OMENTOPLASTY IN THE MANAGEMENT OF PELVIC FLOOR AFTER RADICAL PELVIC SURGERY

THESIS

SUBMITTED IN PARTIAL FULFILMENT FOR THE

(M.D.) DEGREE IN GENERAL SURGERY

BY

EMAD ABDEL WAHAB MOUSTAFA

(M.B., B.CH., M.SC.)

SUPERVISED BY

Prof. Hamdi Mahmoud Abdulla
Prof. of General Surgery
Faculty of Medicine,
Ain Shams University

Prof. Mohammed Monir Aboul Elaa
Prof. of Surgical Oncology
National Cancer Institute

(Co-Workers)
Dr. Somaya Ezzat
Assist. Prof. of Radiotherapy
National Cancer Institute

AIN SHAMS UNIVERSITY

1993

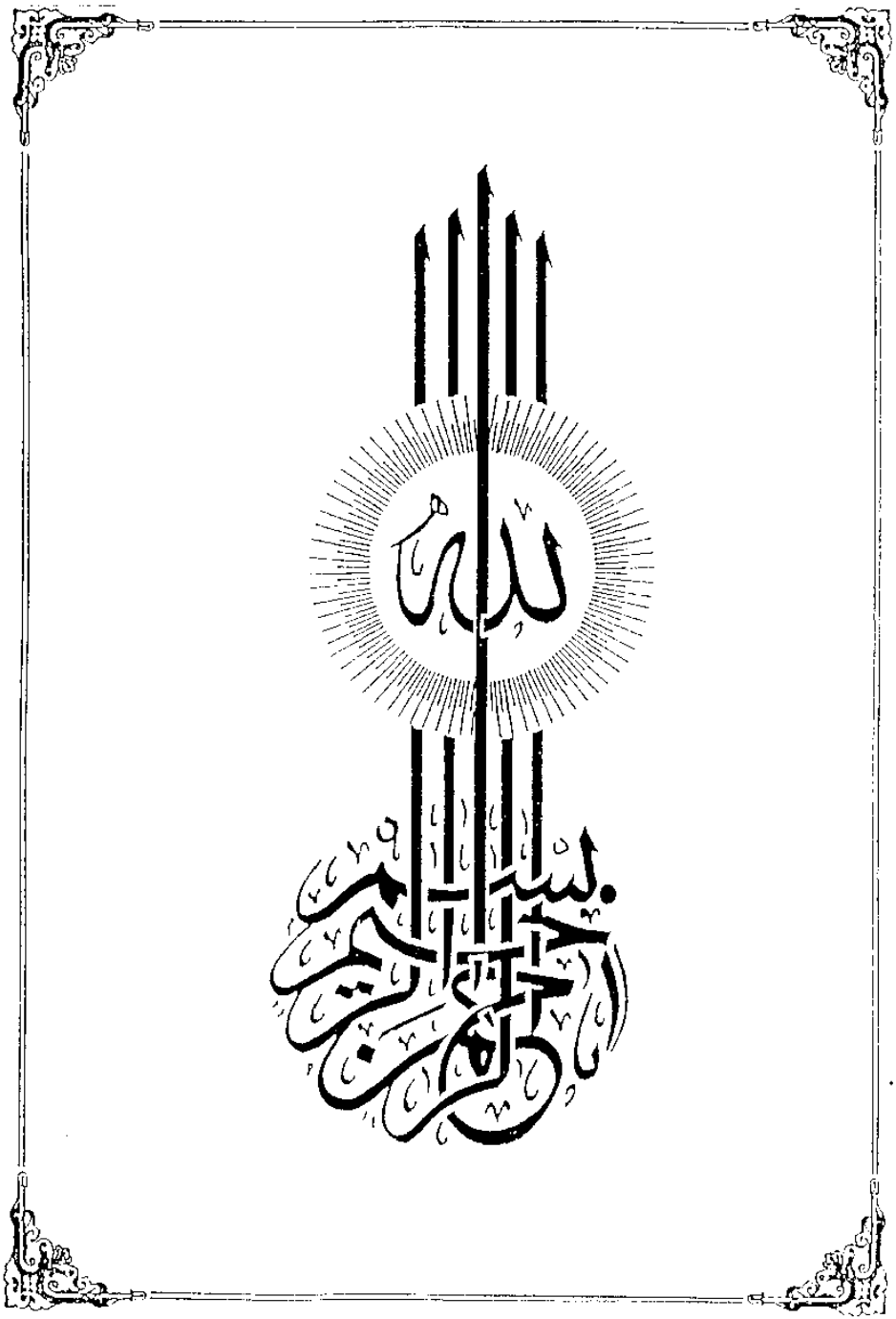
ACKNOWLEDGEMENT

I would like to express my utmost grtitude to ***Prof. Dr. Hamdy Mamoud Abdulla,*** *Prof. of Surgery, Ain Shams University, for his fatherly guidance, supervision and continuous support throughout the preparation of this work.*

My sincere appreciation to ***Prof. Dr. Mohammed Monier Abou El Elaa,*** *Prof. of Cancer Surgery, National Cancer Institute, Cairo University who spent much of his valuable time in revising this work with keen supervision and great advice.*

I am also indebted to ***Assist Prof. Dr. Somaya Ezzat*** *Assist. Prof. of Radiotherapy, National Cancer Institute, Cairo University, for her utmost help in completing the radiotherapeutic part of this work.*

Finally, I would like to extend my gratefullness to ***Assist. Prof. Dr. Nadia El-Diek,*** *Assist. Prof. of Radiology, National Cancer Institute, Cairo University - though not one of the official supervisors of this work - for cooperation.*



CONTENTS

o o o o o

INTRODUCTION

&

AIM OF THE WORK

INTRODUCTION

Radical removal of the pelvic viscera involved with advanced malignancy has resulted in a significant cure rate. The problem of how to manage the pelvic cavity after the performance of such surgical procedures as abdomino-perineal resection of the rectum, radical cystectomy or Wertheim's operation - has challanged the ingenuity of surgeons for several years.

