Several procedures have been designed and applied to treat overt rectal prolapse (ORP). Transperineal procedures, such Altemeier and Delorme operations, are associated with less morbidity, but higher rate of recurrence and less optimal functional results. Transabdominal procedures include a variety of rectopexies with the use of prosthesis or sutures and with or without resection of the redundant sigmoid colon. Nowadays, they are all approached by laparoscopy. Traditional prosthesis rectopexies repair ORP and improve incontinence, but are associated with increased rate of constipation. Resection suture-rectopexy seems to be associated with the best functional results, particular in patients with slow transit constipation and diverticular disease. More recently, prosthesis ventral coloporectopexy seems to be less invasive and to offer very satisfactory results.

Key words: rectal prolapse, Alteimer, Delorme, rectopexy

INTRODUCTION

Although conservative treatment is recommended for the subset of patients with very poor general condition, surgery is the treatment of choice for the majority of patients with ORP. There has been a variety of surgical procedures, performed either transabdominally or through the anus/perineum, designed to treat ORP with a wide range of success rate in correcting the condition (Table 1). According to Bartolo, a successful surgical attempt to correct ORP should aim to restore anorectal physiology, based on the assumption that rectal prolapse is associated with a reversible inhibition of anorectal physiology.

TRANSANAL PROCEDURES

Transanal removal of the rectum and distal sigmoid with sigmoid-low rectal anastomosis (Altemeier procedure) results in the construction of a neo-rectum with low capacity and compliance, usually manifested with urgency and increased incontinence rates, higher than those after transabdominal surgery. In addition, recurrence rate of prolapse tends to be significantly higher than the transabdominal procedures. However, more recent studies report recurrence rates below 10 percent. Although improved, incontinence remains a problem in almost 40 percent of the cases, whilst constipation is reported in 10 percent. Altemeier procedures can be also re-performed after recurrence of prolapse, though with lower success rates.

Very recently, perineal resection of the prolapse with the use of stapling devices has been reported. According to Hetzer et al., the procedure is indicated for rectal prolapse <10cm in length, is safe and is associated with satisfactory functional results and low incontinence rate, in short term.

The most popular transperineal method for the correction of rectal prolapse is the Delorme procedure, consisting of cylindrical removal of the mucosa of the prolapsing rectum, suture placement of the muscular rectal wall and suturing of the mucosal stumps. According to Pascual-Montero et al., performed in elderly high-risk patients, the procedure is associated with recurrence rate of 10-13 percent and improvement of the incontinence in 63-87 percent of the cases, although severity of the prolapse was not correlated with outcomes. In an even more recent study, the procedure is also advocated for younger patients; After a follow-up period of four years, morbidity was 15 percent and recurrence rate 8 percent in the young, and 25 percent and 14.5 percent respectively in all patients irrespective of age.
TRANSABDOMINAL PROCEDURES

In general, transabdominal procedures for the correction of rectal prolapse are associated with low immediate postoperative complications, success rate of more than 90 percent and improvement of incontinence rate by at least 65 percent. In the past, the most popular of them has been the anterior prosthesis rectopexy (Repstein procedure), which is associated with almost no mortality, morbidity of 5-25% and recurrence rate of 0-12 percent (1.5 percent in a Repstein’s series of 1500 cases11). Similar, results have also been reported with the use of posterior prosthesis rectopexy (Wells procerude), by which the mesh covers the posterior and lateral aspects of the rectum12. To some extent, these procedures are associated with septic complications, as a reaction to the foreign material, which may affect the functional outcomes11,12. The most disturbing functional problem of these procedures is the newly developing constipation, or even fecal impaction, attributed to kinking and angulation of the redundant sigmoid colon over the fixed rectum13,14. Impaired rectal motility, as a result of fibrosis or/and disruption of the parasympathetic innervation of the rectum, may be an additional reason of postoperative constipation15. An additional problem of anterior or posterior prosthesis rectopexy is deterioration of incontinence, in almost 20 percent of the cases16, also attributed to the impaired rectal compliance as a result of fibrotic reaction to the prosthesis17.

Recently, both Repstein and Wells procedures have been performed by laparoscopy. Recurrence of prolapse is almost nil, and functional results are similar to those after the open approach18,19. In a series of 77 patients by Dulucq et al.19, pre-existent constipation improved in 36 percent, while constipation developed in another 18 percent of the cases. Incontinence improved in almost 90 percent of those patients who reported the symptom preoperatively (50 percent).

