

RECENT APPROACHES IN MANAGEMENT OF ACUTE MESENTERIC VASCULAR OCCLUSION

Essay

Submitted for partial fulfillment of master degree in general
surgery

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2013

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ABBREVIATIONS

APTT	Activated partial thromboplastine time
APC	Activated protein C
AMI	Acute mesenteric ischemia
ATP	Adenosine triphosphate
ARDS	Adult respiratory distress syndrome
BER	Basic electrical rhythm
CP	Cancer procoagulant
CPB	Cardiopulmonary Bypass
CA	Celiac artery
CA	Celiac artery
CCL17	Chemokine
CMI	Chronic mesenteric ischemia
CI	Colonic ischemia
CT	Computed tomography
CTA	Computed tomography angiogram
CK	Creatinine kinase
COX	cyclooxygenase
CMV	Cytomegalovirus
DVT	Deep venous thrombosis
DSA	Digital subtraction angiography
DIC	Disseminated intravascular coagulation
EGF	Epidermal growth factor
ePTFE	Expanded polytetrafluoroethylene
L1	First lumbar vertebra
IMA	Inferior mesenteric artery
INF- α	Interferon-alpha
IL-10	Interleukin-10
INR	International normalization ratio
I-FABP	Intestinal fatty acid-binding protein
LT	Leukotrienes
LOX	Lipoxygenase
MRA	Magnetic resonance arteriography
MRI	Magnetic resonance imaging

Acknowledgement

Thanks to **ALLAH** for helping me to complete this work,

I wish to express my deep thanks and gratitude to **Prof. Dr., Hisham Abdel-Raouf EL-Akkad** Professor of General Surgery Ain Shams University for his unlimited support, continuous encouragement and meticulous guidance through the course of this work,

My best thanks to **Prof. Dr. Dr. Osama Mahmoud EL-Shiekh** Assist. Prof. of General Surgery Faculty of Medicine Ain Shams University, for his kind supervision, cordial support and follow up.

It's a pleasure to express my great thanks and appreciation to **Dr. Gamal Fawzy Samaan** Lecturer of General Surgery Faculty of Medicine Ain Shams University , for his constant help and useful assistance which made the completion of this work possible.

I would like to thank also my family, my mother, my wife, my daughters and my son as they were supportive to me through all of my life .

Finally I am very grateful to all my professors and every one helped me by any way in this work,

INTRODUCTION

Mesenteric ischemia is caused by decreased intestinal blood flow that can be caused by a number of mechanisms. Decreased intestinal blood flow results in ischemia and subsequent reperfusion damage at the cellular level that may progress to the development of mucosal injury, tissue necrosis, and metabolic acidosis (*Dang et al., 2008*).

Antonio Benivieni first described mesenteric ischemia in the 15th century. It became more intensely studied in the mid 19th century after case reports by Virchow and others. The first successful surgery to repair a case of acute mesenteric ischemia was performed by Elliot, who, in 1895, resected a gangrenous portion of bowel and reanastomosed the viable bowel (*Tessier and Williams, 2006*).

In the early 20th century, advances were made in diagnostic modalities, heparin was introduced for use in mesenteric venous thrombosis, and residual arterial spasm was recognized. In the 1950s, vascular surgical repair to restore blood flow to ischemic bowel before gangrene occurred was introduced. The first successful embolectomy without bowel resection was performed in 1957(*Herbe and Steele, 2007*).

Mesenteric vascular occlusion represents one of the most dramatic intra-abdominal catastrophes encountered by physicians. It is a relatively rare disorder seen in the emergency department (ED); however, it is an important diagnosis to make because of its high mortality rate. Vague and nonspecific clinical findings and limitations

of diagnostic studies make the diagnosis a significant challenge. Moreover, delays in diagnosis lead to increased mortality rates. Despite recent advances in diagnosis and treatment, mortality rates continue to remain high (*Nishijima and Su., 2008*).

The patho-physiology of intestinal ischemia can be divided into arterial and venous etiologies and acute and chronic ischemia. The vast majority of cases are secondary to arterial causes. All diseases and conditions that affect arteries, including atherosclerosis, arteritis, aneurysms, arterial infections, dissections, arterial emboli, and thrombosis, are reported to occur in the intestinal arteries (*Agaoglu et al., 2005*).

Acute mesenteric ischemia can be further divided into embolic, thrombotic, or non-occlusive causes. Chronic mesenteric ischemia usually results from long-standing atherosclerotic disease of 2 or more mesenteric vessels (*Huang et al., 2005*).

This essay is intended to review methods for diagnosis and management of the acute type of mesenteric vascular occlusion..

AIM OF WORK

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CHAPTER (1)
ANATOMY OF
THE MESENTERIC CIRCULATION