

Quality of life after treatment of rectal intussusception or rectocele by means of STARR



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AIM: *Stapled Transanal Rectal Resection (STARR) has been proposed for surgical treatment of rectal intussusception and rectocele. This study aims at evaluating the effect of the STARR on symptoms of obstructed defecation and associated faecal incontinence regarding the impact on the quality of life of patients with rectal intussusception and rectocele.*

MATERIALS AND METHODS: *Twenty-nine patients with rectal intussusception and 22 with rectocele, who underwent to STARR in the General Surgery of the University of L'Aquila - Italy, are the subjects of the study. Symptoms of obstructive defecation were reported in all cases; with associated faecal incontinence in 31%. Questionnaires as ODS-Score, PAC-QoL, FISI and FIQL were proposed to all 51 patients before surgical treatment and at 3 years from operation.*

RESULTS: *ODS-Score decreased from 28 ± 3.66 preoperatively to 6.7 ± 5.77 postoperatively ($p < 0.001$), while PAC-QoL score was 14 ± 1.4 preoperatively vs 5.3 ± 1.7 postoperatively ($p < 0.0020$). The lower score indicates a lower severity index and an excellent quality of life. FISI score arose from 16.13 ± 5.39 before surgery to 19.33 ± 2.31 after surgery while, in the group of patients with preoperative symptoms of faecal incontinence, it arose from 7.86 ± 2.89 to 16.4 ± 4.5 after surgery ($p < 0.0039$). FIQL score sum was 105 ± 75 preoperatively vs 225 ± 90 postoperatively. The lower score indicates a higher severity index and a lower quality of life.*

CONCLUSIONS: *Patients with rectal intussusception or rectocele may improve their symptoms and quality of life undergoing to the STARR.*

KEY WORDS: Faecal incontinence, Obstructed defecation, Rectal intussusception, Rectocele, STARR, Quality of Life

Introduction

The successful treatment of patients with symptoms of obstructed defecation is challenging. Apart from those with obstructed defecation secondary to functional dis-

turbances, anatomical defects such as rectocele or rectal intussusception account for 42% of patients with this syndrome¹. In addition, faecal incontinence secondary to pudendal neuropathy and /or sphincter injury occur in the literature in such patients up to 23 %². Not rarely, the complicated clinical picture of obstructed defecation impacts deeply on the quality of life in such patients, causing psychological distress and compromising social/occupational activities^{3,4}.

In recent years, the Stapled Transanal Rectal Resection (STARR)⁵ has been proposed for surgical treatment of rectal intussusception and rectocele. STARR, eliminating the anatomical cause of obstructed defecation, seems to improve the symptoms and the quality of life of patients with obstructed defecation⁶⁻⁸. However, in those patients

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where obstructed defecation syndrome is complicated by faecal incontinence, the results are conflicting⁹⁻¹². Our study aims at evaluating the effect of the STARR surgical treatment on the symptoms of obstructed defecation and associated faecal incontinence, paying particular attention to the quality of life of patients. Validated questionnaires, pre- and postoperatively administered, were used.

Materials and Methods

Out of 89 patients complaining of obstructed defecation, 51 consecutive patients not responding to conservative measures (increased water intake, enema, high fibre diet and bulk laxative at least for 6 months) were candidate to STARR. All operations were performed by senior surgeons (SL, RP) in a dedicated team of the Department of Surgery of the University of L'Aquila between January 2008 and December 2009.

In all cases, the diagnosis was based on clinical examination, proctoscopy and defecating proctograms.

Colonoscopy was performed preoperatively to rule out malignancy, and in women gynaecological examination was added.

29 patients (24 F, 5 M aged 40-82 years, mean 56 yrs) underwent surgery for rectal intussusception extending more than 10 mm, the others (22 F, aged 50-90 yrs, mean 62.9 yrs) for rectocele larger than 3 cm from the rectal wall.

Symptoms of obstructed defecation were reported by all patients with a prolonged defecation time (min 20 max 45 minutes; mean 35 minutes): 61% complained of frequent daily toilet visits, 26 % reported self digitations, and 36 % reported straining in more than 50% of defecations. Associated episodes of faecal incontinence for gas and liquid were reported in 29.4% of cases. Nobody showed immune depression, concomitant inflammatory or septic diseases of the anorectal region. Relevant metabolic and cardio-respiratory co-morbidities and pelvic surgery were not present.

Short-term preoperative antibiotic prophylaxis with metronidazol was administered to all patients.

The STARR operation was performed according to the described procedure⁵ using in sequence, anteriorly and on the posterior rectal wall, two circular staplers PPH-01 (Ethicon - Endosurgery, Inc. Pomezia, Italy), under subarachnoid anaesthesia. The two surgeons performing all the procedures had previous experience with all stapled-assisted colorectal techniques.

The patients were discharged on the third postoperative day.

For the present study, questionnaires such *Obstructed defecation Syndrome score (ODS)*¹³, *Constipation quality of life (PAC QoL)*¹⁴, *The faecal Incontinence Severity Index(FISI)*¹⁵ and *The Faecal Incontinence Quality of Life (FIQL)*¹⁶ were employed.

