRAMYCIN IN OCULAR TOXOPLASMOSIS. A RANDOMIZED DOUBLE MASKED STUDY.
BY M. T. ABREU, M. C. MARTINS AND R. BELFORT JR.

ESCOLA PAULISTA DE MEDICINA - SAO PAULO - BRAZIL

Several therapeutic schedules have been suggested by different authors for the treatment of ocular toxoplasmosis in spite of the absence of controlled studies comparing the efficacy of the different drugs. We present here data on the initial 24 patients with ocular toxoplasmosis that have been treated with clindamycin or spiramycin for 45 days in a randomized double masked study that will include 40 patients followed for 2 years. No systemic steroid was used by any patient.

Inclusion criteria included an active (15 days or less) retinochoroidal necrotizing lesion not involving the posterior pole and sattelite to a retinochoroidal scar and the presence of anti-toxoplasma serum antibodies. Exclusion of syphilis (by FTA-ABS) and tuberculosis (by PPD and chest X-rays) in all patients. Patients were examined on days 1,7,14,21,30 and 45. Both groups were similar before treatment.

The results of the initial 24 patients studied for 45 days have shown a significantly improvement of the visual acuity ($P<0.05$) and shorter resolution time ($P<0.001$) when compared to the spiramycin group. Regarding to toxicity 3 cases of mild dyarrhea with rapid improvement ocurred in the clindamycin group. No toxicity occurred in the spiramycin group.

The original protocol as well as the results including longer follow up and larger group of patients will be presented.

OCULAR TOXOPLASMOSIS

BY ANIKI ROTHOVA on behalf of the Netherlands Uveitis Study Group. Department Ophthalmo-Immunology, The Netherlands Ophthalmic Research Institute, Amsterdam, The Netherlands

Ocular toxoplasmosis is a leading cause of posterior uveitis and in a majority of cases represents a late manifestation of congenital infection. The Netherlands Uveitis Study Group is involved in several research aspects of this disease, including diagnosis, therapy and prevention.

The evaluation of laboratory data in a large number of patients shows that the definite diagnosis of ocular toxoplasmosis or its exclusion by means of serologic investigations or cellular immune response against toxoplasma antigen is not possible.

Since the intracystic parasites are resistent to all known forms of treatment, the major aim of therapy in ocular toxoplasmosis remains to bring about rapid healing of the active retinal lesion. A multicenter study was started to compare the effect of two treatment regimes commonly used in the Netherlands. Patients were treated by either pyrimethamine or clindamycin, both in combination with sulfadiazine and systemic corticosteroids. All patients are centrally registered and their inflammatory activity and visual acuity are regularly monitored. The recurrence rate will be prospectively followed. So far 53 patients have been treated according to this protocol. No significant differences were observed between the two

therapeutic regimes, concerning reduction of inflammatory activity and time required for the complete healing of the inflammatory focus.

Long term prospective study shows that the incidence of congenital ocular toxoplasmosis is approximately 0.5% of all births in Amsterdam, which indicates a strong need for prevention. Since vaccine against toxoplasma is not available, the prevention consists mainly of the instructions of pregnant women concerning handling of raw meat, soil or vegetables, which could be infected by oocysts from cat faeces. In future, consideration also should be given to potential high risk factors in mothers for developing congenital toxoplasmosis in their offspring.

OCULAR TOXOCARIASIS: A BLINDING DISEASE BY R. VEGA, E. MAUL and I. NOEMI. Hospital Sótero del Río and Hospital Luis Calvo Mackenna, Santiago, Chile.

Ocular involvement by toxocara sp is being diagnosed with increasing frecuency. In Chile, although the conditions are given for a high prevalence of this disease, few reports have been published.

Fourteen patients with presumptive ocular toxocariasis were analysed from the epidemiological and clinical point of view. Diagnosis was made on the basis of funduscopic findings and a positive ELISA test. The mean age at diagnosis was 6 years male; female ratio of 2:1. History of contact with puppies was elicited in 100% of cases and 60% were reported as being geophagic. Only one patient had a history of visceral larva migrans. ELISA test was generally 1:16.
The original complains were strabismus 64%, leukokoria 14,3%; decreased vision 14,3% one case was discovered on routine examination.
The ophthalmological examination revealed exotropia 71,4%, leukokoria 28,6% and anterior segment inflamation 28,6%. The most frequent clinical presentation were a peripheral inflamatory mass 35,7%, macular granuloma 28,6% and diffuse nematods endophthalmitis 21,4%.
Rare presentations were optic nerve granuloma 7,1% and diffuse neuroretinitis and vitreitis 7,1%.
Systemic and sub-tenon's corticosteroids were used in 50% of cases, being useful to control the inflamatory process; anthelmitic agents in 21,4%, with no significant effect; vitrectomy was used in one case of diffuse endophthalmitis, with pour results.
Ocular toxocariasis resulted in a blinding condition in 64,3% of the cases, in spite of treatment.
Primary health care is emphasized.

OCULAR TOXOCARIASIS

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Serological investigations for toxocara are frequently requested in patients with uveitis and are found to be positive in such numbers as to suggest that the types of uveitis that may be caused by toxocara are of a wider variety than previously appreciated. We have recently had an opportunity to study several cases of this condition, and have been able by the use of modern laboratory techniques to come closer to a proven diagnosis than previously achieved. Several case histories will be presented, the management discussed, and a practical approach to the treatment of these cases will be described. We suggest, in our presentation presentation, that the onset of this disease in the eye can take a wide variety of forms, and in addition, that the prognosis is by no means as poor as is widely believed.

ACUTE POSTERIOR MULTIFOCAL PLACOID EPITHELIOPATHY AND RETINAL VASCULITIS

By ANKA STANOJEVIČ PAOVIČ AND MIROSLAV KOCIČ

"Prof.Dr. Djordje Nešič" Eye Hospital, Belgrade

Inflammations of retinal blood vessels are a frequent ophthalmologic problem. The mechanism of the development of retinal vasculitis as a part of a systemic disease is well defined.
However, retinal vasculitis can occur as an unique manifestation. Vasculitis associated with acute posterior multifocal placoid epitheliopathy represents a special diagnostic and pathologic problem.
The paper represents results of clinical and immunological investigations of vasculitis associated with acute posterior multifocal placoid epitheliopathy of the same or the other eye. The results of immunological investigations indicate the significance of immune complexes in the retinal vasculitis pathogenesis.

MULTIFOCAL CHORIODITIS

BY

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Forty-two (2.5%) cases of Multifocal chorioditis (MC) out of 1,650 referred uveitis cases were found. Patients were classified as having MC if they had multiple (more than 7) small (less than 1/2 disc diameter) atrophic (non-pigmented or pigmented) peripheral choroidal lesions along with inflammatory cells in the anterior chamber or vitreous. Eleven patients (26%) were males and 31 (74%) were female. Twenty-two (50%) were white, 14 (33%) were black, 4 (10%) Hispanic and 3 were East Indian (7%).

