New Trends in management of
Mesenteric Vascular Occlusion

Essay

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Introduction:-

Mesentric vascular disease (MVD) is not a single entity, but rather a syndrome that includes: (1) complete occlusion or stenosis of mesentric arteries by embolism, thrombosis or obliterative disease, (2) thrombosis of mesentric veins, (3) extraluminal obstruction of mesentric arteries, (4) aneurysms of the splanchnic arteries and (5) traumatic injury to visceral vessels. These conditions produce vascular insufficiency or infarction of the affected intestine ***(Daly et al., 1999)***.

Mesentry is a reflection of the posterior parietal peritoneum onto the surface of the intestine, where it becomes visceral peritoneum. It connects the intestine to the posterior abdominal wall and transmits blood vessels (superior and inferior mesentric arteries and veins) and nerves ***(Daly et al., 1999)***.

Mesentric ischemia and bowel infarction represent a broad spectrum of disease with diverse etiologies in elderly people. A primary or idiopathic form with no apparent cause also has been reported ***(Oguzkurt et al., 2000)***.

Acute vascular occlusion results in tissue injury with release of intracellular contents and products of anaerobic metabolism, so compromised bowel mucosa allows unrestricted influx of toxic materials from the bowel lumen with systemic consequence and bowel necrosis, perforation and peritonitis ensue ***(Belkin et al., 2001)***.

Chronic mesentric insufficiency is almost a problem in older age group with diffuse atherosclerosis. Vasodialatation after eating reduces peripheral resistance, but blood flow can not be increased in the presence of proximal fixed occlusive disease, creating transient ischemic pain (intestinal angina) ***(Belkin et al., 2001)***.

The ideal test for mesentric ischemia would be non invasive, fast, reproducible (to follow changes over time), sensitive, specific and provides information about the viability of the intestine so, superconducting quantum

interferance devices (SQUID) can detect the magnetic fields generated by the electrical activities of the smooth muscle of the small bowel, is a highly sensitive measurement of the bowel viability ***(Seidel et al., 1999)***.

Computed tomography (CT) scans and ultrasound may show thickened bowel loops specially in mesentric venous thrombosis. Angiography shows spasm of arteries and decrease or absent blood flow and absence of venous drainage ***(Oguzkurt et al., 2000)***.

Early onset of regional intestinal ischemia can be detected with carbon dioxid tension measurement inside the peritoneal cavity ***(Knichwitz et al., 2000)***.

Once the diagnosis of acute occlusive mesentric ischemia has been established, continuous infusion of vasodilator, such as papaverine or nitroglycrine, may be begun directly into the superior mesentric artery if the origin of this vessel is patent and can be cannulated ***(Daly et al., 1998)***.

Bypass grafting to the superior mesentric artery alone is effective and durable for treatment of intestinal ischemia and the results appear equal to those reported for complete revascularization for intestinal ischemia ***(Foley et al., 2000)***.

Percutaneous transhepatic pharmacologic and mechanical thrombolysis followed by embolization of the liver tract in mesentric venous thrombosis (MVT) in symptomatic patient with early diagnosis is a procedure effective in treating focal venous thrombosis ***(Lopera et al., 2002)***.

Aim of the Work

Is to review the anatomy of the mesentric blood vessels, clinical picture, pathophysiology and recent trends in management of mesentric vascular occlusion.

