

# Acute Diverticulitis And Acute Myelogenous Leukemia- An Unusual Association: A Case Report And Review

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## Abstract

### INTRODUCTION

Crude incidence of AML in adults in Europe is 5-8 cases/100000/year. Mortality is approximately 4-6 cases/100000/year. Elderly patients (>60) have an adverse prognosis and are more susceptible to treatment complications.

Incidence of diverticular disease of the colon is 5-10% in the 5<sup>th</sup> decade and 50% past the 7<sup>th</sup> decade. It mainly affects the sigmoid colon (incidence is 80%) as it is the narrowest segment of the colon and has the highest pressure.

AML and diverticular disease can both by themselves or in combination predispose, by diminishing or increasing demand of colonic intramural blood flow, to a condition known as Non-gangrenous ischemia of the colon. This is due to hypo-oxygenation, caused by hypo perfusion of the gut wall microcirculation. Only occasionally is there secondary occlusion of intramural vessels.

### CASE 1

76 years old male, presented with 5-7 weeks history of central abdominal pain with associated weight loss, anorexia and fever with night sweats. This was later followed by rectal bleeds and altered bowel habits (loose stools). On physical examination there was a lower abdominal tender mass, but no signs of Peritonitis.

Blood tests revealed a pancytopenia (WCC 2.6, neutropenia of 1.8 and anemia, Hb 8.2, CRP 230.)

CT scan of abdomen showed a pericolic abscess and sigmoid diverticular disease.

Bone marrow aspirate performed for persistent pancytopenia showed a hypo-cellular marrow and Acute Myeloblastic Leukemia (AML). Patient opted for supportive treatment

with blood transfusions and antibiotics and refused Chemotherapy.

### CASE 2

46-year-old male, presented with lower abdominal pain associated with progressive lethargy and pyrexia. Examination findings were consistent with a diagnosis of acute diverticulitis.

Blood tests showed pancytopenia (WCC 1.7, neutropenia of 0.44, Hb 11.9 and CRP 261).

Although patient responded to antibiotics pancytopenia persisted and he remained pyrexial and unwell.

Bone marrow aspirate showed a hypo-cellular marrow and blast cells. A diagnosis of Acute Myeloblastic Leukemia (AML) was made. Patient was treated with IV antibiotics prior to commencing Chemotherapy.

### DISCUSSION

Both the above examples may appear as a mere coincidental association between the 2 conditions; however it could also be a possible manifestation of Non gangrenous Ischemic Colitis.

### PATHOGENESIS

There are two major forms of colonic ischemia: gangrenous (transmural) and nongangrenous colitis (disease contained within the colonic wall). These are in fact two different diseases, with different etiologies and clinical courses, and require different approaches to their management. Gangrenous ischemic colitis is caused by obstruction of the major mesenteric vessels. Occasionally, transmural gangrene may develop when nongangrenous ischemic colitis slowly progresses to transmural necrosis. The recognition and management of this complication of the originally

nongangrenous disease is crucial, and depends on careful ongoing observation of the patient with nongangrenous ischemic colitis.

In contrast to the rarity of nonocclusive ischemia of the small bowel is the relative frequency of local vascular hypoperfusion of the colon. The cause of this relative frequency may be related to the following factors: In comparison to the small intestine, the colon receives less blood, has fewer vascular collaterals, has susceptible "watershed areas" and possesses an ongoing forceful motor activity. Elevated intramural pressure during increased motility in patients with constipation, diverticular disease and cancer of the colon may lead to diminished gut wall blood flow. Also conditions like AML or other hypercoagulable conditions which increase blood viscosity cause nonocclusive hypoperfusion of the gut. Similarly, distention with air during colonoscopy or barium enema may temporarily reduce blood flow to the colon. The large bowel also has a different neuroendocrine control. Evidence has indicated that the vessels of the canine colon respond more vigorously to hypotension than those of the small intestine and that contrary to the latter, in the colon the major local vasoconstrictory substance is angiotensin.

## CONCLUSION

As both cases were individuals otherwise fit with no major illnesses in the past, it may be reasonable to conclude that

- Persistent pancytopenia in a complicated case of diverticular disease unresponsive to antibiotics is

likely to be associated with a haematological problem.

- Complication of diverticular disease of colon with underlying leukemia may be a result of Non gangrenous ischemic colitis.

Non gangrenous ischemic colitis is an under diagnosed entity and although in the above cases the prognosis was poor due to AML, other treatable conditions causing it may have a more favorable outcome.

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