

Value of colpo-cysto-entero defecography to predict the post operative results in patients with obstructed defecation



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INTRODUCTION: *The conventional video colpo-cysto entero defecography describing the morpho-functional imaging features, physiological and pathological of the recto-anal region and pelvic floor. It represents the gold standard examination for the identification and staging of morphological and functional disorders of the recto-anal region and pelvic floor in evacuation dysfunctions.*

MATERIALS AND METHODS: *Between January 2010 to January 2013 88 patients underwent STARR procedure for obstructed defecation syndrome (ODS) caused by single rectocele or internal rectal intussusception. We retrospectively analyzed the collected data, in particular we reviewed the defecography results before surgery.*

RESULTS: *At defecography imaging, 30 patients (34 %) had an anal canal opening between 0 and 5 seconds, 44 (50 %) between 6 and 10 seconds and 14 patients (16 %) over 10 seconds at defecography imaging. The defecography showed an enterocele in 30 patients (34 %). The enterocele was functional in 25 (28,4 %) and stable in 5 (5,6 %) patients. 53 patients have a II° rectocele (60,2 %) and 35 patients a III° rectocele (39,7 %). The average preoperative ODS score was 14. The average ODS score reevaluated at 1 year was 3.1, 4.3 at 3 years and 6.4 after 5 years. The improvement of the ODS score was lower in the subgroup of patients presenting a slow opening of the anal canal (> 10 sec): 7.5 at one year, 9.1 at 3 years and 11 after 5 years follow-up. Also in the subgroup of patients with stable enterocele (5,6 %) the improvement was less evident: 6.7 at 1 year, 8 at 3 years and 9.7 after 5 years follow-up.*

DISCUSSION AND CONCLUSION: *We have observed that a coexistence of a long opening time of the anal canal and / or the presence of a stable enterocele are factors that significantly reduce the effectiveness of the surgery leading over time to ODS score values close to those present before surgery. In the first case we suggest a pre and post-operative perineal physiotherapy, in the second case a Dougl's plasty*

KEY WORDS: Defecography, Obstructed defecation syndrome, Rectocele, Recto-anal prolapse

Introduction

The conventional video colpo-cysto entero defecography describe the morpho-functional imaging features, phy-

siological and pathological of the recto-anal region and pelvic floor. This technique described by Wallden in 1953 ^{1,2}, has dramatically improved our knowledge of dysfunctions of evacuation.

The study of evacuation can also be performed with magnetic resonance imaging. Nonetheless, conventional defecography still represents a widely available and cost-effective diagnostic tool ^{3,4}. It represents today the gold standard examination for the identification and staging of morphological and functional disorders of the recto-anal region and pelvic floor in evacuation dysfunctions. The

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TABLE I - *Characteristics of patients*

Characteristic	Value
Sex	88 F, 0 M
Mean age (y)	60
Mean BMI (Kg/m ²)	27
Mean ASA score	2
Average pre-operative ODS score	14

complication rate after performing this test is very low⁵. It therefore represents the key element for placing the correct surgical indication for obstructed defecation syndrome (ODS).

The aim of this study is to better use the defecographic elements in order to provide a prediction of the success of the Stapled Trans Anal Rectal Resection (STARR) surgical procedure.

Materials and Methods

Between January 2010 to January 2013 88 patients underwent STARR procedure for obstructed defecation syndrome (ODS) by single rectocele or internal rectal intussusception⁶⁻⁸ (Table I). We retrospectively analyzed the collected data recorded in a department database. All patients were females. The mean age at surgery was 60 years, the mean ASA score was 2 and the mean B.M.I was 27. The written informed consent was obtained from all patients included in the study. The work described has been carried out in accordance with ethical principles for medical research involving human subjects (World Medical Association Declaration of Helsinki). In particular we reviewed the defecography results before surgery. We evaluated the ODS score pre-operative and 1, 3 and 5 year after surgery

