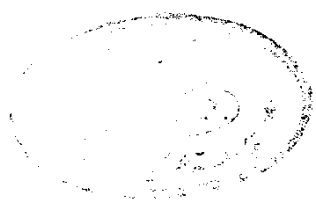
LYMPHOMA ESSAY

SUBMITTED IN PARTIAL FULFILLMENT

FOR

THE MASTER DEGREE IN GENERAL SURGERY



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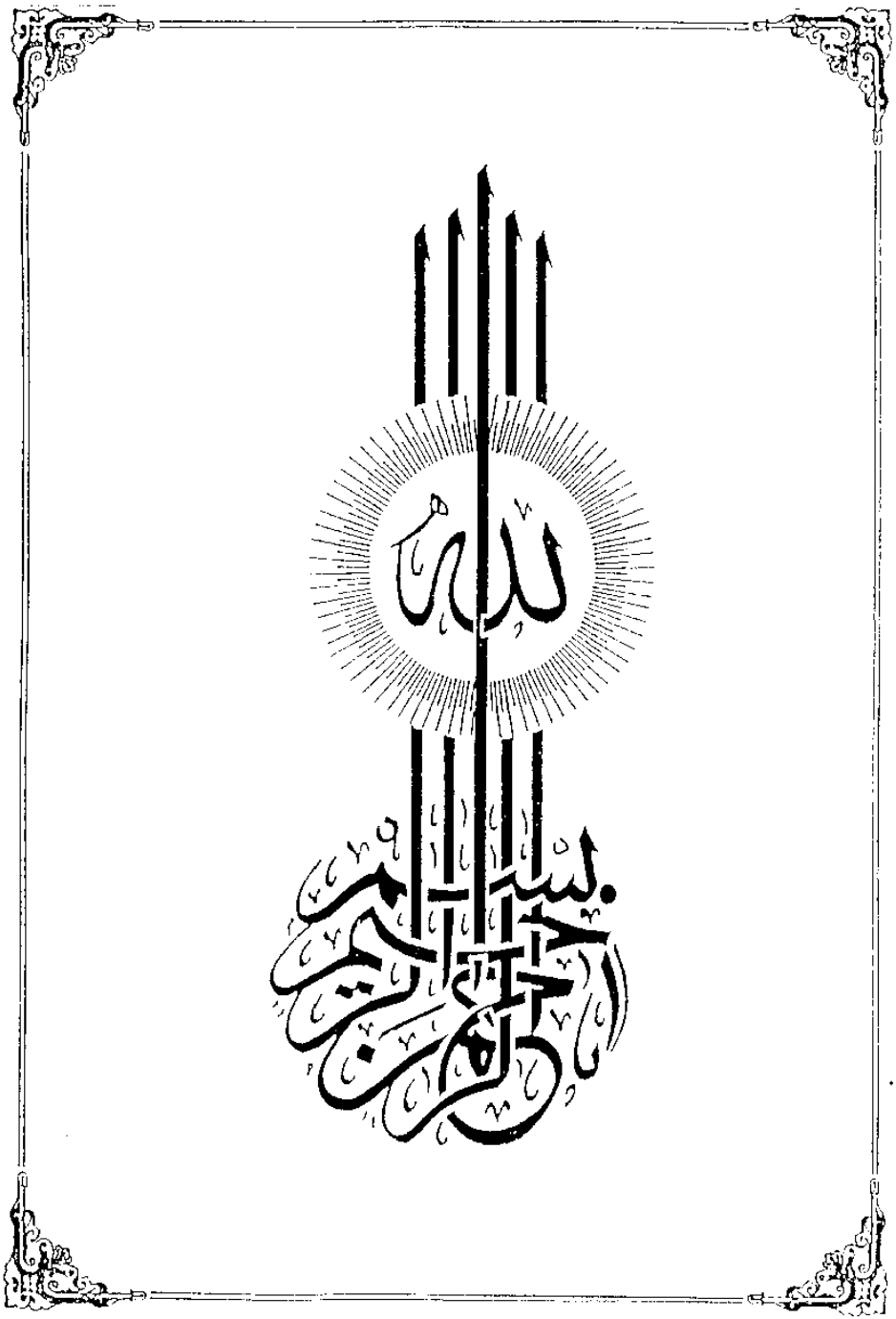

INTRODUCTION

Lymphoma presents the third malignant disease in Egypt after cancer bladder and breast cancer. It is distributed all over the world.

The aim of our work is to discuss the subject of lymphoma , its definition, etiology, epidemiology and pathology of lymphoma.

The diagnosis and staging of lymphoma is very important in planning the proper therapeutic regimen.