The pelvic wall denuded of its peritoneum is often a source of numerous complications, where adherence and fixation of loops of small intestine occur with kinking and narrowing of the intestine at these points of adhesions and subsequent acute and subacute intestinal obstruction. In addition, local necrosis, perineal hernias or intestinal fistula formation are prone to occur, especially when a pelvic abscess forms or there has been prior damage to the bowel by radiation therapy. (Foley and Fetherston, 1965).

Re-operation in these patients for either intestinal obstruction or fistula is hazardous and technically quite difficult, both identification and repair of the involved portion of the intestine are complicated

by the multiple loops of the terminal portion of the ileum which are usually densely plastered to the pelvic hollow. An attempt to free all the adherent loops usually results in additional multiple areas of damage to the intestine, and complete resection of the entire adherent segment is necessary. Furthermore, it leaves a large raw area on the pelvic floor to which previously uninvolved loops-including the one bearing the new-end to end anastmosis - are almost certain to become adherent and to pave the way for repitition of the same complication.(Webb and Symmonds, 1977).

On the other hand, at most fifty percent of these patients is a candidate for postoperative radiotherapy, the sequelae of which - particularly on the small bowel - will be more serious if loops of the intestine are not moving in and out of the pelvic irradiation field being fixed by adhesions and recieving the same dose each time.(Green et al., 1975).

Various methods have been attempted for managing this problem, as simple packing, approximation of adjacent structures, or insertion of prothestic materials, but acceptance has not been universal.

The requirements of any proposed surgical technique for this condition are the obilitration of dead space,

adequate drainage, support to the pelvic floor, and coverage of all raw areas to prevent formation of adhesions. Further aim would be to elevate the small bowel out of the pelvis thus preventing or minimizing significant radiation enteritis.

Mobilization of an omental flap to the pelvis would meet most of these criteria. The omentum is a versatile tissue structure whose functional and physical characteristics are quite unique.