The questionnaires were proposed to each of all 51

patients both before surgical treatment and at 3 years from operation.

*Obstructed defecation score(ODS)*¹³ includes 5 items regarding straining, incomplete rectal evacuation, use of laxative or enema, digital pressure of perineum, constipation. The score range is from 0 (absence of obstructed defecation) to 40 (always present).

*Patients Assessment of Constipation quality of life (PAC QoL)*¹⁴ is a self-reported questionnaire measuring the quality of life of patients. According to literature data¹⁷, only the satisfaction subscale, including four items with a global score ranging from 0 (poor quality) to 16 (excellent quality), was used.

*The Faecal Incontinence Severity Index (FISI)*¹⁵ includes the type of incontinence (gas, mucus, liquid or solid) and the frequency of occurrence. The score of the item rises from 1 (most severe) to 20 (least severe).

*The Faecal Incontinence Quality of Life (FIQL)*¹⁶ questionnaire, a disease-specific tool, has been designed to evaluate the impact of Faecal Incontinence on four aspects of patients' QL: life style, coping behaviour, self perception depression and level of embarrassment. Each aspect is described as a score measured on a scale between 1 and 4, where 1 is very affected and 4 is not affected. Therefore the score range is from 4 to 16.

Postoperative complications, influencing the outcome, were analyzed.

The statistical significance of the results has been evaluated through the Wilcoxon Rank-Sum Test, correlating the preoperative to the postoperative results. Data are reported as mean \pm standard deviations of the mean. A p value < 0.05 was considered to be significant.

Results

Postoperative morbidity was 3.9 %: one case of transient defecation urgency, one case of severe suture line bleeding which required operative reviewer, and one case of minor bleeding which was healed conservatively. Mortality was 0.

All 51 patients filled out the questionnaires.

Mean Obstructed Defecation Syndrome score (0-40) decreased from 28 ± 3.66 before surgery to 6.7 ± 5.77 after surgery ($s = 76.5$, $p < 0.001$). The lower score indicates a lower severity index. Faecal Incontinence Severity Index score (1-20) arose from 16.13 ± 5.39 before surgery to 19.33 ± 2.31 after surgery, while in the group of patients with preoperative symptoms of faecal incontinence it arose from 7.86 ± 2.89 to 16.4 ± 4.5 after surgery ($p < 0.0039$) (Fig. 1). The lower score indicates a higher severity index. The quality of life after the STARR treatment for both patients with obstructive defecation syndrome and/or faecal incontinence improved significantly (Tab. I). The results of scores before and after surgery were statistically significant (obstructive defecation $p < 0.0001$; faecal incontinence $p = 0.0039$).

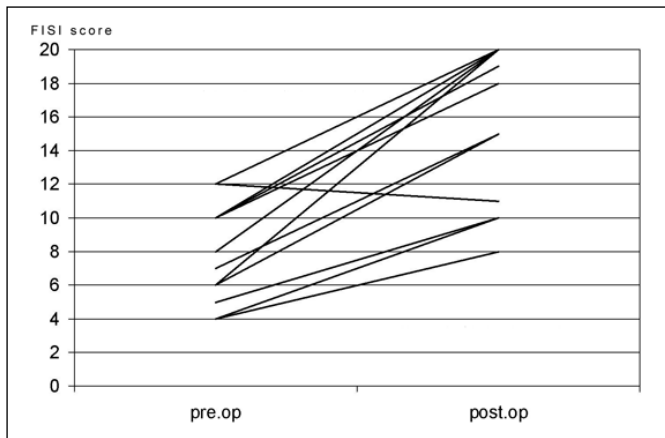


Fig. 1: Faecal Incontinence Severity Index (FISI) in 15 patients, who went to STARR for obstructed defecation, with associated episodes of faecal incontinence. The FISI score rises from 1 (most severe) to 20 (least severe).

TABLE I - Quality of life of 51 patients who underwent to STARR for rectal intussusception or rectocele.

Score		Before surgery	After surgery	P
PAC-QoL*				
Satisfaction subscale	4-16	14.5 ± 1,4	5.3 ± 1,7	<0.0020
FIQL°				
Life style	10-40	13.9 ± 3.01	29 ± 6.7	<0.0020
Coping	10-40	13.8 ± 2.20	32 ± 4.87	<0.0020
Depression	6-24	11.4 ± 3.71	20 ± 3.67	<0.0020
Embarassment	2-8	3.2 ± 0,63	6.7 ± 1.33	<0.0020

*PAC-QoL Patients Assessment of Constipation quality of life : Higher values represent poor quality life.

°FIQL Faecal Incontinence Quality of Life: Higher values represent better quality life.

Overall, a significant improvement of symptoms and quality of life-score was reported in 81 % of patients.

Discussion

The STARR operation seems to improve the quality of life and the symptoms of patients with rectal intussusception and rectocele. This result improves the quality of life and reduces the psychological distress in such patients^{18,19}. Such a good outcome has been reported at short-term follow-up^{6,7} up to 5 years²⁰. However, some authors^{21,22} report, after a first improvement, a worsening of the quality of life and even a recurrence of disease.

