AQUEOUS HUMOR STUDIES IN UVEITIS: INVASIVE AND NONINVASIVE TECHNIQUES

Essay Submitted for the Partial Fulfillment of the Master Degree in Ophthalmology

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To my parents

Usama Rashwan

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Introduction and aim of the work

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INTRODUCTION

Uveitis is an inflammation of the uveal tract. It may be anterior uveitis (iritis or iridocyclitis), intermediate uveitis (parsplanitis or inflammation of the extreme periphery of the retina), posterior uveitis (choroiditis) or panuveitis. Clinically, it is acute, subacute or chronic. Pathologically, it is granulomatous or non-granulomatous.

Aetiologically, it is classified into:

1. Exogenous uveitis: due to microorganisms or agents from outside.
2. Endogenous uveitis: due to microorganisms or agents from inside: e.g.

[a] Associated with systemic disease: e.g. ankylosing spondylitis.

[b] Due to infection by bacteria, fungi, viruses, protozoa or parasites.

[c] Idiopathic specific uveitis: e.g., Fuch's uveitis syndrome.

[d] Idiopathic non-specific uveitis entities: which don't fall into any of the above categories. They make up about 25% of all cases of uveitis.

Diagnostic measures are mainly directed to recurrent and chronic cases and they include:

1. Medical history and physical examination: are often noncontributory. Physical examination is directed particularly to cutaneous and mucous membrane

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lesions, involvement of joints in arthritic lesions and genitourinary tract infections. In any patient with an infectious disease, the possibility of AIDS must be considered.

2. Ophthalmoscopic appearance of fundus lesions, slit lamp biomicroscopy and flourescein angiography are also useful.
3. Examination of the specimens obtained by pars plana vitrectomy.
4. Systemic investigations which include: VDRL, chest X-ray, tuberculin test, complement fixation test for toxoplasmosis, angiotensin converting enzyme and lysozyme tests for sarcoidosis, HLA-B27 testing, lumbosacral X-ray for ankylosing spondylitis,....
5. Aqueous humor analysis: it is a very valuable and direct approach for accurate diagnosis. Aqueous humor is obtained by tapping of the anterior chamber, its technique can be safe if it is done under completely aseptic conditions. A small beveled partial thickness incision in peripheral cornea is done by a razor knife and about 0.1 ml of aqueous is aspirated with 25 gauge needle attached to an insulin syringe. The samples undergo the following:

   Drops are placed on slides for Gram, Giemsa and Papanicolaou staining.

   Drops are inoculated onto blood agar, chocolate agar, liquid thioglycolate and Sabouraud's agar.

   Drops are centrifuged for cytologic and immunologic examination.

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