Original Article

The surgical treatment of patients with ulcerative colitis from an university hospital at Natal, Brazil

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ABSTRACT: **Introduction:** Ulcerative colitis (UC) is a chronic inflammatory disease that affects the rectum and colon, involving periods of exacerbation and remission. A considerable number of patients requires surgery during the course of this disease. **Objective:** The purpose of this study is to analyze the profile and therapeutic approach of patients with UC. **Methods:** This is a retrospective study that analyzed medical records of patients diagnosed with UC between 1999 and 2010. We selected 45 patients and analyzed the following variables: age, gender, ethnic group, interval between onset of symptoms and diagnosis, extraintestinal manifestations, extent of colonic involvement, disease complications, pharmacological treatment, indication for surgery, time between diagnosis and indication, surgical procedures, early and late complications and pathological results of surgical specimens. Data were analyzed descriptively and compared with other studies. **Results:** The clinical profile of the patients was consistent with the literature. Nine patients underwent surgical treatment: seven were submitted to procto-colectomy with anastomosis in the ileo-anal pouch and two were submitted to total colectomy; in addition, eight were submitted to ileostomy. Postoperative complications occurred in 55.5% of patients. **Conclusions:** The study confirms data from the literature regarding the profile and therapeutic approach of patients with ulcerative colitis.

Keywords: proctocolitis; colorectal surgery; postoperative complications; signs and symptoms, digestive; colonic pouches.

RESUMO: **Introdução:** A retocolite ulcerativa (RCU) é uma doença inflamatória crônica que acomete reto e cólon, cursando com períodos de exacerbação e remissão. Uma parcela considerável de pacientes necessita de procedimento cirúrgico ao longo do curso dessa enfermidade. **Objetivo:** Este estudo objetiva analisar perfil e abordagem terapêutica de portadores de RCU. **Métodos:** Trata-se de estudo retrospectivo realizado por meio da análise de prontuários de pacientes acompanhados com diagnóstico de RCU no período de 1999 a 2010. Foram selecionados 45 pessoas, sendo analisadas as variáveis: idade, sexo, raça, intervalo entre início dos sintomas e diagnóstico, sintomatologia, manifestações extraintestinais, extensão do acometimento colônico, complicações da doença, tratamento medicamentoso, indicação de cirurgia, tempo entre esta e o diagnóstico, procedimentos cirúrgicos, complicações precoces e tardias e resultado anatomopatológico das peças cirúrgicas. Os dados foram analisados de forma descritiva e comparados com outros estudos. **Resultados:** O perfil clínico dos pacientes foi condizente com a literatura. Nove foram submetidos a tratamento cirúrgico, sendo realizadas sete proctocolectomias com anastomose em bolsa íleo-anal e duas colectomias totais, além de oito ileostomias. As complicações pós-operatórias ocorreram em 55,5% dos pacientes. **Conclusões:** O estudo corrobora com os dados da literatura referentes ao perfil e abordagem terapêutica dos pacientes com diagnóstico de RCU.

Palavras-chave: proctocolite; cirurgia colorretal; complicações pós-operatórias; sintomas e sinais digestórios; bolsas do colo.

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INTRODUCTION

Ulcerative colitis (UC) is a chronic inflammatory bowel disease (IBD) that spreads across the mucosa. It involves the rectum in about 95% of the cases and may extend in an ascending, symmetrical form, presenting a circumferential pattern, fully or partially affecting the colon[1,2]. It affects around 500,000 people in the United States, with annual incidence of 8 to 12 in 100,000 people, a constant index in the last five decades[1]. In Brazil, no concrete data are available, but growing incidence of the disease has been observed. It is the cause of 25,000 doctor's appointments annually, around 30,000 hospital admissions and over 1 million working days missed by people with this disease[1]. Its etiology is unknown, but it is believed to involve multiple factors, with patients genetically susceptible, associated with unbalanced immunological response, influenced by environmental factors[1,2].