Our study showed that the STARR procedure seems to improve not only obstructive defecation but also the

symptoms of faecal incontinence when present. This aspect is still controversial since our results are in line with some authors^{2,11,12}, whereas other authors^{9,10} observed no improvement in faecal incontinence.

By modifying defecation, rectal intussusception and rectocele can distress the sphincter activity causing faecal incontinence. The restoration of the anal canal anatomy through STARR might reduce the stress of the anorectal sphincter by improving the defecation. Therefore, if other causes of injury are absent, normal sphincter activity may start again, improving the faecal incontinence.

Many factors, like number of patients, experience of surgeons, prevalence of rectocele or intussusception, time of follow-up, may be the cause of some conflicting results. Undoubtedly, 10-20% of all the patients remain symptomatic after the STARR operation^{6-9,20,21} as in our experience. Obstructed defecation syndrome and faecal incontinence may depend on many other causes, relating to the pelvic condition or psychological diseases²³.

Therefore, it is essential to exclude the concomitant presence of these conditions, which can lead to failure of the surgical treatment through STARR⁷. In this respect, a complete proctological examination is of utmost importance: defecography is mandatory, as well as colonoscopy and gynaecological evaluation. Rectal manometry may be useful. Psychometric testing is useful too, if doubts concerning mental status of patient arise. Besides, different surgical techniques may be indicated in relation to the size of the rectal intussusception and rectocele. This can be another reason for the STARR procedure failure. Therefore, accurate indications to STARR are obviously necessary.

Technical errors during the STARR procedure can represent another cause of failure and persistence of symptoms. The STARR procedure presents some difficult steps^{6,7,24} and previous experience with stapled-assisted colonproctology techniques is mandatory⁷. Actually, even if postoperative morbidity is low^{6,7,13,25}, anecdotal, severe, life-threatening postoperative complications have been reported in literature^{26,27}, which are further failure risk factors in the STARR procedure.

Considering all the above, the failure in 19% of our cases might have been caused by mistaken indications and minor technical errors.

Recently, new devices^{24,28,29} or techniques³⁰ have been proposed for the STARR operation, aiming at a better view and control of resection, with promising results³¹.

Conclusions

In conclusion, many patients with rectal intussusception and or rectocele causing obstructed defecation may improve their symptoms and quality of life undergoing surgical correction by means of the STARR operation.

Riassunto

Recentemente, la Stapled Transanal Rectal Resection (STARR) è stata proposta come trattamento chirurgico del prolasso mucoso del retto e del rettocele. Tale intervento, eliminando le cause della sindrome da ostruita defecazione, migliorerebbe i sintomi e la qualità di vita di questi pazienti. Tuttavia quando si associano i sintomi da incontinenza fecale, i risultati non sono univoci. Pertanto il nostro studio vuole valutare gli effetti della STARR oltre ovviamente sui sintomi della ostruita defecazione, su quelli legati all'incontinenza nei pazienti con prolasso mucoso del retto e/o rettocele, con particolare riferimento alla qualità di vita dei pazienti, a distanza di tempo dal trattamento chirurgico.

MATERIALE E METODO: 29 pazienti con prolasso mucoso del retto e 22 con rettocele, sottoposti a STARR, dopo l'insuccesso di un trattamento conservativo, sono l'oggetto del nostro studio. Tutti i pazienti riferivano i sintomi da ostruita defecazione: nel 31% dei casi si associavano anche quelli dell'incontinenza. Prima dell'intervento di STARR e a distanza di 3 anni dallo stesso, tutti i 51 pazienti si sono sottoposti a 4 questionari per la valutazione della qualità di vita. *Obstructed defecation Syndrome score (ODS)*, *Constipation quality of life (PAC QoL)*, *The faecal Incontinence Severity Index (FISI)*, e *The Faecal Incontinence Quality of Life (FIQL)*.

RISULTATI: ODS-Score è sceso significativamente da 28 ± 3.66 preoperatoriamente a 6.7 ± 5.77 postoperatoriamente ($p < 0.001$), così come il PAC-QoL score da 14 ± 1.4 preoperatoriamente al 5.3 ± 1.7 postoperatoriamente ($p < 0.0020$). Più lo score è basso, meno grave è la severità della malattia e migliore è la qualità della vita. FISI score è passato dal 16.13 ± 5.39 prima dell'intervento al 19.33 ± 2.31 dopo l'operazione. In particolare, nel gruppo di pazienti con sintomi preoperatori d'incontinenza fecale lo score è passato da 7.86 ± 2.89 a 16.4 ± 4.5 dopo l'intervento ($p < 0.0039$). Anche il FIQL score sum era aumentato da 105 ± 75 preop. al 225 ± 90 postop. In questi casi uno score più basso è indice di maggiore severità e di peggiore qualità di vita.

CONCLUSIONE: Molti pazienti con prolasso mucoso del retto e / o rettocele possono migliorare la qualità della loro vita tramite l'intervento chirurgico della STARR. Questo intervento, infatti, sembrerebbe migliorare i sintomi legati alla sindrome da defecazione ostruita ed anche quelli da incontinenza fecale, quando presente.

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