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Case Report

A case of pneumoperitoneum after diagnostic colonoscopy for ulcerative colitis managed conservatively: a rare but possible complication

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ABSTRACT

Ulcerative colitis is a chronic disease characterized by recurring episodes of inflammation of the colonic mucosae. Patients with ulcerative colitis are at an increased risk of perforations due to friability of colonic mucosa. Colonoscopy is usually regarded as a safe procedure, but complications may occur. Perforations associated with colonoscopy are dreaded complications. Most patients with pneumoperitoneum require surgical intervention, with associated major postoperative morbidity and mortality. This case report describes a 30 year old female presenting with an extensive pneumoperitoneum 2 days after colonoscopy done for her complaint of melena for one week. Colonoscopy was suggestive of severe active colitis in background of chronic ulcerative colitis. Histopathological reports s/o inflammatory bowel disease ulcerative colitis likely. CT Abdomen was s/o diffuse concentric thickening of the large bowel more predominantly seen in rectosigmoid colon, ascending colon, caecum, IC junction and consistent with inflammatory bowel disease and moderate pneumoperitoneum noted. The patient remained stable despite intraperitoneal free air. Patient was managed conservatively and no surgical intervention needed.

Keywords: Ulcerative colitis, Pneumoperitoneum, Colonoscopy, Conservative management

INTRODUCTION

Ulcerative colitis (UC) is a chronic disease characterized by recurring episodes of inflammation of the colonic mucosae. Patients with ulcerative colitis are at an increased risk of perforations due to friability of colonic mucosa given the chronic inflammation and relapsing flares, advanced crypt distortion, formation of crypt abscesses, and mucin depletion which lead to fulminant colitis or toxic megacolon.[1,2] Pneumoperitoneum as a result of colon perforation rarely occurs in patients with fulminant colitis, either spontaneously or after diagnostic endoscopy. Colonoscopy is usually regarded as a safe procedure, but complications may occur. The most feared are perforation and massive bleeding of the colon. Most patients with pneumoperitoneum require surgical intervention, with associated major postoperative morbidity and mortality. Medical therapy, endoscopic and other non-surgical managements have decreased the role of surgery. However, due to the risk of complications, sometimes other modalities other than open surgery should be considered.

Symptomatic free air requires surgical management, but management of asymptomatic pneumoperitoneum is controversial.[3] If the etiology is micro perforation, the standard treatment is intravenously administered antibiotics and bowel rest. However, transmural passage of insufflated air without bowel wall compromise may not require any intervention. Conservative treatment should be reserved only for carefully selected patients.[4]

CASE REPORT

A 30 year old female patient was referred to civil hospital with free gas under the diaphragm from a private hospital. She had a history of diagnostic colonoscopy performed 2 days before. Colonoscopy was a done to evaluate her complaint of 1 week of melena (7-8 times/day). Gastroenterologist in private setup that had performed the procedure indicated that the colonoscopic procedure was not complex and was performed safely. Room air was used for inflating the colon. On per abdominal examination abdomen was soft and distended but no abdominal tenderness, guarding, and rigidity were detected on physical examination.

Laboratory findings were as follows: leukocytes; 12500/mm^3, Hb; 5.9 gm/dl, Hct; 23.74%, and CRP; 43 mg/dl. Free air was detected on the plain films of the abdomen (Figure 1). On the abdominal computerized tomography, free air was detected (Figure 2).

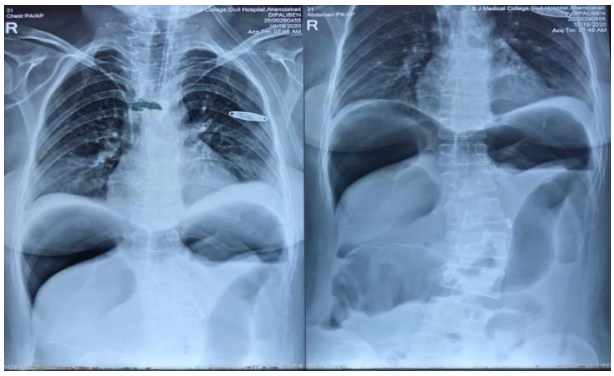

Figure 1: chest and abdomen X-ray showing free gas under both dome of diaphragm.

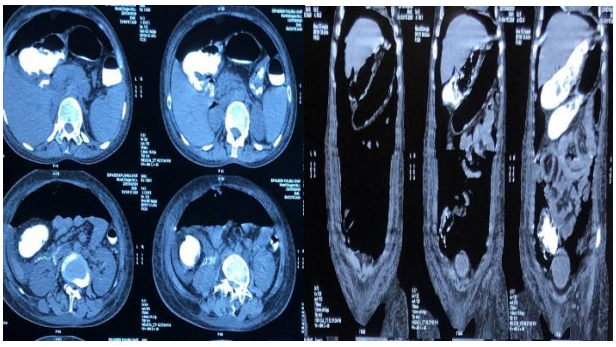

Figure 2: CT Abdomen showing moderate pneumoperitoneum.

Colonoscopic findings were: right colon; multiple variable sized punched out ulcer with normal intervening seen. A diffuse area of congested, erythematous, inflamed, vascular pattern-lost mucosa with multiple variable sized pseudo polyps was found from rectum to hepatic flexure of colon. Findings were suggestive of severe active colitis in background of chronic ulcerative colitis (Figure 3). Histopathological reports revealed inflammatory bowel disease ulcerative colitis. Two days after colonoscopy, the patient was referred to civil hospital with free gas under the diaphragm.

