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CAUTERIZATION - PLICATION OPERATION IN THE TREATMENT OF COMPLETE RECTAL PROLAPSE

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Abstract: ***The current communication presents a simple technique for treatment of complete rectal prolapse (CRP), which is easy, and with minimal complications. The study included 28 patients present with CRP. Their mean age was 36.4 (4 children 2-12 years), 17 females and 11 males, 14 patients had fecal incontinence. With the patient under general anesthesia in lithotomy position, the prolapsed rectum was pulled outside the anal canal, the mucosa was cauterized in vertical line and thus exposing the muscle layer which was plicated by 2/0 Dixon suture. Posterior levatorplasty was done in 14 adult patients in whom the length of prolapsed segment was more then 4 inches and who were incontinent. The postoperative follow up was 31.6 months. Five had postoperative mucosal prolapse and one had recurrence 3 months of operation. Mucosal placation was performed for the five patients and redo of the operation for the recurrent patient. Fecal impaction, stricture and fistula formations were not encountered. The technique is simple easy and with minimal complication.***

Key words: ***Complete rectal prolapse; Cauterization; Plication; Posterior levatorplasty; Incontinence.***

INTRODUCTION

Rectal prolapse is a distressing condition that is associated with fecal incontinence in 50-70% of patient[1]. Bleeding and mucus discharge is common symptoms of rectal prolapse. Women are particularly affected, when males develop prolapse there is usually some underlying predisposing Factor. Frequently, younger patients give a history of straining at stool of long period[2].

There are many treatment modalities in managing complete rectal prolapse (CRP). The operative management is either perineal or transabdominal .The perineal or sacral operations include Theirsch's, modified Theirsch's, Delorme's, modified Delorme's operation, perineal rectopexy, posterior repair and suspension of rectum, Shafik's levatorplasty, perineal rectosigmoidectomy, perineal sleeve resection and Altemeier's procedure [3-10]. A variety of abdominal procedures have been described for the treatment of CRP such as Moschowitz repair of levator diastases[11], abdomino-perineal levator repair[12], sigmoidopexy[13], presacral suture proctopexy or Cutait operation[14], proctopexy plus resection[15], anterior resection, lateral strip rectopexy (Riptein repair) [16], posterior sling rectopexy or Well's operation12, puborectalis sling procedure (Negro) [17], rectal plication and Ivalon stent[18,19].

However, a postoperative mortality after abdominal procedures, as high as 10% was reported. Presacral hemorrhage, recurrence, incontinence and constipation are common postoperative complications of the transabdominal procedures[20,21].

The current communication presents an operation for the treatment of CRP, which is simple, easy and with minimal complications.

PATIENTS AND METHODS

The study included 28 patients presented with CRP of duration ranged from 2 to 6 years with a mean of 3.2± years. Their ages ranged from 3 or 43 years with a mean of 26.4±5.6, four were children 2 to 12 years (2 females and 2 males), 17 females and 11 males. All patients had a long history of excessive strain at stool. The duration of CRP ranged from2 to 6 years with a mean of 3.2± years. Fecal incontinence was present in 14 out of the 28 patients. Physical examination was normal in all patients. The length of the prolapsed segment varied from 2-5 inches with a mean of 3.2± inches.

Laboratory work including blood count, renal and hepatic function tests was unremarkable. Proctoscopy, colonoscopy and barium enema studies were normal.

Preoperative EMG study revealed diminished activity of puborectalis and external anal sphincter in all patients. Defecography confirmed perineal decent and showed rectoceles in 4 women.