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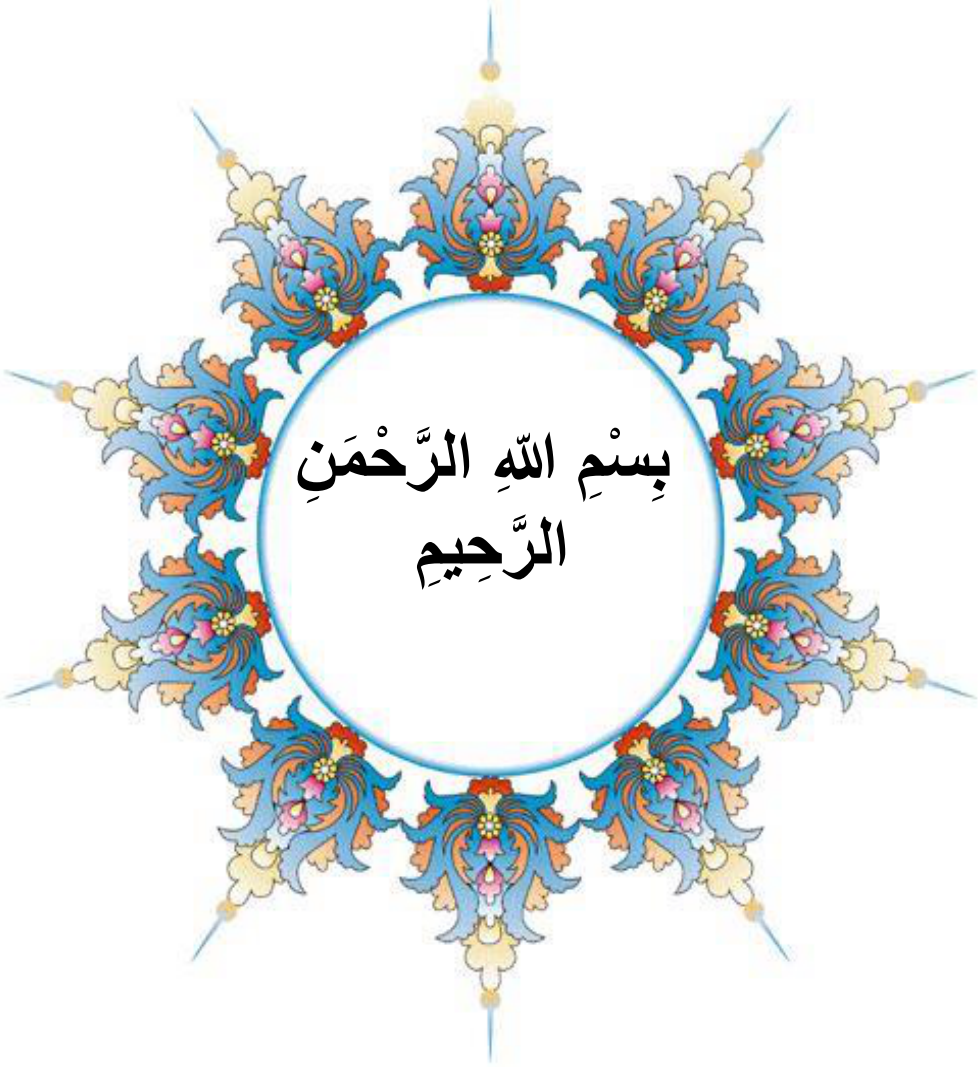
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To My

Family

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Abbreviations

MVD	Mesenteric vascular disease
SQUID	Superconducting quantum interference devices
CT	Computed tomography
MVT	Mesenteric venous thrombosis
SMA	Superior mesenteric artery
IMA	Inferior mesenteric artery
L1	First lumbar vertebra
L3	Third lumbar vertebra
CA	Celiac artery
AMI	Acute mesenteric ischemia
CI	Colonic ischemia (ischemic colitis)
CMI	Chronic mesenteric ischemia
NOMI	Nonocclusive mesenteric ischemia
vWF	von Willebrand factor
IL-10	Interleukin-10
TGF-B	Tissue growth factor -B
INF- **α**,	Interferon-alpha
CCL17	Chemokine L-17
DIC	Disseminated intravascular coagulation
SIRS	Systemic inflammatory response syndrome
PAF	Platelet-activating factor
TNF	Tumor necrosis factor
NADPH	Nicotinamide adenine dinucleotide phosphate
ARDS	Adult respiratory distress syndrome
DVT	Deep venous thrombosis
APC	Activated protein C
CP	Cancer procoagulant
CMV	Cytomegalovirus
α-GST	α-subunit of glutathione *S*-transferase
I-FABP	Intestinal fatty acid-binding protein
CK	Creatinine kinase
MRA	Magnetic resonance arteriography
MRI	Magnetic resonance imaging
BER	Basic electrical rhythm
PT	Prothrombin time

APTT	Activated partial thromboplastine time
t-PA	tissue plasminogen-activator
INR	International normalization ratio
MSOD	Multisystemic organ dysfunction
PTA	Percutaneous transluminal angioplasty
ePTFE	Expanded Polytetrafluoroethylene
DSA	Digital subtraction angiography

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