CT Abdomen was s/o diffuse concentric thickening of the large bowel more predominantly seen in rectosigmoid colon, ascending colon, caecum, IC junction and consistent with inflammatory bowel disease. Moderate pneumoperitoneum was noted. The patient remained stable despite intraperitoneal free air. Patient was kept nil by mouth for 4 days following admission and was treated with IV fluids, IV corticosteroid and IV antibiotics. When the patient started tolerating soft diet patient was shifted to oral steroid and tablet mesalamine. During this period sequential clinical examination was performed. Abdomen remained soft and distention gradually decreased. A follow-up radiological investigation showed the gradual disappearance of pneumoperitoneum (Figure 4) and the patient was discharged on the 9th day with same medications and advised follow-up.

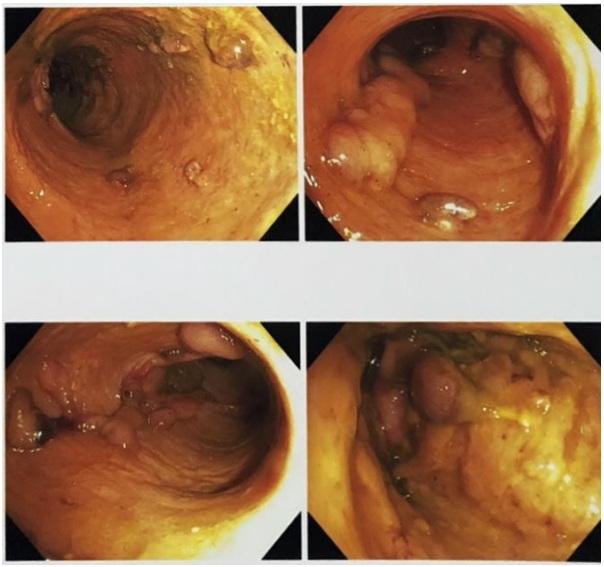

Figure 3: Colonoscopy showing inflamed and congested mucosa and pseudo polyps.

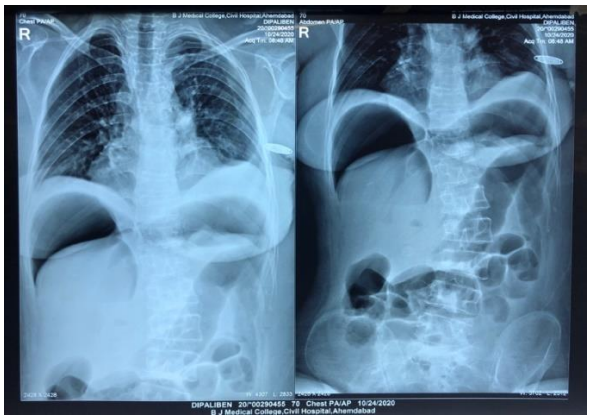

Figure 4 : Follow up chest and abdomen X-ray showing gradual resorption of pneumoperitoneum.

DISCUSSION

Colonoscopy has become the diagnostic and therapeutic modality of choice in patients with inflammatory bowel disease (IBD) by allowing for the assessment of disease extent and activity; the distinction between ulcerative colitis, Crohn's disease, and other differential diagnoses; the surveillance of dysplasia; and the delivery of treatment (stricture dilation).[5]

Asymptomatic free intra-abdominal air or pneumoperitoneum without peritonitis and appears as a characteristic radiolucency seen below the diaphragm on chest radiograph or in superiorly dependent location on abdominal radiograph. Colonoscopy associated perforation is a dreaded complication associated with significant mortality and morbidity. Understanding and mitigating the risks of perforation in patients with IBD has become an important issue with the increasing use of immunomodulators and biologic agents. Studies have shown that patients with IBD are at a higher risk for perforation from diagnostic or therapeutic endoscopy than individuals in the general population. Reported risk factors associated with colonoscopic perforation include female sex, advanced age, severe colitis, use of corticosteroids, presence of multiple comorbidities, and stricture dilation.[6-8] The purpose of this case report is to shed some light on management of pneumoperitoneum in patients with IBD undergoing diagnostic and/or therapeutic endoscopic evaluation. Majority of patients are usually managed surgically as pneumoperitoneum is considered as a surgical emergency. But current report emphasize on importance of some aspects like haemodynamic stability and sequential clinical examination to manage patient on a conservative basis successfully.

CONCLUSION

Colonoscopy has been shown to be a safe and effective method of diagnosing and treating complications associated with IBD. Although the current data demonstrate that the overall risk of perforation in this patient population remains low, the significant morbidity associated with this complication, coupled with the increased risk of perforation. IBD-specific perforation risk factors for diagnostic colonoscopy include active inflammation, concurrent corticosteroid use, older age, female sex, and performance of endoscopic dilation. The management of colonoscopic perforations remains controversial, since there are no specific guidelines, and has evolved during the last decades. Perforations can be often managed medically with bowel rest and intravenous antibiotics. However, in the light of deteriorating condition and development of signs of peritonitis, surgical intervention becomes mandatory.

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