

ASSESSMENT OF NOTARAS POSTERIOR MESH RECTOPEXY IN TREATMENT OF RECTAL PROLAPSE: A TEN YEAR EXPERIENCE

M. MOZAFAR, M.D.,* A. AFSHARFARD, M.D.,**
AND A.M. TOFIGH, M.D.***

*From the Dept. of Surgery, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences,
Tehran, I.R. Iran.*

ABSTRACT

Background: The aim of this study is to evaluate the long and short term postoperative results after the Notaras procedure as a surgical treatment of rectal prolapse in adults.

Methods: Thirty-one patients suffering from rectal prolapse who were operated with Notaras posterior mesh rectopexy in Shohada-e-Tajrish hospital between 1991-2000 were followed up for results and complications and the results were compared with other surgical techniques for this disease.

Results: The mortality rate was zero which was ideal in comparison with other studies; short term complications were seen in 20% of cases which had the same prevalence as other abdominal surgeries.

Sexual impotence and retrograde ejaculation as long term complications were seen in only one patient (3.22%). The recurrence rate was zero which stands above nearly all other procedures, also we had recuperation of fecal incontinence in all of our cases and gas incontinence in 92% of them. The constipation rate has not increased significantly postoperatively ($p=0.8$)

Conclusion: The Notaras procedure can be used in the management of rectal prolapse with low mortality and recurrence rate but although not contraindicated, may not be appropriate for young and sexually active male patients.

MJIRI, Vol. 19, No. 1, 37-40, 2005.

Keywords: Rectal prolapse, Rectopexy, Mesh.

INTRODUCTION

Rectal prolapse is a condition in which part or the whole of the circumference of the rectal wall protrudes through

*Assistant professor of surgery, Shohada-e-Tajrish hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran
Tel:009821-22718001, E-mail:mohamad_mozafar@yahoo.com.

**Associate professor of surgery, Shohada-e-Tajrish hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
E-mail:afshara@yahoo.com

***Resident of general surgery, Shohada-e-Tajrish hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Tel:00989113395340
E-mail:arash_mtough@yahoo.com

the anus intermittently during defecation. It may result in occasional or complete fecal incontinence. In the early stages, the prolapsed portion is reduced spontaneously but with progression of the disease it needs to be reduced digitally. In the extreme form of rectal prolapse the rectum becomes permanently prolapsed. With chronic exposure, the mucosa is excoriated, leading to ulceration and bleeding.

Rarely the blood supply of the prolapsed portion may be affected leading to ischemia and even gangrene of the affected bowel.¹ In adults, rectal prolapse presents either as mucosal or complete prolapse. It is far more common in women than in men, mostly occurring in elderly, nulliparous

females.² A high proportion of patients have the habit of excessive straining during defecation. They have a weakened external sphincter and levator muscles and the signs of a descending or dropped perineum.²

The etiology of the condition is not completely understood but an intussusception approximately at the level of the sacral promontory, neuromuscular deficiency of the pelvic floor musculature, weakened external sphincter, diminished rectal sensation and constipation are suggested causes.³

Surgical treatment of procidentia may be classified as perineal or transabdominal, according to the approach used. Perineal rectosigmoidectomy, Thiersch procedure, anorectal mesh encirclement, Delorme operation, Altmeier and the modified Kraske approach are perineal procedures.

The Ripstein operation, Ivalon sponge rectopexy, Notaras posterior mesh rectopexy, and retrosacral suture fixation are the transabdominal procedures which can be done either by laparoscopic or laparotomic methods.^{2,4,5}

In the original Notaras method, a rectangular piece of monofilament synthetic mesh is sutured behind the rectum, covering approximately one-third of its posterior circumference and then its upper edge is sutured to the sacral promontory.⁶

This technique is a valuable option compared to other methods because of the minimum obstructive effects from the placement of the mesh which allows the free anterior wall of the rectum to expand, avoiding the contact of the mesh with the bowels and ureters by hiding it behind the rectum, avoiding bleeding from injured presacral vessels by not placing sutures in the sacral hollow, and is more quickly performed than other procedures.⁶

The aim of this study is to evaluate the long and short term postoperative results after the Notaras procedure as a surgical treatment of rectal prolapse in adults.

PATIENTS AND METHODS

Adult patients suffering from rectal prolapse who were admitted in the surgery ward and operated with the Notaras technique were enrolled in this study over a period of ten years (1991-2000). 35 patients had the above characteristics but only 31 of them were completely followed, thus entering our study (89%). From them 17 were female, mean age 58.7(40-72) yrs and 14 male, mean age 41.9(20-59) yrs. Mean postoperative hospitalization was 5 days (4-11) and the mean follow up time was 58 months (24-120). Preoperative assessment included history taking, inspection, digital rectal examination, proctosigmoidoscopy, colon transit time measurement, electromyographic study of pelvic floor and NCV of the pelvic and sacral nerves. Also, CXR, ECG and laboratory data were taken and colon preparation was done. All of our patients had a normal proctosigmoidoscopy, NCV and

EMG and patients with abnormal findings were omitted from the study. 23 patients (74.2%) suffered from chronic constipation and 20 (64.5%) had gas and fecal incontinence. The operation was done under general anesthesia and in Trendelenburg position. A lower midline incision was made from the umbilicus to the levator muscles. The lateral ligaments were divided expect in young males (to avoid the possibility of impotence). With the rectum mobilized, a rectangular piece of Prolene mesh (5 to 7 by 8 to 10 cm) was prepared.