Fifteen (36%) were felt to have presumed sarcoidosis. Of these 15 cases, 3 (20%) were biopsy proven, 3 (20%) had bilateral hilar adenopathy, 5 (33%) had both elevated ACE and lysozyme levels and 4 (27%) had only an elevated ACE.

Seven (17%) were felt to have possible TB with a skin slough from a PPD skin test. Possible syphilis was diagnosed in 4 patients (10%) by a positive serology and the absence of other causes.

In thirteen patients (31%) no etiology was determined. Two of these patients developed disciform keratitis and iridocyclitis (iris atrophy) consistent with herpes simplex during therapy. This is of interest in that Grutzmacher et al reported an eye wall biopsy in an MC-like patient to give cultures for Herpes Simplex type 1. They did not find viral particles on EM. E-B viral antibodies have been recently reported in MC patients.

In summary, MC is a pattern that occurs in the eye after exposure to certain stimuli. There is good epidemiologic experimental evidence that Histoplasma capsulatum can cause this pattern. When cells are present in the media, entities such as sarcoidosis, TB, syphilis and herpetic viruses should be considered as etiologies.

BIRDSHOT RETINOCHOROIDOPATHY BY

Leslie S. Fujikawa and Nicholas Grinich, Smith-Kettlewell Eye Research Foundation, Pacific Presbyterian Medical Center, San Francisco, California, USA.

Birdshot retinochoroidopathy is a bilateral posterior uveitis with the striking feature of multifocal depigmentation of the choroid and retinal pigment epithelium, the so-called "birdshot" lesions. In addition, there is retinal vasculitis with cystoid macular edema and vitritis with variable optic nerve involvement. It is thought to be

primarily an autoimmune disease with significant numbers of patients demonstrating immune reactivity to retinal antigens and a strong association with HLA-A29. A 59-year-old white female presented in 1982, who appeared as classic HLA-A29 positive birdshot retinochoroidopathy. The patient was treated with cyclosporine in 1984 with return of some visual function. Cyclosporine was discontinued after several months, and the patient subsequently noted decreased visual acuity. In 1987, she was noted to have changes in the retina suggestive of a chorioretinal dystrophy with pigment clumping, pigmentary vascular sheathing, and small bone spicules. In addition, there was worsening of color vision, progression of ring scotomas, and abnormal electrophysiologic tests. Re-treatment with cyclosporine is contemplated. The relationship between birdshot retinochoroidopathy and other inflammatory disease involving the retina and choroid, as well as the relationship between birdshot retinochoroidopathy and degenerative disease is not clear. The present case illustrates features common to retinal and choroidal inflammation, as well as features of chorioretinal dystrophy. Birdshot retinochoroidopathy may represent a bridge between these entities, and it is postulated that autoimmune mechanisms involving T cells and class II antigens may be important in this disease.

CYCLOSPORINE-A IN THE TREATMENT OF SERPIGINOUS CHOROIDITIS

BY A.G.SECCHI, M.S.TOGNON, and F.MORO
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Experimental and clinical investigations suggest that serpiginous choroiditis may be related to an inflamatory condition of the posterior ciliary vessels, with a subsequent involvement of the choriocapillaris/RPE/outer retina layers. Cyclosporine-A (Cs-A) has proven to be effective both in vasculitis and in different types of experimental and clinical uveitis.

We thought it interesting, therefore, to investigate the effect of Cs-A in the acute phase of serpiginous choroiditis.

Five patients have been treated with Cs-A (5-7 mg/Kg/ die at the beginning of treatment) for at least nine months. The results have been encouraging; the inflamatory signs of the disease cleared rapidly, and all of the ten eyes showed a significant inprovement in their visual acuity, without any relevant side effect from the therapy.

These results, together with longitudinal FAG and electrophysiologic evaluations, will be discussed, although the well known unpredictability of the disease requires a much longer follow up before stating the definite value of Cs-A in the treatment of this disease.

STUDIES ON THE "PRESUMED OCULAR HISTOPLASMOSIS SYNDROME"

BY

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We present seven cases which show the typical ophthalmoscopic findings of the "presumed ocular histoplasmosis syndrome". However, humoral antibodies could not be demonstrated. In addition, even after "boostering" skin testing results were all negative. Therefore the diagnosis of ocular histoplasmosis had to be dismissed. Testing for listeriosis, lues, leptospirosis, ornithosis, Toxocara canis, toxoplasmosis, Larva migrans and Candida albicans were negative too.

Obviously there have to be other so far unknown agents which lead to an ophthalmoscopic picture that mimics ocular histoplasmosis with its typical "punched-out lesions" and the central hemorrhagic chorioretinopathy. One of these agents may be Epstein-Barr virus, because two of our seven patients had increased antibody levels of Epstein-Barr nuclear antigen and early antigen suggestive of an active or persistent state of viral infection.

HERPES SIMPLEX UVEITIS BY C. SANTOS
University of P. R. School of Medicine

Herpes simplex uveitis can occur concurrently with corneal herpetic disease or in the absence of corneal involvement. When it occurs alone, or in the absence of corneal herpetic scarring, the diagnosis is frequently missed. Herpetic uveitis has clinical characteristics which may include centrally located keratic precipitates and increased intraocular pressure which help in the diagnosis. The course of the disease is variable and attacks may be recurrent and chronic. Effective therapy is not available and topical steroids are frequently needed to control the inflammation. Oral Acyclovir seems to have beneficial effect and decreases the amount of further loss of vision.

SIGNIFICANT QUOTIENT VALUES FOR THE DIAGNOSIS OF HERPETIC UVEITIS

BY

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Viral antibody quotient is of great use for the diagnosis of intraocular viral infection. In order to determine clinical diagnostic values for antibody quotient, the antibody titer and quotient for herpes viruses i.e. herpes simplex virus, varicella-zoster virus, cytomegalo virus, and Epstein-Barr virus in aqueous humor were compared in various herpetic uveitis (herpetic keratouveitis, herpes zoster uveitis, Kirisawa's uveitis etc.) in 31 eyes and control ocular disease without herpetic infection (senile cataract, various types of uveitis) in 230 eyes.

The results suggested that while the possibility of intraocular viral infection was extremely low in cases in which the antibody quotient was less than 1, the possibility of intraocular viral infection was also considered to be low in cases in which the antibody quotient was between 1 and 6, provided the antibody titer of aqueous humor was low. For cases with an antibody quotient of more than 6, the possibility of intraocular viral infection was considered to be extremely high, regardless of whether they were newly infected or chronic.

These results were largely identified with the antibody quotient of experimental herpetic uveitis induced by herpes simplex virus in rabbit eyes.

KIRISAWA'S UVEITIS (ARN) IN JAPAN

BY

M. USUI

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Recently Kirisawa's uveitis is largely identified with acute retinal necrosis in European and American journals from the viewpoint of clinical features and etiological studies.

