IMMUNOPATHOLOGICAL STUDY OF LESIONS OF URINARY BLADDER SCHISTOSOMIASIS AND ASSOCIATED CANCER BLADDER

Thesis

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By

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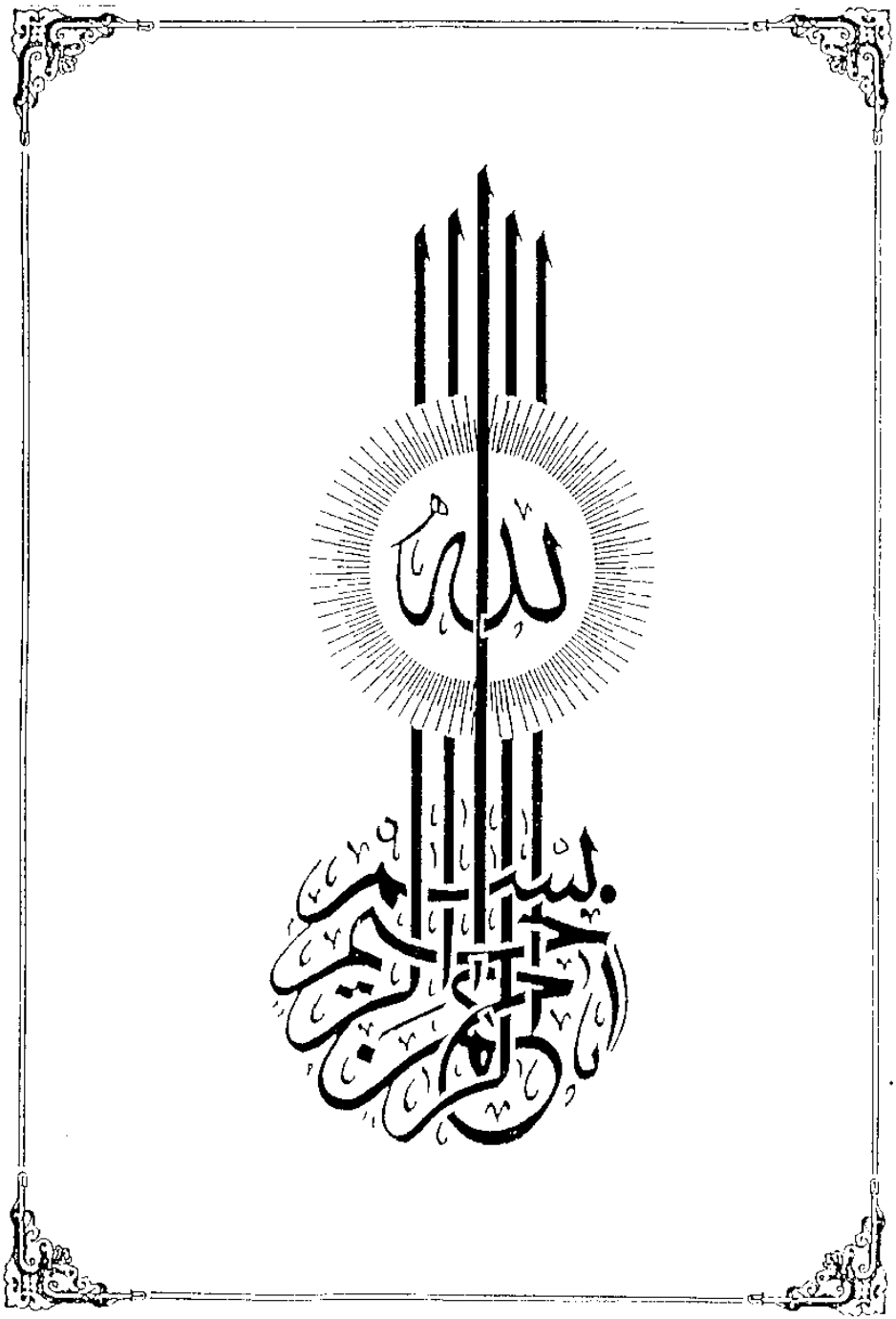
بسم الله الرحمن الرحيم

" وفوق كل ذى علم عليم "

الآيه (٧٦)
سورة يوسف



TO MY DEAREST ONE .....

