LOCAL TREATMENT OF THERMAL BURNS

ESSAY

SUBMITTED FOR PARTIAL FULLFILMENT

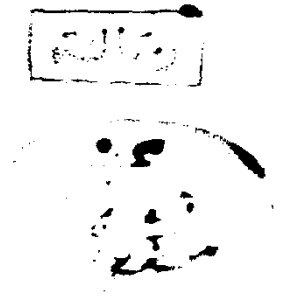
OF THE MASTER DEGREE

IN GENERAL SURGERY

By

MOHAMED HESHAM TALAAT AHMED

M.B. , B.Ch.



SUPERVISED BY

PROFESSOR MOHAMED MAMDOUH KAFEN

HEAD OF PLASTIC AND RECONSTRUCTIVE SURGERY

AIN SHAMS - FACULTY OF MEDICINE

DOCTOR IKRAM IBRAHIM SEIF

LECTURER OF PLASTIC AND RECONSTRUCTIVE SURGERY

AIN SHAMS - FACULTY OF MEDICINE

FACULTY OF MEDICINE

AIN SHAMS UNIVERSITY

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most gracious, most merciful.....".

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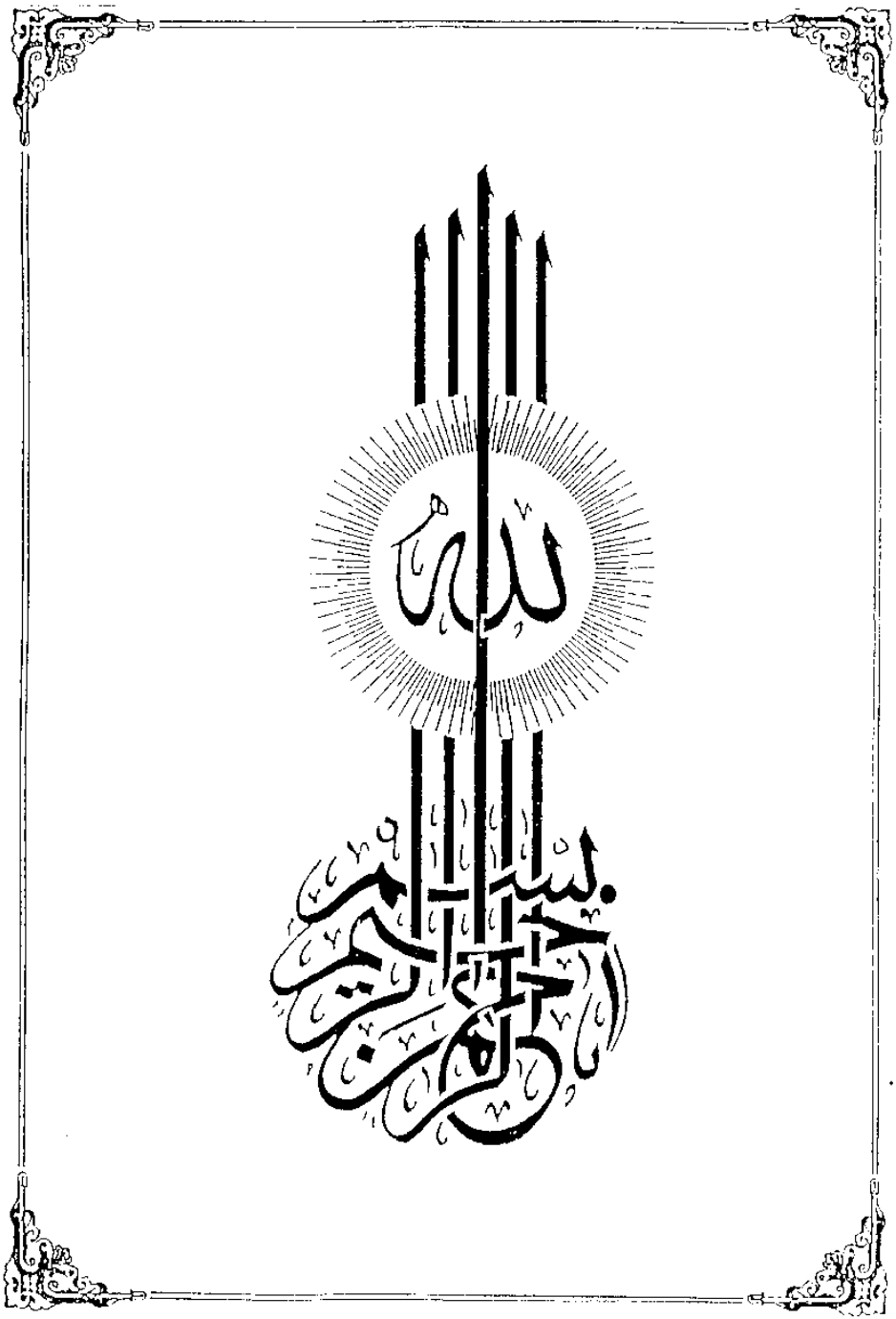

C O N T E N T S

AIM OF WORK

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- Studying the different methods of local treatment of thermal burns.

