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EDITORIAL

Surgery for obstructed defecation syndrome-is there an ideal technique

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Abstract

Obstructive defecation syndrome (ODS) is a common disorder with a considerable impact on the quality of life of affected patients. Surgery for ODS remains a challenging topic. There exists a great variety of operative techniques to treat patients with ODS. According to the surgeon's preference the approach can be transanal, transvaginal, transperineal or transabdominal. All techniques have its advantages and disadvantages. Notably, high evidence based studies are significantly lacking in literature, thus making accurate assessments difficult. Careful patient's selection is crucial to achieve optimal functional results. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing an appropriate and tailored strategy. Radiological investigation is essential but may not explain complaints of every patient.

Key words: Obstructive defecation syndrome; Defecatory disorders; Rectopexy; Rectocele; Prolapse

Core tip: Surgical treatment of obstructive defecation syndrome remains a challenging topic. Several approaches have been described, with controversial functional outcomes. Each technique has its risks and benefits, thus careful patient selection is crucial to achieve optimal functional results. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing an appropriate and tailored strategy. Radiological investigation is essential but may not explain complaints of every patient.

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INTRODUCTION

Constipation is a common disorder in the general population with an estimated prevalence ranging from 1.9% to 27.2% in North America[1]. The wide range is mainly due to different definitions of constipation making accurate collection of epidemiological data difficult. Constipation is often multifactorial, but can broadly be divided into

3 categories: slow-transit constipation, normal-transit constipation and defecatory disorders[2].

Defecatory disorders can be a result of functional or anatomical pelvic floor alterations. Functional causes, such as anismus or paradoxical pelvic-floor contraction, are best treated by conservative management, with surgery having a minor role only. In contrast, rectoceles and internal rectal prolapse are generally considered to be an underlying anatomical cause leading to obstructive defecation syndrome (ODS). In general, ODS if often a multifactorial condition, thus a detailed assessment and examination is mandatory for further treatment planning. Conservative management needs to be offered to all patients initially, and only a few patients will finally be considered for surgery.

ASSESSING ODS

Symptoms of ODS include straining, feeling of incomplete evacuation, repetitive toilets visit, hard and lumpy stools and the need for digital support to expel stool[3]. Additionally, internal rectal prolapse can be associated with fecal incontinence in 50 percent of affected patients. This fact is of clinical relevance and might influence the decision making process for choosing the right approach for surgical management. Notably, it is of great importance to define the main reason for ODS, as poor patients selection leads to dissatisfying functional outcome following surgery[4,5].

Dynamic defecography is the routine radiological diagnostic tool used to objectively assess pelvic floor anatomy[3]. Rectocele and intussusception are frequent radiological findings in patients with ODS, but can also be found in asymptomatic women[6]. This was also observed by Palit *et al*[7] who performed evacuation proctography on 46 healthy volunteers. The authors found a rectocele in 93% of female subjects with a mean depth of 2.5 cm; however recto-anal intussusceptions were not detected.

Interestingly, it has been shown by Ting *et al*[8] that no particular defecographic finding correlated with a higher or lower amount of remaining contrast volume, and the feeling of incomplete evacuation did not depend on the amount of retained volume. The rectocele depth measured by defecography seemed to have no impact on the functional outcome following rectocele repair either[9]. Furthermore, a recent study challenged the common assumption of the etiology of ODS, stating that the correlation of symptoms of obstructive defecation and anatomy were inconsistent. Apart from the need of anal or vaginal digitation, there were no functional differences between patients with and without rectocele. Consequently, the authors concluded that recocele is not the cause but the result of ODS.

Altogether, interpretation of radiological findings needs to be made with caution and the decision to proceed to surgery should be weighted carefully after failure of conservative treatment.

Choosing the right treatment

There exists a great variety of operative techniques to treat patients with ODS. According to the surgeon's preference the approach can be transanal, transvaginal, transperineal or transabdominal.

All techniques have its advantages and disadvantages; thus, we believe that satisfying functional outcomes can only be achieved by offering a tailored approach to each individual patient. Consequently, it is essential for pelvic floor surgeons to focus on more than one operative technique to optimize treatment for defecatory disorders.