Since 1971, 84 cases of Kirisawa's uveitis have been reported in Japan, and we have observed 13 cases of this uveitis. In this report, we have reviewed these cases and have compared previously reported cases with our own cases in terms of symptoms, etiological studies, prognosis, and treatment.

The results are as follows.

1. The males were 1.5 – 1.6 times more affected with the uveitis than females.
2. Average age of the patients observed was 48 years old.
3. Among previously reported cases 12 out of 84 cases had bilateral ocular involvement, and 3 out of 13 cases were BARN in our cases.
4. Frequency of uveitis onset in each month was very similar to the frequency of chichen pox in each month.
5. Etiological studies suggested that varicella-zoster virus was the most causative agent for this uveitis, but herpes simplex virus was also an etiological agent in two cases.
6. Prognosis of this uveitis is very poor, so only 25 eyes out of 112 uveitis eyes could obtain a visual acuity of more than 0.1.
7. Administration of high doses of acyclovir and/or vitrectomy were very effective in treating the uveitis in early stages.

ENDOGENOUS FACTORS IN KIRISAWA'S UVEITIS (ACUTE RETINAL NECROSIS)

BY

J. SAKAI, K. TAKAMURA, F. SEKI, T. HAMA and M. USUI

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We demonstrated that Kirisawa's uveitis (acute retinal necrosis) resulted from the ocular infection of varicella zostar virus. But the development of Kirisawa's uveitis is very rare in spite of the greater frequency of the general infections of varicella zoster virus. Therefore we hypothesized the participation of endogenous factors in this disease. From this point of view, we investigated the association of this disease with HLA types and the tuberculin-type reaction to evaluate cell-mediated immunity.

We investigated 12 cases of Kirisawa's uveitis patients in whom the ocular infection of varicella zoster virus was demonstrated by serological and immunopathological techniques.

Of the 12, 7 patients were HLA-Aw33 positive showing a significant relationship in comparison to healthy individuals ($P<0.001$, $RR=7.5$), and the same 7 patients were significantly HLA-B44 positive ($P<0.001$, $RR=10.4$). These 7 patients had simultaneously HLA-Aw33 and HLA-B44 as a haplotype with significantly increased frequency ($P<0.001$, $RR=22.2$). These results suggest that the haplotype of HLA-Aw33 and -B44 is closely associated with Kirisawa's uveitis. Five patients out of 11 showed a positive reaction to the tuberculin test, but the frequency significantly decreased compared with other types of uveitis except sarcoidosis ($P<0.001$). It is inferred that hereditary predisposition and decreased cell-mediated immunity are included in the endogenous factors of this disease.

RETINAL NECROSIS AND HERPES SIMPLEX VIRUS TYPE 2 STRAINS

BY C.M. GREMILLION, S.M. MAHJOUB, J.R. TODD, J.P. GANLEY,
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A herpes simplex-2 virus was isolated from the urine of a 31 year old black female patient with AIDS disease, recurrent genital ulcers, and bilateral acute retinal necrosis. Intracerebral mouse (Balb/c) inoculation of 1000 plaque forming units (PFU) caused animal death and retinal necrosis while sublethal injections caused retinal necrosis and panuveitis without fatal encephalitis. A second herpes simplex-2 virus isolated from an immunocompetent patient with genital lesions, inoculated intracerebrally in Balb/c mice, caused death with less than 1 PFU in the absence of ocular lesions. Our data suggests that strain differences exist for herpes simplex-2 viruses based upon preferential neural or retinal virulence, and that the herpes simplex-2 virus isolated genitally may have been the causal agent of acute retinal necrosis in that patient.

OCULAR MANIFESTATIONS OF INFECTION WITH THE HUMAN IMMUNODEFICIENCY VIRUS

BY D.A. JABS, S.K. WEST, R. FOX, C. ENGER, and B.F. POLK. Johns Hopkins, Baltimore, MD, USA.

Ocular involvement in patients with the acquired immune deficiency syndrome (AIDS) is common and consists of a noninfectious microangiopathy, opportunistic ocular infections, particularly cytomegalovirus (CMV) retinitis, and ocular Kaposi's sarcoma (KS). The most frequent ocular manifestation is the microangiopathy, which has been reported to occur in 30 - 90% of AIDS patients, and consists of cotton wool spots and occasionally intraretinal hemorrhages. We have evaluated patients at various stages of infection with the human immunodeficiency virus (HIV) for the presence of ocular manifestations. Patients with asymptomatic HIV infection and non-infected controls in high risk groups were evaluated by reading standard fundus photographs in a masked fashion. Patients with the AIDS related complex (ARC) and AIDS were evaluated by indirect ophthalmoscopy by an ophthalmologist as part of their routine medical care. The prevalence of retinopathy increased in parallel with the severity of the HIV infection. The prevalence of the non-infectious "AIDS microangiopathy" in each group is as follows:

GROUP	NUMBER (%) WITH RETINOPATHY
Noninfected high risk controls	0/818 (0%)
Asymptomatic HIV infection	3/345 (0.9%)
ARC	11/23 (48%)
AIDS	79/113 (70%)

CMV retinitis occurred in 34 (30%) of the 113 AIDS patients. These results suggest that the prevalence of microangiopathy increases in concert with increasing immunologic dysfunction in patients with HIV infection.

ISOLATION AND LOCALIZATION OF HUMAN IMMUNODEFICIENCY VIRUS IN OCULAR TISSUES

by
J.S. PEPOSE and C.A. WILEY and R.J. POMERANTZ and J.A. NELSON and P. SKOLNIK and R.Y. FOOS
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Washington, D.C., U.S.A.

Morphologic studies of the eyes of AIDS victims at autopsy have revealed ocular lesions in up to 94% of cases. The role of human immunodeficiency virus (HIV) in the pathogenesis of these lesions is unclear. We have isolated HIV, HIV and cytomegalovirus (CMV), and CMV alone from the retinas of AIDS patients with cotton wool spots and/or CMV retinopathy. HIV alone was isolated from the retinas of AIDS patients without retinal signs. Using a monoclonal antibody against an envelop glycoprotein of HIV, we have localized HIV antigens in optic nerve and nervehead, retina, choroid, iris, ciliary body, corneal

limbus and conjunctiva of paraffin embedded autopsy material using a modified avidin-biotin-immunocomplex technique. We are now utilizing other methods, such as in situ hybridization and double staining, to identify the specific cell types involved and to define the relationship of HIV to cotton-wool spots and CMV retinopathy.

UVEITIS IN ACQUIRED IMMUNODEFICIENCY SYNDROME

By MESTRE, C.J.; PUENTE, S.I.; GONZALEZ, G.C.; CAHN, P.; PEREZ, H.; MUCHINIK, G. AND PICHIO, G.