MOSTAFA

MY SON, MY FATHER AND

MY ONLY WORLDLY BELONGING

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INTRODUCTION

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Schistosomiasis is a major health problem in many tropical countries. The number of infected people in these countries is expected to increase with the development of more agricultural schemes. Some individuals harbouring the infection may live in a state of natural balance with the parasite.Others may have mild symptoms resulting from brief exposure to infection or resistance having developed.On the other hand, the clinician will often come across the severe or advanced manifestations of one species of schistosoma or mixed schistosoma infections (Omer, 1978).

In infection with schistosomiasis the host is exposed to three stages of the parasite:The penetrating cercaria, the adult worm and finally the ova. The immune rsponses to these are most complex, involving different elements of cell-mediated and humoral systems, and it is only in recent years that some of these have begun to be understood (Draper, 1978).

Human schistosomiasis involves extensive interactions between various life-cycle stages of the parasites and the immunological systems of the host (Colley, 1981).

Hyperglobulinemia has been demonstrated frequently in both experimental and human schistosome infections (El-Hawary *et al.*,1971).

Immunoglobulins are suspected to play a major role in immunopathology, immunoprotection and immunodiagnosis of schistosomiasis (El-Raziky *et al.*,1974).

The existence of soluble antigens and the demonstration of corresponding antibodies with schistosomiasis suggest the formation of immune complexes. The reaction of antibody with parasite antigens may occur:

1-At the site of localization of the parasite or its product.

2-In circulating blood in the case of soluble antigens.

3-In extravascular spaces.

Immune complexes may be formed and persist in antibody excess as well as in antigen excess.(Who, 1974).

Schistosomiasis is characterized by a profound alteration of T-cell functions in the chronic phase of the disease (Pelley *et al.*,1976).

In experimental and clinical studies monocytic suppressor cells (Ottesen, 1979; Todd *et al.*,1979), serum suppressor factors (Cottrell *et al.*,1980; Ottesen and

Poindexter,1980), suppressor T-cells (Rocklin *et al.*,1981) and impaired helper cells (Colley, 1981) have been observed in chronically infected patients.

It was reported by El-Gamal and associates 1993 that excessive immune response may play a role in the pathogenesis of schistosomal lesions.

In areas where Schistosoma haematobium infection is intense, the incidence of vesical cancer is high.It is considered that the development of vesical cancer in haematobium infection is multifactorial and depends upon an intense infection with severe pathological changes associated with chemical changes in the urine and some urinary stasis in the bladder (Prates and Torres, 1965).

Most bladder cancers appears as focal or multifocal expressions of a widespread abnormality of bladder mucosa, progression of which leads to multicentricity and recurrence.Most mapping studies have indicated that in many bladder tumor cases there are widespread premalignant field changes (Soto *et al.*,1977; Murphy and Soloway, 1982).

In relation to the stromal changes associated with carcinoma of the urinary bladder, Boon and associates (1986) had found that in areas with denuded stroma oedema,

vasodilatation and leukocytic infiltrations were seen.In addition lymphoid follicles were strikingly frequent.

Ooms and collegues (1986) had concluded that stromal changes such as desmoplasia, increased collagen production, mast cells and lymphocytic infiltrations may correlate with the prognosis in bladder tumors.

Binding of human IgG by the crystallizable fragment (Fc) portion of immunoglobulin molecule was detected on established tumor cells by indirect immunofluorescence microscopy, quantitative absorption and rossete formation with the use of antibody coated erythrocytes.
Of the none lymphoid tumors tested, IgG binding was restricted to the cell membranes of certain prostate and urinary bladder tumor cells (Wright *et al.*,1987).

AIM OF THE WORK

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This work is designed to study two aspects of urinary bladder lesions:-

* The first is a pathological study of urinary bladder carcinoma whether or not associated with Schistosomiasis. This include the accompanied mucosal and stromal changes and their relation to the histologic types, gross patterns, tumor stages and nuclear grades.

* The second aspect concerns the characterization of the immunoglobulin response in urinary bladder schistosomiasis and urinary bladder carcinoma associated or not with schistosomiasis using the direct immunofluorescent reaction of IgG, IgM and IgA.

REVIEW OF LITERATURE