Montreal classification of patient operated for Crohn's disease and identification of surgical recurrence predictors

Caracterização de pacientes operados por doença de Crohn pela classificação de Montreal e identificação de fatores preditores de sua recorrência cirúrgica

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A B S T R A C T

Objective: to evaluate Crohn's disease recurrence and its possible predictors in patients undergoing surgical treatment. **Methods**: We conducted a retrospective study with Crohn's disease (CD) patients undergoing surgical treatment between January 1992 and January 2012, and regularly monitored at the Bowel Clinic of the Hospital das Clínicas of the UFMG. **Results**: we evaluated 125 patients, 50.4% female, with a mean age of 46.12 years, the majority (63.2%) diagnosed between 17 and 40 years of age. The ileum was involved in 58.4%, whereas stenotic behavior was observed in 44.8%, and penetrating, in 45.6%. We observed perianal disease in 26.4% of cases. The follow-up average was 152.40 months. Surgical relapse occurred in 29.6%, with a median time of 68 months from the first operation. **Conclusion**: The ileocolic location, penetrating behavior and perianal involvement (L3B3p) were associated with increased risk of surgical recurrence.

Key words: Crohn's Disease. Classification. Recurrence. Risk factors.

INTRODUCTION

Crohn's disease (CD) is a chronic transmural inflammatory disease that can affect any segment of the digestive tract associated with intestinal manifestations and other immunological alterations. Its clinical presentation depends on the location and include diarrhea, abdominal pain, weight loss, fever, mucorreia or hematochezia. Clinical behavior comprises alternating periods of exacerbation and remission. The typical presentation is the involvement of discontinuous segments of the gastrointestinal tract. The inflammatory process can lead to the development of complications such as stenosis, abscesses and fistulas[1].

Among the many classifications proposed for CD, the Montreal[2], introduced in 2005, is the most used and aims to standardize the characterization of the disease, using reproducible clinical and epidemiological characteristics. Such categorization is desirable so that one can correlate particular disease phenotypes with possible clinical outcomes and prognosis, to select the best therapeutic strategy and the most appropriate follow-up for each patient.

Despite the increasing success with the clinical treatment of CD, about 75% of patients require surgical intervention within 20 years of onset. Surgery, however, is not curative, postoperative recurrence being common[3]. This recurrence may be defined as clinical, endoscopic, histological, radiological or surgical. Often the disease is asymptomatic until the intestinal inflammation is severe, corresponding to the development of complications requiring a new operation[4]. Little is known specifically on surgical recurrence, there being few studies published in this respect.

The aim of this study was to characterize a cohort of patients with Crohn's disease treated at a tertiary referral center for intestinal inflammatory diseases, based on the Montreal classification, and to evaluate surgical recurrence and its possible predictors.

METHODS

We retrospectively analyzed data from 137 patients diagnosed with Crohn's disease (CD) who were followed-up at the Bowel Intestine Clinic of the Hospital das Clínicas, UFMG, and underwent surgical treatment between January 1992 and January 2012. Twelve were excluded due to loss of essential data for the preparation of the study, 125 patients operated remaining for evaluation.

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Data were collected from medical records and recorded in a specific protocol.

This study was approved by the Ethics in Research Committee of the Universidade Federal de Minas Gerais (CEP-UFMG - opinion ETIC 0156.0.203.000-11).

The variables studied were age, gender, clinical presentation according to the Montreal classification, time of disease evolution, smoking (smoking at diagnosis, regardless of the number of cigarettes smoked and the habit interruption after treatment start), clinical treatment performed before the first operation, progression of the disease until operation, surgical indication, type of surgery, postoperative complications, medications for maintenance of remission after operation, surgical recurrence, number of operations, type of new operation and date of performance.

Patients for whom the diagnosis of CD was perioperatively established, without previous medical treatment, were considered as receiving urgent surgical treatment.

Montreal classification

This classification subdivides CD according to three main phenotypic characteristics: age at diagnosis (A), topographic location (L) and clinical behavior (B)[2].

