

Anal fistula: results of surgical treatment in a consecutive series of patients

Paulo Gonçalves de Oliveira¹, João Batista de Sousa², Romulo Medeiros de Almeida³, Isabel Ferreira Saenger Wurmbauer⁴, Antônio Carlos Nóbrega dos Santos⁴, José Guilherme Filho⁴

¹Associate Professor of Surgical Clinic of the Medical School of the University of Brasilia (Universidade de Brasília – UnB); Head of the Coloproctology Department of the University Hospital at UnB – Brasília (DF), Brazil. ²Associate Professor of Surgical Clinic of the Medical School of UnB – Brasília (DF), Brazil. ³Associate Professor of Surgical Clinic of the Medical School of UnB – Brasília (DF), Brazil. ⁴Assistant Physicians of Coloproctology Department of the University Hospital at UnB – Brasília (DF), Brazil.

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ABSTRACT: Objectives: To evaluate the results of surgical treatment of patients with anal fistulas in a consecutive series of patients. **Methods:** A retrospective analytical study of a consecutive series of cases prospectively collected. The sample comprised 210 patients who underwent surgery; demographic data, signs and symptoms, intraoperative classification of the fistulas and healing time were analyzed. **Results:** The median age was 38 years and 69.0% of the patients were male. The most frequent symptom was perianal orifice with purulent drainage. The fistulas were classified as transsphincteric in 60.9% and the most used operative treatment was the marsupialization of fistulotomy, in 84.2% of cases. Complete healing occurred in all patients between 2 and 16 weeks. One hundred and seventy-eight patients, 84.8% of the patients who underwent surgery, were evaluated at least one year after surgery and recurrence occurred in 6.4% of cases. **Conclusions:** There was male prevalence (2.2/1), and most fistulas were transsphincteric. The marsupialization of fistulotomy was the most used operative treatment, and it presented acceptable low rates of morbidity and recurrence of 6.4%.

Keywords: fistula; rectal fistula; surgery; classification; surgical treatment, operative.

RESUMO: Objetivos: Avaliar os resultados do tratamento cirúrgico de pacientes portadores de fístulas anais em uma série consecutiva de pacientes. **Métodos:** Estudo analítico, retrospectivo, de uma série consecutiva de casos que foram coletados de forma prospectiva. A casuística englobou 210 pacientes operados, tendo sido analisados os dados demográficos, os sinais e sintomas, a classificação transoperatória das fístulas e o tempo até a cicatrização completa. **Resultados:** A mediana de idade foi de 38 anos e 69,0% dos pacientes eram homens. O sintoma mais frequente foi a drenagem de secreção purulenta por orifício perianal. As fístulas foram classificadas como transesfincterianas em 60,9%, e o tratamento operatório mais empregado foi a fistulotomia com marsupialização do trajeto fistuloso, em 84,2% dos casos. A cicatrização completa ocorreu em todos os pacientes entre 2 e 16 semanas. Cento e setenta e oito pacientes, 84,8% dos pacientes operados, foram avaliados com, pelo menos, um ano de pós-operatório e a recidiva ocorreu em 6,4% dos casos. **Conclusões:** Houve prevalência do gênero masculino (2,2/1) com a maioria das fístulas transesfincterianas. A fistulotomia com marsupialização foi o tratamento operatório mais empregado e apresentou baixos índices de morbidade, com recidiva de 6,4%.

Palavras-chave: fistula; fístula retal; cirurgia; classificação; procedimentos cirúrgicos.

INTRODUCTION

Fistula is an anomalous pathway that communicates two epithelized surfaces; in case of anal fistulas,

it connects the anorectal region to the skin. The internal orifice of the pathway is mostly located in the anal canal, and the external orifice is in the perianal skin, thus characterizing a chronic suppurative condition^{1,2}.

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It is a relatively common disease, with high prevalence and an important proportion among the conditions treated by the coloproctologist. It usually affects men in their 40s and male predominance estimated in most published series is of approximately 2:1¹⁻⁵.

Anal fistula is almost always a consequence of an anorectal abscess that was drained. While the abscess represents the acute phase of the disease, fistula represents the chronic phase. Following anorectal abscess drainage, the fistulous pathway may persist in about 1/3 of cases⁶⁻⁸.

The perianal abscess is mostly derived from an infection in the anal glands. However, many other conditions may cause abscess and fistulas, such as inflammatory bowel disease, fungal infection, mycobacterial infection, neoplasm and trauma^{1,2,7}.

Considering the origin of the disease, anal fistulas may be classified as: specific or secondary to pathological process, such as Crohn's disease, ulcerative rectocolitis, tuberculosis, trauma, and other morbid conditions; and nonspecific or secondary to infection of the anal glands^{2,7-9}.