It is clinically characterized by diarrhea mixed with blood, associated with symptoms of rectal urgency and tenesmus. The clinical course of the disease involves periods of exacerbation and remission, which may occur spontaneously or as a response to treatment[3]. Most treatments use pharmacological options; however, estimates say that around 20 to 30% of the affected individuals will require surgical interventions, which may be curative, with most of them within the period of 10 years from the initial diagnosis. The surgery has elective or emergency indication when it occurs as a result of disease complications[2].

When the disease has indication for surgery, the intervention is selected from a number of surgical options. The benefits of a more extensive procedure that enhances the disease cure, reduces the long-term risk of cancer and improves the functional result should be analyzed versus a less extensive procedure, which may be safer in specific clinical situations. It is important to emphasize that most patients want to avoid a definitive ileostomy. In addition, the development of an intestinal restorative technique with ileal pouch-anal anastomosis (IPAA) is the procedure of choice to treat patients with UC[4].

The purpose of this study was to analyze the profile and therapeutic approach of patients with UC from 1999 to 2010 seen at the Service of Gastroenterology and Coloproctology of the Hospital Universitário Onofre Lopes (HUOL), in Natal, comparing the results with those presented in the medical literature, for possible practice reviews.

METHODS

This is a retrospective study based on chart reviews of patients diagnosed with ulcerative colitis seen at the Service of Gastroenterology and Coloproctology of the HUOL from 1999 to 2010.

A bibliographic review regarding the disease was performed, using Pubmed, Lilacs and Scielo database.

The variables collected were: age, gender, race, interval between onset of symptoms and diagnosis, extraintestinal manifestations, extent of colonic involvement, disease-related complications, pharmacological treatment, indication for surgery, time between diagnosis and surgical indication, surgical procedures, early and late postoperative complications (up to 30 days and more than 30 days after the surgery, respectively) and pathological results of surgical specimens.

Fifty-three patients were found and 45 of them were selected for this study. The exclusion criterion was the inadequate completion of patient records.

Data collected were stored in Microsoft Excel 2007™ spreadsheets for the analysis of variables, elaboration of charts and tables and subsequent comparison with data published in the global medical literature.

The protocol of this study was approved by the Research Ethics Committee of the HUOL, with a certificate CAAE *(Certificado de Apresentação para Apreciação Ética)* nº 0069.0.294.000-11.

RESULTS

The analysis of 45 patient records showed that both genders were affected, with a small predominance in men (53.33%; n=24). The most affected age group was over 40 years of age (57.78%; n=26), followed by the age group between 31 and 40 years old (28.89%; n=13). The group between 21 and 30 years old represented 8.89% (n=4) of patients and the group of patients under 20 years old, 4.44% (n=2), as illustrated in Chart 1. Regarding the onset of symptoms and diagnosis, the predominance was in the group between 31 and 40 years old and above 60 years old.

In terms of race, white patients were predominant (51%; n=23), followed by brown patients (42.2%; n=19) and, in a small proportion, black patients (6.7%; n=3), no indigenous patient was included

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in the study. Positive family history was observed in 7% of the cases.

The main symptoms presented were chronic diarrhea and bleeding of variable intensity, both presented in 100% of the cases. Other important symptoms were: weight loss (86.67%), followed by abdominal pain, tenesmus and anorexia, in equal proportions (73.33%). The patients presented other symptoms, as illustrated in Chart 2.

Extraintestinal manifestations were present in 35.56% (n=16) of the patients, with predominance of osteoarticular manifestations, followed by dermatological manifestations and, in small proportions, by ophthalmic, hepatobiliary, nutritional and metabolic manifestations.

From all patients, 13.33% (n=6) had complications related to UC, such as rectal bleeding, fulminant colitis, toxic megacolon, perforation, delayed growth and dysplasia (Table 1).