Results

30 patients (34%) had an anal canal opening between 0 and 5 seconds, 44 (50%) between 6 and 10 seconds and 14 patients (16%) over 10 seconds at defecography imaging. The defecography showed an enterocele in 30 patients (34%) The enterocele was functional in 25 (28.4%) and stable in 5 (5.6%) patients. 53 patients have a second degree rectocele (60.2%) and 35 patients a third degree rectocele (39.8%). In all cases there was a rectal-anal intussusception and a residual of at least 1/3 of contrast medium in rectal ampoule at the end of the evacuation (Table II) dure is feasible in day-surgery regimen. Among postoperative complications urinary retention was observed in 4 patients (4.5%) 3 (3.4%) patients presented an early rectal bleeding (within 24 h from surgery) and 1 (1.1%) patients presented a late

TABLE II - *Defecographic features*

Defecographic feature	N° of patients (%)
Time for anal opening	
0" – 5"	30 (34)
6" – 10"	44 (50)
> 10"	14 (16)
Enterocele	30 (34)
Functional	25 (28,4)
Stable	5 (5,6)
Rectocele	
1st degree	0 (0)
2nd degree	53 (60,2)
3rd degree	35 (39,8)
Rectal-anal intussusception	88 (100)
Residual of at least 1/3 contrast medium	88 (100)

TABLE III - *Postoperative discharge and complications*

Postoperative discharge and complications	N° of patients (%)
Discharge after 24 hours	88(100)
Urinary retention	4(4,5)
Rectal bleeding	4(4,5)
Within 24 hours	3(3,4)
After 24 hours	1(1,1)
Urgency	18(20,4)
Vanished at 3 months	12(13,6)
Vanished at 6 months	6(6,8)

bleeding (after 24 h from surgery). All these cases needed an urgent surgical intervention to obtain hemostasis 18 patients (20.4%) reported urgency that completely vanished at 3 months follow-up in 12 patients (13,6%) and in further 6 patients (6.8%) at 6-months (Table III). The average preoperative ODS score was 14. The average ODS score reevaluated at 1 year was 3.1, 4.3 at 3 years and 6.4 after 5 years. The improvement of the ODS score was lower in the subgroup of patients presenting a slow opening of the anal canal (> 10 sec): 7.5 at one year, 9.1 at 3 years and 11 after 5 years follow-up. Also in the subgroup of patients with stable enterocele (5.6%) the improvement was less evident: 6.7 at 1 year, 8 at 3 years and 9.7 after 5 years follow-up (Table IV)

Discussion

Defecography evaluates in real time the morphology of rectum and anal canal statistically and dynamically. The

TABLE IV - Postoperative ODS score

Postoperative ODS score	Value
Average	
1 year	3,1
3 years	4,3
5 years	6,4
Slow anal opening patients	
1 year	7,5
3 years	9,1
5 years	11,0
Stable enterocele patients	
1 year	6,7
3 years	8,0
5 years	9,7

frequent indications are constipation, straining, fractionated or incomplete evacuation, incontinence, intussusception, prolapse and perineal pain or discomfort. Other imaging techniques (ultrasonography, double contrast, computed tomography) are not able to identify the dynamic modification of the anatomic structures^{9,10}.

At the end of the 90s, a new surgical operation, the stapled transanal rectal resection (STARR) was born to treat the cases of ODS by morpho-functional alterations of the rectum. This is a minimally invasive technique for the correction of rectocele and intussusception aiming to restore the normal anatomy of the rectum by removing redundant tissue⁷.

ODS surgery remains a challenging topic. In many cases conservative therapy through a fiber-based diet, laxative, rectal irrigation or hydrocolon therapy, bio-feedback, yoga and psychotherapy are offices that improve the quality of life of patients lowering the ODS score. According to our experience, however, about 15-20% of cases require surgical treatment. If we consider ODS an "iceberg syndrome", with rectal and internal rectal mucous membrane prolapse, which can benefit from surgery, at least two out of ten patients also have occult disorders such as anism, rectal hyposensation and anxious depression, which require an associated treatment. Careful patient selection is essential for optimal functional results. Not only rectal disorders, but also any pluricompartimental disorders should be evaluated, if there were symptoms.

