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UVEITIS

The aetiology of this disease has never been satisfactorily elucidated. The application of modern laboratory methods to this problem has resulted in important advances, and we take this opportunity of reviewing these in relation to past and present concepts of the aetiology of uveitis.

Uveitis is defined as an inflammation of the uveal tract (iris, ciliary body and choroid), which is a spongy, pigmented and highly vascular tissue and the major source of the blood and nerve supply to the contents of the eyeball. The disease affects all age groups, but predominantly young adults. Because of its tendency to chronicity and recurrence there is a high morbidity, while it is responsible for about 4% of the blind population of England and Wales.[1]

The disease is not localized to the eye, but often occurs as part of a generalized disorder such as Reiter's syndrome—uveitis, arthritis, ankylosing spondylitis, and diarrhoea. Other examples are tuberculosis, sarcoid, syphilis, brucellosis and toxoplasmosis.

A popular classification is based on the tendency for the disease to remain limited to anatomical subdivisions of the uveal tract. Thus in 'anterior uveitis' the iris and ciliary body are affected and in 'posterior uveitis' the ciliary body and choroid; rarely, if the inflammatory process in either group is severe enough, the entire uveal tract is involved—pan-uveitis. This anatomical classification is not only of clinical value, but the two major groups also have different aetiologies.

The broadest division of factors causing the disease is into exogenous and endogenous causes. Exogenous causes are rare and easily recognized, e.g. secondary to trauma, especially where the globe is penetrated, or to a perforated corneal ulcer.

Most cases are due to endogenous causes, but the nature of the pathology is often in doubt. Direct investigation of the uveal tissue for the presence of organisms during the active stages of disease has shown that in posterior uveitis the organism is invariably present in the uveal tissue. However, such studies are seldom possible since it is hazardous to remove biopsy material from a functioning eye, so that an assessment of the relative incidence of various causal factors can only be gained from indirect evidence. The commonest diseases associated with posterior uveitis are toxoplasmosis and various other parasitic diseases, tuberculosis, sarcoid and syphilis—possibly in that order of frequency.

In cases with anterior uveitis, conversely, investigations of direct bacterial infection of the iris has been positive in only a few cases, the commonest organisms being streptococci and tubercle bacillus. In the remaining cases the aetiology has been obscure and has generally been considered to be due to some form of allergy, possibly to bacterial protein. In a survey of anterior uveitis from the uveitis clinic, Institute of Ophthalmology, London, published in 1961, 45% of cases were classified as idiopathic while the remaining 55% were associated with rheumatoid arthritis, particularly ankylosing spondylitis.[2] It is of interest to contrast this with the literature over the past half-century. In 1881 Michel stated that 75% of iritis was due to scrofula, rheumatism, syphilis or tuberculosis, while only 25% was idiopathic.[3] The concept of allergy was as yet unknown.

At the turn of this century the situation was even happier. It was then agreed that 85% of cases were due to syphilis and rheumatism.[4] Of the remaining idiopathic group English and American clinicians considered as many as 55% to be due to 'focal sepsis' and 4% to tuberculosis, while Continental clinicians considered 50% to be due to direct infiltration with tubercle bacilli. This difference in viewpoint was possibly the result of a higher rate of tuberculosis in Europe.

Woods has classified endogenous anterior uveitis into a 'granulomatous' and 'non-granulomatous' group.[5] Although not a generally accepted classification, especially among British ophthalmologists, it is useful since it summarizes the present state of our knowledge. There is, on the one hand, a small group of patients in whom a direct bacterial infection of the uvea can be proved—'granulomatous' uveitis. On the other hand, there is the larger number of patients in whom extensive clinical and laboratory investigations have added little to elucidate the aetiology, apart from suggesting an association with Reiter's syndrome and that allergy is an important aetiological factor—'non-granulomatous' uveitis. Woods considers that these two groups are distinct clinically, histologically and immunologically.

Clinical, experimental and immunological evidence that allergy is a major factor in the aetiology of anterior uveitis is accumulating rapidly. It has been shown that some cases of iritis are due to hypersensitivity to pollen, food, drugs and foreign protein (atopy).[6-8] Others are probably due to hypersensitivity to autologous protein, for example in endophalmitis phacoanaphylactica[9] and sympathetic ophthalmia.[10] Antibodies to lens and uveal protein have been found in the sera of patients with uveitis in a significantly higher proportion of cases and to significantly higher titres than in controls.[11] Similarly, auto-immune complement-fixing antibody has been demonstrated in a significantly higher proportion of sera from individuals with anterior uveitis when compared with controls.[12] Witmer has demonstrated the presence of antibodies to lens protein in high titre in the aqueous humour of patients with lens-induced uveitis, and, using uveal protein conjugated to fluorescein, has shown the presence of antibody fixed in the iris in a patient with sympathetic ophthalmia.[13] The results of skin tests for microbial allergy and the investigation of the antistreptolysin titre of the sera and aqueous humours of patients with anterior uveitis has been conflicting, and there is at present no clear evidence for the concept of microbial allergy as an aetiological factor.[14]