The predominant UC location was the distal colon (proctitis/proctosigmoiditis), in 53.33% (n=24) of the cases, followed by left colitis in 26.67% (n= 12) and pancolitis in 20% (n=9) (Chart 3).
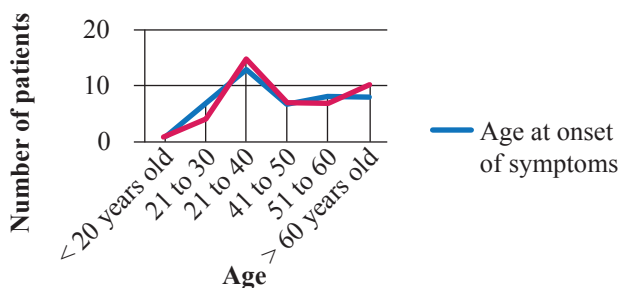
In terms of treatment, the most frequent medications were salicylates (82.22%), oral corticosteroids (51.11%) and, in small proportions, azathioprine, infliximab, antibiotics, topical corticosteroid and tacrolimus (Table 2).

Twenty per cent of patients (n=9) had indication for surgery, 67% (n=6) of them were submitted to elective surgery and 33% (n=3) to emergency surgery.

Table 1. *Complications of ulcerative colitis.*

Complications	Absolute value	Relative value (%)
Present	6	13.33
Absent	39	86.67
Total	45	100.00
Types of complications		
Bleeding	3	6.67
Perforation	2	4.44
Fulminant colitis/ toxic megacolon	3	6.67
Delayed growth	1	2.22
Cancer/dysplasia	1	2.22
Total patients	6	13.33

Chart 1. *Distribution of patients according to age group and comparison of age group with the age at onset of symptoms.*
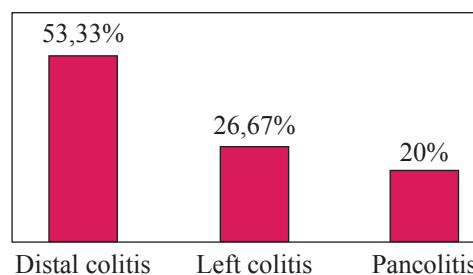

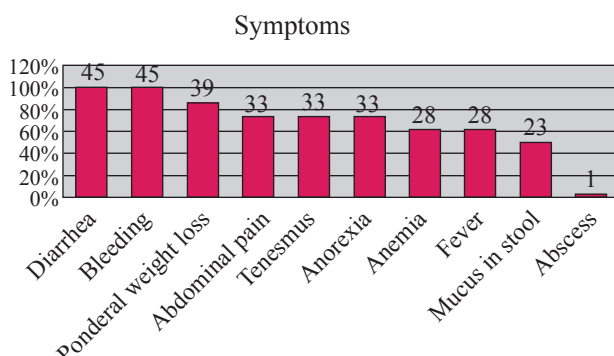**Chart 3.** *Location of ulcerative colitis.*

Chart 2. *Clinical manifestations.*

Table 2. *Drugs used in the clinical treatment.*

Pharmacological treatment	Absolute value	Relative value (%)
Salicylates	37	82.22
Oral corticosteroids	23	51.11
Budesonide	2	4.44
Azathioprine	5	11.11
Antibiotics	4	8.89
Infliximab	4	8.89
Tacrolimus	1	2.22
Total patients	45	

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In all cases, the interval between diagnosis and indication for surgery was 10 years or less, in the majority of cases the interval was within the first five years of the disease (Chart 4).

The indications that led to surgery were clinical intractability (67%; n=6), side effects/drug intolerance (22%; n=2) and dysplasia (11%; n=1) (Chart 5).

Among surgical procedures, total proctocolectomy with "J" ileal pouch-anal anastomosis was the most common procedure (78%; n=7), followed by total colectomy (22%; n=2) (Chart 6). Six patients with a ileal pouch-anal anastomosis underwent diverted ileostomy.

Postoperative complications occurred in 55.5% (n=5) of the patients, four patients had early complications (<30 days), and late (>30 days) complications were observed in five patients. The main early complications were: anastomotic dehiscence (two patients), pelvic/abdominal sepsis (two) and bleeding (one). Late complications were: pouch fistula (two), pouchitis (two), IPAA stenosis (one), anal fistula (one) and death (one) (Chart 7).

After the anatomopathological analysis, UC diagnosis was confirmed in 89% (n=8) of the cases and Crohn's disease in one patient (11%; n=1), who was later submitted to abdominoperineal amputation due to the presence of disease in the rectal stump and dysplasia during the follow-up period.