The rectum was drawn forward, and the mesh was placed against the mesorectum and was positioned for fixation. The upper edge of the mesh should lie at a level at which, when fixed to the sacral promontory, it will partially suspend the bowel. The lateral edge of the mesh was then sutured to the posterolateral wall of the rectum and to the lateral ligaments. The upper part of the mesh was then fixed with two sutures of 0 monofilament nylon or Prolene to the sacral promontory. After the operation, with return of bowel movements and gas passage, the diet was begun and the patients were discharged. We assessed the mortality and morbidity rates, recurrence rate, short term complications which improved in 2 weeks from the operation and long term complications which improved after 2 weeks from the operation, in our follow up period by mailed questionnaire and telephone interview.

RESULTS

The mortality rate after surgery was zero, the short term complication rate was 20% which were all minimal (fever, atelectasia, urinary tract infection, superficial thrombophlebitis) and recovered during the hospitalization. Sexual impotence and retrograde ejaculation as a long term complication was seen in one case (3.22%).

The recurrence rate in the follow up period was zero. In functional assessment during the follow up period, fecal incontinence was recovered in all the patients but gas incontinence remained in 6.45% which were all 50 years or older. Constipation in 67.74% of the patients continued postoperatively (Table I, II).

DISCUSSION

31 patients who had all the conditions of the study entered it (89%). Most of them were female with a higher mean age (females: 54±10.23 yrs, males: 35.64±9.64 yrs) ($p<0.001$), which correlate with other studies.^{2,3} zero which is ideal in comparison with other studies (0-1% in other studies).⁸ The short term complications as fever due to atelectasia and prolonged ileus, were seen in 20% of cases which has the same prevalence as other abdominal surgeries.⁶ In one male patient (3.22%), sexual impotence and

Table I. Absolute and relative distribution of fecal and gas incontinence before and after performing the Notaras procedure in patients suffering from rectal prolapse.

Condition \ Group	Pre-op	Post-op	Sum
Fecal incontinence	20(64.5%)	0(0%)	20
Gas incontinence	20(64.5%)	2(6.45%)	22
Sum	40	2	

Table II. Absolute and relative distribution of constipation and normal defecation in patients suffering from rectal prolapse before and after performing the Notaras procedure.

Condition \ Group	Pre-op	Post-op	Sum
Constipation	23(74.2%)	21(67.74%)	44
Normal defecation	8(25.8%)	10(25.32%)	18
Sum	31	31	

retrograde ejaculation as a long term complication of the procedure was seen. In regard to pelvic dissection, despite avoiding division of the lateral ligaments, this complication is expected and shows that extensive pelvic dissection during the procedure may create serious sexual problems in male patients and is not appropriate for young sexually active male patients.⁷

We had no recurrence in our experience and this is one of the most important aspects in the management of patients with the Notaras procedure. This result makes the Notaras procedure stand above the other techniques like rectopexy, sigmoidectomy or perineal procedures, but is comparable with the Ripstein method.^{4,5,8,9}

Recuperation of fecal incontinence in all of the cases and gas incontinence in 92% of the patients are also good results that is superior than all other procedures.^{7,10,11} We had no meaningful increase in constipation rate in the follow up period (67.24% preoperative, 74.2% postoperative) ($p=0.8$) whereas in other abdominal mesh rectopexy methods (like the Ripstein procedure), constipation is a manifest problem in the postop period.^{7,12}

In conclusion, the Notaras procedure can be used in the management of rectal prolapse with a low mortality and recurrence rate, but although not contraindicated, may not be appropriate for young and sexually active male patients. It is a simple and fast procedure and does not cause complications like adhesions and bowel erosion. Fecal incontinence is cured with this method and it does not increase the constipation rate.

Oral use of appropriate drugs for management of constipation is recommended postoperatively.

REFERENCES

1. Azimuddin K, Khubchandani IT, Rosen L, et al: Rectal prolapse: A search for the "best" operation. *Am J Surg* 67(7): 622-7, 2001.
2. Bahoop P, Brazzelli M, Grant A: Surgery for complete rectal prolapse in adults. *Cochrane Database Syst Rev* (2): 1758, 2000.
3. Broden B, Snellman B: Procidentia of the rectum studied with cineradiography, a contribution to the discussion of causative mechanism. *Dis Colon Rectum* (11): 330, 1968.
4. Chiu HH, Chen JB, Wang HM, et al: Surgical treatment for rectal prolapse. *Zhonghua Za Zhi (Taipei)* 64(2): 95-100, 2001.
5. Boccasanta P, Rosati R, Venturi M, et al: Surgical treatment of complete rectal prolapse, results of abdominal and perineal approaches. *J Laparoendosc Adv Surg Tech A* 9(3): 235-8, 1999.
6. Notaras MJ: The use of Mersilene mesh in rectal prolapse repair. *Proc R Soc Med* 27: 930, 1973.
7. Suchultz I, Mellgren A, Dolk A, et al: Long term results and functional outcome after Ripstein rectopexy. *Dis Colon Rectum* 43(1) : 35-43, 2000.
8. Aitola PT, Hiltanen KM, Matikainen MJ: Functional results of operative treatment of rectal prolapse over an 11 years period. *Dis Colon Rectum* 42 (5): 655 -60, 1999.
9. Kim DS, Tsang CB, Wong WD, et al: Complete rectal prolapse: evolution of management and results. *Dis Colon Rectum* 42(4):

Notaras Posterior Mesh Rectopexy

- 460-6, 1999.
10. Sielezneff I, Malouf A, Cesair J, et al: Selection criteria for internal rectal prolapse repair by Delorme's transrectal excision. *Dis Colon Rectum* (42) 3: 367-73, 1999.
 11. Araki Y, Isomoto H, Isuzi Y, et al: Transsacral rectopexy for complete rectal prolapse. *Kurume Med J* 43(3): 235-8, 1998.
 12. Launer DD, Fazio W: The Ripstein procedure, a 16-years experience. *Dis Colon Rectum* 25: 41-45, 1982.