



General Surgery

A CASE SERIES STUDY ON ACUTE MESENTERIC ISCHEMIA IN GOVERNMENT GENERAL HOSPITAL KURNOOL

Dr. Boddeti Marthand Kumar

Junior Resident.

Dr. Lakshmi Manjusha Peesa

Junior Resident.

Dr. S. Vijaya Babu*

Assistant Professor At Government General Hospital, Kurnool. *Corresponding Author

ABSTRACT

Introduction:- Acute mesenteric ischemia account for about 1:1000 acute hospital admissions. AMI is a condition in which inadequate blood flow through mesenteric circulation causes ischemia and eventual gangrene of bowel wall. Early diagnosis and prompt treatment are the goals of modern therapy, but diagnosis is difficult in early stages when intervention would be of most benefit. **Materials And Methods:-** Six patients who presented to the surgical casualty with symptoms of pain abdomen & features of obstruction in Government General Hospital, Kurnool were included in the study. All the cases have been analysed for this study during a period of 1 year 2 months from January 2021 to February 2022. All cases were diagnosed to have mesenteric ischemia at exploratory laparotomy. Traumatic mesenteric ischemia excluded from study. **Results:-** Out of 6 cases in the study 5 were male and 1 was female. The most common age group affected in the study was between 45 – 60 years. Most common complaint of 6 cases is abdominal pain with or without vomiting. 5 out of 6 cases recovered well in postoperative period with 1 death reported in postoperative period. Resection and anastomosis done in 5 out of 6 cases. Permanent stoma procedure done in 1 out of 6 cases. Because of delayed presentation and no interventional procedure, all of the patients in our study have gangrenous bowel with variable length of involvement. **Conclusion:-** The diagnosis of AMI is difficult and mostly delayed resulting in irreversible bowel ischemia which requires emergency intervention. As study was done for short period with a small group, it requires a larger group & long term follow up for better evaluation of cases and to understand the prognosis of the condition. Interventional procedure at an early stage reduces the mortality and morbidity in these cases.

KEYWORDS : Acute Mesenteric Ischemia, Ischemia, Exploratory Laparotomy, Gangrene**INTRODUCTION:**

Vascular occlusive disease of the mesenteric vessels is a relatively uncommon but potentially devastating condition that generally presents in patients over 60 years of age, is three times more frequent in women. Acute mesenteric ischemia is not an isolated clinical entity, but a complex of diseases, including acute mesenteric arterial embolus and thrombus, mesenteric venous thrombus, and nonocclusive mesenteric ischemia¹. Mesenteric ischemia is thought to occur when two of the three visceral vessels are affected with severe stenosis or occlusion. The most common cause of mesenteric ischemia is atherosclerotic vascular disease. Other etiologies exist and include Fibromuscular dysplasia, pan arteritis nodosa, arteritis, and celiac artery compression from a median arcuate ligament, but they are unusual. It is estimated that mesenteric ischemia accounts for 1 in every 1000 hospital admissions. Delay in diagnosis and treatment are the main contributing factors in its high mortality, with mortality rates ranging from 50% to 75%.

AIM & OBJECTIVES:

- The aim of the series is to highlight the clinical presentation, difficulty in diagnosis of acute mesenteric ischemia in emergency setting in our hospital.
- To assess the mortality and morbidity of AMI associated with the amount of bowel gangrene and underlying risk factors.

METHODS:

- All patients diagnosed to have mesenteric ischemia at exploratory laparotomy in our hospital were assessed in prospective manner.
- Total 6 patients were assessed over duration of 1 year 2 months from January 2021 to February 2022 in Government General Hospital, Kurnool.

OBSERVATION AND RESULTS:**Case Scenarios & Intra Op Photos:**

	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6
AGE & SEX	40yrs, MALE	56YRS MALE	65YRS MALE	58YRS FEMALE	45yrs, MALE	38yrs, MALE
CLINICAL PICTURE	Pain abdomen, Constipation, vomiting	Pain abdomen, Constipation, vomiting, abdominal distension	Pain abdomen, vomiting	Pain abdomen, Constipation,	Pain abdomen, Constipation, vomiting	Pain abdomen, vomiting

Relationship Between Type Of Procedure And Mortality:

TYPE OF PROCEDURE	NO.OF PATIENTS(%)	NO.OF DEATHS(%)
RESECTION AND ANASTOMOSIS	4(66%)	1(25%)
DIVERSION PROCEDURE	2(33%)	0(00%)

Distribution Of Patients According To Age Group:

AGE IN YEARS	NO.OF PATIENTS	PERCENTAGES
35-45	3	50%
46-55	0	00%
56-65	3	50%

Clinical Presentation:

PRESENTATION	NO.OF PATIENTS	PERCENTAGES(%)
ABDOMINAL PAIN	6	100%
VOMITTINGS	5	83%
CONSTIPATION	4	66%
FEVER	0	00%
ABDOMINAL DISTENSION	0	00%
MALENA, UPPER GI BLEED	0	00%

- All patients presented with features of acute intestinal obstruction.
- Pain abdomen is main presenting complaint in all cases with or without vomiting, constipation.
- Contrast CT was not performed in 3 cases because of hemodynamic instability and elevated renal parameters.
- Post operative CT angiography done in one patient [female], it showed partial filling defect in SMA
- Heparin was started in all cases in immediate postoperative period, and discharged with oral anticoagulants.