By analyzing the cases of ODS associated only with rectal-anal intussusception and rectoceles, there is always a modest deterioration over time of ODS score values after STARR surgery⁷. However, it has been observed with our study that the coexistence of a long opening time of the anal canal and/or the presence of a stable enterocele are factors that significantly reduce the effectiveness of the surgery leading over time to ODS score values close to those present before surgery.

In cases of ODS secondary to rectal-anal intussusception and rectoceles associated with a slow opening of the anal canal, the pre- and postoperative association of a pelvic floor physiotherapy would be recommended. In the case of stable enterocele, on the other hand, it is advisable to associate a plastic intervention of the Douglas.

In all cases, post-operative psillyum intake improves recovery¹¹.

However, in all cases, surgical treatment of a morpho-functional alteration of the rectum with the expectation of a functional improvement, it is always advisable to explain to the patient that the success rate of the intervention can be hardly expected with certainty in the preoperative phase.

Conclusion

The diagnosis of an obstructed defecation is primary anamnestic, the defecographic parameters are useful to identify the morphologic causes and to put the right surgical indication. In cases of obstructed defecation not associated with pluricompartimental syndrome but secondary to simple rectal-anal intussusception and rectocele it is very important to analyze some defecographic elements useful for predicting the success of a surgical correction. Slow opening of the anal canal and a stable enterocele keep the ODS score high. In these cases it is useful to evaluate the association of a perineal physiotherapy and / or a plastic surgery of Douglas. In all cases, awaiting from this type of surgery a functioning result, it is recommended to make the patient aware of the inaccurate predictability of the surgical result.

Riassunto

INTRODUZIONE: La colpo-cisto entero defecografia rappresenta oggi il gold standard per l'identificazione e la stadiazione dei disordini morfologici e funzionali della regione retto-ale e del pavimento pelvico nelle sindromi da defecazione ostruita.

MATERIALI E METODI: Tra Gennaio 2010 e Gennaio 2013 88 pazienti sono stati sottoposti a procedura di STARR per sindrome da defecazione ostruita (ODS) causata da rettocele e intussuscezione retto-ale. Abbiamo analizzato retrospettivamente i dati raccolti ed in particolare rivisto i risultati defecografici pre-operatori.

RISULTATI: 30 pazienti (34%) alla colpo-cisto entero defecografia pre-operatoria, avevano un'apertura del canale anale compresa tra 0 e 5 secondi, 44 (50%) tra 6 e 10 secondi e 14 pazienti (16%) superiore ai 10 secondi. Le immagini hanno mostrato presenza di enterocele in 30 pazienti (34%). In 25 pazienti (28,4%) si trattava di enterocele dinamico, in 5 (5,6%) di enterocele stabile. 53 pazienti avevano un rettocele di II° (60,2%) e 35

pazienti un rettocele di III° (39,7%). I' ODS score medio preoperatorio era 14. Il punteggio medio di ODS rivalutato a 1 anno è stato di 3,1, 4,3 a 3 anni e 6,4 dopo 5 anni. Il miglioramento del punteggio ODS era inferiore nel sottogruppo di pazienti che presentavano un'apertura lenta del canale anale (> 10 sec): 7,5 a un anno, 9,1 a 3 anni e 11 dopo 5 anni di follow-up. Anche nel sottogruppo di pazienti con enterocele stabile (5,6%) il miglioramento era meno evidente: 6,7 a 1 anno, 8 a 3 anni e 9,7 dopo 5 anni di follow-up.

DISCUSSIONE E CONCLUSIONE: I dati ottenuti ci hanno dimostrato che la coesistenza di un lungo periodo di apertura del canale anale e / o la presenza di un enterocele stabile sono fattori che riducono significativamente l'efficacia della chirurgia riducendo il miglioramento dell'ODS score nel breve e lungo periodo. Consigliamo pertanto nel primo caso l'associazione di fisioterapia perineale mentre nel secondo una plastica del cavo del Douglas.

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