

Surgical complications in coloproctology: a scoring system

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Abstract: Surgery for anorectal diseases is frequently performed with good outcomes and is relatively safe. The aim of this study was to assess the reliability of a quantitative score which includes a quality of life (QOL) analysis and evaluation of the severity of early and the late complications of surgery in order to provide a better long term clinical and prognostic evaluation. Three hundred patients were followed-up after 120 haemorrhoidectomies, 80 operations for anal fissure, 50 fistulectomies and 50 procedures for rectocoele. Follow-up at 3, 6 and 12 months included a numerical questionnaire about quality of life and severity of early and late stage complications. Eighty patients were lost to follow-up. We observed an increased severity of early and late stage complications to be significantly associated with a poor QOL. The mean score of QOL significantly differed in comparison to the mean score observed before surgery (4.5 vs 8.5 vs 8.6 vs 8.9, $p=0.05$). The QOL did not differ significantly when controls at 3, 6 and 12 months were compared (8.5 vs 8.6 vs 8.9, $p=ns$). Our scoring system includes QOL and severity of the early and late stage complications and provides a better long term clinical and prognostic evaluation of proctological surgery patients.

Key words: Proctological surgery; Quality of life; Complications score.

INTRODUCTION

Symptomatic anorectal diseases frequently present to surgical outpatient departments and many patients with these symptoms undergo surgical treatments.¹ Recent studies have demonstrated that a better understanding of the pathophysiology of anorectal diseases and use of some recently introduced diagnostic tools can lead to better choice of surgery for specific cases.²⁻⁹ In clinical practice the choice of a specific surgical technique is based on the pre-operative assessment.¹⁰ However even an excellent clinical assessment and diagnosis of the various anorectal disorders before surgery cannot provide reliable prognostic information for the post-surgical outcome. The aim of this prospective study was to determine the prognostic and scientific value of a quantitative numerical score assessing quality of life and severity of early and late stage complications of surgery in patients who underwent proctological surgery for various anorectal disorders. This score is accompanied by a legend and it can be easily administered in clinical practice.

MATERIALS AND METHODS

A total of 300 consecutive patients of both sexes, aged between 18 and 75 years were recruited in five referral centres (Dipartimento di Chirurgia Generale "Paride Stefanini", Policlinico Umberto I di Roma, UCP Clinica Annunziata di Roma, Centro USI di Roma, Unità di Endoscopia e Gastroenterologia Operativa "Fabio Di Giovanbattista" di Roma, Lega Italiana per la lotta contro i tumori sezione di Roma e AIED sezione di Roma).

Inclusion criteria were benign anorectal conditions such as active symptomatic grade III and IV haemorrhoidal disease, perianal fistulae, rectocoele or anal fissure. Exclusion criteria were: any other chronic illness, significant medical conditions such as heart or kidney failure and previous colorectal or proctological surgery. Based on disease characteristics and severity, patients were treated with different surgical techniques. Follow-up lasted one year and included clinical controls and phone interviews at 3, 6 and 12 months after surgery. Patients were asked to rate their quality of life on the basis of a numerical score ranging 0 to 10.

Severity of early stage complications such as pain, bleeding in the first 24 hours and urinary retention was rated with a score ranging 0 to 4, with a global assessment ranging 0 to 12 (Tab. 1).

Pain was assessed using three parameters: requirement of analgesics, time needed for pain relief (12, 24 or 48 hours) and failure to eliminate pain after administering these drugs.

The resolution of bleeding was characterised as spontaneous, pharmacological, para-surgical and/or surgical. Urinary retention ranged from mild dysuria to micturition only after drug administration or needing temporary or permanent catheterization.

Each late complication such as pain, bleeding, stenosis, anal secretion, tenesmus and anal incontinence was rated 0 to 4. These scores were then added to create a global assessment ranging 0 to 24 (Tab. 1).

The severity of pain was defined by the need for analgesics and by the duration of drug administration (72 - hours). Late bleeding was assessed in the same way as early bleeding. Anorectal stenosis was evaluated after 6 months, based on a spontaneous symptom relief, need for anal dilators, surgery or no relief. Anal secretion was defined as resolution within 30 days or more than 60 days or with surgery. Tenesmus was defined by frequency, duration and resolution after medical or surgical treatment. Finally anal incontinence, evaluated after 6 months, ranged from incontinence to gas, soiling and loss of liquid or solid stool.