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Thirteen patients with A.I.D.S. diagnosis, in accordance with the C.D.C. (U.S.A.) criterion, were studied in our Hospital.
Seventy six per cent of them presented ocular manifestations; one with CMV retinitis clinically diagnoses, another, a 11 years male, one of three hemofilic brothers, all of them with positive HIV; is being follow up at present showing uveitis and severe retinitis in both eyes.
In this last patient serology for herpes virus was performed in the National Academy of Medicine of Bs. As., on May and Oct. 1987 with similar result of 1/80. On the other hand serology for CMV increased four times in the same period. It has to be remarqued that in the last control (Oct. 87) blood culture for Human Immunodeficiency Virus (HIV) was performed with positive result.
Because of the serology curve, we strongly suspect a CMV infection, nevertheless HIV viremia cannot be disregard in behave of the neurotropism of this virus.

FLUORESCEIN ANGIOGRAPHY IN PATIENTS AFFECTED BY AIDS AND RELATED SYNDROMES

BY P.PIVETTI PEZZI, A.MONCADA, S.TAMBURI, F. BOZZONI, M.ACCORINTI and I.MEZZAROMA
Iatituto di Oftalmologia - Università "La Sapienza" di Roma Italy

The study of ocular manifestations in patients affected by AIDS and related syndromes (ARC, LAS) may be improved by fluorescein angiography. Therefore, the Authors carried out an angiographic study of chorioretinal vessels in 24 patients affected by acquired immune deficiency syndrome, divided into three groups: 1) LAS patients (8 cases); 2) ARC patients (8 cases); 3) AIDS patients (8 cases).

In LAS or ARC patients there were no important alterations of chorioretinal circulation. Macular capillary microaneurisms were found to be the most frequent finding in patients affected by AIDS.

Relations between ophthalmoscopic, angiographic and immunologic changes are discussed.

A RETROSPECTIVE CLINICAL STUDY OF BEHÇET'S DISEASE

BY J.H.YAMAMOTO, C.E.HIRATA, S.H.C.WARREN, E.OLIVALVES, C.R.GONÇALVES AND J.A.F.CALDEIRA.

From the Division of Ophthalmology, São Paulo University School of Medicine, São Paulo , S.P., Brazil.

Twenty six patients with Behçet's disease were studied retrospectively; 49 eyes had some ocular manifestation.

The average follow-up time was 36.88 months.

Of 32 eyes (65.31%), which had an initial visual acuity of less than or equal to 0.1, 25 eyes (78.13%) did not improve visual acuity to more than 0.1. Of 17 eyes (34.69%), which had an initial visual acuity of more than 0.1, 9 eyes (52.94%) retained this level of visual acuity.

Considering patients with a follow-up shorter than 3 years, 12 eyes had an initial visual acuity of more than 0.1, among which 8 eyes (66.66%) remained at the same level of visual acuity; whereas, in those patients with a follow-up longer than 3 years, 5 eyes had an initial visual acuity of more than 0.1, among which only one (20.00%) remained at this level of visual acuity.

The use of chlorambucil did not determine a better final functional result.

CONTRIBUTION TO THE STUDY OF THE DERMATOLOGIC AND OPHTHALMOLOGIC'S MANIFESTATIONS OF BEHÇET'S SYNDROME

BY M. A. R. SCHERRER and F. ORÉFICE. From the Service of Uveitis and Service of Dermatology, Federal University of Minas Gerais, Medical School, Belo Horizonte, M.G., Brasil.

We studied sixteen patients with complete Behçet's Disease and nine patients with incomplete Behcet's Disease retrospectively. The main points of the study were the mucocutaneous and ocular involvements. Among the patients with the complete syndrome, it had found 93,7%of oral lesions, most of them were of the minor aphtous ulcer type; 87,5% of genital lesions, 50% of polimorphic cutaneous lesions , 75% of ocular lesions, most of which in both eyes and with diffuse uveal involvement; 56,2% of joint lesions; 6,25% of neuroligc lesions and 37,5% of other kinds of lesions such renal involvement, recurrent orchitis and epididymitis, fever.

Among those patients with the incomplete syndrome, all had quite typical ocular lesions that followed the pattern observed in the lesions of the complete type and oral lesions as well. None had genital or cutaneous lesions.

ANTIBODIES TO ORAL MUCOSA IN PATIENTS WITH OCULAR BEHCET'S DISEASE

BY

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A method is reported for the identification of cytoplasmic antibodies in patients with Behcet's disease and uveitis. The assay appears positive in at least 80% of patients in American population with definite or probable Behcet's disease, with a false-positive rate of 6.5% among non-Behcet's ocular inflammatory disorders with vasculitis. The clinical spectrum of Behcet's uveitis and vasculitis will be presented.

MICROBIOLOGICAL STUDIES ON BEHCET'S DISEASE

BY Y.Sasamoto, S.Ohno, S.Kotake, and K.Yoshikawa Dept. of Ophthalmology, Hokkaido University School of Medicine, Sapporo, Japan

Behcet's disease is a multisystemic disease. The etiology of Behcet's disease is still unknown. Microbiological studies on Behcet's disease have not thoroughly been performed yet.

However, fever of unknown etiology, tonsillitis, oral aphthous ulcers and dental caries are often found in patients with Behcet's disease. These symptoms suggest that bacterial infection or bacterial allergy may have some correlation with this disease. Microbiological studies therefore seem to be very important in this disease.

In the present study, we have examined the oral, pharyngeal and intestinal bacterial flora in patients with Behcet's disease. It was shown that the percentage of streptcoccus sanguis was significantly increased in oral cavity of the patients as compared to the normal controls. Serum antibody titers to Str. sanguis were also increased in patients. Str. sanguis seems to play some important role in the pathogenesis of this disease.

PLASMA EXCHANGE AND THERAPY OF BEHCETS DISEASE BY M.B. RAIZMAN and C.S. FOSTER. Immunology and Uveitis Service, Massachusetts Eye & Ear Infirmary, Harvard Medical School, Boston, USA.
Behcet's disease may be adequately controlled through a number of therapeutic strategies. However, no single therapy works universally, and in some cases, destructive disease progresses despite all interventions. We reviewed the records of 30 patients with Behcet's disease, seen over 14 years. Follow-up ranged from 2-13 years. 24 had ocular involvement, 12 had neurologic involvement, and 8 patients had both. In these 8, the ocular involvement preceded the neurologic signs; in 7 of 8, the interval between the ocular and neurologic involvement was less than one year. Neurologic, mucocutaneous, and rheumatologic manifestations were controlled in all patients. Of the 24 with ocular involvement, 10 were controlled with corticosteroids alone and 10 responded to the addition or substitution of immunomodulating agents. Four patients with severe retinitis and uveitis progressed despite all pharmacologic efforts. These 4 patients were treated with plasma exchange and all responded with a rapid decrease in ocular inflammation. Relapses ocurred in all four, 3-8 weeks following plasma exchange. Repeat plasma exchange in two patients again provided only short term control. These four each lost useful vision in one eye while the fellow eye remained quiet and functional. Our experience confirms that of others: most cases of Behcet's disease can be managed with steroids and/or immunomodulating agents including azathioprine, cyclophosphamide, chlorambucil, cyclosporine, bromocriptine, and colchicine. We found plasma exchange to be of value only transiently; in most cases its benefits do not seem to outway the risks and high cost. It may have a role early in the disease process before extensive vascular damage has occurred. Better therapy is needed for those patients with severe ocular Behcet's disease.