In this essay, there is a description of the differential diagnosis and immunologic abnormalities with lymphoma.

Prognosis of lymphoma depends mainly on the therapeutic regimen and other prognostic factors.

CONTENTS

PART I

CHAPTER I

DEFINITION AND ORIGIN

Malignant lymphoma is the generic term for all the malignant lymphoproliferative disorders arising from the lymph glands and the lymphoid components of other tissues.

Virchow in 1846, used the term lymphosarcoma to denot neoplastic diseases affecting the lymph nodes, spleen or lymphoid structure in the liver, kidney or the lung and to distinguish them from Leukaemia ; a disease of the marrow and peripheral blood. (De Vita, V.T. 1982).

He also included those cases included by Hodgkin in 1832. Kundrat in 1893, was cridited with developing histologic criteria for the diagnosis of lymphosarcoma, but it was not untill 1930 that Roulet established criteria for reticulum cell sarcoma.

In 1925, Brill reported a group of lymphoid tumers with folicular characteristics, relatively benign in prognosis. For many years non-Hodgkin's lymphomas were therefore divided into giant follicular lymphoma, lymphosarcoma and reticulum cell sarcoma. Since this scheme was difficult for pathologists to reproduce, and provided limited prognostic information new classifications of the malignant lymphomas have been proposed. The most widely utelized modern classification for the non-Hodgkin's

lymphomas is based on the work of Gall and Rappaport. (Rosenberg, S.A. et al., 1982).
Current data regarding histopathology staging and treatment have corroberated many years of observations by clinicians that this group of disorders represent a mixture of tumors with a widely varying natural histories. The synthesis of this information into a unified plan of management for each type of non-Hodgkin's lymphomas has begun to affect survival rates in much the same way as has been noted in Hodgkin's disease. (De Vite, V.T. 1982).

Hodgkin's disease can be defined as a malignant disease arising in the lymph nodes ; with a characterstic histopathologic appearance which if untreated has a variable but progrissive course leading to death. The affliction has challenged clinicians and investigators for the past century because of its unknown aetiology, its clinical and histopathologic features suggesting a granulomatous infection as well as neoplasia. The extreme varlability of its microscopic and clinical picture, its peculiar associated immunologic abnormalities and its frequent responsiveness to modern therapeutic approaches which can result in cure of the disease. In theabsence of a known etiology or satisfactory animal model, it is being increasingly challenged that the characteristic giant cell of Hodgkin's disease the so called Reed-Sterenberg

cell, identifies a single disease entity. (Berand, C.W. et al., 1969).

HISTORY :

Thomas Hodgkin in 1832 described seven cases with a fatal illness in his report on some morbid appearances of the absorbent glands and spleen. It has been suggested that Malpighi in 1661, and Morgagni in 1779, probably described the same disease.
Such pathologists as Virchow,Cohenheim, Langhans, Jackson, Kundrat, Brill, Roulet, Leukes, and Symmers have all contributed to the charecterisation of the disease and its relationship to other neoplasms of lymphoid origin.

Dorothy Reed and Carl Sterenberg are usually given cridet for the clearest description of the virtually pathognomonic giant cell which now bears their names.

Though numerous names have been given to this disease, such as lymphogranuloma, lymphogranulomatosis, lymphadenoma and malignat granuloma, the name Hodgkin's disease, initially given by Sir Samneul Wilks has received offecial and international recognition. (Rosenberg, S.A., et al., 1982).

Burkitt's lymphoma is a distinct pathologic entity among the malignant lymphomas. Since this tumor syndrome

was originally described by Burkitt in 1958, it has been the subject of worledwide investigation becuase of (1) the dramatic and often durable responce to chemotherapy (2) the evidence suggesting the participation of the host defences in tumor regression, and (3) the distinct possibility of a viral etiology (Burchenal, J.H. et al., 1966).

Burkitt's lyphoma is defined as a malignant lymphoma undifferentiated, Burkitt's type. It is composed of primative lymphoblasts with charecteristic histologic and cytologic features. (Berard, C.W. et al., 1969).

CHAPTER II

AETIOLOGY AND EPIDEMIOLOGY

INTRODUCTION :

The Microscopic Anatomy Of Normal Lymph Tissue :

1) Haematopoietic and

2) Lymphoreticular components.

Lymphoreticular cells are widely distributed throughout the body, both singly and in centers of aggregations include lymph nodes, white pulp of the spleen, Waldayer's ring (Tonsils and adenoids), Thymus gland and lymphoid aggregates in the lamina propria and submucosa of the respiratory and gastrointestinal traets (Peyer's patches).