A number of studies have been published about the surgical management of symptomatic rectoceles in the last decade. However, high evidence based studies are still lacking, and most data were analyzed retrospectively with a low number of included patients. Additionally, there are few well-designed randomized controlled trials available comparing different surgical techniques. Thus, the interpretation of data should be performed with caution, as selection bias cannot be ruled out. Selection of patients is an essential aspect and poorly described in literature. It is often not stated, whether patients have a symptomatic singular rectocele, or show other associated pathologies such as intussusception and enterocele. This fact needs to be taken into account when choosing the appropriate approach. The use of objective validated measurements is also significantly lacking in the vast majority of studies, but certainly helpful to define and evaluate the role of each technique. Perineal techniques are certainly less common than other procedures, thus are not discussed in detail here. It can be combined with a sphincteroplasty in selected patients with both ODS and fecal incontinence due to sphincter defects[10].

Transvaginal approach

Posterior colporraphy often with plication of the levator muscle represents the treatment modality most favored by gynecologists. Although the transvaginal approach is a safe procedure with a low complication rate, functional results are highly conflicting[11-15]. Moreover, the indication for surgery is often based on the feeling of a vaginal bulge, without assessing all aspects of pelvic floor symptoms. In addition, gynecologists tend not to perform defecography for further detailed evaluation.

One of the largest series on posterior colporraphy was published by Kahn *et al*[12] including 231 female patients. After mean follow up of 42.5 mo, the authors reported a reasonable improvement of prolapse symptoms due to rectocele. However, constipation, incomplete bowel emptying, incontinence of feces and sexual dysfunction deteriorated after the operation.

One randomized controlled trial with only 15 patients in each group compared the functional outcome between the transanal and transvaginal approach[13]. Both techniques

led to an improvement of symptoms. Notably, the need for digital assistance for rectal emptying and the rate of recurrent rectoceles were higher in the transanal group following surgery.

We consider the transvaginal approach suitable for patients with an isolated rectocele without significant internal prolapse. It is associated with an acceptable morbidity rate and improves complaints in selected patients. In addition, it can be combined with further gynecological prolapse procedures if deemed necessary[10].

Transanal approach

The transanal access to treat ODS is routinely conducted by colorectal surgeons, with varying success rates[11,13,16-18]. Arnold *et al*[16] reported poor postoperative results as 54% of patients still complaint about constipation. The authors pointed out that the disappointing results were probably due to a relatively unselective approach. Roman *et al*[19] revealed that functional outcome decreased with increased length of follow up, reaching a recurrence rate of 50% at 5.5 years. In addition, new onset of anal incontinence occurred in nearly one third of female patients. In contrast, Murthy *et al*[5] found excellent results after transanal rectocele repair by operating on patients only with defined criteria: sensation of vaginal mass requiring digital support for defecation, contrast retention on defecography and the presence of a large rectocele.

The stapled transanal rectal resection (STARR) gained some popularity when it was first introduced for treating ODS caused by both rectocele and intern rectal mucosa prolapse. By using either two firings of the PPH-01 ® circular stapler or the CONTOUR® TRANSSTAR, a full thickness rectal resection can be conducted[20,21]. A high number of studies reported promising results with significant improvement of ODS reflected by objective scorings systems[20,22-24]. On the contrary, there have also been reports about serious complications including rectal-vaginal fistula and rectal perforation[25]. Moreover, fecal urgency, possibly related to change in rectal ampulla volume and sensitivity, frequently occurs postoperatively, but may decline with time[26]. Fecal incontinence following STARR procedure has been reported as well[26,27].

Altogether, STARR is certainly an alternative technique for treating ODS, when performed by experienced colorectal surgeons. Care must be taken in patients with already existing weakness of anal sphincter muscle. Furthermore, patients also need to be aware and informed about the possibility of new fecal urgency or even de-novo onset of fecal incontinence.

Transabdominal approach

The transabdominal approach is mainly suitable for patients with ODS caused by complex rectocele in association with high-grade intussusception. Different rectopexy techniques have been described with or without mesh application[28-30]. Laparoscopic resection rectopexy is one standard procedure achieving good long term results with an improvement of defecation symptoms[30,31]. Especially patients with a symptomatic sigmoidocele tend to benefit from this operation.

