

## Colonic Perforation in Ulcerative Colitis

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### Abstract

Ulcerative colitis (UC) is a chronic inflammatory disorder of the gastrointestinal tract. Goals of treatment include eliminating symptoms and restoring quality of life with normal growth. Probiotic transplantation (PT) using colonoscopy has the potential to be an effective and safe for UC. Colonic perforation in UC is an unwanted complication of disease during treatment which may necessitate urgent surgical intervention. This study is presented to review the literature with special reference to surgical management of UC in children.

**Keywords:** *Ulcerative Colitis (UC); Colonic Perforation*

### Introduction

Ulcerative colitis (UC) is a chronic inflammatory disorder of the gastrointestinal tract that begins mostly during adolescence and young adulthood. Nearly 25% of the patients with UC present before age 20 years [1]. Current goals of treatment in UC are to eliminate symptoms and restore quality of life, restore normal growth and eliminate complications [2]. There are various treatment modalities including the probiotic transplantation (PT) using colonoscopy which has the potential to be an effective and safe for UC [3].

The colon and rectum is mostly affected during UC which has an incidence of 10 per 100.000 and prevalence of 240 per 100.000 [4-6]. Pediatric inflammatory bowel disease (IBD) is unique from adult onset disease having extensive intestinal involvement with fairly rapid progression [7]. Current goals of treatment are to eliminate symptoms and restore quality of life, restore normal growth and eliminate complications. Medical treatment options include corticosteroids, enteral nutrition therapy, aminosalicylates, immunomodulators, anti (tumor necrosis factor) TNF therapy [2].

In order to modify the gastrointestinal microbiota probiotics and prebiotics have been used in the treatment and maintenance of IBD with variable efficacy [8]. Probiotics are live microorganisms having beneficial effects like increasing metabolism and improving immune system function for the body. The literature on the usage of probiotic enemas in children with UC is scarce. It has been suggested that administering certain strains with an enema, in addition to oral medication might be beneficial for children with UC [9].

Colonoscopy is used worldwide for the diagnosis and treatment of colorectal diseases. It is essential diagnostic and screening tool but is not without complications. Iatrogenic colonic perforation is a rare complication of colonoscopy and there is no consensus for the optimal management of these complications. Reported incidences of colonic perforation following diagnostic colonoscopy are 0,2% - 0,5% and that of for therapeutic colonoscopy is as high as 2% [10].

Abdominal pain after a colonoscopy with pain migrating to the shoulder should be carefully assessed because it may indicate a perforation [11]. Other symptoms of colonic perforation are nonspecific and include bilious vomiting accompanied by nausea. Fever and leucocytosis are other objective signs of perforation [12]. Abdominal upright radiographs are usually diagnostic of intestinal perforations revealing subdiaphragmatic free intraperitoneal. If findings are inconclusive, computed tomography is recommended for further evaluation [13].

Three possible explanations have been suggested for the etiology of colonic perforations following colonoscopy. These are pneumatic perforation, mechanical perforation and perforation associated with therapeutic colonoscopy [14]. Any intervention involving dilation or electrocoagulation may be an initiating factor for perforation associated with therapeutic colonoscopy. In a large literature review, it was reported that the most frequent site of perforation is sigmoid followed by caecum [15]. This might be due to shearing forces applied during endoscopic insertion, mechanical or thermal injury during electrocoagulation.

Management of colonoscopic perforations include operative treatment including laparoscopic approach and nonoperative treatment [12]. The decision on which type of treatment modality to be choiced depends on the type of injury, the quality of bowel preparation, underlying colonic pathologies such as IBD, time interval between diagnosis and occurrence of perforation and clinical stability of the patient [16]. Nonoperative management of colonic perforations is usually reserved for perforations after interventions with adequate bowel preparation in stable patients with no sign of peritonitis [11,17,18]. Conventional operative treatment options include primary repair, segmental resection with anastomosis or a creation of a stoma proximal to the perforation site [19]. Proctocolectomy with some sort of ileo-anal pouch procedure is usually reserved for these patients in the late teen years (15 - 18 years).

### Conclusion

In conclusion, regarded as a relatively safe procedure, colonoscopy does pose risks for serious complications. Colonic perforation following colonoscopy is considered one of the most serious complication which can lead to peritonitis, shock, sepsis and eventually death. Colonic perforation after colonoscopy may produce great challenge to attending surgeon if accompanied by IBD like UC. Risk factors for perforation should be kept in mind and adoption of preventive actions, early recognition of signs and symptoms and prompt management are essential tools for defending patient's health. The health providers dealing with these patients should keep this in mind and a prompt pediatric surgical consultation is recommended and the patient should be treated accordingly.

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