Lymphoreticular cells are also found in the bone marrow. In addition, we can find lymphoreticular cells normally as interstitial elements in all tissues except the central nervous system.

The various cells of lymphoreticular system include :

(1) Reticular supporting cells.

(2) Lymphoid cells.

(3) Cells of monocyte-macrophage series.

The lymphoreticular system is thus the anatomical basis of cellular and humoral immunity.

Because lymphoreticular cells differ from haemopoietic in

anatomical distribution and function, their neoplastic proliferation is distinguishable from that of haemopoietic malignancies.

When the bone marrow is the majour site of involvement of lymphoreticular neoplasms, the disease is said to be, acute or chronic lymphocytic or less commonly monocytic leukaemia. (Lukes R.J. and Collin R.D. 1974).

When they arise from extramedullary fraction, in lymph nodes or other sites, solid lymphoreticular tumors are called malignant lymphomas.

These malignant lymphomas are classified on histological basis into Hodgkin's and non-Hodgkin's lymphomas. A third type of lymphoma is Burkitt's lymphoma. (Lukes R.J. and Collin R.D. 1974).

Normally both the lymphoid and monocytic cells originate in the bone marrow and from there migrate to other lymphoreticular tissues. (Berard, C.W. 1976).

The lymphocyte processed through the thymus gland are called Thymus-dependent T-cells.

Other lymphocytes are thymus independent and are processed through an equivalent to avian bursa of Fabricus. They are termed B-cells based on the avian system.

Monocytes also migrate in the bone marrow and like lymphocytes circulate and populate extramedullary tissues as cells of monocyte-Histiocyte series. (Gold, D. et al., 1973).

Aetiology and Pathogenesis Of Hodgkin's Disease :

The cause of Hodgkin's disease is unknown. Although various etiologic agents such as bacteria (Tubercle bacilli, diphtheroid, spirochetes, brucells), and viruses have been proposed, none is definite to be the cause.

The nature of Hodgkin's disease, whether infectious or neoplastic remains unsetteled. (Seif, G.S. and Sprigg's, A.L. 1965).

In Hodgkin's disease, the age of the early peak is proportion to the level of socioeconomic development in a given country.

In developing countries, the early peak occurs before adolescence, where in U.S.A. and western European countries it occurs between 20-30 years. Male to female ratio is equal.

While the older age peak has a higher male to female ratio, is greater proportion of mixed cellularity types, a higher proportion of abdominal involvement at the time of presentation and a more aggressive course. This later group shows no geographic or socioeconomic variation. (Cole, P. 1977).

Whether tonsillectomy increase the hazard of Hodgkin's disease is still unsettled. It is supposed that according to the socio economic status which is known to affect the early peak.

There is recent evidence that chronic wood dust exposure may enhance the risk of Hodgkin's disease. (Coltman, C. 1980).

Etiology of non-Hodgkin's Lymphoma :

Viruses, radiation and genetic abnormalities have been said to be causal factors. On the basis of radiation studies in mice, Kaplan has suggessted three possible etiologic mechamisms. (Kaplan, H.S. et al., 1977).

1- Release or activation of a latent virus.

2- Atrophy of lymphoid tissue followed by compansatory hyperplasia of thymocytes, postulated to be more susceptible to malignant transformation in the proliferative state.

3- Injury to marrow and thymus, with impaired regeneration of the thymus and thus increased susceptibility of the thymus to neoplastic changes.

Type C morphologically similar to RNA leukemogenic viruses have been observed in dogs, cattles and man in

material from lymphomas and leukemias. (Dmochowski, L. et al., 1967).

A type C-RNA virus has also been isolated from several cultured histiocytic lymphoma cell lines. (Kaplan, H.S., et. al., 1977).

All these viruses had some similarity to known type C-primate viruses. Recently a type C virus has been isolated from contineous cell cultures obtained from patients with cutaneous lymphomas. These studies donot constitute proof of a viral etiology for human malignant lymphomas. Burkitt's lymphoma has been associated with the DNA-herpes-like virus (Epstein-Barr Virus) detected by identification of virus particles in tissue culture specimens. (Epstein, M.A. et al., 1964).

An apparent increase of lymphomas has been described in adults with acquired hypogammaglobulinaemia. Adenopathy is associated with hypoimmune state. (Millet, D.G., 1962).

Miller has suggested that one of the several possible explanations for the association of immune disorders and lymphoma is a basic systemic defect in mesenchymal cells. Recently it has been suggested that the incidence of lymphomas is related to prior social contact with patients having these disorders. (Schimpff, S.C. et al., 1976).