After the abscess drainage, there may be formation of anal fistula, which will require surgical treatment in most cases⁶⁻¹⁰.

OBJECTIVE

To assess the demographic profile, signs, symptoms, intraoperative classification and the results of anal fistula surgery in a consecutive series of patients.

PATIENTS AND METHODS

Patients with anal fistulas who underwent surgery in the Coloproctology Department of the University Hospital at University of Brasilia, from January 1991 to December 2004, had their identification, anamnesis, physical and coloproctological exams, surgery report and outpatient follow-up data collected on a prospective basis. Then, these case report forms were assessed and represent the sample for this study.

Demographic data, disease-related symptoms, time elapsed between the onset of symptoms and treatment, fistulas classification according to intraoperative assessment, surgical technique, healing time

and recurrent disease, abscess or incontinence in the postoperative follow-up were collected.

The preoperative diagnosis assessment was performed by a complete proctological exam in all cases and complemented by video-colonoscopy in case of suspected bowel inflammatory disease or that indicated colon assessment due to associated symptoms or tracking of neoplasm. A magnetic resonance was performed in two patients with fistulas that were considered complex.

RESULTS

Two hundred and ten case report forms of patients who underwent surgery between January 1991 and December 2004 were assessed. Median age was 38 years (12 to 78 years-old), being 62.8% of patients in their 30s and 40s. The predominant gender was male (69.0%), in a ratio of 2.2:1.

The most frequent symptom was the perianal orifice with purulent drainage (91.9%), followed by perianal tumorigenicity (80.0%) and pain (41.9%). The association of purulent secretion drainage with tumor and pain was referred by 38.1% of patients.

The median length between the onset of symptoms and surgical treatment was of 12 months (2 weeks to 30 years).

During the surgery, the surgeon tried to classify the fistulas according to possible sphincter impairment according to Parks¹¹ classification. In 172 cases (81.9%), the classification could be performed safely, being the transsphincteric fistulas the most prevalent ones (Table 1).

Thirty-one (18.0%) patients presented complex fistula, including 20 with high transsphincteric, 6 with suprasphincteric and, 5 with extrasphincteric fistula. Out of the 20 high transsphincteric fistula, 6 presented horseshoe extension with deep involvement of postanal space.

Table 1. Anal fistulas transoperative classification¹¹.

Classification	n=172	%
Transsphincteric	105	61.0
Intersphincteric	56	32.6
Suprasphincteric	6	3.5
Extrasphincteric	5	2.9

The fistula origin was considered to be cryptoglandular in 91.9% of the patients, but anorectal trauma-fistulas were also observed in the orificial proctologic surgery, vaginal delivery and congenital origin (Table 2).

Previous surgical treatment was performed in 11 patients (5.2%) in other departments.

The most performed surgical treatment was the marsupialization with fistulotomy of the surgical wound (84.2%). For cases with major involvement of the sphincteric system, surgical treatment was mostly performed in two parts, and the loose seton was used in the first part, followed by fistulotomy, occasionally with the marsupialization of surgical wound in the second part in 9.5% of patients (Table 3).

In most patients, the internal orifice was identified by stylet exploration and, in other cases, by injecting coloring substances through the external orifice. The nuclear magnetic resonance was not available in the initial sampling period, but it was useful in the assessment of a patient with posterior horseshoe transsphincteric fistula following two disease relapses and in another patient to identify disease extension, contributing to the surgical approach and the success of the treatment.

Table 2. *Origin of the disease.*

Origin	n=210	%
Cryptoglandular	193	91.9
Postoperative	6	2.8
Trauma	6	2.8
Postvaginal delivery	2	1.0
Congenital	2	1.0
Crohn's Disease	1	0.5

Table 3. *Surgical treatment performed.*

Type of surgery	n=210	%
Fistulotomy + marsupialization	177	84.2
Loose seton	20	9.5
Fistulectomy	5	2.4
Fistulotomy	4	1.9
Fistulectomy + colostomy	2	1.0
Mucous patch advance	1	0.5
Curettage	1	0.5

Considering the minimum time of outpatient follow-up in one year, 178 (84.7%) patients were accompanied. To calculate healing time, a patient with an adverse result of approximately 28 months was withdrawn. To other patients, healing time ranged from 2 to 16 weeks, with a median of 5 weeks. Healing was complete in up to 4 weeks in 44.3% of patients and in up to 8 weeks in 78.0%.