- A trial has been made to find out the most reliable, applicable, recent methods of local treatment of thermal burns.

INTRODUCTION

Introduction :

The local management of thermal burns had passed through different stages of development from the eighteenth century up till now.

Beginning with Hippocrates (460 to 377 B.C.), the observations and writings of selsus (about A.D. 100), Galen (129-199), Albucases (936-1013), Hispanus (1220-1277), Fallopius, Fabricius, and others were traced to the end of the eighteenth century. In 1797, Edward Kentish published one of the most important early discussions of burns in the English language, a monograph entitled "An Essay on Burns which happen to Workmen in mines ". This essay advocated exposure therapy in the early stages but the later use of occlusive dressings. James Earl, about the same time, published a series of discussions about burn treatment, including the use of ice for initial pain, in 1797. Few changes were made in therapy throughout the nineteenth century, and articles in textbooks by the end of this century indicate little or no emphasis on burn physiology and supportive therapy. These textbooks advocate a wide variety of local agents for burn treatment, including carbolic

acid, bichloride of mercury, carron oil, lead carbonate, zinc oxide, lard, colodian, silver nitrate, castor oil and a wide variety of other medications. A classic paper published by Sneve in 1905, entitled "The Treatment of Burns and Skin Grafting" advocated early exposure therapy. In 1906, Oppenheimer advised picric acid therapy, which was used intermittently for many years following this publication. By 1919, numerous reports on the exposure therapy of burns had appeared. The use of Paraffin wax or Ambrine was popularized by Barthe de Sandfart, and it became widely used.

Davidson published in a paper on "Tannic Acid in the Treatment of Burns" in 1925 and started the era of chemical escharotic agents, which lasted for several years. Other agents in wide use at that time included silver nitrate, saline packs, and gentian violet.

With the introduction of sulfanilamide in the early 1940s, the era of topical antimicrobal agents began.

In 1943, the American National Research Council manual abandoned tannic acid and other types of chemical escharotic agents and the publication of Allen and Koch emphasized the use of pressure dressings.

With the report of Wallace in 1949, exposure treatment of burns was revived in the literature as an acceptable procedure. Blocker and Pulaski were primarily responsible for reintroducing exposure therapy to the United States at that time.

In the past 25 years, there has developed better understanding of the metabolic, nutritional, hematologic, fluid and electrolyte problems; methods of combating shock have improved; and a large number of papers have appeared on all aspects of burn care from around the world. In recent years, specialized institutions for the treatment of burns have been developed in many countries and a large number of national and international burn meetings are regularly held, (Grabb and Smith, 1979).

REVIEW OF LITERATURE

INITIAL WOUND MANAGEMENT

When the burned patient has successfully passed through the resuscitation period, the burn wound represents the greatest threat to survival. An understanding of supportive care and wound management will result in healing of the partial thickness burn wound and in successful resurfacing of the full thickness burn one.

The burn wound differs from other wounds of trauma in that :

1. It is colonized by potentially pathogenic bacteria.
2. It excudes large quantities of water, serum, and blood.
3. It frequently contains large amounts of non viable tissue.
4. It remains open for extended period of time.
5. It does not offer protection from pathogenic bacteria colonizing the burn wound environment.
6. It frequently requires grafting for its permenant

closure.

The factors of supporative wound care that give the burn wound the optimal chance of healing are as follows:

a) Control of bacteria colonizing the wound.
b) Removal of all non-viable tissue from the wound as rapidly as possible.
c) Prevention of the accumulation of purulent and enzymatic secretions on the burn wound.
d) Isolation of the burn wound from sources of contamination,
e) Maintenance of an enviroment conductive to wound healing.
f) Prevention of wound dehydration by excessive evaporation of water from the burn surface.
g) Keeping the burn wound at a state of rest.
h) The accomplishment of all these considerations without doing harm to the healing burn wound (Mac Millan, 1979).

The initial wound management should be carried out in a simulated operating room environment. An accurate determination of depth of burn is best accomplished after all blisters and loose, non viable

tissue have been removed from the burn wound. A wide margin of normal skin surrounding the burn wound should be shaved to prevent contamination subsequently from hair follicles. Only after through debridement has been carried out can the depth of the injury be accurately assessed and the prefered method of local care determined.

Methods of Wound care :

a. Exposure therapy.
b. Open dressing.
c. Occlusive dressing.

Exposure therapy :

The role of exposure therapy is to control bacterial colonization without the aid of topical agents by utilizing a light cool environment. Exposure treatment is particularly suitable for burns of the face, perineum, unilateral burns of the trunk and limbs, and extensive burns that cannot be adequately dressed. The patient should be placed on clean, dry, sterile sheets with total burned area completely exposed. Sterile sheets should be used until a satisfactory crust or eschar has developed. Crust formation should be complete within 24 to 36 hours. Once