STATISTICAL ANALYSIS

Mean values of all variables were compared to determine if this score improved clinical and prognostic evaluation of patients treated surgically and if quality of life and severity of early and late stage complications were useful in follow-up to predict outcomes. Statistical analyses were calculated using Fisher's exact test and T Student test. A mean value of $p < 0.05$ was considered statistically significant.

RESULTS

In pre-operative assessment of 300 patients, a mean score of 4.5 points was found (0 to 10) for quality of life. Anorectal diseases treated are presented in table 2. Two hundred and twenty of 300 patients were followed up. Post-surgical assessment scored 4.5 points as a mean value for quality of life and 4.9 (0 to 12) as a mean value for early complications, with an overall score of 9.4 points. At three months, a mean score of 8.5 was observed for quality of life for early and 8.5 for late complications, with an overall score arising to 17.

At 6 months a mean score of 8.6 for quality of life and of 3.1 for late complications with an overall score of 11.7 were registered. After twelve months after surgery the quality of life score was 9 points while that of late complications was 1.2 points, with an overall score of 10.2 points.

The mean quality of life score registered pre and post-

TABLE 1. – *Complication Score.*

<i>Early Complications</i>	<i>Late Complications</i>
<i>Pain</i>	<i>Pain</i>
0 No analgesics	0 No analgesics
1 Resolution with analgesics in the first 12 hours	1 Resolution with analgesics in the first 72 hours
2 Resolution with analgesics in 24 hours	2 Resolution with analgesics in 96 hours
3 Resolution with analgesics in 48 hours	3 Resolution with analgesics in 112 hours
4 No resolution with analgesics	4 No resolution with analgesics after 112 hours
<i>Bleeding in the first 24 hours</i>	<i>Bleeding</i>
0 No bleeding	0 No bleeding
1 Spontaneous bleeding resolution	1 Spontaneous bleeding resolution
2 Pharmacological bleeding resolution	2 Pharmacological bleeding resolution
3 Para-surgical bleeding resolution	3 Para-surgical bleeding resolution
4. Surgical bleeding resolution	4. Surgical bleeding resolution
<i>Urinary retention</i>	<i>Anal Stenosis (evaluation at 6 months)</i>
0 No retention	0 No stenosis
1 Mild dysuria	1 Subclinical Stenosis
2 Temporary catheterization	2 Resolution of stenosis with dilators
3 Pharmacological therapy	3 Resolution with surgery
4 Permanent catheterization	4 No resolution
	<i>Anal secretion</i>
	0 No secretion
	1 Mild
	2 Resolution in 30 days
	3 Resolution in 60 days
	4 Surgery
	<i>Tenesmus</i>
	0 Absent
	1 Mild
	2 Severe
	3 Medical resolution
	4 Surgical resolution
	<i>Fecal Incontinence (at 6 months)</i>
	0 No incontinence
	1 Gas incontinence
	2 Soiling
	3 Liquid stool incontinence
	4 Solid stool incontinence

surgery resulted statistically different (4.5 vs 8.5 vs 8.6 vs 9, $p < 0.05$). The quality of life Score improved after surgery at ambulatory settings at three, six and twelve months, although the difference did not reach the statistical significance (8.6 vs 8.9 vs 9, $p = ns$). The overall Score registered after three of follow-up resulted significantly higher compared with the results obtained at the end of follow-up (17 vs 10.2, $p < 0.05$) (Fig. 1).

Stratifying the mean values of the score calculated for early and late complications and for quality of life within the

TABLE 2. – *Patients demographics and procedures.*

<i>Parameters</i>	<i>Values</i>
Age (mean)	50.4
Sex (M/F)	130/170
Haemorrhoids	120
Perianal fistulae	80
Rectocele	50
Anal Fissure	50

different groups of patients, no statistically significant difference was found. Thus this score can be considered applicable to all anorectal disorders treated in the present study (Fig. 1).