The age parameter takes account of the time when the diagnosis was definitely established. There are three possibilities: £16 years (A1); between 17 and 40 years (A2); and > 40 years (A3)[2].

Location is defined as the point of maximum anatomical extent of the disease at any time. There are four possibilities: the terminal ileum (L1, disease limited to the lower third of the small intestine, with or without the involvement of the cecum); colon (L2, anywhere between the cecum and the rectum, without involvement of the upper digestive tract); ileocolic (L3, terminal ileum disease and anywhere between the ascending colon and the rectum); and the upper gastrointestinal tract (L4, any location proximal to the terminal ileum, except the mouth). If there is concomitant proximal (L4) and distal (L1 to L3) involvement, the L4 category should be added as a modifier; if the distal condition is not found, L4 remains exclusively considered. This creates seven location possibilities: L1, L2, L3, L4, L4 + L1, L2+ L4 and L3 + L4[2].

Clinical behavior is classified as non-stenotic and non-penetrating (B1), stenosing (B2) and penetrating (B3). Non-penetrating, non-stenotic disease is defined as the presence of inflammation, without evidence of stenosis, or fistula. Stenotic disease is defined by the occurrence of luminal narrowing. Penetrating disease is defined by the occurrence of abdominal fistulas or inflammatory masses and / or abscess in any period of the disease. When there is perianal disease, this should be separately indicated by a marker (p), which must be added to the categories B1, B2 and B3. Thus, there are six possibilities: B1, B2, B3, B1p, B2p and B3p[2].

Statistical analysis

Data descriptions were based on frequency tables and graphs. For quantitative variables, we computed the average and standard deviation when they presented normal distribution, and median (interquartile range) when the distribution was not normal, after application of the Shapiro-Wilk test.

Initially we analyzed the association between the study variables and the number of operations (1 and e"2) and subsequently we evaluated the association of the variables with the type of operation (elective and emergency) through the asymptotic or accurate Pearson chi-square tests. For the analysis of quantitative variables we used the Student t or Mann-Whitney tests, depending on the distribution' the normality or not. The level of significance was 5% (p <0.05).

We performed the multivariate analysis of the association between the number of operations and the study variables by the logistic regression model adjustment. The model was adequate when the p value was less than 0.05.

RESULTS

There were similar gender distribution, with a slight predominance of females (63 patients - 50.4%) and the mean age was 46.12 ± 12.2 years. Forty-eight patients were smokers (38.4%).

Six patients (4.8%) were diagnosed younger than age 16 (A1), 79 (63.2%) between 17 and 40 years (A2) and 40 (32%), over 40 (A3).

In 73 (58.4%) patients the terminal ileum was affected (L1); in 22 (17.6%), the colon (L2) and 29 (23.2%) had ileocolic disease (L3). The upper gastrointestinal tract (L4) was committed in six patients, one in isolation (0.8%), four (3.2%) in association with involvement of the terminal ileum (L1 + L4) and in one patient (0.8%), in combination with ileocolic involvement (L1 + L3).

Twelve patients (9.6%) had non-stenotic / non-penetrating disease (B1); 56 (44.8%) stenotic disease (B2) and 57 (45.6%) had penetrating disease (B3); 33 patients (26.4%) had associated perianal disease: five (4%) non-stenotic and non-penetrating (B1P), five (4%) stenotic (B2P) and 23 (18.4%) penetrating (B3p).

Fifty-four patients (43.2%) received preoperative clinical treatment (Table 1), the association of another type of medicine being common. Seventy-one (56.8%) patients underwent surgical treatment, usually of urgency, without prior medical treatment nor confirmed diagnosis.

The mean follow-up of patients was 152.4 months. The first surgery was performed on average 29 months after diagnosis. The most frequent surgical indications were acute inflammatory abdomen and ileal obstruction (Table 2).

The main surgical decisions during the first operation were ileocolectomy in 49 (39.2%) patients and

bowel resection in 46 (36.8%). The laparoscopic approach was applied in three patients. Anoperineal interventions were performed in 17 patients: simple fistulotomy, abscess drainage, placement of seton and excision of plicomas were the most common procedures (Figure 1).