DISCUSSION

The disease extension was, in descending order, distal colitis, left-side colitis and pancolitis. These data are compatible with those found in the medical literature, which show predominance of distal colitis in 34 to 70% of the cases, followed by left colitis in 8 to 40% and pancolitis in 14 to 56%[1].

Extraintestinal manifestations (EIM) may occur in up to 30% of the cases – ophthalmic manifestations, arthritis and dermatological manifestations are associated with the disease activity, while axial arthropathy and primary sclerosing cholangitis (PSC) occur regardless of the disease activity[1]. In our study, EIMs occurred in 35.5%.

According to international references, the most common drugs used to induce remission of acute disease are salicylates and corticosteroids and, in more severe or refractory cases, thiopurines, azathioprine,
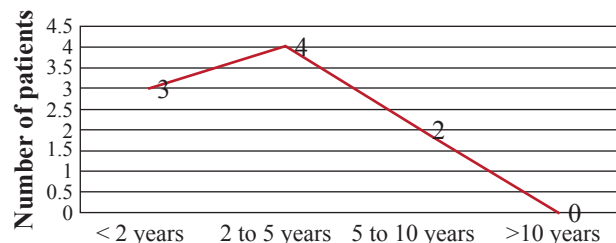

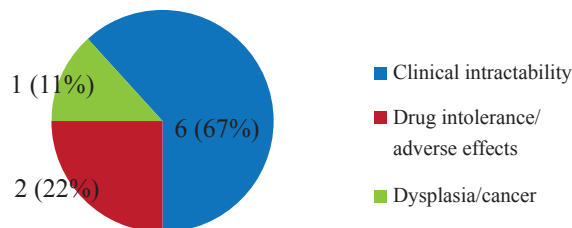**Chart 4.** *Period between diagnosis and surgery indication.*

Chart 5. *Surgery indications.*
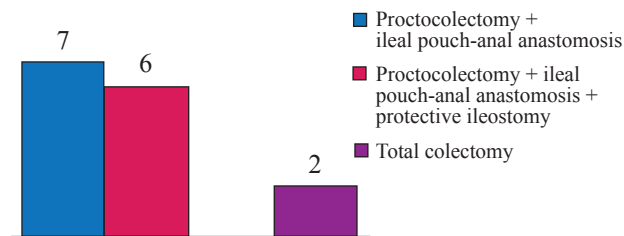

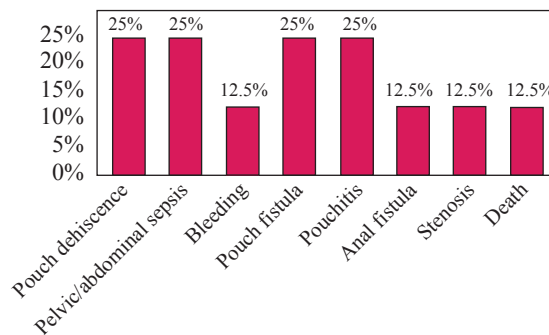**Chart 6.** *Surgical procedures performed.*

Chart 7. *Postoperative complications.*

6-mercaptopurine and immunobiological agents (infliximab). For maintenance, salicylates, thiopurines and immunobiological agents are the most recommended drugs[1,5]. Our study has agreed with the literature, as salicylates were the most common drugs, followed by oral corticosteroids, azathioprine and infliximab.

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Regarding the treatment, we had 20% of surgical indication (n=9), all within the first 10 years of the disease, with predominance (77%) in the first 5 years. These results are similar to current literature, which indicates that 20 to 30% of patients with UC are submitted to surgical resection, most of them within the first 10 years from the initial diagnosis[1,2,4-6]. The progress of surgical techniques has allowed fecal stream restoration with anal continence preservation, reinforcing the importance of surgery in UC cure. The indications for surgery in our study were clinical intractability (67%), drug intolerance (22%) and dysplasia (11%). Among these patients, 67% (n=6) were submitted to elective surgery and 33% (n=3) to emergency surgery due to UC complications (fulminant colitis, toxic megacolon, perforation and bleeding). One patient submitted to elective surgery had delayed growth. Such indications are reported in the medical literature[1,2,4,5].

