"EXTERNAL IRRADIATION IN URINARY BLADDER CARCINOMA IN THE EGYPTIAN PATIENTS"

THESIS

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BY

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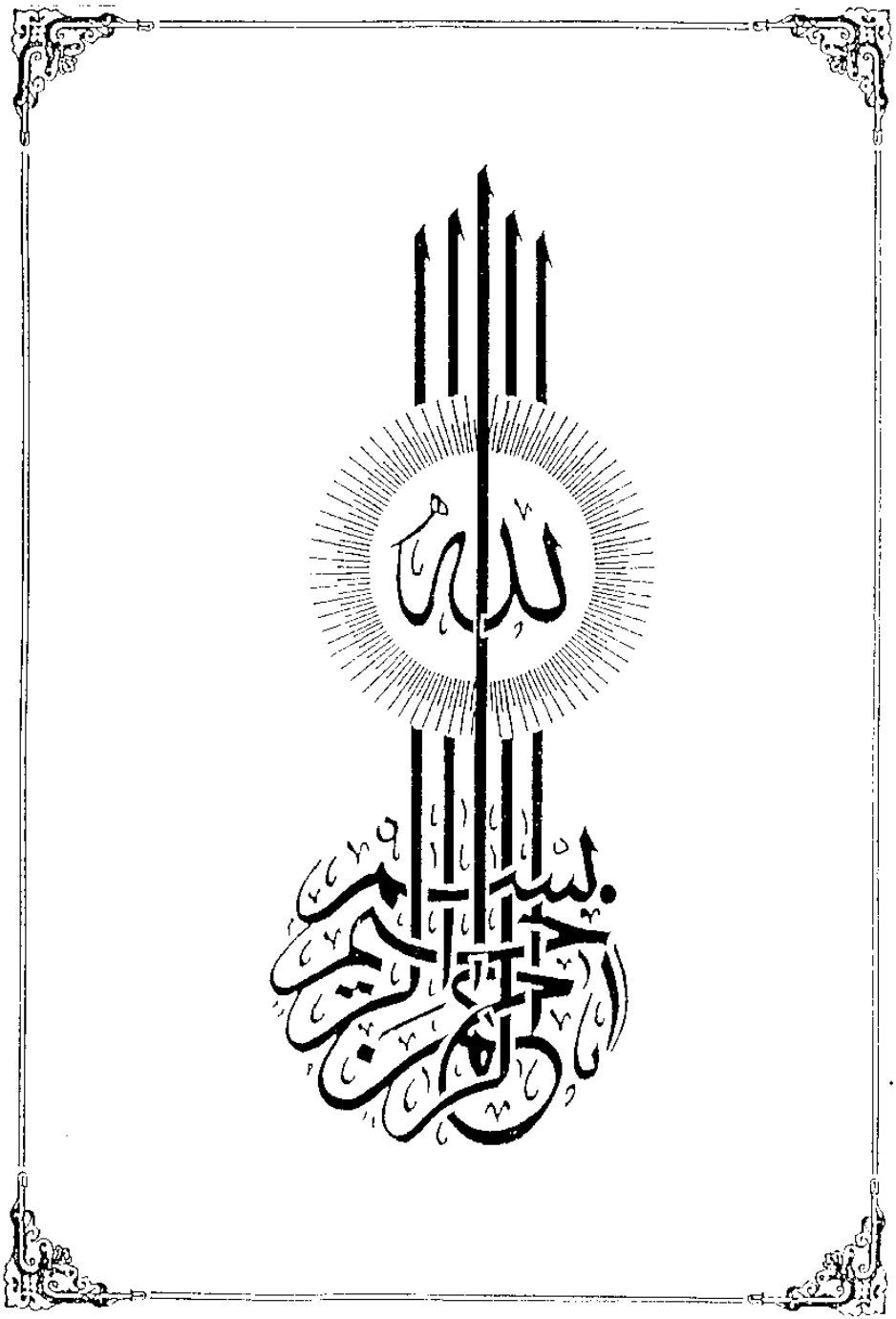

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INTRODUCTION

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INTRODUCTION

1.1. Historical note:

Schistosomiasis has been known to exist in Egypt since the early Egyptiancivilization in the Nile Valley (as early as 3200 B.C.) and was reported by many papyri.

Ruffer (1910) on doing an autopsy of two mummies of the XXth. dynasty (1200 - 1900 B.C.), discovered many calcified ova of schistosoma haematobium fixed inside the pelvis of one of the kidneys.

Various Arab historians reported haematuria in the Egyptians, and considered Egypt as being the land of menstruating males. However, the treatment by using decoctions of various herbs was reported by IBN SINA, AL QANUN FI'L TIBB (1050).

Theodor Bilharz(1852), proved that a certain trematode was the causative agent producing haematuria. Ever since, the staff of the Egyptian Medical School have been most actively engaged in the study of the various aspects of this disease.

During the twenties of this century, two antimonial preparations: tartar emetic (Christopherson, 1918 and 1920; Christopherson & Nesbitt, 1919) and Fouadin (Stibophen) (Khalil et al., 1929 & 1930), have been used in

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1921; Christopherson & Newlove, 1919) and Fouadin (Stibophen) (Khalil et al., 1929 & 1930), have been used in the treatment of Schistosomiasis, Ever since this discovery, much awareness of the increasing incidence of the bladder neoplasia, in cases suffering from Schistosomiasis, was noted.

The management of malignat tumours of the urinary bladder, has passed through various stages of development.