Recently, laparoscopic ventral mesh rectopexy (VMR) has gained much attraction among colorectal surgeon[32]. This technique has initially been described by D'Hoore *et al*[33] for treating external rectum prolapse, but its indication has been extended for internal prolapse causing ODS. Here, the rectum is purely mobilized ventrally without division of the lateral ligaments and subsequent rectal denervation. Several centers reported promising functional outcomes with a significant reduction of ODS and a low morbidity rate[32,34,35]. Moreover, in contrast to transanal procedures, lap. VMR is unlikely to impair fecal continence.

Nevertheless, long-term data are still lacking and late mesh related complications may increase with longer follow-up periods. In addition, laparoscopic VMR seems to have a considerable learning curve if it is not taught in a mentored environment[36].

CONCLUSION

Surgery for ODS remains a challenging topic. Careful patient's selection is crucial to achieve optimal functional results. Not every operation fits to every patient and vice versa. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing the appropriate strategy. Radiological investigation is essential but may not explain complaints of every patient.

The transabdominal laparoscopic VMR showed good functional results for treating ODS in patients with complex rectocele and might also be the preferred technique in patients with preexisting weak sphincter muscle. However, long term results are still lacking.

The transvaginal approach can be offered to patients with an isolated rectocele and the need for additional gynecological operations. Notably, the functional outcome is conflicting and postoperative dyspareunia can occur.

Transanal correction of rectocele is commonly performed, with improved symptoms as demonstrated by several studies. Notably, postoperative fecal incontinence has been reported, especially after the STARR procedure.

Most important, conservative management should be offered to every patient before planning surgical treatment.

REFERENCES

1 **Higgins PD**, Johanson JF. Epidemiology of constipation in North America: a systematic review. *Am J Gastroenterol* 2004; **99**: 750-759 [PMID: 15089911 DOI: 10.1111/j.1572-0241.2004.04114.xAJG4114]

2 **Lembo A**, Camilleri M. Chronic constipation. *N Engl J Med* 2003; **349**: 1360-1368 [PMID: 14523145 DOI: 10.1056/