Eleven patients were relapsed, i.e., 5.2% of patients who underwent surgery (11/210) or 6.2% of patients followed for at least one year (11/178). Out of these 11 patients, 10 underwent another fistulotomy, and the problem was resolved for 8 of them. One patient presented anal abscess in the postoperative which was resolved with simple drainage.

Six (3.3%) patients experienced fecal incontinence during follow-up and three underwent sphincteric repair with significant improvement of incontinence symptoms. Overall, the complication rate was 7.5%.

There were no deaths in the analyzed sample.

DISCUSSION

Clinical aspects identified in the analysis of this series of patients are similar to the ones described by other authors. The disease was predominant among men and affected mainly people in their 30s and 40s. The perianal inflammatory tumor, with purulent drainage and pain, also appeared as the most frequent symptoms, similar to other series^{3,9,12-14}.

In preoperative investigation, the full proctological exam is crucial. Complementing it with colonoscopy is mandatory in case of suspected inflammatory disease, doubts about the diagnosis and in those patients indicated to be tracked for neoplasm. Other complementary methods for assessment have been employed, such as nuclear magnetic resonance and anorectal ultrasound in order to contribute to the planning of surgical technique^{7,8,15,16}.

In the current study, the predominance of transsphincteric fistulas has been observed; although different from the ones mentioned by Parks, Gordon and Hardcastle¹¹, whose model is used to classify the fistulas, they were also found by other authors as described in Table 4¹⁰⁻¹³.

Table 4. Anal fistulas classification in case series.

Series	Transsphincteric (%)	Intersphincteric (%)	Suprasphincteric (%)	Extrasphincteric (%)
Parks, Gordon and Hardcastle ¹¹	30	45	20	5
Marks and Ritchie ¹²	20.7	70.1	3.3	2.9
Vasilevsky and Gordon ¹³	53.1	41.9	1.3	0
Seow-Choen and Phillips ¹⁰	53	42	3	2
Current series	61.0	32.6	3.5	2.9

Table 5. Literature series comparing results of surgical treatment.

Series	n	Relapse (%)	Incontinence (%)
Mazier ³	1,000	13.9	0.001
Parks, Gordon and Hardcastle ¹¹	400	9	17–39
Marks and Ritchie ¹²	793		25
Vasilevsky and Gordon ¹³	160	6.3	3
Seow-Choen and Phillips ¹⁰	158	6.3	10
Current series	210	5	3

Fistulas presenting higher sphincteric involvement, called complex fistulas, represent a challenge to the surgeon. Among the several modalities employed for the surgical treatment, seton and mucous advance are highlighted. In the current series, seton was used in 9.5% of patients, similar data found by other authors^{6,7,10,13,17,18}.

Most patients with anal fistula may be treated surgically; however, more conservative conducts have been raised, but still presenting high rates of recurrence. Sealing fibrin or injections of buffer solution, for instance, present low rates of incontinence, but high relapse rates¹⁹⁻²¹.

The postoperative sphincteric function, in the current study, has only been considered by patients' report, either spontaneously or by questioning, during the follow-up. By being a subjective assessment, this strategy may underestimate the occurrence of such complication. This is a frightening complication because it causes major discomfort to the patient, although its occurrence in the current series has been low [six patients (3.3%)], only three patients were successfully treated and the other three experienced permanent sequels^{9,10,14,22}.

Up to one year, the surgical follow-up showed loss in about 15.3% of patients; however, postoperative complication rates must be underestimated. There

are reports that the relapsed rates increase along with the follow-up time, evolving from 4% in two years to 6.3% in three years^{6,7,10}.

Relapse and incontinency rates in the current study, 6.2 and 3.3%, respectively, were similar to those in other literature series (Table 5)^{3,10-13}.

Surgeries to treat anal fistula are safe, there were no deaths associated to the procedure and only one abscess since an early postoperative complication has occurred.

Most of non-complicated anal fistula healed in 12 weeks, as the median healing period of this series was 6.3 weeks, similar to the results observed in other studies^{3,10,14}.

The absence of standardized and internationally known classification, besides technical variation in the employment of surgical treatment, makes it difficult to compare series and, therefore, it is also difficult to establish acceptable rates of relapse and complications.

CONCLUSION

The assessment of this consecutive series of patients revealed disease prevalence in males aged around 30s and 40s, being transsphincteric fistula the most frequent one, with relapse and incontinence rates of 6.2 and 3.3%, respectively.

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Correspondence to:

Paulo Gonçalves de Oliveira
Área de Clínica Cirúrgica da Faculdade de Medicina da
Universidade de Brasília
Campus Universitário Darcy Ribeiro
Asa Norte
CEP: 70910-900 – Brasília (DF), Brazil
E-mail: pgoofmunb@unb.br