Cauterization-rectal plication operation:

Preoperative bowel preparation was done by mechanical cleansing and metronidazole (25-50mg/kg/day) administration one day before operation. Under spinal or general anesthesia, the patient was placed in lithotomy position with slight Trendlenburg so as to minimize pelvic congestion and allow gut to retract in the pelvic cavity. The prolapsed rectum was identified and pulled tightly downward with Babcock forceps so that the redundant rectal wall was taken into the prolapsed segment (Fig. 1). The rectal mucosa was cauterized in vertical lines starting from slightly above the pectinate line and up to the upper limit of the prolapsed segment using the cautery probe (Fig. 2). The cauterization includes the rectal mucosa and submucosa only, so that after cauterization, the muscle coat was exposed. Four cautery lines were performed one at each corner of the prolapsed gut.

After cauterization, the exposed muscle coat of the rectum at the cauterized lines was plicated by a series of vertical pursestring sutures of 2/0 Dixon (Fig.3). The sutures were tied, so that they gathered or reefed the prolapsed rectal wall. Multiple vertical pursestring sutures (2-3) were taken between the 4 main plicating sutures in the prolapsed segment. After completing the plication the prolapsed rectum was pushed back inside the anal canal.

Posterior levatorplasty:

The posterior repair was done in 14 adult patients in whom the length of the rectal prolapsed segment was more than 4 inches and who were incontinent. The levator hiatus in these patients was found abnormally wide.

Technique: A semicircular incision 1-1.5 inches posterior to the anal opening was done .It was deepened to expose the coccyx and the retroanal space was entered. By blunt dissection posterior to the anal canal, the levator ani muscle was exposed. The opposing edges of the posterior part of the muscle were sutured together posterior to the anal canal using 3-4, 2/0 Dixon sutures, so that the levator hiatus was narrowed. One of these sutures took a bite in the wall of the anorectal junction; the wound was closed loosely without drainage.

Postoperative care: The patients were discharged one day after the operation. Mild apparent such as liquid paraffin was given daily for 2 weeks. A hot sitz- baths were done twice daily. The patients were advised not to strain at stool and to be nursed on their sides during defecation. Antibiotics and analgesics were given for 5 days.

The patients were followed up for a mean 31.6± 14.8 months (12-48 months), every 3 months in the first year and every 6 months thereafter. They were questioned about straining at stool, fecal incontinence and occurrence of rectal prolapse.

RESULTS

The mean operative time was 40.8 5.8 mm (range 30-60) the blood loss at operation was 5-10 ml. No complications were encountered either per-or post-operatively. All patients returned to their normal daily activities 10-15 days after operation.

The 14 incontinent patients became continent after operation. The tendency to strain at defecation gradually disappeared in the first 3 to 4 post-operative weeks resulting in normal defecation.

Five out of 28 patients of the study got mucosal rectal prolapse after the operation by 2 months in one patient and after 3 months in 2 patients. These 3 patients were treated by mucosal plication. Fecal impaction, anal strictures and fistulas were not encountered. One patient had got CRP after operation by 3 months (patients used to defecate in squatting position).

Fig 1: The prolapsed rectum was pulled tightly downward with Babcock forceps.

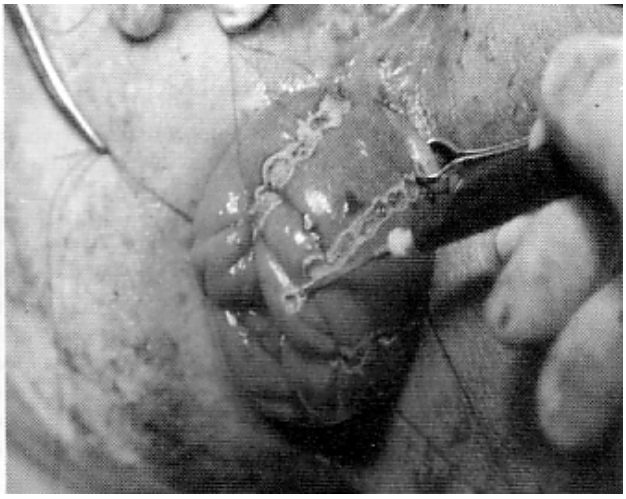

Fig 2: The rectal mucosa was cauterized in vertical lines starting from slightly above the pectinate line

