

# Conservative Approach for Postoperative Ischemic Colitis: A Case Report

## *Postoperatif İskemik Kolit için Konservatif Yaklaşım: Olgu Sunumu*

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### ÖZET

**Giriş:** Kolorektal cerrahi sonrası görülen iskemik kolit ender ve ciddi klinik komplikasyonlardır. Pnömo-peritoneum postoperatif iskemik kolit olguları için suçlanmaktadır. Son günlerde laparoskopik tekniklerin tercih edilmeye başlanması ile birlikte bu komplikasyon daha sık karşımıza çıkmaya başlamıştır.

**Olgu sunumu:** Bu olguda laparoskopik rektal cerrahi uyguladığımız 62 yaşında erkek bir hastanın postoperative dönemdeki anastomoz proksimalindeki iskemi kliniğine yaklaşımımızı takdim etmekteyiz. Genellikle bu tür olgularda klinik seneryo proksimal kolonun nekrozu ve reoperasyonlarla devam etmektedir. Biz ise postoperative karşılaştığımız kolonik iskemide reoperasyon yerine klinik takip ve konservatif yaklaşımı tercih ettik.

**Tartışma:** Kolon iskemisi geridönüşümlü kolopati ve

### ABSTRACT

**Introduction:** Ischemic colitis after colorectal surgery is a rare and serious clinical complication.

Pneumoperitoneum is blamed for postoperative colonic ischemia. Nowadays, as the laparoscopic techniques are preferred, this complication has been seen more frequently.

**Presentation of case:** We report the case of a 62 year old male with proximal colonic ischemia following laparoscopic rectal surgery. Proximal bowel necrosis and re-operations are the most common clinical scenario. We present here a non-operative treatment and clinical features of postoperative colonic ischemia.

**Discussion:** Colonic ischemia is a clinicopathological condition from reversible colopathy and transient colitis to gangrenous and fulminant colitis. In this case, high

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geçici kolit tablosundan gangrenöz ve fulminant kolite kadar değişebilen klinik ve patolojik olgular bütünüdür. Bu olguda üst rectum cerrahisi için IMA'nın (İnferior mezenterik arter) yüksek ligasyonu ve yüksek basınçlı pnömoperitoneum veya mezenterik arterin aşırı gerilmesi anastomoz proksimalinde iskemik koliti tetiklemiş olabilir. Anastomoz kaçağını ve peritoniti dışlamak bizi tedavi için konservatif yöntemi tercih etmekte cesaretlendirmiştir.

**Sonuç:** Kolorektal cerrahi sonrası görülen kolonik iske mi ve olası klinik durumlar halen net olarak aydınlatılmış değildir. Bu nedenle postoperative akut abdominal ağrılar hızlı bir şekilde değerlendirilmelidir ve iskemik kolit her zaman ayırıcı tanıda akıllarda tutulmalıdır. Eğer anastomoz kaçağı yoksa ve peritonit dışlanabiliy se segmental kolonik iske mi cerrahi yapılmadan da tedavi edilebilir.

**Anahtar Kelimeler:** İske mik kolit, anastomoz, laparoskopik kolorektal cerrahi

### Manuscript

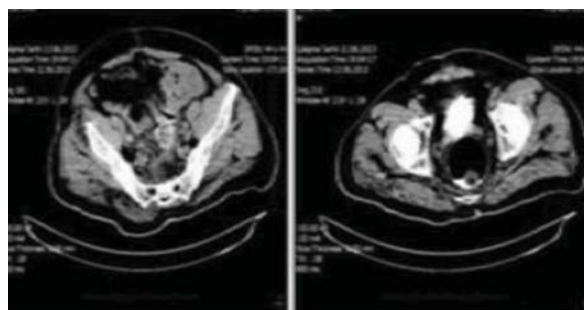
**Introduction:** Ischemic colitis following colorectal surgery is a rare, serious and unresolved complication.<sup>1</sup> This complication become more frequently after minimally invasive surgical methods started to be used for colorectal surgery.<sup>1,2,3</sup> Park and et all identified colonic is chemia as 0,83% among their 1201 colorectal surgeries.<sup>1</sup> High ligation of inferior mesenteric artery, long period of time with high pressure intraperitoneal CO2 insuflation, mesentery traction while accomplishing intestinal anastomoses or any hypoxic condition intraoperatively are all possible causes of bowel ischemia.<sup>1,4</sup> The pathophysiologic mechanism is described by ischemia-reperfusion phenomenon.<sup>5</sup> Since the clinical statement varies according to severity of colonic ischemia, there is no consensual management of the disease.<sup>5</sup> Hereby we present a conservative approach for a case with ischemic colitis following laparoscopic assisted low anterior surgery for rectum cancer. Presentation of case: A 62 year-old-man with a diagnosis of mid grade rectosigmoid adenocarcinoma (T1N1M0) underwent laparoscopic assisted low anterior resection. His medical history revealed medically controlled hypertension and thyroidectomy with a benign pathology. During the operation high ligation of IMA is accomplished, splenic flexura is mobilized and using

ligation of IMA (Inferior mesenteric artery) for upper rectum surgery, mesentery traction or high pressure pneumoperitoneum during laparoscopy might have triggered ischemic colitis in proximal part of the anastomosis. Excluding the anastomotic dehiscence and peritonitis has encouraged us for being more conservative in our treatment.

