

COLONIC ISCHEMIA

INTRODUCTION

- Colonic ischemia is the most common form of intestinal ischemia.
- Attacks occur in a transient fashion and can resolve spontaneously. Because of this, it can be very difficult to diagnose and detect.
- Anatomy of the colon
 - Major arteries: Superior mesenteric artery and inferior mesenteric artery.
 - Superior mesenteric artery gives off branches consisting of the ileocolic artery, right colic artery, and middle colic arteries which supply the right and transverse colon. The ileal and jejunal branches supply the small bowel.
 - Inferior mesenteric artery supplies the descending colon and the sigmoid colon via the left colic artery, sigmoid arteries and the superior rectal arteries.
 - The IMA and the SMA have collateral circulation provided by the marginal arteries.
- Etiologies include aortic surgery, arteriosclerotic disease, any factor that can cause transient hypotension. Other factors include the use of oral contraceptives, cocaine abuse, hereditary coagulopathies, long-distance running and bacterial infections (E. coli and CMV).
- Colonic ischemia has a wide range of sequelae ranging from transient ischemia, chronic ischemia to gangrenous bowel.
- The disease usually occurs in a segmental fashion.
- Severity of disease depends on the thickness of bowel involved.
- Disease involving the mucosa usually results in full recovery.
- Disease involving the muscularis can result in stricture and transmural involvement can result in perforation and peritonitis.

SIGNS AND SYMPTOMS

- Abdominal pain, hematochezia, and fever.
- Symptoms vary depending on the severity of ischemia, length of bowel involved.
- In severe cases involving full bowel thickness causing perforation will result in severe abdominal pain, fever and peritoneal signs.

DIAGNOSIS

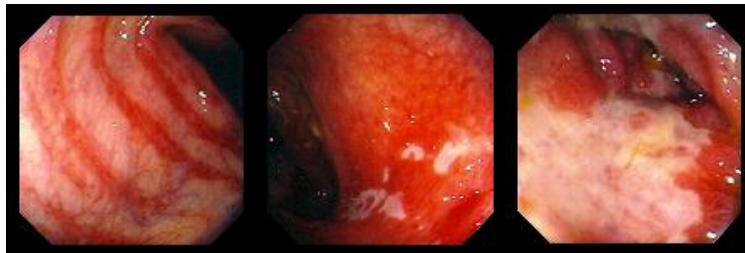
- High index of suspicion for colonic ischemia, the symptoms alone can be caused by a whole host of conditions. A good clinical history and exam are of utmost importance.
- Radiologically, a plain film of the abdomen can be obtained. This is often not specific but some radiologic signs that can be seen include:
 - isolated segment of distended colon
 - ileus
 - “thumbprinting” resulting from a combination of intestinal wall edema or submucosal hemorrhage.
 - Pneumatosis can also be seen in some cases.
 - Plain films can also show free air from perforation.
- Use of oral or rectal contrast studies are relatively contraindicated due to the risk of

perforation.

- Flexible sigmoidoscopy or colonoscopy are good diagnostic modalities for visualizing colonic mucosa.
 - Hemorrhagic, dusky mucosa can be seen on colonoscopic studies.
 - Biopsies can be taken to rule out infectious or inflammatory causes of colitis.
 - However, colonoscopy cannot determine whether disease is transmural or mucosal.
- CT studies using intravenous contrast are useful in visualizing the arterial supply of the bowel and determination of the extent of ischemia.
- Arteriography is indicated for suspected mesenteric ischemia involving the small bowel.
- In some cases, Doppler studies can be useful in delineating vascular flow in the mesenteric circulation.

TREATMENT

- Treatment is dependent upon the severity and the presentation of disease.
 - Initially patients are treated with bowel rest, intravenous fluids and supportive measures until bowel pain resolves.
 - In some cases, broad spectrum antibiotics may be useful since disrupted bowel may result in bacterial translocation.
- Surgical management of colonic ischemia is indicated in certain instances.
 - Acute: perforation of bowel should be managed by segmental resection of affected bowel with an end ostomy.
 - Subacute: no response to treatment after 2-3 weeks with continued symptoms, recurring bouts of sepsis with no other identifiable source.
 - Management consists of segmental resection with primary anastomosis or end ostomy.
 - Chronic: symptomatic stricture of affected bowel or symptomatic chronic colitis.
 - This can be managed with resection or in some cases, endoscopic dilation or stenting.





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