"IN VITRO" AND "IN VIVO" EFFECT OF COLCHICINE ON NEUTROPHIL FUNCTION OF PATIENTS WITH BEHÇET'S SYNDROME

BY M.H.A.SILVA, H.SCHAINBERG, R.BELFORT JR, J.R.C.L. REHDER and M.A.SCHEINBERG.
Escola Paulista de Medicina, Santa Casa de São Paulo and Instituto de Cancer A.V.Carvalho, São Paulo, Brasil.

Patients with Behcet's syndrome are known to have spontaneous activated neutrophils in the peripheral blood. We have reasoned that colchicine may have its beneficial effect by inhibiting neutrophil activation. Twenty two patients had their peripheral blood evaluated on three neutrophil functions (chemotaxis, adherence and lysozyme release) at different times: immediately after venous puncture; with addition of 2 ug of colchicine and after 1- week of administration of colchicine 1.5mg orally by day. Normal subjects were used as controls.

The following results were obtained:

- **Chemoctatic activity of neutrophil in Behçet's patients was reduced when compared to normal values and colchicine "in vitro" and "in vivo" produced an extra reduction.**
- **Adherence activity was markedly enhanced in Behçet's group when compared to control. Colchicine "in vitro" and "in vivo" inhibited this function.**
- **Lysozyme release was inhibited by colchicine "in vitro" and "in vivo" both in Behçet's and control groups.**

VOGT-KOYANAGI-HARADA SYNDROME

By
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The authors analized 16 patients with Vogt-Koyanagi -Harada (VKH) syndrome, 13 females and 3 males, aged 16 to 55, (median 42), with a follow-up of from 3 months to 18 years (average 60,6 months). Patients were classified (Ohno, 1977): Type I: 9 (8 with - central nervous system symptoms (and or signs), and Type II: 7 (4 with CNS symptoms (and or signs). The most frequent ocular finding was the pigmentary disturbance of the ocular fundus in 15 patients. 12 patients have serous retinal detachment. Vitreitis in 10. Edema and congestive disc in 8 . In 14 patients there was anterior pole inflammation, with cells and flare and fine keratic precipitates, 6 with iridis granulomas, posterior synechias in 8 and 6 cataracts. Ocular tension was always normal. Initial visual acuity was lower than 0.1 in 13/16. Final visual acuity more than 0.5 in 20/30 eyes, and lower than 0.1 in 12 eyes. There was diferent visual acuity in both eyes in some patients. One patient had not registered final visual acuity. The patients were treated according to two therapeutic schedules: the first one, consisted of local and systemic corticosteroids (prednisone 40mg, or more initially), and cyclophosphamide (not more than 150 mg) when there was not appropiate improvement before 30 days (our therapeutic scheme), the second one consisted of prednisone 40 mg. a day or less and local steroid treatment (this schedule was irregular in doses and duration). Of 8 cases in the first treatment group there were 13 eyes with final visual acuity over 0.5. In the second treatment group of 6 patients there was only one eye with visual acuity over 0.5, the other 11 eyes had visual acuity between 0.1 and hand movements. One patient was not oncluded in either therapeutic group.
The association of sistemic steroids and cyclophosphamide resulted in good final visual acuity.

VOGT-KOYANAGI-HARADA DISEASE: FIVE CASES OF ATYPICAL CLINICAL COURSE.

BY Y.TANOUCHI, Y.FUJITA, Y.BANDO, K.FUKUYADO AND Y.MIMURA.
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Vogt-Koyanagi-Harada disease (VKH disease), that is thought to be an autoimmune uveitis associated with melanocyte, is one of the

major uveitis in Japan. We have experienced more than 100 cases of VKH disease. In most cases the diagnosis of this disease is not so difficult. However, in some cases the clinical course is complicated and misdiagnosis is made. Five cases of atypical clinical course will be presented.

Case 1. 59-year old female
VKH disease was developed during the therapy for episcleritis due to rheumatoid arthritis.

Case 2. 34-year old male
VKH disease was developed after uveal effusion.

Case 3. 36-year old male
Behcet's disease was suspected until the fundus showed diffuse depigmentation.

Case 4. 76-year old female
Vitreous opacity, retinal detachment, cataract and uveitis were presented. The diagnosis was not decided until vitrectomy and lensectomy were done and VKH disease was confirmed on account of the fundus finding.

Case 5. 32-year old female
The diffuse depigmentation was located within the posterior pole.

A NEW OCULAR SIGN IN VOGT-KOYANAGI-HARADA SYNDROME AND SYMPATHETIC OPHTALMIA.

BY C.R. NEUFELD and T. AIHARA
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Several systemic and ocular manifestations have been reported in Vogt-Koyanagi-Harada syndrome (V.K.H.) and Sympathetic Ophtalmia (S.O.).
In the early stages of the diseases central nervous system manifestations, disacousia and difuse bilateral uveitis with serous retinal detachmment and papilitis are common.
The generally late signs often seen in these diseases are vitiligo, poliosis and alopecia. The ocular findings include cataract, glaucoma, sinecchias, peri-corneal vitiligo (described by Sugiura) and the fundoscopic changes characterized by retinal pigment migration with large hypopigmented areas alternating with pigmented stripes, resulting the so called "Sunset or glow fundus".
The authors have followed 6 VKH and 6 S.O. cases at Clinica Oftalmológica da Santa Casa de São Paulo and have noted in the late stage of the course in all of them except 1 S.O. patient, the pronounced increase of the escleral transilummination due to loss of pigment epithelium in large areas where has previously been choroiditis and serous retinal detachment. In some cases, transilummination revealed periferal dark stripes corresponding to the pigment acumulation.
This picture resembles an albinic eye in pacients with no albinism and from no european caucasian origin in whom the transilummination may be increased. This sign becomes specially important in eyes with posterior sinecchias and opaque media that prevent a detailed fundus observation.

LATE CLINICAL AND ANGIOGRAPHIC FINDINGS IN THE VOGT-KOYANAGI-HARADA SYNDROME

BY

K.H. PACKO and H.H. TESSLER

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The acute findings of Vogt-Koyanagi-Harada Syndrome (VKH) have been well described, but little attention has been paid to the late findings, aside from the "sunset glow fundus." We retrospectively reviewed 23 cases of VKH in the late stage. Ninety-one percent (91%) of patients had leopard spot pigmentation and atrophic spots. Eighty-two percent (82%) developed the classic "sunset glow." Sixty-five percent (65%) developed a curvilinear pigmented line in the macula not previously described, which we term a "scimitar sign," and correlated with poor acuity. Other findings included peripapillary disciform scars, nodular choroidal neovascularization, chorioretinal anastomosis and macular edema.