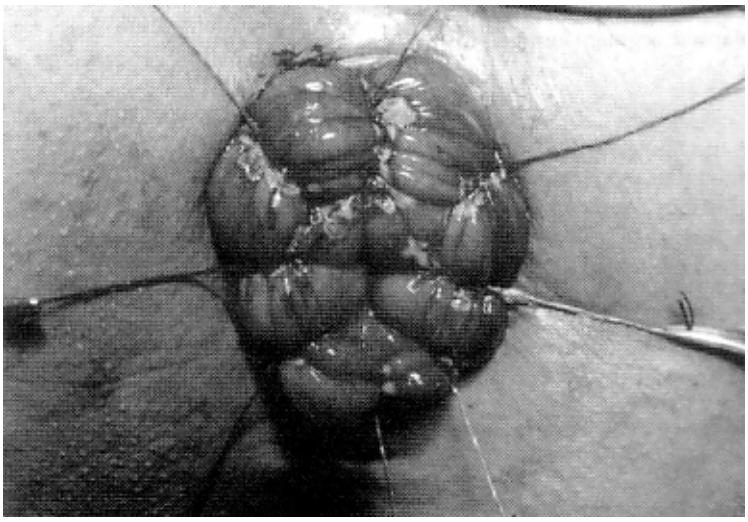

Fig 3: The rectum plicated at the cauterized lines by a series of vertical pursestring sutures

DISCUSSION

The treatment of CRP is problematic despite the numerous types of treatment modalities devised. This seams to be related to the fact that the etiology of CRP is still controversial and most of these techniques deal with the secondary effect and not with the primary cause. The abdominal suspension operations, which are in common use nowadays, provide mechanical suspension of the prolapse and are associated with the possibility of postoperative constipation. Meanwhile, it may not cure the fecal incontinence associated with CRP. Also, resection operations whether abdominal or perineal, do not deal with the primary etiological factors, besides being associated with morbidity.

Delorme described an operation for CRP which depends on intussuscepting the prolapsed segment in a serpentine fashion. Although, the procedure is simple, yet the mucosal dissection is always associated with excessive bleeding and is time consuming. The current technique is a type of plication operation trying to avoid the mucosa dissection of Delorme and its associated bleeding. The linear cauterisation of the prolapsed segment creates a raw surface at multiple areas of the prolapse. These raw areas when plicated heal by fibrosis. Thus, the prolapsed segment is fixed by these multiple fibrotic fixation areas which appear to keep the prolapsed segment plicated. Meanwhile, the plicating sutures is taken through the cauterization lines would help in fixing the prolapsed segment until fibrosis occurs.

The technique in 14 cases was augmented by levatorplasty, these cases had the longest prolapsed rectal segment (>4 inches). We assumed that the levator hiatus in these cases as already demonstrated by Shafik, is widely due to the sagging levator ani. In such cases, we sutured the edges of the two levators posterior to the rectum. This would serve a doublefold action:

a- It narrows the levator hiatus and thus diminishes the laxity of the intrahiatal structures.

b- It elevates the two levator ani muscles and increases their functional activity.

Mucosal prolapse recurrence occurred in 5 cases. We do not know what could be the cause of this recurrence. It could be the result of the preexisting redundancy of the rectal mucosa above the prolapsed segment. The treatment of this prolapsed mucosa is simple and easy by applying few plication sutures fixing the prolapsed mucosa to the rectal musculature.

Previous studies [3, 4, 8] have accused the levator ani subluxation and sagging as being essential etiological factor in the genesis of CRP. Levatorplasty, that is elevation and suturing of the levator ani to the upper end of the anal canal was used with satisfactory results in the treatment of the small-sized segment of CRP[8]. We assume that the posterior levatorplasty which was done in 14 cases of the current study might have a place in the support of the intrahiatal structures.

In conclusion, the cauterization-plication operation is a simple and easy operation for the treatment of CRP. It gave satisfactory results with minimal complication.