Postoperative medication was used in 98 patients (78.4%), some patients receiving more than one drug; azathioprine was used in 61 (48.8%), mesalazine in 27 (21.6%), sulfasalazine in 25 (20%), infliximab in 16 (12.8%), methotrexate in two patients (1.6%) and adalimumab in one (0.8%) (Table 3).

Postoperative complications occurred in 23 patients (18.4%). Anastomotic leaks occurred in 15 individuals (12%), superficial surgical site infection in six (4.8%), pneumonia in one patient (0.8%) and deep vein thrombosis in one (0.8 %), which evolved to death due to pulmonary thromboembolism.

Surgical recurrence occurred in 37 patients (29.6%), on average 68 months after the first intervention, ranging from three to 204 months. In 27 patients (57.5%) recurrence ensued in the pre-anastomotic region, and in 20 patients (42.5%) it occurred in other places: proximal small intestine in nine (7.2%), terminal ileum in five (4%), perianal region in five patients (4%), colon in one (0.8%) and rectum in one patient (0.8%). Patients with symptoms recurrence required two or more operations. Fourteen patients (11.2%) underwent three operations, the second recurrence happening, on average, 47 months after the first. Four patients (3.2%) required four operations, 72 months being the average time of the third recurrence (Figure 2).

The ileocolic location (L3), the penetrating behavior (B3) and presence of perianal disease (B3p), as well as the time of disease progression, were significantly associated with surgical recurrence (Tables 3 and 4).

When the emergency operations were compared with the elective ones, we observed that there was no difference in relation to surgical recurrence. Regarding the Montreal classification, we observed that patients younger than age 16 and aged between 17 and 40 years at diagnosis underwent elective surgery more often. On the other hand, patients aged over 40 years underwent emergency surgery more frequently (Table 5).

Also regarding the type of operation, the main indication for surgery in the group undergoing emergency procedures was inflammatory acute abdomen in 30 patients (42.9%), followed by intestinal obstruction in 27 (38.6%). In the group of patients undergoing elective operations, the main indication was intestinal obstruction in 17 patients (30.9%), followed by perianal sepsis in 11 (20%) and clinical intractability in ten (18.2%) (Table 5).

DISCUSSION

The Montreal classification has been increasingly used in patients with Crohn's disease (CD) due to its

Table 1 - Preoperative clinical treatment (n = 54).

Previous Drug	n (%)
Sulfasalazine	25 (20)
Mesalazine	14 (11.2)
Corticosteroids	42 (33.6)
Azathioprine	27 (21.6)
Mercatopurina	1 (0.8)
Methotrexate	5 (4)
Infliximab	6 (4.8)

Table 2 - Main surgical indications (n=125).

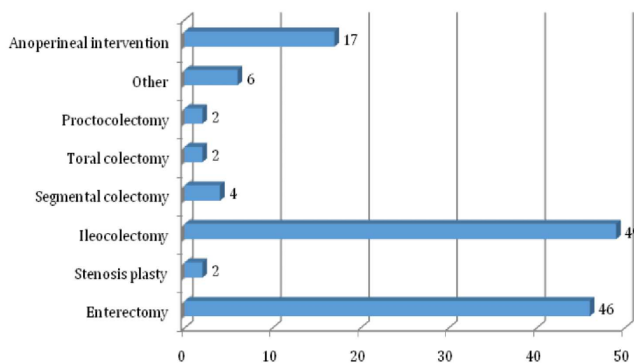| Indication	n (%)
Acute Abdomen	36 (28.8)
Ileal Obstruction	35 (28)
Perianal Disease	17 (13.6)
Ileal Perforation	10 (8)
Clinical Intractability	10 (8)
Jejunal Obstruction	8 (6.4)
Enterocutaneous Fistula	4 (3.2)
Enterovesical Fistula	3 (2.4)
Enteroenteric Fistula	2 (1.6)
Colonic Perforation	2 (1.6)
Colonic Obstruction	1 (0.8)
Enterouterine Fistula	1 (0.8)
Refractory Bleeding	1 (0.8)