Immuno-Histochemistry of Non Treated Sympathetic Ophthalmia : Myung K. Kim[1] M.D., Rubens Belfort Jr.[1] M.D., Chi C. Chan[2] M.D., Miguel P. Burnier[1] M.D., Robert B. Nussenblatt[2] M.D. and Alan G. Palestine[2] M.D. Escola Paulista de Medicina[1]- São Paulo, SP. Brasil. National Eye Institute[2]- National Institute of Health. Bethesda, MD. USA.

The immunocompetent cells were studied by immunohistopathology in an eye enucleated from a patient with a diagnosis of Sympathetic Ophthalmia (S.O) who did not receive any kind of treatment since the onset of the disease. We observed T(Leu 4+) and B(Leu 14+) lymphocytes within the infiltration with predominance of T helper/inducer (Leu 3a+) cells. These results are similar with those observed in our previous report from eyes enucleated from patients with shorter duration of the disease in comparison with patients with long duration of the disease in which we observed a predominance of T suppressor/cytotoxic cells (Leu2a+) within the infiltration. These results suggest dynamic changes of the lymphocyte subsets in the inflammed ocular tissue and are consistent with the results obtained in the S-Ag induced uveitis model. It also suggests that the treatment in early stage of the disease does not alter the subsets of cellular infiltration but may act by affecting soluble mediators produced by these cells.

IMMUNOLOGIC ANALYSIS OF RETICULUM CELL SARCOMA

BY J. DESCHENES and D.H. CHAR. Ocular Oncology Unit, the Department of Ophthalmology, the Francis I. Proctor Foundation, University of California, San Francisco and McGill University, Montréal.

Ocular reticulum cell sarcoma is a rare lymphoma which involves the uvea, retina, vitreous, and central nervous system. Because of its rarity and diagnostic difficulties, its differentiation from uveitis is difficult and often delayed. The value of immunologic analysis in the evaluation of patients with reticulum cell sarcoma is unclear. Since these tumors may be monoclonal, some investigators have suggested that immunologic studies might improve our diagnostic analysis. We have analyzed nine cases of reticulum cell sarcoma. Vitreous aspiration for immunologic and cytologic studies was performed on all patients. Vitreous lymphocytes were labeled with monoclonal anti-T cell, anti-B cell,

anti-natural killer cell, and anti-macrophage antibodies. The analysis was performed with a fluorescence activated cell sorter (FACS IV) in two colors. Six specimens were defined as null cell lymphomas, two specimens were polyclonal, and two consisted of probable T-cell neoplasms. The origin of the cells which produce intraocular lymphoma is unclear. From our studies it appears that these cells are derived from different lymphocyte populations, often admixed with normal inflammatory cells. Flow cytometric cell analysis can not be used to routinely delineate normal from abnormal lymphocytes on the basis of normal lymphocyte antigens.

OCULAR COMPLICATIONS OF DRUG ABUSE

BY

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SCRIPPS CLINIC & RESEARCH FOUNDATION
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The confusing and vast array of systemic and ocular manifestations of occult drug abuse often culminate in devastating retinitis, endophthalmitis, or AIDs. The panorama of these increasingly frequent signs and symptoms will be presented.

OPTIC DISC NEOVASCULARIZATION AND UVEITIS BY R. VEGA and E. MAUL. Hospital Sótero del Río and Pontificia Universidad Católica de Chile, Santiago, Chile.

Optic disc neovascularisation is documented in two patients with uveitis, one presented vascular occlusion as the most prominent sign.

Case 1: A 25 years old male presented with bilateral granulomatous uveitis, severe retinal vasculitis and disc neovascularization in the right eye. In both eyes angle neovascularisation could be observed. The fluorescein angiography demonstrated extensive areas of capillary non perfusion. Systemic evaluation was negative. The patient needed immunosuppresion to control inflamation and a panphotocoagulation was performed in both eyes, with regression of neovascularization.

Case 2: A 35 years old woman presented with a unilateral granulomatous anterior uveitis associated with vitreous hemorrhage in the left eye. The examination of the contralateral eye was negative, except for two small vitreous floaters in the inferior midperiphery. Once the vitreous hemorrhage cleared an extensive peripapillar neovascular network was discovered. Macular edema and inferior snowbanking were present. Clinical signs of vasculitis were not found. The fluorescein angiography showed microcystic macular edema and a peripapillary neovascular network.
Areas of capillary non perfusion were not found. Systemic evaluation was negative.
Optic disc neovascularization often complicates severe vasculitis, in which extensive areas of capillary non perfusion are present, suggesting that the angiogenic stimulation is related to retinal ischemia. On the other side, this complication has occasionally been described in patients with chronic uveitis, in which, like in our case, no evidences of vascular occlusion have been found, demonstrating that inflamation is capable of inducing neovascularization in the abscence of circulatory occlusion.

MEDICAL TREATMENT

THE ANTIPHLOGISTIC EFFECTS OF SUPEROXIDE INHIBITORS IN UVEITIS BY G. E. Marak, Jr.

Oxygen derived free radicals are an important mechanism of tissue damage in uveitis. Anti-oxidants have been demonstrated to be effective anti-inflammatory agents. Preventing the generation of reactive oxygen metabolites is an alternative approach to inhibiting inflammation in uveitis. Many of the pharmacologic agents which interfere with the production of the superoxide radical (the principal product of the oxygen burst of stimulated phagocytes) are clinically safe medications.

The discussion will evaluate the clinical effects of selected agents that modulate superoxide production and review the pharmacologic mechanisms of their antiphlogistic activity.

BROMOCRIPTINE IN THE TREATMENT OF UVEITIS

BY

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We report on initial results in the treatment of uveitis with Bromocriptine (Parlodel®), a prolactin inhibitor. One group of seven patients (6 iritis/iridocyclitis, 1 panuveitis) was treated systemically with Bromocriptine alone, a second group of three patients with Bromocriptine in combination with Plasmapherese and Cyclosporin A. Follow-up was from 2 to 15 months in the first group and from 3 to 21 months in the second. In the first group, the dosage of Bromocriptine was gradually increased to 2x 2.5 mg; only one patient had a recurrence (in the first month). Side effects in this group (reduced blood pressure and nausea) led to termination of the therapy in three cases. In the second group (with additional Cyclosporin A and Plasmapherese), there were no recurrences. The side effects (creatinine rise, paraesthesia) were attributable to Cyclosporin A; however, the therapy had to be terminated in one case due to intense fatigue. Under the Bromocriptine therapy, it proved possible to reduce Cyclosporin A dosage by nearly 50 % in all patients without diminishing effectiveness. Creatinine levels, if elevated, dropped. Bromocriptine appears to be an effective immunosuppressant which both reduces the recurrence rate of anterior uveitis attacks and has synergistic effect in combination with Cyclosporin A, thus reducing dosage-related side effects.

