Faculty of Medicine
Department of General Surgery

Selective management of penetrating abdominal trauma

Essay
Submitted for the fulfillment of Master degree
in general Surgery

By

Fathy Atteia Ghozy
(M.B.B.Ch)
Faculty of Medicine, Mansoura University

Under Supervision of

Professor Dr. Awad Hassan El-Kayal
Professor of general Surgery
Faculty of Medicine – Ain Shams University

Dr. Mohammed Ali Lashin
Professor of general Surgery Faculty of Medicine - Ain Shams University

Dr. Ibrahim Mohammed El-Zayat
Consultant of general Surgery
Faculty of Medicine - Mansoura University

2014

ACKNOWLEDGEMENT

First and above all, my greatest thanks to mighty ***"ALLAH"***, the most merciful, the most gracious for helping us all to complete this work.

I wish to express my gratitude and appreciation to ***Prof Dr.Awad Hassan El-Kayal***, Professor of General Surgery, Faculty of Medicine, Ain Shams University, for his kind meticulous supervision, unlimited help, for the time and effort he give to me his support and sensory help. His patients and willingness to provide continuous support have been instrumental in bringing the study to completion. He did his best to help me.

I owe special thanks to ***Dr.Mohammed Ali Lashin***, Lecturer of General Surgery, Faculty of Medicine, Ain Shams University, he did his best to help me, and he encourages me in every step of this work.

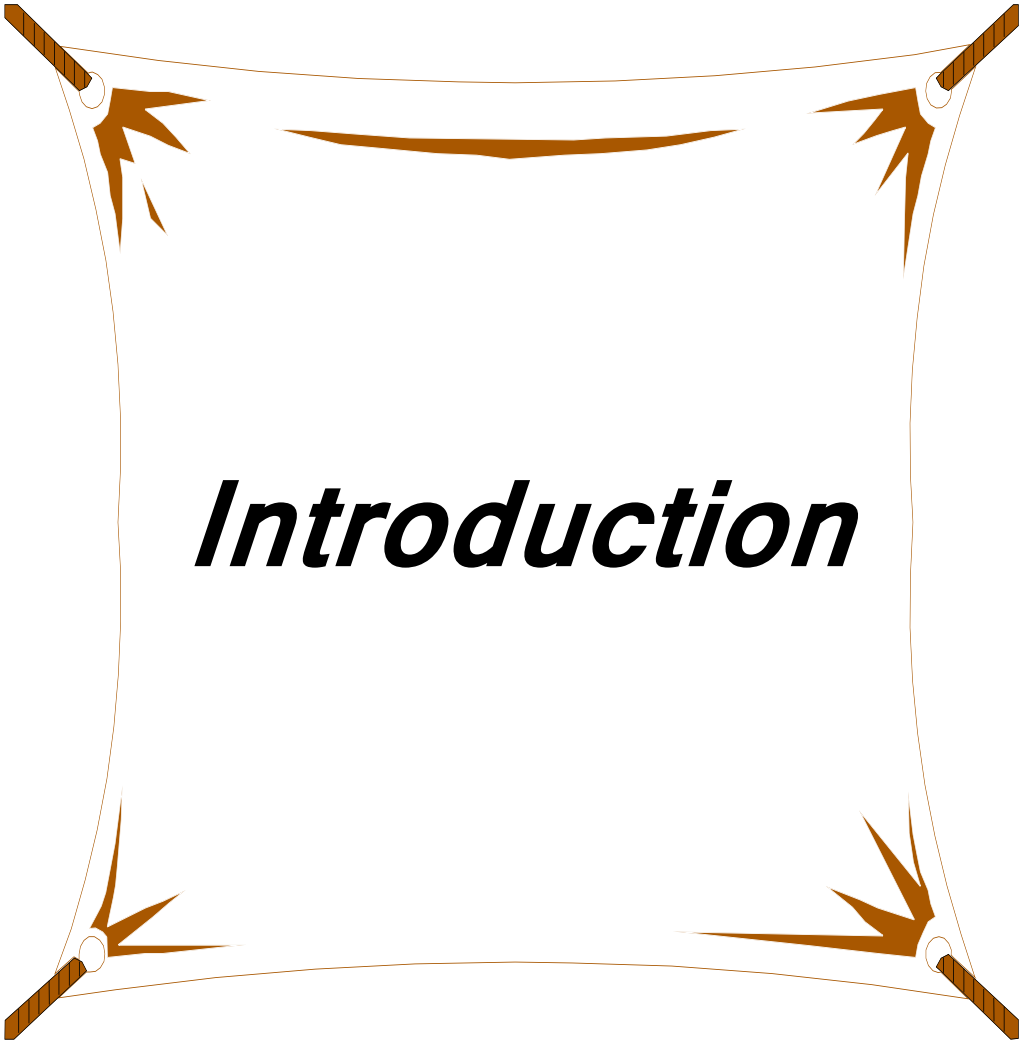
I am greatly indebted to ***Dr.Ibrahim Mohammed El-Zayat***, Consultant of General Surgery, Faculty of Medicine, without his suggestion, generous help and meticulous supervision, it was impossible to complete this work.

