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## HYPOKALEMIA IN ACUTE MESENTERIC ISCHEMIA IN CHRONIC SMOKER

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### ABSTRACT

Ischemic enteritis is a disease of the elderly, with more than 90% of the cases occurring during the age 60. Ischemic enteritis is difficult to estimate as many patients with mild ischemia may not seek medical attention. It is also important to differentiate ischemic colitis, which often resolve on its own from the more immediately life threatening condition of acute mesenteric ischemia of the small bowel. Here, we presented a case in which 49 yr / male with H/O chronic heavy smoker ( more than 25 yrs ) came to casualty with acute pain abdomen with hypokalemia and leukocytosis and the patient was taken for laporotomy and resection of the gangrenous bowel was done.

**KEY WORDS:** Hypokalemia, Ischemic Bowel, Chronic Heavy Smoking



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## INTRODUCTION

Ischemic enteritis is a disease of the elderly and is usually suspected on the basis of clinical settings, physical examination and lab test results and diagnosis can be confirmed by endoscopy. Patient with mild to moderate ischemia are usually treated with intravenous fluids, analgesia and bowel rest, those with severe ischemia who develop complications such as sepsis, intestinal gangrene or bowel perforation may require surgery and intensive care [1-3].

## CASE REPORT

A 49 yr / male who came with severe abdomen pain for the past few days was admitted on 16/6/2013. Patient had past H/O of abdomen pain for 6 months. Patient was suspected based on clinical settings, physical examination and lab tests to have an acute intestinal perforation

and peritonitis. Patient was taken for the surgical procedure and laporotomy was performed and resection of the gangrenous bowel was done on 20/6/2013. Patient had electrolyte disturbances (with hypokalemia, hyponatremia, and hypochloremia). Patient had leukocytosis with neutrophilia. Patient had past H/O as chronic heavy smoker (more than 25 yrs)

### HISTOPATHOLOGY FINDINGS

*Impression is consistent with ischemic enteritis*

### Gross description

Loops of small intestine; longest segment measuring 12 cm, small segment measuring 4 \* 3.5 cm, mesenteric surface brownish, cut surface focal dilatation and thinning of mucosa (Fig1).



**Microscopic description**

Ulceration of mucosa, transmutable inflammatory cell collection, congestive blood vessel, focal areas of submucosa edema, thrombosed vessel in the mesenteric fat (Fig 2).



**HAEMATOLOGY**

TC: 34,000 cells/mm<sup>3</sup>  
NEUTROPHILS: 80 %  
LYMPHOCYTES: 20%  
HB: 13.4 g/dl  
PCV: 41.7%  
PLATELETS: 1.54 lakhs / mm<sup>3</sup>  
BT: 1'50" CT: 3' 55"  
PT: 16.69 ; APTT : 27.16  
BLOOD GROUP: 'A' positive

**LIVER FUNCTION TEST**

Total protein: 6.8 g/dl  
Albumin: 3.9 g/dl  
Globulin: 2.9 g/dl  
(A/G): 1.3  
Total bilirubin : 0.8 mg/dl  
Direct bilirubin : 0.3 mg/dl  
Indirect bilirubin : 0.5 mg/dl  
SGOT: 14 IU/L  
SGPT: 17 IU/L  
ALP: 60 IU /L

**PANCREATIC TESTS**

Amylase: 68 U/L  
Lipase: 27 U/L

**LIPID PROFILE**

Total cholesterol: 114 mg/dl  
TGL: 159 mg/dl  
HDL: 46 mg/dl  
LDL: 36.2 mg/dl  
VLDL: 31.8 mg/dl

**RENAL FUNCTION TEST**

Urea: 37 mg/dl  
Creatinine : 0.9 mg/dl

**SERUM ELECTROLYTES**

Serum sodium: 128 mEq/L  
Serum potassium : 3.22 mEq/L

Serum chloride: 89.7 mEq/L

**URINE ROUTINE**

Protein: trace  
Sugar: nil  
RBC: nil

## DISCUSSION

A 49/ male patient was diagnosed to have an acute intestinal perforation and peritonitis and then laparotomy was performed and resection of the gangrenous bowel was done [4, 5, and 6]. Histology impression is consistent with ischemic enteritis. Patient had leukocytosis and electrolyte abnormalities with other biochemical tests within normal limits. Patient had no past H/O diabetes mellitus, systemic hypertension, coronary heart disease or any previous surgery, and he was not on any previous medication. Patient had past H/O chronic heavy smoking (more than 25 yrs). Usually the causes for ischemia are due to occlusive or non-occlusive type. Occlusive ischemia indicates that a blood clot or other blockage has a cut-off blood flow (thrombo-embolism is usually caused by atrial fibrillation, valvular disease, myocardial

infarction or cardiomyopathy). Non-occlusive ischemia develops because of low blood pressure or constriction of the vessels. A shock phase can develop as fluids start to leak through the bowel lining. This can result in shock and metabolic acidosis and dehydration with low blood pressure, increased heart rate and confusion [7]. In this case report, Patient had electrolyte disturbances (with hypokalemia, hyponatremia, and hypochloremia). Patient had leukocytosis with neutrophilia. Patient had hypotension, tachycardia and anxiety. Patient had past H/O chronic heavy smoking (more than 25 yrs). The cause for ischemia is most probably non-occlusive here. The constriction of the vessels most probably was due to person's chronic smoking habit.

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