OCULAR BIOAVAILABILITY OF CYCLOSPORINE FOLLOWING ORAL ADMINISTRATION

BY

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Cyclosporine (CsA) has been used in the treatment of ocular inflammatory disease (Uveitis). In order to study the ocular bioavailability of CsA following oral administration, we obtained trough aqueous and blood specimens from five patients undergoing cataract extraction. Patients were on CsA 3-5 mg/kg/d for Behcet's disease and were in a remission. CsA aqueous levels ranged between 26-67 ng/ml with a mean of 41 ng/ml. The mean CsA aqueous level was approximately one fifth the mean blood level. The ocular bioavailability of CsA in patients with Behcet's disease appears to be satisfactory for suppression of ocular inflammation following oral low dose CsA (3-5 mg/kg/d).

THE ROLE OF LOW DOSE SANDIMMUN THERAPY IN CASES OF NON INFECTIOUS POST UVEITIS

BY: A. MALATY & S.H. ASSAAD & H.S.EL MARKABY
Alexandria University / EinShams Univ.

Although previous studies have already shown the effectiveness of Sandimmun in the management of intraocular inflammations, the doses used were not without limitations. In an attempt to minimize the possible side effects of the drug, 18 patients with non-infectious post uveitis and Behcet disease were included in the study and the beneficial effect of low dose therapy of Sandimmun was evaluated.

INTRAVITREAL TREATMENT OF CYTOMEGALOVIRUS RETINITIS WITH GANCICLOVIR

BY
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Academic Medical Centre, Amsterdam, The Netherlands.

CMV-retinitis, a severe opportunistic eye infection that occurs in approximately one third of the AIDS patients, is the leading cause of visual loss in these patients. Without treatment CMV-retinitis leads to blindness from retinal atrophy within three to six months. Before Ganciclovir, no known drug was able to slow the growth of human cytomegalovirus.

At the present time, a trial is being carried out in the Department of Internal Medicine of the Amsterdam Medical Centre to test clinically the therapeutic effect of Ganciclovir; the provisional results are encouraging. When leucopenia, the most important side-effect of Ganciclovir, makes it necesaary to stop the systemic treatment, the only means to prevent the patient to become blind is to give Ganciclovir intravitreally. We use a solution of 400 µg/0,1 cc Ganciclovir on an outpatient base.

The last two years we saw 70 AIDS patients, 20 of whom were treated with Ganciclovir intravenously for a uni- or bilateral CMV-retinitis. Eight of these patients were treated intravitreally, all with good result and without complications. The Wittmer coefficient to determine the local synthesis of antibodies against CMV in the eye subsided from 9 (clinically active retinitis) to 0 (clinically completely regressed retinitis) in one patient after intravitreal treatment.

In conclusion we may say, that early detection and rapid, adequate treatment (if necessary intravitreally) of this aggressive, blinding eye infection becomes increasingly important as the lifespan of AIDS patients lengthens in the future.

TREATMENT OF UVEITIS WITH QINGKAINING, A CHINESE BLENDED MEDICINE. BY WINIFRED MAO, SHUDONG WEN, MING NI, QIANG YU, ROBERT B. NUSSENBLATT, AND CHI-CHAO CHAN. Zhongshan Ophthalmic Center, Guangzhou, China, and National Eye Institute, Bethesda, Md., U.S.A.

Qingkaining, a Chinese blended medicine, has been used to treate patients with hepatitis and respiratory infection in China. One of its pharmacological function is thought to be immunosuppression. Twenty-one patients (36 eyes) with active uveitis were treated with Qingkaining and topical corticosteriod for 22 to 60 days. Among these 21 patients, 18 of them (31 eyes) were diagnosed posterior or pan-uveitis; and 3 cases (5 eyes) were diagnosed anterior uveitis. The follow-up period lasted 9 months to 2 years. Twenty-three eyes (63.89%) had improvement in vision by more than 2 lines. Ten eyes (27.78%) had subjective improvement in vision. Three eyes (8.33%) did not have improvement in vision. Ocular examination revealed no active inflammation in 12 eyes (33.33%), mild but decreasing inflammation in 21 eyes (58.33%), and no chang in 3 eyes (8.33%). No side effect was reported. This study suggests that Qingkaining is one of the potential medication for the treatment of uveitis.

SURGERY

DIAGNOSTIC AND THERAPEUTIC VITRECTOMY IN INFLAMMED EYES BY
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Diagnostic and therapeutic vitrectomy is a useful adjunct in eyes with infectious and non-infectious uveitis. Pars plana vitrectomy using 20 gage, two handed instrumentation is the method of choice. In eyes with relatively opaque media, pre-operative standardized echography is helpful in determining entry sites for instrumentation. In phakic eyes, the anterior chamber is irrigated first with a two handed technique to remove material obscuring the visual axis. Cataractous or damaged lenses may be removed efficaciously using the pars plana approach. Pars plana vitrectomy allows safe and effective procurement of sterile undiluted vitreous and vitreous washings for the laboratory diagnosis of infectious bacterial or fungal endophthalmitis as well as intraocular malignancies. Study of inflammatory cells utilizing monoclonal antibodies and fluorescent activated cell sorting techniques is also possible on vitreous washings. In addition to classical indications for vitrectomy in eyes with endophthalmitis, vitreous specimens may be useful in the management of viral retinitis specifically acute retinal necrosis and retinitis in immunosuppressed hosts. Determination of the viral etiology is important because new antiviral drugs with differing specificities such as acyclovir and ganciclovir have been recently developed. In addition, pars plana vitrectomy allows access to the retina and relatively safe endoretinal biopsy in eyes with retinal detachment associated with intraocular infection. Finally, epiretinal membrane formation and retinal detachment which may be late sequellae of inflammation associated with posterior uveitis such as Toxocara canis infection can be dealt with using this approach. Utilization of vitrectomy techniques combined with long acting gases, endolaser and other techniques can allow visual rehabilitation of these eyes. We still prefer the external approach using a scleral flap and indirect ophthalmoscopic localization of lesions when choroidal biopsy is indicated.

VITRECTOMY IN UVEITIS. BY Y.FUJITA, Y.TANOUCHI, H.ISHIMARU, Y.BANDO AND Y.MIMURA DEPARTMENT OF OPHTHALMOLOGY, SCHOOL OF MEDICINE, THE UNIVERSITY OF TOKUSHIMA TOKUSHIMA JAPAN

Pars plana vitrectomy and lensectomy were performed on 13 eyes of 10 patients with various uveitis which did not respond to the treatment with drugs in our hospital from 1983 to 1987. The ages of the patients were from 5 to 76 years old. The cases were consisted of fungal endophthalmitis, peripheral uveitis, lens induced uveitis, Behcet's disease, Vogt-Koyanagi-Harada disease, acute necrosis syndrome and uveitis of unknown etiology. Eight eyes had vitreous opacity, two retinal detachment, two vitreous haemorrhage and one lens dislocation. After the vitrectomy visual acuity was improved in 76.9% of the eyes. Candida tropicalis was isolated from the vitreous in two cases of endophthalmitis. The diagnosis of Vogt-Koyanagi-Harada disease was confirmed from the finding of the fundus which showed depigmentation of the choroid.