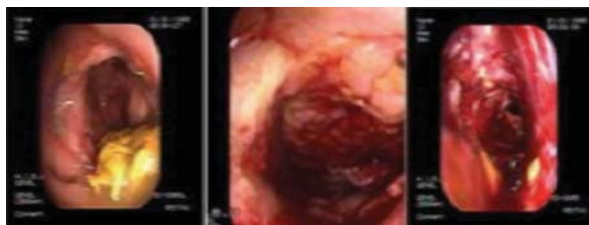
**Conclusion:** Colonic ischemia following a colorectal surgery and its possible clinical features has not been well described yet. Therefore acute abdominal pain after colorectal surgery should be evaluated immediately. Ischemic colitis should always be kept in mind after colorectal surgery. If there is no peritonitis or anastomotic leakage, segmental colonic ischemia can be treated nonsurgically.

**Key words:** Ischemic colitis, anastomosis; laparoscopic colorectal surgery

circular staplers end to end anastomosis is performed. Integrity of anastomosis was tested with endoscopic pneumatic testing. The blood loss was minimal and the laparoscopic operation time was 120 minutes. He was discharged on the eighth day postoperatively. However on the 20th postoperative day he readmitted suffering nausea and abdominal pain. His vital signs were normal and we did not detect any sign of peritoneal irritation on abdominal examination. His laboratory tests revealed elevation of acute phase reactants. A thickened 6 cm length of bowel wall proximal to anastomosis and obstruction around it were detected on computerized tomography (CT) scan (Fig. 1) Despite his normal

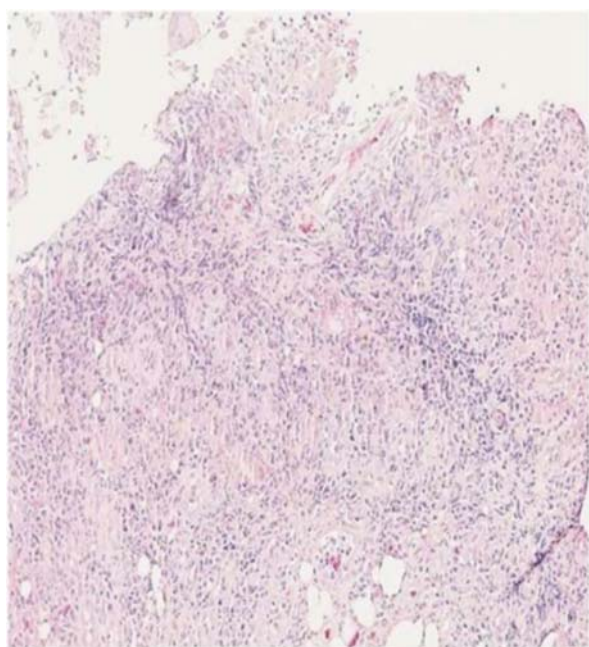


**Figure 1.** Abdomiopelvic CT scan showed mesenteric inflammatory reaction.

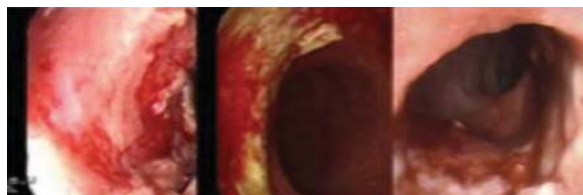


**Figure 2.** a, b, c: Rectoscopic appearance of the anastomosis&ischemia.

abdominal examination, the CT images were suspicious about anastomotic leakage. So we decided to perform contrast enema graphy. There were no any leakage on the graphy. Rectoscopic examination is performed. Ischemic, patchy ulcerated and fragile mucosa were seen on anastomotic segment rectoscopically (Fig. 2a). Multiple biopsies taken for definitive diagnosis revealed that surface erosions, crypt necrosis and mild inflammatory cell infiltration (Fig. 3).The patient was hospitalized, oral regimen was ceased and fluid resuscitation was started. Intravenous second generation cephalosporine and metranidazole was started. Mesalamine enema is added to the treatment. Oral intake was restarted on the 10th day of his hospitalization. After the clinical improvement was achived, he has been



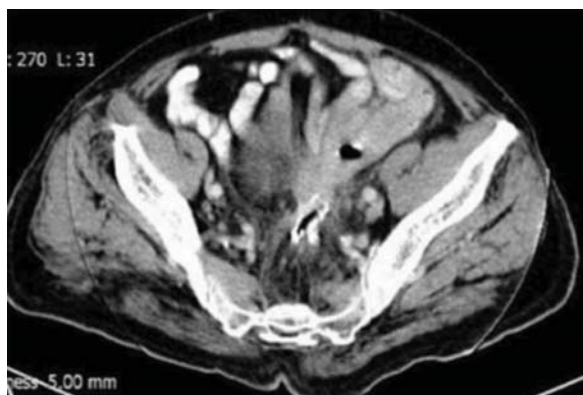
**Figure 3.** Microscopic specimen showing colitis w/ ischemic features.



