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Case Report

Ischemic Colitis Due To Intestinal Neoplasia; an Unappreciated Pathologic Entity- A Case Report of Two Cases with Unusual Morphologic Features

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Abstract

Ischemic colitis goes unrecognized as a complication in intestinal neoplastic disorders because of their unique morphological features which vary depending upon haemodynamic status. The two cases presented here show even though ischemic pathogenesis is the underlying factor responsible for this condition; morphologically they are heterogenous and they are described in detail.

Keywords: Ischemic colitis, morphological, haemodynamic, morphologically.

INTRODUCTION

Among the many complications one encounters in the study of intestinal neoplastic disorders; a condition which often goes almost unnoticed morphologically and also assessed clinically imprecisely is ischemic bowel disease. Even though assessment of prognostic indicators has advanced significantly in recent times, the role of ischemia as a contributor in the mortality and morbidity in malignancy is yet to be appreciated in full. Recently we have come across two such cases drawing our attention to the significant role of ischemia as a factor in determining the clinical features, different pathogenic mechanisms, morphological expression requiring varied strategies in managing these complications in such a common problem like cancers.

Systemic hypotension and distension of bowel leading to reduction in splanchnic blood flow [1] are the main reasons for ischemia and the basis for this is vasoconstriction due to release of high levels of thromboxane-A2 from platelet aggregates and leukotriene C4; 300% more than normal [2].

Even in the patent patient vessels, this phenomenon can result in widespread intestinal infarcts.

CASE PRESENTATION

Case-1

A 55 year old male was admitted in the hospital for acute abdominal pain and passing blood per rectum. He was obviously in distress with impending signs of shock. Previous history disclosed abdominal discomfort on and off. Rectal examined revealed a growth and it was resected.

The specimen sent showed a growth with papillary projections and a haemorrhagic ulcerative lesion (Figure-1). The growth proved to be aqn invasive adenocarcinoma; confined mostly in mucosa. The papillary process near the surface showed.

Carcinoma in- situ type of lesion along with few foci of microinvasion. Subnuclear vacuolation was seen in many cells in the mucosal lesion.

The other half of biopsy revealed loss of mucosal elements completely. Withered crypts with oedema and mucosal haemorrhages dominate the lesion with detachment of surface mucosal lining (Figure-2). Small blood vessels were thrombotic and necrotic. A diagnosis of invasive adenocarcinoma coexisting with superficial mucosal ischemia was made. Transmural edema, necrosis and infarct like lesion as in advanced ischemic lesion were not seen.

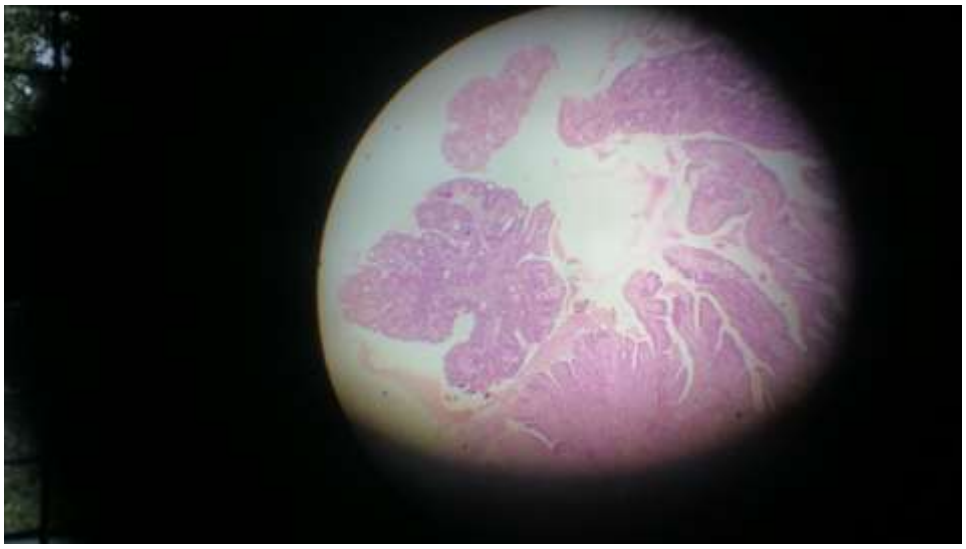

Fig-1: Papillary adenocarcinoma with cribriform areas intestine (Low power)