REFERENCES

1. Keighley MRB, Williams NS (1993) Surgery of the anus, rectum and colon, vol. 2 ch.24, p675-719. W.B. Saunders Company LTD

2. Chris T, Oecononroputos, Orvard(1960) Thiersch's operation for RP: In infants and children. Am J Surg 100:45-61

3. Schoetz DJ, Veidenheimer MC(1985) Rectal prolapse, pathogenesis and clinical features in coloproctology and pelvic floor. pp 303-309

4. Jacohs LK, Lin YJ, Dirkin B (1997) The best operation for rectal prolapse, surgical clinics of North America 77(1): 49-70

5. Wyatt AP (1981) Perineal rectopexy for rectal prolapse. Br J Surg 68: 717

6. Ashcraft KW, Amoury RA, Hoder TM (1977) Levator repair and posterior suspension for rectal prolapse. J Ped Surg 12: 241-245

7. Lechaux JP, Chaux D, Perez M (1995) Results of Delorm's procedure for rectal prolapse. Advantages of a modified technique. Dis Col Rect. 38(3)301-7

8. Shafik A (1987) A new concept of the anatomy of the anal sphincter mechanism and the physiology of defecation XXVIII. Complete rectal prolapse a technique for repair. Coloproctology 6:345.

9. Mickuhcz JZ (1889) Operative be handlings des prolapsus recti et coli vaginati Arcb Klim Cbir 1889, 38: 74-97 quested from Rob and Smith 1993, surg. of colon, rectum and anus 5th edition. Vol 2 P 730-735

10. Altemeier WA (1977) Rectal prolapse. Rhoad Text Book of Surgery and Practice, 5th edition, p 1252-1259, Lippincott Company, Philadelphia, Toronto

11. Moschcowitz AV (1912) The pathogenesis, anatomy and cure of prolapse of the rectum. Surg Gyn Obst. 15:7-21 Quoted from Maingot's Abdomenal Operation 9th edition. Vol. 11Prentice-Hall International Inc. U S A. P.1097-116

12. Watts JD, Rothenberger DA, Goldberg SM (1985) Treatment of rectal prolapse in coloproctology and pelvic floor. PP.308-325

13. Pemberton J, Stalker (1939) Surgical treatment of complete rectal prolapse. Ann Surg 109:799

14. Goligher JC, (1980) Surgery of anus, rectum and colon, 4th edition, P.224-258. New York, Mac Millian

15. Keighley MRB, Fielding JWL (1983) Management of foecal incontinence and results of surgical treatment. Br.J.Surg.70:463-468

16. Loygue J, Nordlinger B, Malafossa M, Huguet and Pare R (1984) Rectopexy to promontory for treatment of rectal prolapse: Report of 257 cases. Dis Colon Rectum.27:356-359

17. Green FL (1983) Repair of rectal prolapse using a puborectalis sling procedure. Arch. Surg.118-129

18. Weddel J, Meier Zu, Bissen P, Fiedlor R (1980) A new concept for management of rectal prolapse. Am J Surg. 139:723

19. Williams, JG, Madoff, RD (1993) Perineal rectosigmoidectomy with levatorplasty. In: Rob and Smith operative surgery, surgery of the colon rectum and anus 5th edition, Vol.2. Butterworth-Heinemam Ltd. Oxford, London, Boston, Tokyo. P730-735

20. Madoff RD, William JG, Goldbergs M (1993) Rectal prolapse, intraabdomenal repair. In: Rob and Smith operative surgery of colon, rectum and anus. 5th edition Vol. 2 Oxford London Boston Tokyo Butter worth Heinmann Ltd.P.701:705

21. Pemberton JH, Meagher AP (1996) Anatomy and physiology of the anus and rectum. In: Shackelford's Surgery of the alimentary tract. Zuidema GD (ed), WB Saunders Co, Philadelphia; 4(22):279