Surgical management was limited by the associated morbidity and psychological trauma due to the loss of potency and virility where radical surgery is contemplated.

Ionising radiations, were also used with the hope of overcoming the mortality and the morbidity of surgery. The evolution of ionising radiation passed through radium teletherapy bomb, removable and permanent interstitial sources, intracavitary instillations and orthovoltage external irradiation.

Megavoltage and supervoltage X-ray machines then followed with its valuable meritis. Despite the great improvement in energy used and techniques applied in the last twenty years, ionising irradiation is anticipated with great challenge beinghandicapped by a number of factors. In our Egyptian patients, the lacal tolerance of the

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bladder is compromised by the presence of chronic cystitis, ischaemia, ulceration, calcification and other bilharzial lesions. Moreover, most patients present with bulky tumours, in which the problem of tumour cell hypoxia is likely to be encountered.

Energetic trials are being done nowadays to improve the results of surgery and radiotherapy by combining either or both by chemotherapeutic agents or radiosensitizers.

1.2. Aim of work:

The aim of this work is to compare between the available lines of management to develop criteria for the most suitable lines of treament in carcinoma of the urinary bladder in Egyptian patients.

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REVIEW OF LITERATURE

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REVIEW OF LITERATURE

2.1. Epidemiological review:

The percentage incidence of cancer bladder as compared with that of cancer in all other sites of the body is low except in Egypt where it is reported by Egyptian authors to be extremely high (Serma, 1969).

Clemmesen and Nielsen (1956) reported the incidence rate of all tumours, benign and malignant, of the urinary bladder and ureter, in man, in 1953 to be 21.3/100,000 in Copenhagen, 11.28 in provincial towns of Denmark and 9.19 in the rural areas and reported the corresponding figures for females to be 5.41, 4.46, 2.37. In the U.S.A., Friedman and Ash (1959) found that cancer bladder formed 2% of malignant tumours.

In Egypt on the other hand, Scrour (1928), estimated that cancer bladder affects 20% of bilharzial patients. Makar (1942) found that it formed 12-43% of hospital admissions of the Urology Deprtment of Kasr el Ainy. Mahfouz (1971) found that 20% out of 11948 cancer cases attending the Radiotherapy Department in Kasr el Ainy during the years 1956-1970 were cancer bladder. Also El Sebaii (1971)

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found that cancer bladder constituted 20% of 3257 cases of cancer collected and analysed by him in the period from 1955-1965 Abul Nasr (1962), mentioned that it formed 7.1% of a series of cosecutive new cancer cases examined.

As regards the age distribution of cancer bladder, most authors in western countries agree that the average age at onset is 55-60 years. Egyptian authors on the other hand give a cosiderably younger age of onset. Carcinoma of the bilharzial bladder in Egypt occurs some 10-20 years earlier than elsewhere in non bilharzial carcinoma (Table 1).

Table (1): Theage incidence in bilharzial and non bilharzial cases.

Author	Age M	Age F	Average
Bilharzial cancer bladder			
Makar (1959).			30-39
Abou El-Nasr (1961)			44
Kandil (1968)			30-50
Makhyoun (1969)	47.3	41.0	45
El Boulkainy (1972)	46.7	44.6	46.3
Non bilharzial ca. bladder			
Payne's report (1959)			63.5
Makhyoun (1969)	54.7	57.5	56.0

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As regards sex distribution, all authors agree that c cancer bladder is more common in males.

In Egypt, Makar (1955) gave male to female ratio of 5:1, also Badr (1964) reported a ratio of 5:1. Mahfouz (1969), however, reported a high ratio of male to female of 17:1. Similarly Makhyoun (1969), reported a high ratio of male to female as much as 11.8:1. Ratio of occurrence of schistosomal vesical carcinoma according to sex was male: female 4:1 (El Boulkainy, 1972).

Special habits:

In the last two decades, several reports appeared showing a relationship between tobacco smoking and cancer bladder. Lilienfeld, Levin & Moore (1956), in a retrospective study of smoking habits of patients of cancer bladder and of a control group, found that cancer bladder is about twice as common among smokers. This finding was confirmed by Wynder et al. (1961) who demonstrated that there was significantly more cigarette smokers among male cancer bladder patients, than among control patients. Lilienfeld (1964) reviewed the subject and concluded that higher mortality from cancer bladder was present among heavy than a among light smokers. These results were also confirmed by

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Staszeweski (1966) in Poland, who found a positive correlation between cancer bladder and the amount of tobacco smoking, as well as, the habits of inhaling the tobacco smoke.

Hosti & Ermala (1955) could produce tumours of the urinary bladder of mice by applying tobacco tar extracts to the buccal mucosa and lips of these animals. No known carcinogen were detected in the urine of smokers. Thiocyanates and aceto nitrile were found in much higher concentration in the urine of cigarette smokers than in the urine of non-smokers. It seems that metabolites derived from tobacco smoke, certainly find their way into the bladder, so that, a causal relationship with smoking is not unreasonable (Lilienfeld, 1964).

The most important epidemiological factor in relation to cancer bladder in Egypt is bilharzial infection. Ferguson (1911) published the first report in a series of 40 cases of primary carcinoma of the bladder associated with bilharziasis of this organ to establish correlation between the high incidence of bilharziasis and carcinoma of the bladder. Evidences that bilharziasis of the urinary bladder is related to carcinoma of that organ are based on statistical, pathological and experimental data, however, not yet confirmed.

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