Experimentally it has been shown that the uvea can act

as the shock tissue of an allergic reaction in experimental animals,[15-17] although there is no explanation of how this occurs, and that the uvea is capable of producing antibodies locally.[12] Hypersensitivity to lens protein has been transferred from a patient with lens-induced uveitis to guinea-pigs using whole leukocytes,[18] and endophalmitis phacoanaphylactica has been experimentally reproduced in guinea-pigs by sensitizing them to their own lens protein.[11]

In summary, there is considerable evidence, which is mounting, that immunological mechanisms play an important part in the aetiology of anterior uveitis. This work, which is in progress in uveitis clinics at many major ophthalmic centres, has wide applications because the disease is not a localized disorder, but in many cases part of a generalized disease process. It is important that this should always be borne in mind while the search for the underlying pathology continues.

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INTERNASIONALE KONFERENSIE OOR DIE PORFIRIES

SPESIALE UITGAWE : *SUID-AFRIKAANSE TYDSKRIF VIR LABORATORIUM- EN KLINIEKWERK*

Die eerste Internasionale Konferensie oor die Porfiries wat in Suid-Afrika gehou is, het in Kaapstad plaasgevind in die Departement van Medisyne van 18 tot 20 September 1963. Hierdie Konferensie is ondersteun deur die Wetenskaplike en Nywerheidsnavorsingsraad.

Behalwe die welbekende Suid-Afrikaanse werkers op die gebied van die porfiries het die volgende oorsese besoekers—almal deskundiges op hierdie gebied—deelgeneem aan die Konferensie:

Prof. C. Rimington, professor van Chemiese Patologie, University of London and University College Hospital Medical School, Londen.

Dr. A. Goldberg, Senior Dosent in die Medisyne, Universiteitsdepartement van Medisyne, Gardiner Institute, Western Infirmary, Glasgow.

Dr. H. D. Barnes, Departement van Chemiese Patologie, St. Mary's Hospital, Londen.

Dr. A. M. Gajdos en mev. Gajdos-Török, Departement van Medisyne, Hôtel-Dieu, Parys, Frankryk.

Prof. R. Schmid, Departement van Medisyne, Universiteit van Chicago.

Dr. Allan G. Redeker, Mediese Skool, Universiteit van Southern California, Los Angeles.

Dr. A. Magnus, Institute of Dermatology, St. John's Hospital for Diseases of the Skin, Londen.

Dr. Birgitta Haeger-Aronsen, Departement van Kliniese Chemie, Malmö Algemene Hospitaal, Universiteit van Lund, Swede.

Die Konferensie het nie net geleentheid gegee vir werkers op hierdie gebied om voorbereide bydraes te lewer nie, maar het ook die geleentheid vir hulle verskaf om die groot aantal onopgeloste probleme op hierdie gebied te bespreek—dit was een van die grootste voordele wat uit die kongresbyeenkoms gespruit het. Die hoofdoel van die Konferensie was:

1. Om die porfiries, soos hulle in Suid-Afrika aangetref word, te bestudeer—Suid-Afrika het die twyfelagtige onderskeiding om die hoogste voorkomssyfer van porfirie in die wêreld te hê.

2. Om die navorsingswerk op hierdie gebied by die verskillende mediese skole te bespreek.

3. Om ooreenstemming te probeer vind, indien moontlik, oor die klassifikasie en benaming van die porfiries. Ander betwisbare sake is ook bespreek.

Na die kongres in Kaapstad het die oorsese besoekers die mediese skole van Stellenbosch, Durban, Johannesburg en Pretoria ook besoek.

Die verhandelinge van hierdie Internasionale Konferensie oor die Porfiries sal volledig gepubliseer word, insluitende die besprekings na elke voordrag, die gesamentlike besprekings van die Konferensie, en die aanbieding van gevalle, in 'n spesiale uitgawe van die *Suid-Afrikaanse Tydskrif vir Laboratorium- en Kliniekwerk* wat binnekort sal verskyn. Hierdie spesiale uitgawe sal geheel en al gewy word aan die publikasie van die verhandelinge van hierdie Konferensie. Dit is 'n baie spesiale onderneming, en die eerste maal dat 'n Konferensie van hierdie aard op hierdie manier in ons land gerapporteer word. Daar word verwag dat daar 'n groot aanvraag vir addisionele eksemplare van hierdie belangrike publikasie sal wees, wat bestel kan word van die Sakebestuurder, Mediese Vereniging van Suid-Afrika, Posbus 643, Kaapstad. Die prys van die spesiale uitgawe, wat ongeveer 200 bladsye sal behels, sal ongeveer R2.00 wees.