The purpose of the present study is to describe the technique and evaluate the results of pelvic filling with pedicled omentum after 3 basic operations: Abdomino-perineal resection, Werthiem's operation and Radical cystectomy.

REVIEW OF LITERATURE

Historical Perespective

Historical Perspective

The great omentum has been the subject of medical interest and research for more than 3,600 years. Yet, in this present era of scientific enlightenment, it is still an organ of much mystery.

Travelling back 3,600 years, the cunning Egyptian priests could tell fortunes by the omentum, indeed it is most interesting to know that the organ was named by them. Priests, during the process of embalming the human body, would examine the abdominal viscera, and, as this organ in particular was a mystery to them, they used it for a gain and would tell fortunes by it, and according to the purse that the relatives were able to pay, by examination of the omentum, would give either good or evil omens as to the hereafter of the dead. Thus the first part of the name Omen-and by adding the suffix-um of the language, it came to be called the omentum. (Bloomhard et al., 1917).

When we pass back to the limits of medical history, we find that Hippocrates, 460-385 B.C. thought that the omentum regulated the amount of fluid in the peritoneal cavity.

After Hippocrates, we owe to Aristotle, 384-322 B.C., the commonly accepted opinion that the omentum is formed of light fatty membrane and so placed covering the intestine as to preserve the innate heat of the body. Gallen (200 AC) accepted and expanded this view, He gives the case of a gladiator who having lost his omentum through a wound, recovered from the injury but thereafter felt cold in his abdomen. (Q.F. Abbot and White 1985).

Malphigii, 1628-1694, considered the omentum as the cause of ascites and as a storehouse of fat. Vesalius regarded it as a ligament of support for the transverse colon. Verhagen recognized in the omentum a device to protect the adominal viscera from sudden jars and from friction. Hansen believed that the omentum served to pull the stomach downwards when that organ was full, and so to facilitate the descent of the diaphragm in respiration (Q.F. Wilkie 1911).

Like most other forms of scientifc inquiry, further (advancement) in the knowledge of the omentum did not occur untill the Renaissance when the study of anatomy blossomed, particularly with the work of Leonardo da Vinci.

It was not untill quite recent times however, that the protective functions of the omentum were

recognized and that surgeons and pathologists noted the important part which the omentum so frequently plays in helping to localize inflammatory processes int he abdomen.

Once this useful action of the omentum had been appreciatled, many observers, chiefly from pathological though partly from experimental studies, developed this protective theory and endowed the omentum with the capacity for intelligent movement, guided by positive and negative chemotaxis and went so far as to designate the omentum "a large abdominal leucocyte". However, considerable debate still exist as to the nature of the function of the omentum in health and disease, (Wilkie 1911).

Surgery of the omentum was limited to ligation and cauterization when it was incarcerated in hernias untill the 1800s when its capability to wall off infection and foreign bodies became increasingly appreciated. In 1826, Jobert de Lambelle was the first to suggest that the omentum might be used to cover gastrointestinal injuries. By the end of the 18th century, the value of vascularized omentum in sealing off acute peptic perforations was keenly appreciated by Braun (1897) and the use of free omental grafts was suggested by Senn. (1887). Q.F. (Liebermann and Whtie 1983).

The transposition of a pedicled omental graft to provide coverage of defects beyond the reach of normal omentol apron, such as in the pelvic floor, chest wall, groin, the extremity, has only been employed clinically within the last 30 years. The pioneer clinical work of Kiricuta in Rumania (1963) with omental transposition in the treatment of advanced breast cancer and pelvic fistula provided the impetus for the current interest in the surgery of the omentum.

The term abdominal policeman was coined to Morison in 1906. He stated: "there can be no doubt that it (the omentum) travels about in the abdomen with considerable rapidity and is attracted by some sort of information to neighbourhoods in which mischief is brewing." These preternatural powers were denied by Rubin in 1919 after experimental studies in which he concluded that the omentum had no spontaneous motility and no demonstrable "chemotaxis".

Anatomy Of The Omentum