Figure 1 - *Conduct adopted in the first operation (n=125).*

diagnostic and therapeutic implications. However, despite its great utility, it is still little used in Brazil, especially when it comes to evaluating potential predictors of recurrence in a population of surgical patients. Its use in a cohort of patients with CD treated surgically, evaluated and monitored on a university reference center for treatment of inflammatory bowel disease can contribute to a greater understanding of the disease presentation and its response

Table 3 - Analysis of association between the number of operations in patients with Crohn's disease and the study variables (n = 125).

| Variables n (%) | Number of Surgeries | | | p-value |
	1 n=88 (70,4%)	>2 n=37 (29,6%)	Total n=125	
Age of diagnosis				
A1	3 (3.4)	3 (8.1)	6 (4.8)	0.319
A2	59 (67.0)	20 (50.1)	79 (63.2)	
A3	26 (29.5)	14 (37.8)	40 (32.0)	
Location				
L1	57 (64.8)	16 (43.2)	73 (58.4)	0.039
L2	15 (17.0)	7 (18.9)	22 (17.6)	
L3	16 (18.2)	13 (35.1)	29 (23.2)	
L4	0	1 (2.7)	1 (0.8)	
Behavior				
B1	8 (9.1)	4 (10.8)	12 (9.6)	0.001
B2	49 (55.7)	7 (18.9)	12 (9.6)	
B3	31 (35.2)	26 (70.3)	57 (45.6)	
Perianal Disease				
B1p	4 (4.5)	1 (2.7)	5 (4.0)	0.033
B2p	5 (5.7)	0	5 (4.0)	
B3p	11 (12.5)	12 (32.4)	23 (18.4)	
Smoking				
Yes	33 (37.5)	15 (40.5)	48 (38.4)	0.319
No	55 (62.5)	22 (59.5)	40 (32.0)	
Previous medication				
Sulfasalazine	17 (19.3)	8 (21.6)	25 (20)	0.769
Mesalamine	13 (14.8)	1 (2.7)	14 (11.2)	0.063
Corticoids	32 (36.4)	10 (27.0)	42 (33.6)	0.313
Azathioprine	23 (26.1)	4 (10.8)	27 (21.6)	0.057
Mercaptopurine	1 (1.1)	0	1 (0.8)	1.000
Methotrexate	5 (5.7)	0	1 (0.8)	0.320
Infliximab	6 (6.8)	0	6 (4.8)	0.178
Postoperative medication				
Azathioprine	43 (48.9)	18 (48.6)	61 (48.8)	0.982
Infliximab	12 (13.6)	4 (10.8)	16 (12.8)	0.776
Other	44 (50.0)	15 (40.5)	50 (47.2)	0.334

to operative treatment. In the Brazilian literature, only a single study aimed to assess the factors of CD surgical recurrence[5]. In that study, Albuquerque et al. observed that penetrating clinical presentation and the presence of intestinal perforation are predictors of recurrence in surgical patients[5]. However, that article does not apply the Montreal classification and its prognostic implications.

Moreover, one may wonder whether CD would not be less frequently suspected in patients over 40 years of age, since inflammatory bowel diseases are considered to traditionally affect younger patients.