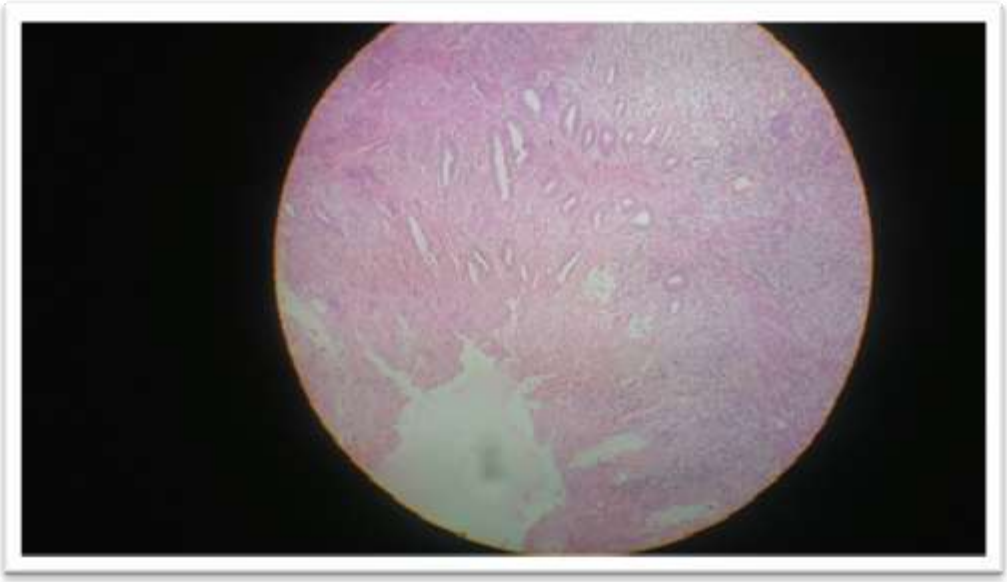

Fig-2: Withered crypts with oedema and mucosal haemorrhages

Case-2

A male of 60 years old was admitted with a complaint of abdominal distension and dull aching pain throughout the abdomen. Alternating constipation, and diarrhea with occasional dysentery like manifestations was recorded earlier. A provisional diagnosis of subacute intestinal obstruction was made and abdomen was opened for resection of colon. Stricture was identified and partial colectomy was performed. Apart from stricture, the intestine revealed multiple mucosal ulcers with a polyp like lesion. Histology revealed evidences of healed inflammatory bowel disease like shortening of crypts, forking of crypts, etc are noticed along with a vasoformative lesion in the polyp. The presence of small blood vessels, lined by epithelial looking endothelial cells, sheet like and cord like arrangment of similar cells, massive eosinophilic infiltrate and dense lymphocytic infiltrate throughout the mucosa in the polyp suggest a coexisting angio lymphoid hyperplasia with eosinophilia (otherwise termed as epithelioid hemangioma); a rare condition involving gastro intestinal tract (Figure 3 & 4). Mucosa as well serosa, more so in the latter show extensive foci of haemorrhages without hemosiderosis and subtle small vessel thrombosis; a finding not seen in IBD.