DISCUSSION

In the present study the introduction of a score which evaluates quality of life and severity of early and late complications after a surgical treatment for various anorectal disease led to a more complete and accurate clinical assessment with improved significance.⁵ This study confirmed the findings in the literature that patients' quality of life^{11, 12} depends not only on the treatment outcome, but also on all potential complications caused by the surgical technique.¹³⁻¹⁸ Most post-operative symptoms were due to pain, bleeding or urinary retention in addition to symptoms related to the specific surgical technique. All procedure related complications were observed during the first 3 months of follow-up. Reduction of these symptoms led to a significant improvement in the quality of life score. This score takes into account all factors

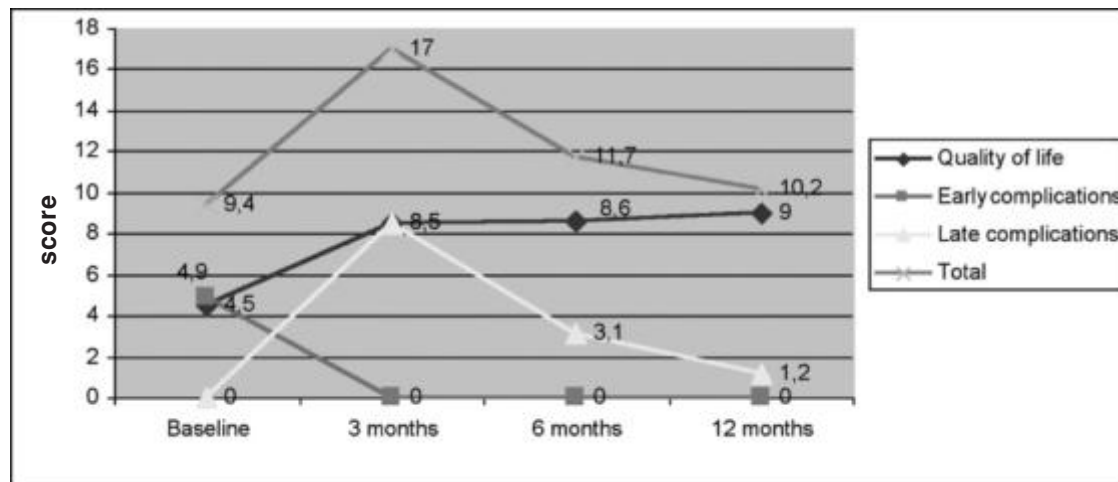


Fig. 1. – Mean score for early and late complications in follow-up.

that can influence the post-surgical outcome when considering the severity of early and late complications. It also determines the length of follow-up and need for medical or surgical reintervention. It is noteworthy that this score, accompanied by the legend introduced in this study, was able to detect those complaints previously difficult to assess due to their ambiguous presentation. Thus, their clinical and scientific importance in the patients' follow-up were underestimated.

This score may be helpful when determining the best treatment options for some clinical problems such as pain, bleeding, urinary retention, anal secretion and tenesmus, the evaluation of pathological strictures or the onset of anal incontinence where a choice between medical therapy or further surgery has to be made. Finally the score considers all parameters that can cause temporary or permanent impairment of QOL and/or result in the need for medical or surgical intervention.

This score has proven to be an important clinical and prognostic tool. Accompanied by a legend it provides a better insight into the therapeutic outcomes of proctological surgery. It may prove to be an accurate scientific measure of treatment efficacy in prospective trials. This tool should help to differentiate a real treatment failure (when treatment is not efficacious) from simple symptoms of a normal surgical recovery which cause significant symptoms but disappear after a short period of time (when treatment is efficacious).

This score highlights different factors able to influence QOL in patients, which is confirmed to be the most reliable measure of a treatment success in proctological surgery, and superior to other clinical, anatomical and functional parameters.

A score which include quality of life and severity of early and late complications, accompanied by a legend, improves clinical and prognostic evaluation during follow-up of patients treated surgically for anorectal disorders. A better understanding of the nature and underlying reasons for the main post-operative complaints in proctological patients should also help to define more precisely the results obtained from prospective clinical trials.

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