It is of paramount importance to study the concurrent involvement of the upper gastrointestinal and other locations, a fact that was not contemplated by other classifications, with possible underestimation of the disease incidence in such topography. In this study, the involvement of the upper gastrointestinal (GIT) tract occurred in six patients (4.8%), 4% concurrent to other locations. This data are similar to the published by Thin et al., in that only 1% of the study population had an isolated upper GIT condition and 3.3% had concomitant involvement, L1, L2 or L3[7]. It has also been reported that the risk of recurrence is higher when the disease occurs in the terminal ileum and ileocolic regions [8,9]. In this cohort, patients with L3 location had higher surgical recurrence, which had already been confirmed by other authors[3]
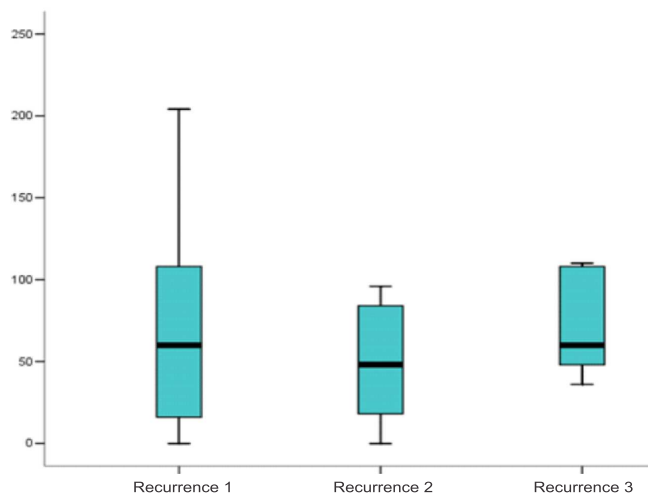
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Figure 2 - *Surgical recurrence time in patients operated for Crohn's disease (n=37).*

It is well established that the penetrating behavioral features more aggressive clinical course and more recurrence index[4], as well as the presence of perianal disease, often associated with colonic disease, which has also been considered an important marker of severe disease[10]. In this study, it was observed that B3 behavior patients had more surgical recurrence, which confirms the higher aggressiveness of this kind of CD behavior. However, despite the perianal disease is more associated with CD penetrating form, even grouped together with this form in the old Vienna classification[11], enteric fistula does not occur in up to 80% of patients with perianal disease[2], which is probably related to the genetic profile of the disease.

With regard to surgical treatment, ileocolectomy and enterectomy were the most common procedures, which conforms to the CD topographical location in the study population (L1 in 58.4% of patients). In this cohort, few patients underwent plasty of stenosis, always Heine-type Mickulicz, in segmental stenoses[12]. This is because most stenoses were long, resulting in the realization of enterectomies or the need for more extensive plasties, type Jaboulay or Michelassi[12], which are not used in our service. Moreover, as most of the patients underwent emergency surgery, resection allowed the confirmation of CD by histological analysis of the specimen in patients without prior diagnosis.

In this cohort, 12% of patients had anastomotic leak and 4.8% had superficial surgical site infection. These complication rates are high, since the reports of septic abdominal complication rates in the postoperative period of intestinal resection for CD range from 8% to 16%. These rates are higher than those recorded in patients undergoing bowel resection by other benign diseases[13]. It must be pointed out that this study was conducted in a reference center, at a hospital in tertiary complexity and therefore many of the operated patients are severely ill, with compromised nutritional status and in use of medications that lead to anastomotic dehiscence risk.

The obtained surgical recurrence rate of 29.6%, with a mean 68-month time onset, corresponding to 5.6 years, is consistent with the rates reported in the literature, which vary according to the definition of recurrence used: endoscopic, surgical or clinical[14]. Patients undergoing endoscopic ileocolectomy present relapse in 90% of cases in the absence of treatment, while clinical recurrence reaches 20-25% per year[15]. In what concerns surgical recurrence, reoperation rates range from, 11 to 32% in five years, 20-44% in ten and 46 to 65% in 20 years[16].

Among the Montreal classification features, the factors most related to surgical recurrence in this study were the ileocolic location (L3) and the penetrating behavior (B3). In the national literature, in a paper published by Albuquerque et al., who also evaluated postoperative recurrence, penetrating behavior was also associated with higher recurrence rates[5].

We also observed that the duration of the disease was more associated with recurrence, which conforms to CD's natural history, a chronic, progressive and almost invariably evolving into complications that culminate with surgical treatment. The long follow-up of this cohort in a university academic ambulatory-care character, averaging 152.4 months, accounting for more than 12 years, makes possible the proper assessment of a chronic disease with high morbidity but relative low mortality.