Intra-ocular lens implantation in Fuchs' heterochromic cyclitis

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Since Ernst Fuchs described in 1906 the symptoms of the syndrome named after him, little has been added to our knowledge of this syndrome. The clinical picture is sufficiently known and cataract is a common complication.

According to most authors, the results of cataract extraction are favorable and few complications occur. This is contradicted by the publications of Ward and Hart (1967) and of Nord (1968), in which several complications were described, such as intra-ocular hemorrhages and, in particular, secondary glaucoma.

In 1974, Smith and O'Connor reported the results of cataract extraction in 29 patients with Fuchs' heterochromia. These results were favorable and few complications occurred. Here too, the most important complication was secondary glaucoma. However, we should remember that secondary glaucoma occurs in 10-20% of patients not operated on for cataract.

Pre- and postoperative complications of cataract extraction with implantation of an artificial lens in 15 patients with Fuchs' heterochromia are described. The results were generally favorable. In most patients a vision of ⩾ 5/10 was achieved.

FUCHS' HETEROCHROMIC IRIDOCYCLITIS IN BROWN EYES AND THEIR CATARACT SURGERIES BY
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As the reports of Fuchs' heterochromic iridocyclitis from the U.S.A. increase, iris atrophy is thought to be more important than heterochromia, especially in brown eyes. The diagnosis of this entity has been increasingly made in Japan as well.

We found 43 cases with this disease in our Uveitis Survey Clinic during past 8.5 years. We report the clinical features of our cases and the results of the cataract surgery performed on 19.

Keratic precipitates, marked iris atrophy, mild iritis without posterior synechia formation, fine dust-like opacities in the anterior vitreous and cataract were observed in most cases. Heterochromia was recognized in 10 cases (23.3%) and glaucoma was present in 5 (11.6%). Of these, 19 cases underwent Cataract extraction. Ten of the cases were performed using the intracapsular cryoextraction method and 9 were extracapsular. There was no difference between the results from two kinds of surgery methods with respect to complications, visual acuity and the sevirity of postoperative inflamation. Postoperative visual acuity was satisfactory (more than 20/40) in all the cases except for 2, in whom one had corneal opacity and the other had amblyopia due to high myopia.

INTRAOCULAR LENS IMPLANTATION FOLLOWING CATARACT EXTRACTION IN UVEITIS
BY
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Artificial intraocular lens implantationin in uveitis, though controversial, is expected to render a more physiologic visual recovery provided there are no remarkable vitreoretinal changes. We performed extracapsular cataract extraction and intraocular lens implantation in the posterior chamber in a total of 61 selected eyes afflicted with endogenous uveitis of 51 cases which included acute anterior uveitis 27 eyes of 23 cases, Fuchs' heterochromic cyclitis 12 eyes of 11 cases, Behcet's disease 6 eyes of 5 cases, Harada's disease 6 eyes of 4 cases, herpetic keratouveitis 3 eyes of 3 cases, lens-induced uveitis 2 eyes of 2 cases, sclerouveitis 2 eyes of 1 case, diabetic uveitis 2 eyes of 1 case and lepromatous uveitis 1 eye. The follow-up period

averaged 13.0+7.7 months, ranging from 3 to 38. 48 eyes(78.7%) achieved final vision of 6/15 or better. Only 4 eyes(6.6%), one in acute anterior uveitis with iridodialysis and three in Behcet's disease with preceding macular lesions or optic nerve atrophy, had visual outcome worse than 6/60. Common complications were pupillary decentration(26.2%), opacity of the posterior capsule(23.0%) and posterior synechiae(21.3%) which were amendable by keeping the pupil mobile and doing Nd-YAG laser capsulotomy in due time postoperatively. No exacerbation or increased recurrence of uveitis were noted. Implantation of intraocular lens in uveitis appears justifiable if pertinent cases, time of operation and postoperative managements are considered.

CATARACT EXTRACTION IN PATIENTS WITH CHRONIC UVEITIS POSTERIOR

BY C.J.J.Brinkman G.J.Los and A.C.Breebaart

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Cataract extraction in patients suffering from chronic uveitis has been considered by many surgeons as a hazardous procedure. An exacerbation of the underlying inflammatory process by the release of lens fragments, or the surgical intervention itself may result in disappointing results. Complications as ocular hypotony, secondary glaucoma, macular edema or macular pucker and formation of pupillary membranes were observed and considered responsible for the postoperative failure as described in many reports. We have studied the results of intracapsular and extracapsular lensextraction with or without implantation of an artificial lens in patients suffering from various types of chronic uveitis posterior. The mean follow-up period after lensextraction was 3,3 years. After operation an improvement of the visual acuity was obtained in 96% of all eyes(46) of 35 patients. No significant differences were observed in visual improvement between eyes following intracapsular lensextraction(16) and extracapsular lensextraction with(18) or without(10) artificial lens implantation. In 39% of the eyes which were operated extracapsularly, opacification of the posterior capsule developed within one year. Other complications consisted of macular edema(14%), ocular hypertension(7%) or hypotony(39%), retinal detachment (4%) and vitreous hemorrhage(11%). In the group of intracapsularly operated eyes we observed macular edema(17%), ocular hypertension(16%) or hypotony(28%), retinal detachment(6%) and vitreous hemorrhage(28%). Following extracapsular and intracapsular lensextraction, recurrences of the inflammatory process were observed respectively in 18% and 44% of the eyes in both groups. Implantation of an artificial lens did not influence the frequency of inflammation recurrences.
In conclusion: Visual improvement was obtained in 96% of the eyes of patients with chronic uveitis posterior following lensextraction. Intracapsular and extracapsular lensextraction resulted in comparable improvement of vision, although the former technique showed more recurrences of uveitis. Implantation of an artificial intraocular lens after extracapsular lensextraction did not influence the prognosis.

INTRAOCULAR LENS IN UVEITIS BY C.P.A. FERRAZ FILHO;B.C. D'AVILA;R. BELFORT JR. AND M. T. ABREU

ESCOLA PAULISTA DE MEDICINA - SAO PAULO - BRASIL

In a prospective study the authors performed extracapsular lensextraction and posterior chamber lens implantation in 19 patients(20 eyes) with the following diagnosis: Fuchs'heterochromic cyclitis (5), toxoplasmosis (5), inespecific iridocyclitis (2), Fuchs'heterochromic cyclitis associated to toxoplasmosis (3), traumatic iridocyclitis with corneal perfuration (1), zoster uveitis (1), intermediate uveitis (1 patient, both eyes) and difuse uveitis with vasculitis (1).

The follow-up period ranged from 6 to 34 months and the visual results were the following: 20/20 in 60%, 20/30 or better in 65% and 20/40 or better in 75%. The reasons for vision less than 20/20 were always related to lesions previous to surgery. There was no case of uveitis reativation. The authors concluded that intraocular lens implants are indicated in some special types of uveitis that develop cataract.

TOXOCARIASIS AND CYSTICERCOSIS OF THE EYE

By R. CORDERO-MORENO

Venezuela