Resection suture rectopexy has been very much popularized after the ‘80s. The procedure is associated with minimal recurrence and postoperative complication rates20,21. This is attributed on the one hand to the resection of the redundant sigmoid colon and thus avoiding sigmoid kinking over the fixed rectum and on the other to the presence of a compliant rectum devoid of fibrosis. It has been though speculated that division of the lateral rectal ligaments compromises parasympathetic innervation of the rectum, and this may cause constipation19. However, this hypothesis has not been supported by other studies3,13,15, while preservation of the lateral rectal attachment may be a factor of recurrence of prolapse22. Resection suture rectopexy has also been recently performed by laparoscopy with similar rates of recurrence and functional results, but faster recovery, as compared to the open approach, according to several studies19,23-26 and a meta-analysis27.

Some further studies28-33 compare different types of rectopexy, performed either by open or by laparoscopy. They conclude that all types of rectopexy sufficiently repair prolapse and improve incontinence. Resection suture-rectopexy is associated with less incidence of constipation, and the procedure is recommended in patients with associated preoperative constipation and sigmoid colon bearing diverticulae. For patients with predominant diarrhea prosthesis rectopexy is recommended.

The above findings are further emphasized by one systematic review34 and one re-meta-analysis35 of studies comparing open to laparoscopic approach for all types of rectopexies in patients with ORP. The systematic review also included studies with perineal procedures. They both show that the laparoscopic approach seems to be associated with faster recovery, and similar recurrence rates and functional results as compared to the open approach. In more detail, i) data to document superiority of transabdominal over perineal procedures are not sound, ii) there were no significant differences in the outcomes between the different methods of rectopexy, iii) division of the lateral ligaments seems to be associated with reduced recurrence rate, but increased incidence of postoperative constipation, and iv) resection suture-rectopexy is associated with less incidence of postoperative constipation. However, due to the heterogeneity and the poor quality of the studies included, safe results cannot be drawn. According to the results of a more recent multi-center study36, suture rectopexy should always complement rectal mobilization; avoidance to fix the mobilized rectum is was associated with significantly increased recurrence rate, after 5 years of follow-up.

Very recently, prosthesis ventral colporectopexy by laparoscopy, a modification of the Orr-Loygue procedure, has been applied by D’ Hoore and Penninckx37. By this procedure, all pelvic compartments anatomical deformities are addressed, while postero-lateral mobilization of

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the rectum, and thus damage of nerve supply to the rectum, is avoided. According to several recent studies and one review, morbidity is low, recurrence rate is below 5 percent, pre-existing constipation is treated in almost 80 percent of the cases, and incontinence improves in 90 percent. To avoid any complication form the synthetic prosthesis, use of biological mesh has also been used with comparable success rates.

CONCLUSION

ORP is better treated by a type of transabdominal rectopexy, than by the perineal approach, because it seems to be associated with less recurrence rates and better functional results. All transabdominal procedures should be approached by laparoscopy. Resection suture-rectopexy is associated with less incidence of constipation. At present, ventral prosthesis colpoproctopecty is a less invasive procedure and seems to offer very satisfactory results, namely low recurrence of prolapse and low constipation and incontinence rates. Perineal procedures are reserved for high risk, elderly patients. Due to poor quality of studies available in the literature, prospective, randomized, multicenter trials are needed to address the question of the best method for the individual patient.

SUMMARY

FUNKCIONALNI REZULTATI NAKON OTVORENOG PROLAPSA REKTUMA

Postoji više hirurških procedura za rešavanje otvorenog prolapsa rektuma (ORP). Transperinealne procedure, kao što su operacije po Altemeier i Delorme proceduri, udružene su sa manjim morbiditetom, ali većom stopom recidiva i manje optimalnim funkcionalnim rezultatima. Transabdominale procedure obuhvataju različite rektomeksije sa aplikacijom prostetskog materijala ili sutura sa resekcijom viša sigmoidalnog kolona. U današnje vreme ove procedure se šesto obavljaju laparoskopski. Tradicionalno prostetske rektomeksije pojavljivale su rezultate ORP i smanjuju inkontinencije, ali su udružene sa većom stopom opistopije. Resekcija, sutura i rektomeksija trenutno daju najbolje funkcionalne rezultate, naročito kod pacijenata slow transir opstipacijom i diverternom bolesti. U skorije vreme, prostetska ventralna kolo-rektomeksija se čini manje invazivnom i nudi veoma zadovoljavajuće rezultate.

Ključne reči: prolaps rektuma, Alteimer, Delorme, rektomeksija

REFERENCES