As for the analysis of other surgical recurrence predictors, smoking is widely deemed a negative prognostic factor, being recognized both as a risk factor for the onset

Table 4 - Multivariate analysis between the number of operations, the time of evolution and disease behavior.

| Variables | Amount of operations | | | | | |
	1 N=88	>2 n=37	Total n=125	OR	IC95% OR	*p-value*
Time evolution	133.8 ± 97.2	179.4 ± 81.1	147.3 ± 94.8	1.01	1.00 ; 1.01	0.031
Behavior						
B1	8 (66.7)	4 (33.3)	12	1		
B2	49 (87.5)	7 (12.5)	56	0.10	0.02 ; 0.54	0.686
B3	31 (54.4)	26 (45.6)	57	1.34	0.33 ; 5.48	0.007

Table 5 - Association between the type of operation (elective or emergency) in patients with Crohn's disease and the study variables (n=125).

Variables	Types of surgery						p-value
	Urgency (n=70)		Elective (n=55)		Total (n=125)		
Number of surgeries							
1	46	(65.7)	42	(76.4)	88	(70.4)	0.195
>2	24	(34.3)	13	(23.6)	37	(29.6)	
Age at diagnosis							
A1	1	(1.4)	5	(9.1)	6	(4.8)	0.04
A2	42	(60)	37	(67.3)	79	(63.2)	
A3	27	(38.6)	13	(23.6)	40	(32)	
Location							
L1	43	(61.4)	30	(54.5)	73	(58.4)	0.084
L2	8	(11.4)	14	(25.5)	22	(17.6)	
L3	19	(27.1)	10	(18.2)	29	(23.2)	
L4	0	(0)	1	(1.8)	1	(0.8)	
Behavior							
B1	6	(8.6)	6	(10.9)	12	(9.6)	0.902
B2	32	(45.7)	24	(46.3)	56	(44.8)	
B3	32	(45.7)	25	(45.5)	57	(45.6)	
Surgical Indication							
Inflammatory acute abdomen	30	(40.2)	6	(10.9)	36	(28.8)	<0.0001
Jejunal Obstruction	4	(5.7)	4	(7.3)	8	(6.4)	1.000
Ileal obstruction	23	(32.9)	12	(21.8)	35	(28.0)	0.172
Colonic pseudo-obstruction	0	(0)	1	(1.8)	1	(0.8)	0.440
Refractory bleeding	1	(1.4)	0	(0)	1	(0.8)	1.000
Enterocutaneous fistula	1	(1.4)	3	(5.5)	4	(3.2)	0.319
Enteroenteric fistula	0	(0)	2	(3.6)	2	(1.6)	0.192
Enterovesical fistula	1	(1.4)	2	(3.6)	2	(2.4)	0.582
Enterouterine fistula	0	(0)	1	(1.8)	1	(0.8)	0.331
Ileal perforation	7	(10.0)	3	(5.5)	10	(8.0)	0.510
Colon perforation	0	(0)	2	(3.6)	2	(1.6)	0.192
Clinical intractability	0	(0)	10	(18.2)	10	(8.0)	<0.0001
Perianal sepsis	6	(8.6)	11	(20.0)	17	(13.6)	0.064

of the disease, and for recurrence after surgical treatment[3,5.] Nonetheless, this was not confirmed in this study (Table 4).

We did not aim to evaluate clinical treatment, nor the association between the type of drug treatment with the need for surgical treatment. It is noteworthy that in this study most patients (56.4%) underwent surgical treatment without previous clinical treatment, ie, had suspected and confirmed diagnosis peri- and postoperatively. Importantly, patients belong to a reference clinic, which often receives individuals who were operated in various other services, often undiagnosed. One cannot say whether these patients had a more acute disease course or stopped seeking medical assistance at the start of symptoms, losing the opportunity to establish the diagnosis without the need for surgical intervention. Many may have been treated in emergency rooms, where the initial condition of acute inflammation of the ileocecal region was interpreted as inflammatory acute abdomen, with strong suspicion of acute appendicitis.