In patients that developed peritonitis or perforation due to toxic colitis refractory to clinical treatment, the surgery performed was subtotal colectomy with ileostomy. Better medical support and more aggressive surgical intervention led to significant reduction of mortality caused by toxic colitis to levels below 3%[4,7]. Bleeding occurred in 10% of all emergency colectomy for UC. In patients with massive bleeding and malnourished, the best option is subtotal colectomy and terminal ileostomy[4].

Around 70% of the patients with UC are submitted to surgery due to chronic problems[4]. These people have persistent symptoms, with negative impact on their quality of life. Malnourishment and delayed growth are significant problems in pediatric patients. In more severe chronic cases, restorative proctocolectomy is frequently performed in stages. Debilitating extraintestinal manifestations are rarely indications for colectomy. Although most of these conditions will spontaneously improve in the postoperative period, the response is not always predictable. Long-term complications from the use of steroids are another frequent indication for surgical resection[4].

Among patients with UC, 10% are submitted to surgery due to cancer or dysplasia[4]. The risk factors for the development of colorectal cancer are long-term disease, pancolitis, early age at onset, concomitant PSC and dysplasia. Dysplasia is still the main risk factor available for malignancy potential, and it is rea-

sonable for patients with UC for more than eight years to be submitted to surveillance colonoscopy with sequential biopsy. Patients diagnosed with dysplasia or cancer should be submitted to surgical resection[1,4,5,8].

Proctocolectomy with "J" ileal pouch-anal anastomosis was performed in six patients and urgent total colectomy in three patients in our study. One patient was submitted to permanent ileostomy, after the anatomopathological diagnosis of Crohn's disease, and one patient to temporary ileostomy due to toxic colitis, with subsequent intestinal reconstruction with IPAA.

With the advent of restorative proctocolectomy with IPAA as the procedure of choice, total colectomy with ileostomy has been mainly indicated to emergency cases, incontinent patients and cases of indetermined colitis[4]. Many studies indicate that a restorative proctocolectomy with IPAA can be performed in a safer manner, with operative mortality less than 1%. Postoperative complications are frequent, but controllable. They are of mechanical, inflammatory, functional, neoplastic and metabolic nature, ranging from 10 to 60%[9].

The main early postoperative complications presented in this study were anastomotic dehiscence, pelvic/abdominal sepsis and bleeding, and late complications were pouch fistula, pouchitis, IPAA stenosis, anal fistula and death. All these results are similar to those of other studies published in the medical literature[4,10].

Sepsis occurs in 3 to 15% of patients after restorative proctocolectomy with IPAA, and it is the most frequent early complication[4,10]. The causes include pouch or anastomotic leak, with consequent contamination of peritoneal cavity, and it may affect up to 34% of the cases[11] and lead to death in 3%[10,11]. Other less frequent complications include deep vein thrombosis, pulmonary embolism, intestinal bleeding from ileostomy or pouch and pouch ischemia.

Pouchitis is the most frequent late complication, affecting 23 to 46% of patients[4,10]. In this situation, clinical treatment is indicated and, in some cases, ileal bypass or pouch excision is necessary. Pouch fistulas occur in 3 to 17% of the cases[4,10] and stenosis of the pouch anastomosis in 7.8 to 14%[4,10,12].

In our study, all ileal pouches were constructed in "J" shape, as recommended by other studies[13], and, in six cases, a diverted ileostomy was performed, despite its controversial indication in medical literature[14]. Al-

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though diverted ileostomy does not prevent dehiscence, it minimizes the degree of pelvic contamination, which may result in pouch dysfunction, requiring pouch removal. Some authors emphasize the benefit of protective ileostomy in specific cases[4].

When analyzing the long-term functional results of the pouch and the quality of life of patients after restorative proctocolectomy, we can say that, according to prior studies, most patients are satisfied[15,16]. In our study, all of our patients are in outpatient clinic follow-up, with good function and excellent pouch acceptance.

CONCLUSION

After analyzing data from this case series, we can conclude that our study results are similar to those reported in the medical literature and this was important to review the care delivered in our service.

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