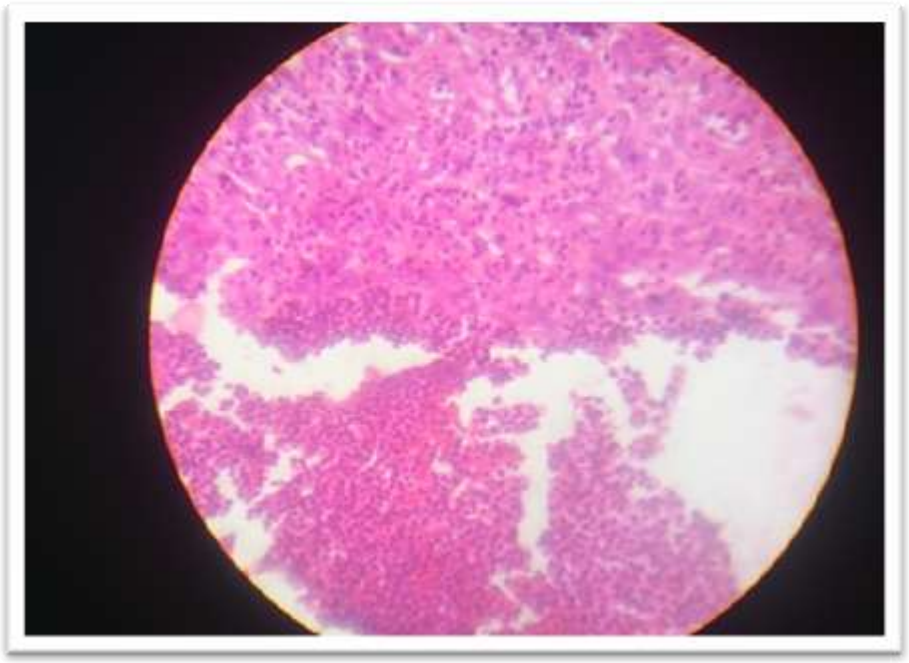

Fig-3: Eosinophilic infiltrate with prominent vessel proliferation

DISCUSSION

More than 75years ago, the inter relationship between fibrinolytic and consumption coagulopathies and malignancy had been established. In a study of 182 patients with malignant disease, excessive bleeding was noticed in 41% cases while arterial and venous thromboses including migratory thrombophlelites accounting for the rest [3]. In another study 7% of patients suffering from solid tumors had DIC [4]. Ischemic conditions involving the bowel affects mucosa initially and that too superficial zone very much vulnerable to tissue anoxia and if this is uncorrected the lesion progresses; extending deep transmurally and leading to irreversibility and shock. Initially when the lesion is transient the mucosa shows mild edema, mucosal haemorrhages and surface epithelial detachment and coagulative necrosis of superficial mucosa. Later on after the influx of lipo-polysaccaride derived from microbial factors and superoxides from the infiltration of neutrophils, the morphology undergoes a transformation. At this stage one of the characterstic features of this disorder, namely withering of crypts manifests itself; as seen classically in our case under discussion [4]. The deeper crypts show mucus depletion and reactive epithelial lining. Small blood vessels become necrotic and are filled with thrombi; due to DIC like coagulopathy. All these changes are well represented in our study in this case. The irreversible stage leads further to the formation of pseudomembrane, transmural edema, widespread necrosis and haemorrhages in the walls.

Another complication in ischemic bowel disease, often recurrent, is characterized by bloody diarrhea and symptomatic stricture manifesting as subacute or chronic intestinal obstruction. Our second case under discussion was admitted with a preoperative diagnosis of intestinal obstruction. Histologically this phase share many morphological features as in inflammatory bowel diseases [5]; particularly when ischemic lesion undergo healing. Appearances as in chronic ulcerative colitis like shortened crypts, branched and budded glands are mimicked in healing of ischemic disease; some of which encountered in our case also.

Even though morphological expression of ischemic bowel disorders either acute or chronic, differ widely, the basic mechanism leading to this alteration is the same. Tissue factors, escaping from altered cells due to ischemia initiate the release of factors responsible for coagulation; consuming coagulation factors during this process and activating fibrinolytic mechanism, like plasminogen activator and T-PA [6] and releasing cytokines; particularly IL-6 which is mainly responsible for expression of tissue factor [7]. For planning appropriate therapy for ischemic bowel disease, understanding the morphological features elaborated above is essential and helpful.

CONCLUSION

One of the features not properly emphasized in the study of ischemic lesions in bowel due to cancer is the various morphological evidences of this disorder; resulting from the altered haemodynamic status of the disease and various factors complicated in keeping blood in a fluid state. It is to be understood that the morphological expression of this disorder is based upon the intricate interrelationship between coagulation, tissue injury and repair.

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