**Figure 4.** a, b, c: Endoscopic images month by month during follow-up.

discharged and followed up by routine rectoscopic examinations (Fig. 2b & c) Chemotherapy regimen was assigned as FOLFOX and started after the disease's pathologic stage had been reported. The patient had no any other abdominal pain episode and regression of mucosal findings after 8 months was detected during his follow up (Fig. 4a, b, c). CT scan control in the 6th month showed regression of all findings detected in the 20th day postoperatively (Fig. 5).

Discussion: Ischemic colitis, first described by Boley et al, arises due to impairment of colonic blood supply resulting mucosal inflammation.<sup>6,7,8,9</sup> Some authors prefer to name it as 'acute idiopathic colitis' until ischemia is proven to be exact pathogenesis.<sup>10</sup> The mild and transient injury of ischemia is mucosal and submucosal hemorrhage and edema with or without partial necrosis and ulceration. More severe injury includes chronic ulcerations, crypt abscess and pseudopolyps. If there are strictures formed in muscularis propria layer, then it is named as severe ischemia. And the most severe form includes transmural infarction with gangrenous necrosis.<sup>6</sup> The clinical context can be encountered as spontaneous and postoperative ischemic colitis.<sup>5</sup> Colonic ischemia predominantly localized segmentally affecting



**Figure 5.** Following CT-scan, 6 months after discharge.

left colon in 80% of the cases.<sup>5</sup> It usually affects watershed areas of splenic flexure, descending colon or rectosigmoid junction.<sup>8,9</sup> The etiological risk factors are old age, hypertension, congestive heart failure, obstructive pulmonary disease, diabetes, hyperlipidemia, chronic renal failure and past history of cardiovascular or cerebrovascular accidents.<sup>7</sup> High ligation of inferior mesenteric artery (IMA), traction of the mesentery during performing anastomosis, pneumoperitoneum with high pressure insufflations and severe blood loss intraoperatively are the probable etiological factors for colon ischemia following colorectal surgery.<sup>4</sup> After a laparoscopic cholecystectomy is accepted as a gold standard surgical technique for gallstones, laparoscopy for colorectal surgery has gained popularity. But laparoscopic colorectal surgery throughout the world is still rare and reliable data about its success or complication rates is not clear yet.<sup>11,12,13,14,15,16</sup>

To achieve exact staging and prognostic values for rectosigmoid cancer, IMA should be divided before it gives the left colonic branch and in the literature postoperative colon ischemia rates after high ligation of IMA is declared between 0.45% and 24%.<sup>1,17</sup> Division of IMA at its root increases the risk of ischemic colon.<sup>7</sup> In this case operation time and blood loss were acceptable. Intraabdominal pressure did not exceed 14 mmHg. The integrity and tension of the anastomosis were controlled intraoperatively. We believe that, high ligation of IMA for rectum cancer is responsible for colon ischemia. Probable lack of collaterals for left colon result in segmental ischemia.<sup>18</sup> Generally clinical presentation of such a postoperative case includes fever, abdominal pain, bloody stool and leukocytosis in the first week following

operation.<sup>1,4,7</sup> In our case abdominal pain was the only symptom beside leukocytosis in the second week postoperatively. In the study of Park and et al, the patients with postoperative colon ischemia were in serious clinical condition so they all underwent secondary operations with or without anastomosis reconstruction. And the mortality rate is declared as 10% in ischemic colitis subgroup.<sup>1</sup> In this patient, we did not notice any obstruction or peritonitis sign. The patient's hemodynamics were stable. We exclude the anastomotic leakage and gangrenous necrosis. Ischemic colitis was involving mucosal and submucosal layer of proximal segment of anastomosis. By the way of our radiological, rectoscopic and pathological examinations, we considered his clinical state as a mild ischemic colitis which let us plan careful clinical follow up. After exclusion of gangrene and colonic perforation, patient can be treated conservatively.<sup>8</sup> Colonic ischemia can mimic inflammatory bowel diseases.<sup>6,8</sup> Broad spectrum antibiotics reduce severity of the bowel damage and provide mucosal integrity.<sup>6,8</sup> Immediately fluid resuscitation, appropriate antibiotic regimen for colonic flora preventing bacterial translocation and 5-aminosalicylic acid (5-ASA) treatment for 'antiinflammatory effect' worked in this case.<sup>19</sup> We documented a gradual mucosal repairment in each colonoscopic control done by monthly. At the end of the fifth month, remission of inflammation and patchy ulceration was established.

Conclusion: This case presentation has tried to exhibit that nonsurgical management of the postoperative ischemic colitis is reasonable if its severity evaluated comprehensively.

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