Fathy Atteia Ghozy
2014

List of Contents

List of Figures

List of Tables



Introduction

Introduction

Penetrating abdominal trauma (PAT) is commonly seen in emergency departments and poses a significant challenge to trauma surgeons. The most important decision that must be obtained during the management of these traumas is which patient must be operated on ***(Alimoglu, 2012).***

Mandatory laparotomies for all patients with penetrating abdominal trauma have resulted in non-therapeutic laparotomy (negative or insignificant findings) in 11% to 40% of patient. Complications of non-therapeutic laparotomy may be sever and when it is performed for PAT, mortality and complication rates vary from 0% to 5% and 5% to 22% respectively ***(Hallfeldt et al., 2010).***

There is little controversy that patients presenting with haemodynamic instability or generalized peritonitis should undergo immediate laparotomy without further diagnostic evaluation ***(Demetriades and Rabinowitz, 2011).***

If the patient is haemodynamically stable and has no urgent indications for laparotomy, the course of action can be controversial, involving the decision on whether to perform a laparotomy or undertake conservative management. After the questioning of routine laparotomy by Shaftan, the management trend moved from mandatory exploration to selective approach ***(Alimoglu, 2012).***

Although the modern management of PAT has decreased non-therapeutic laparotomy by using selective non-operative management protocols, immediate recognition of intra-abdominal injury still poses a significant clinical challenge, particularly in patients who have minimal or no symptoms and has no obvious indications for emergent laparotomy. The most important questions are which diagnostic procedures will be used, which patient requires laparotomy, and when to operate the patient ***(Bostrom, 2011).***

The benefits of successful nonoperative management of abdominal trauma should be weighted against the consequences of missed injuries and delayed treatment ***(Bensard et al., 2010).***

The ultimate goal of "selective conservatism" is to minimize the incidence of negative exploration of the abdomen without increasing morbidity from missed or delayed recognition of serious injuries ***(Zubowski et al., 2012).***

Aim of the Work

Aim of the Work

The aim of this prospective study is to evaluate the technique of "selective conservatism" in the management of penetrating abdominal trauma.


Review

Chapter I

History

CHAPTER 1

History

Therapeutic guidelines, not based on historical foundation, soon evaporate **(Lucas and Ledger wood, 2009**).

The history of the first laparotomies for abdominal trauma cannot be traced accurately. Celsus in his writings in the first century discussed abdominal trauma. The Greek physician Galen (AD 130 to 200), physician to the gladiators and later personal physician of Emperor Marcus Aurelius had significant experience in penetrating trauma and is known to have performed abdominal wall and intestinal suturing. Significant progress in the management of penetrating abdominal injuries was made with the discovery of chloroform by Simpson in 1847 and with the introduction of general anesthesia **(Demetriades and Velmahos, 2009).**

Nonoperative management of penetrating trauma remained the standard of care through most of the nineteenth century. In 1887, the American Surgical Association recommended exploration of civilian penetrating abdominal wounds. In early stages of World War I, a policy of nonoperative management was associated with extremely high mortality, and a new policy of routine exploration of all penetrating abdominal injuries was introduced in 1915. The policy of mandatory operation significantly reduced mortality **(Demetriades and Velmahos, 2008).**

For many years, surgeons steadfastly adhered to the basic principle that laparotomy was central to the management of penetrating abdominal injuries. The experiences of the two World Wars further reinforce this concept. As more and more laparotomies were performed for penetrating trauma, mortality from these injuries gradually declined to single digit finger over the

course of almost a century, a decline that was primarily attributed to the use of laparotomy. Policies of mandatory exploratory laparotomy for penetrating abdominal trauma were followed in most centers as recently 15 years ago, also the rate of missed injuries declined. These liberal policies led to an increase in the number of non-therapeutic laparotomies **(Shatz, 2009).**

This practice was challenged in the 1960s and 1970s, when a policy of selective nonoperative management of stab wounds to the abdomen was gradually introduced **(Demetriades and Velmahos, 2008)**

Shaftan was the first to support a policy of observation with repeated examination for civilian stab. Nance at the Charity Hospital in New Orleans was a leader in providing the safety and practicality of observation of stable patient with abdominal stab wounds **(Fabian and Croce, 2005).**

However, mandatory exploration of all gunshot wounds to the abdomen remained the standard practice until the 1990s, when some centers in the United Stats and South Africa published the first studies on selective nonoperative management **(Demetriades and Velmahos, 2008).**

Shaftan and Nance, again, were leaders in promoting the selective observation of asymptomatic patients with abdominal gunshot wounds. Feliciano expanded these though, to recommend observation for patients with right upper quadrant gunshot wounds associated with right-sided pneumothorax **(Lucas and Ledgerwood, 2009).**

Application of these principles has continued to receive support, and the long-held surgical maxim of mandatory laparotomy for penetrating abdominal injuries has been systematically disproved Questions of negative laparotomy rates, non-therapeutic laparotomy rates, mortality, morbidity and discussions of the relative merits of different diagnostic modalities and