NEJMra020995]
3 **Wijffels NA**, Jones OM, Cunningham C, Bemelman WA, Lindsey I. What are the symptoms of internal rectal prolapse? *Colorectal Dis* 2013; **15**: 368-373 [PMID: 22823279 DOI: 10.1111/j.1463-1318.2012.03183.x]
4 **Janssen LW**, van Dijke CF. Selection criteria for anterior rectal wall repair in symptomatic rectocele and anterior rectal wall prolapse. *Dis Colon Rectum* 1994; **37**: 1100-1107 [PMID: 7956577]
5 **Murthy VK**, Orkin BA, Smith LE, Glassman LM. Excellent outcome using selective criteria for rectocele repair. *Dis Colon Rectum* 1996; **39**: 374-378 [PMID: 8878494]
6 **Shorvon PJ**, McHugh S, Diamant NE, Somers S, Stevenson GW. Defecography in normal volunteers: results and implications. *Gut* 1989; **30**: 1737-1749 [PMID: 2612988]
7 **Palit S**, Bhan C, Lunniss PJ, Boyle DJ, Gladman MA, Knowles CH, Scott SM. Evacuation proctography: a reappraisal of normal variability. *Colorectal Dis* 2014; **16**: 538-546 [PMID: 24528668 DOI: 10.1111/codi.12595]
8 **Ting KH**, Mangel E, Eibl-Eibesfeldt B, Müller-Lissner SA. Is the volume retained after defecation a valuable parameter at defecography? *Dis Colon Rectum* 1992; **35**: 762-767 [PMID: 1644000]
9 **Stojkovic SG**, Balfour L, Burke D, Finan PJ, Sagar PM. Does the need to self-digitate or the presence of a large or nonemptying rectocoele on proctography influence the outcome of transanal rectocoele repair? *Colorectal Dis* 2003; **5**: 169-172 [PMID: 12780908]
10 **Zbar AP**, Lienemann A, Fritsch H, Beer-Gabel M, Pescatori M. Rectocele: pathogenesis and surgical management. *Int J Colorectal Dis* 2003; **18**: 369-384 [PMID: 12665990 DOI: 10.1007/s00384-003-0478-z]
11 **Harris MA**, Ferrara A, Gallagher J, DeJesus S, Williamson P, Larach S. Stapled transanal rectal resection vs. transvaginal rectocele repair for treatment of obstructive defecation syndrome. *Dis Colon Rectum* 2009; **52**: 592-597 [PMID: 19404059 DOI: 10.1007/DCR.0b013e31819edbb1]
12 **Kahn MA**, Stanton SL. Posterior colporrhaphy: its effects on bowel and sexual function. *Br J Obstet Gynaecol* 1997; **104**: 82-86 [PMID: 8988702]
13 **Nieminen K**, Hiltunen KM, Laitinen J, Oksala J, Heinonen PK. Transanal or vaginal approach to rectocele repair: a prospective, randomized pilot study. *Dis Colon Rectum* 2004; **47**: 1636-1642 [PMID: 15540292]
14 **Tsujinaka S**, Tsujinaka Y, Matsuo K, Akagi K, Hamahata Y. Changes in bowel function following transanal and transvaginal rectocele repair. *Dig Surg* 2007; **24**: 46-53 [PMID: 17369681 DOI: 10.1159/000100918]
15 **Yamana T**, Takahashi T, Iwadare J. Clinical and physiologic outcomes after transvaginal rectocele repair. *Dis Colon Rectum* 2006; **49**: 661-667 [PMID: 16680502 DOI: 10.1007/s10350-006-0502-9]
16 **Arnold MW**, Stewart WR, Aguilar PS. Rectocele repair. Four years' experience. *Dis Colon Rectum* 1990; **33**: 684-687 [PMID: 2376225]
17 **Heriot AG**, Skull A, Kumar D. Functional and physiological outcome following transanal repair of rectocele. *Br J Surg* 2004; **91**: 1340-1344 [PMID: 15376184 DOI: 10.1002/bjs.4543]
18 **Ho YH**, Ang M, Nyam D, Tan M, Seow-Choen F. Transanal approach to rectocele repair may compromise anal sphincter pressures. *Dis Colon Rectum* 1998; **41**: 354-358 [PMID: 9514432]
19 **Roman H**, Michot F. Long-term outcomes of transanal rectocele repair. *Dis Colon Rectum* 2005; **48**: 510-517 [PMID: 15875294]
20 **Ribaric G**, D'Hoore A, Schiffhorst G, Hempel E. STARR with CONTOUR® TRANSTAR™ device for obstructed defecation syndrome: one-year real-world outcomes of the European TRANSTAR registry. *Int J Colorectal Dis* 2014; **29**: 611-622 [PMID: 24554148 DOI: 10.1007/s00384-014-1836-8]
21 **Isbert C**, Reibetanz J, Jayne DG, Kim M, Germer CT, Boenicke L. Comparative study of Contour Transtar and STARR procedure for the treatment of obstructed defecation syndrome (ODS)--feasibility, morbidity and early functional results. *Colorectal Dis* 2010; **12**: 901-908 [PMID: 19438882 DOI: 10.1111/j.1463-1318.2009.01932.x]