The relationship between appendicitis, appendectomy and Crohn's disease is not well established. Many patients who present with acute ileitis can be submitted to appendectomy for suspected acute appendicitis, when the true diagnosis is Crohn's disease, which can be diagnosed in the perioperative period or a few months later. However, it is not yet confirmed if appendectomy is a risk factor for CD or previous appendectomy changes the natural history of the CD[17].

We did not to evaluate postoperative prophylactic medication, as many of these patients were operated on other services, sometimes staying long periods without any medication, being referred only when they became symptomatic again. In any case, there was no relationship between preoperative clinical treatment and greater surgical

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recurrence rate, nor regarding the use of prophylactic postoperative medication (Table 4).

In a study published by Latellaet al.[18], who evaluated CD's clinical course in patients undergoing surgical treatment for acute abdomen and had their diagnosis revealed at surgery, and observed that the risk of these patients being submitted to reintervention due to surgical recurrence was lower. The authors also found that patients with involvement of the terminal ileum and penetrating or stenotic behavior were at greater risk of being subjected to exploratory laparotomy without prior diagnosis. In another study[19], in which they compared two groups who underwent early surgery (without medical treatment) and late surgery (along the course of the disease due to complications), patients who underwent early surgery had a longer clinical remission [19]. However, the reoperation rate was the same. In this cohort, there was no statistically significant difference between the two groups of patients regarding surgical recurrence. The most common indication for surgery in the emergency surgery group was laparotomy for suspected inflammatory acute abdomen, followed by bowel obstruction, whereas in patients undergoing elective surgery, the main indication was intestinal obstruction, followed by clinical intractability.

The perianal disease affects about 33% of patients with CD in ten years of evolution and has high morbidity due mainly to pain and drainage in the area, which can lead to complications such as dermatitis, itching, among others [10]. We observed perianal involvement in 26.4% of patients. In a recent study, Eglinton et al. reported prevalence of symptomatic perianal disease in 26.6% of patients with DC[10], much like the rate found in our cohort. In this, the most frequent type of injury was the perianal fistula, followed by abscess, fissure, plicoma and stenosis. The goal of treatment of perianal disease should be aimed to improve the quality of life and is determined by the complexity of involvement. Simple abscesses may be drained, always as close to the anal verge as possible. Simple fistulas can be treated by fistulotomy, as occurred in 12 patients in this study. The seton placement is indicated by the presence of complex fistula, to drain the perianal sepsis and to prevent the sphincter section, which can lead to fecal incontinence[20]. This technique was used in six patients. It is known that the association of seton with immunobiological therapy provides better results in fistulas healing than each type of therapy alone[20].

In conclusion, surgical recurrence of Crohn's disease affects a significant portion of patients (29.6%), usually more than five years after the first intervention. The penetrating behavior, especially in the ileocolic topography, associated with perianal involvement most often lead to recurrence after surgical treatment, confirming the prognostic importance of the Montreal classification.

R E S U M O

Objetivo: avaliar a recorrência da doença de Cröhn e seus possíveis fatores preditores em pacientes submetidos ao tratamento cirúrgico. *Métodos:* estudo retrospectivo de pacientes com doença de Crohn (DC) submetidos a tratamento cirúrgico entre janeiro de 1992 e janeiro de 2012, em acompanhamento regular no Ambulatório de Intestino Clínico do Hospital das Clínicas da UFMG. *Resultados:* foram avaliados 125 pacientes, sendo 50,4% do sexo feminino, com média de idade de 46,12 anos, a maioria (63,2%) com diagnóstico entre 17 e 40 anos de idade. O íleo terminal foi envolvido em 58,4%, sendo que o comportamento estenosante foi observado em 44,8% e o penetrante em 45,6% dos pacientes. Doença perianal foi observada em 26,4% dos casos. A média de tempo de acompanhamento foi 152,40 meses. Recorrência cirúrgica foi observada em 29,6%, com um tempo médio de 68 meses até a segunda operação. *Conclusão:* a localização ileocólica, o comportamento penetrante e o acometimento perianal (L3B3p) estão associados ao maior risco de recorrência cirúrgica.

Descritores: Doença de Crohn. Classificação. Recorrência. Fatores de Risco.

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