RISKFACOR	nil	nil	CAD	nil	Vaso occlusive disease of lower limb	Vaso occlusive disease of lower limb
ABDOMINAL XRAYs	Dilated bowel loops	Dilated bowel loops	Normal	Dilated bowel loops	Normal	Normal
CT ABDOMEN	Partial thrombus noted in aorta at origin of CELIEC TRUNK	Diffuse circumferential wall thickening of proximal jejunal bowel loops	Not done	Dilated jejunal and proximal ileal loops with transition point noted in mid ileal loops	Not done	Not done
SURGERY	Diversion procedure	Resection and anastomosis	Resection and anastomosis	Resection and anastomosis	Diversion procedure	Resection and anastomosis
POSTOP FOLLOWUP	uneventful	uneventful	Anastomotic leak, second look surgery	uneventful	uneventful	Death

DISCUSSION:

- There are three major mechanisms of visceral ischemia involving the mesenteric arteries: (a) acute mesenteric ischemia, which can be either embolic or thrombotic in origin; (b) chronic mesenteric ischemia; and (c) nonocclusive mesenteric ischemia². The superior mesenteric artery (SMA) is the most commonly involved vessel in acute mesenteric ischemia.
- Acute mesenteric ischemia is a life-threatening vascular emergency that requires early diagnosis and intervention to adequately restore mesenteric blood flow and to prevent bowel necrosis and patient death³.
- Abdominal pain out of proportion to physical findings is the classic presentation in patients with acute mesenteric ischemia and occurs following an embolic or thrombotic ischemic event of the SMA. Fever, nausea, vomiting, and abdominal distention are some common but nonspecific manifestations. Diffuse abdominal tenderness, rebound, and rigidity are late signs and usually indicate bowel infarction and necrosis.
- The differential diagnosis of acute mesenteric ischemia includes other causes of severe abdominal pain of acute onset, such as perforated viscus, intestinal obstruction, pancreatitis, cholecystitis, and nephrolithiasis
- In the setting of mesenteric ischemia, complete blood count may reveal hemoconcentration and leukocytosis. Metabolic acidosis develops as a result of anaerobic metabolism. Finally, increased lactate levels, hyperkalemia, and azotemia may occur in the late stages of mesenteric ischemia.
- Duplex ultrasonography is a valuable noninvasive means of assessing the patency of the mesenteric vessels. Finally, spiral CT with three-dimensional reconstruction and MRA have been promising in providing clear radiographic assessment of the mesenteric vessels⁴.
- The definitive diagnosis of mesenteric vascular disease is made by biplanar mesenteric arteriography. It typically shows occlusion or near-occlusion of the CA and SMA at or near their origins from the aorta.
- Initial management of patients with acute mesenteric ischemia includes fluid resuscitation and systemic anticoagulation with heparin to prevent further thrombus propagation. Operative management requires adequate excision of clearly necrotic bowel and a high index of suspicion of borderline segments⁵.
- It is helpful to obtain a preoperative mesenteric arteriogram to confirm the diagnosis and to plan appropriate treatment options. **However, the diagnosis of mesenteric ischemia frequently cannot be established prior to surgical exploration,** and therefore, patients in a moribund condition with acute abdominal symptoms should undergo immediate surgical exploration, avoiding the delay required to perform an arteriogram.

CONCLUSION:

1. The diagnosis of AMI is difficult and mostly delayed resulting in irreversible bowel ischemia which requires emergency intervention.
2. Mortality and Morbidity for AMI remains high, and in patients requiring extensive bowel resection the survival rate was low.
3. Early recognition and prompt treatment before the onset of irreversible intestinal ischemia are essential to improve the outcome.

REFERENCES:

1. Meşinâ C et al. Acute mesenteric ischemia Chirurgia (bucur) 2008 Jul-Aug;103(4):385-94
2. Yasuhara H. Acute mesenteric ischemia: the challenge of gastroenterology. *Surg Today*. 2005;35(3):185-195.
3. Oldenburg WA, Lau LL, Rodenberg TJ, Edmonds HJ, Burger CD. *Arch Intern Med*.

2004 May 24;164(10):1054-62. doi: 10.1001/archinte.164.10.1054.

4. Mitchell EL, Moneta GL. Mesenteric duplex scanning. *Perspect Vasc Surg Endovasc Ther*. 2006;18(2):175-183.
5. Karwowski J, Arko F. Surgical management of mesenteric ischemia. *Tech Vasc Interv Radiol*. 2004;7(3):151-154.