22 **Zhang B**, Ding JH, Yin SH, Zhang M, Zhao K. Stapled transanal rectal resection for obstructed defecation syndrome associated with rectocele and rectal intussusception. *World J Gastroenterol* 2010; **16**: 2542-2548 [PMID: 20503455]
23 **Lenisa L**, Schwandner O, Stuto A, Jayne D, Pigot F, Tuech JJ, Scherer R, Nugent K, Corbisier F, Espin-Basany E, Hetzer FH. STARR with Contour Transtar: prospective multicentre European study. *Colorectal Dis* 2009; **11**: 821-827 [PMID: 19175625 DOI: 10.1111/j.1463-1318.2008.01714.x]
24 **Arroyo A**, González-Argenté FX, García-Domingo M, Espin-Basany E, De-la-Portilla F, Pérez-Vicente F, Calpena R. Prospective multicentre clinical trial of stapled transanal rectal resection for obstructive defaecation syndrome. *Br J Surg* 2008; **95**: 1521-1527 [PMID: 18942056 DOI: 10.1002/bjs.6328]
25 **Pescatori M**, Gagliardi G. Postoperative complications after procedure for prolapsed hemorrhoids (PPH) and stapled transanal rectal resection (STARR) procedures. *Tech Coloproctol* 2008; **12**: 7-19 [PMID: 18512007 DOI: 10.1007/s10151-008-0391-0]
26 **Goede AC**, Glancy D, Carter H, Mills A, Mabey K, Dixon AR. Medium-term results of stapled transanal rectal resection (STARR) for obstructed defecation and symptomatic rectal-anal intussusception. *Colorectal Dis* 2011; **13**: 1052-1057 [PMID: 20813023 DOI: 10.1111/j.1463-1318.2010.02405.x]
27 **Schwandner O**, Fürst A. Assessing the safety, effectiveness, and quality of life after the STARR procedure for obstructed defecation: results of the German STARR registry. *Langenbecks Arch Surg* 2010; **395**: 505-513 [PMID: 20549229 DOI: 10.1007/s00423-009-0591-8]
28 **Samaranayake CB**, Luo C, Plank AW, Merrie AE, Plank LD, Bissett IP. Systematic review on ventral rectopexy for rectal prolapse and intussusception. *Colorectal Dis* 2010; **12**: 504-512 [PMID: 19438880 DOI: 10.1111/j.1463-1318.2009.01934.x]
29 **Schultz I**, Mellgren A, Dolk A, Johansson C, Holmström B. Continence is improved after the Ripstein rectopexy. Different mechanizms in rectal prolapse and rectal intussusception? *Dis Colon Rectum* 1996; **39**: 300-306 [PMID: 8603552]
30 **von Papen M**, Ashari LH, Lumley JW, Stevenson AR, Stitz RW. Functional results of laparoscopic resection rectopexy for symptomatic rectal intussusception. *Dis Colon Rectum* 2007; **50**: 50-55 [PMID: 17115334 DOI: 10.1007/s10350-006-0781-1]
31 **Laubert T**, Kleemann M, Roblick UJ, Bürk C, Hildebrand P, Lewejohann J, Schlöricke E, Bruch HP. Obstructive defecation syndrome: 19 years of experience with laparoscopic resection rectopexy. *Tech Coloproctol* 2013; **17**: 307-314 [PMID: 23152078 DOI: 10.1007/s10151-012-0925-3]
32 **Collinson R**, Wijffels N, Cunningham C, Lindsey I. Laparoscopic ventral rectopexy for internal rectal prolapse: short-term functional results. *Colorectal Dis* 2010; **12**: 97-104 [PMID: 19788493 DOI: 10.1111/j.1463-1318.2009.02049.x]
33 **D'Hoore A**, Cadoni R, Penninckx F. Long-term outcome of laparoscopic ventral rectopexy for total rectal prolapse. *Br J Surg* 2004; **91**: 1500-1505 [PMID: 15499644 DOI: 10.1002/bjs.4779]
34 **Formijne Jonkers HA**, Poierrié N, Draaisma WA, Broeders IA, Consten EC. Laparoscopic ventral rectopexy for rectal prolapse and symptomatic rectocele: an analysis of 245 consecutive patients. *Colorectal Dis* 2013; **15**: 695-699 [PMID: 23406289 DOI: 10.1111/codi.12113]

35 **Wong M**, Meurette G, Abet E, Podevin J, Lehur PA. Safety and efficacy of laparoscopic ventral mesh rectopexy for complex rectocele. *Colorectal Dis* 2011; **13**: 1019-1023 [PMID: 20553314 DOI: 10.1111/j.1463-1318.2010.02349.x]

36 **Mackenzie H**, Dixon AR. Proficiency gain curve and predictors of outcome for laparoscopic ventral mesh rectopexy. *Surgery* 2014; **156**: 158-167 [PMID: 24929765 DOI: 10.1016/j.surg.2014.03.008]

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