

Original Article

Longterm effects of compression method in the surgical treatment of bleeding haemorrhoids

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Abstract

Objective: Present study was undertaken to find out the long term effect of application of compression probe after haemorrhoidectomy in the treatment of bleeding haemorrhoids. **Materials and methods:** They study was carried out in the Department of Clinical Surgery, Russian People's Friendship University, Moscow, Russia, from January 1992 to December 2001, on 80 patients, equally divided into two groups, case (haemorrhoidectomy plus application of compression probe) and control (haemorrhoidectomy only). **Results:** Long term follow up showed higher good outcome in case group (82.1%) compared to control (53.8%) ($P < 0.05$), satisfactory and unsatisfactory outcome was higher in control group (17.9% and 28.2%) compared to case group (12.8% and 5.1%). **Conclusion:** Application of compression problem after haemorrhoidectomy in patients with bleeding haemorrhoids gives better long term results.

Key Words: Bleeding haemorrhoids, Compression probe

Introduction

The surgical illnesses of anorectum are frequently observed disease among the persons of working age. Haemorrhoids is one of the most common disease of anorectum. The frequency of it among the adult population varies within the limits of 60 to 70 percent¹. According to data, absolute increase of this pathology only in Russia annually 600,000 patients are admitted to hospitals. A large number of patients receiving outpatient treatment engaged a self treatment plan is not included in the statistics². Majority of the patients are from the working age group 30 65 years. Among these patients, 29 90% encounter from 2 6 episodes per year, and for each episode loss of working days range from 6 to 35 days. Therefore, haemorrhoids represent an important social problem³. Patients with bleeding haemorrhoids have the agonizing problems due to passage of blood per rectum after defaecation which are worrisome and may result in fatal outcome due to loss of excessive blood.

Various methods of surgical treatment of bleeding haemorrhoids have been described in the literature but none of these are considered to be radical because of their side effects, complication and even fatal outcome^{4,6}. Compressive probe was used effectively in bleeding haemorrhoids as part of conservative treatment in patients in whom general or spinal anaesthesia was contraindicated⁷. Surgical treatment of haemorrhoids, especially, the bleeding haemorrhoids is a concern of colorectal surgeons, and this article shows the effectiveness of compressive probe with the combined surgical treatment of bleeding haemorrhoids.

Materials And Methods

Subjects

This study was carried out in the Department of Clinical Surgery, Russian Peoples' Friendship University, Moscow, Russia (Hospital No. 17), during January 1992 and December 2001, and included 80 patients with bleeding haemorrhoids. The

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patients were subdivided into case (n=40) and control (n=40). Patients with bleeding haemorrhoids concomitant with rectal polyp, chronic anal fissure, partial prolapsed rectal mucosa and patients with condyloma of anus were included in the case group. Histologically confirmed cases with rectal carcinoma were excluded from the study. Informed consents were obtained from study patients and hospital authorities. Ethical approval was taken from the hospital authorities before study.

Methods

All 80 patients underwent Milligan Morgan haemorrhoidectomy. After operation, in 40 case group patients, after operation, compressive probe was applied at the internal and external haemorrhoidal sites of the anorectum with inflated balloon (50 mmHg in each balloon) for 24 hours (Fig. 1). In control group, after operation proper haemostasis was ensured and antibacterial ointment soaked tampon was introduced into the anorectum. The patients were discharge from hospital only after full recovery.

All 80 patients were followed up on outdoor basis for a period ranging from 6 months to 9 years. Long term follow up results could be obtained from 78 patients, as one patient from each group died due to other disease not related to haemorrhoidectomy.

Out of 78 patients, 21 patients were followed up at the outpatient department, and data from the rest 57 patients were obtained with the help of data collection form provided to them as they were unable to attend. Ethical approval: This protocol was approved by institutional Ethics Committee.

Long term assessment

Long term follow up results were evaluated as (1) Good: when a patient has no complaint related to the operation on anorectum, as there are no exacerbation or relapse of haemorrhoids, i.e. there is no nodulation, bleeding or prolapse of haemorrhoids; (2) Satisfactory: when there is no nodulation or prolapse of haemorrhoids, but only periodic bleeding or difficulties at defaecation (with or without pain) or disturbance in micturition; (3) Unsatisfactory: when there are relapse of haemorrhoids which demanded repeated operative measure.

Statistical methods

Data were expressed a number (percentage) and mean (\pm SD). Statistical analyses were done by unpaired Student's 't' test and Chi square test.

Results

Table I shows patient data. Mean (\pm SD) are showed no significant difference between case (42.70 \pm 7.88 years) and control (43.55 \pm 6.72 years) groups. Sex also showed to significant variation between groups. In case and control groups, respectively, there were 28 (70%) and 26 (65%) males, and 12 (30%) and 14 (35%) female. Associated diseases in case and control group, respectively, were polyp of anal canal (10% and 20%), anal fissure (2.5% each), anal stenosis (7.5% and 2.5%), condyloma of anus (2.5% each), prolapse of anal mucosa (10% and 0%), and none (67.5% and 72.5%). Distribution of associated diseases between groups showed statistically no significant variation.

None of the case group of patients required blood transfusion, however, 9 (22.5%) control group of patients required blood transfusion ($P < 0.01$). Mean (\pm SD) hospital stay was significantly high ($P < 0.001$) for control group of patients compared to case (12.3 \pm 1.54 vs 6.83 \pm 0.98 days).

Preoperative and postoperative mean (\pm SD) haemoglobin level in case and control groups showed significant difference between groups. Preoperative haemoglobin level was 13.04 \pm 0.56 and 12.57 \pm 0.89 g/dl ($P < 0.01$), and postoperative was 12.84 \pm 0.56 and 11.23 \pm 1.00 g/l ($P < 0.001$). Mean change in haemoglobin level at postoperative period from preoperative level was 0.20 (1.54%) in case and 1.34 (10.73%) in control group.

Table II shows long term follow up results. In case group, out of 39 patients, 32 (82.1%) were evaluated as good. In these patients, there was no complaint related to the performed operation. Satisfactory results was obtained in case of 5 (12.8%) patients though they did not show any sign of relapse. Two patients (5.1%) of case group showed unsatisfactory results. In one case, there was only internal nodulation, but there was no bleeding per rectum or haemorrhoidal relapse. In second case, periodic bleeding per rectum was present without any sign of haemorrhoids.

Out of 39 control patients, outcome results in 21 (53.8%) were evaluated as good based on their health and absence of any complaints connected to anorectum operation. In case of 7 (17.9%) patients follow up outcome was satisfactory, as they developed constipation and period bleeding but had no signs of haemorrhoidal nodules. Four patients

developed increased frequency of micturition and two patients lost their capacity to work. In control group, 11 (28.2%) patients follow up results were unsatisfactory as they showed signs of relapse of haemorrhoids requiring repeated operative treatment.

Comparing the long term outcome of treatment of haemorrhoids and benign tumours of anorectum, it was noted that good outcome was higher in case group (82.1%) in comparison to control group (53.8%), satisfactory outcome was higher in control

group (17.9%) in comparison on case group (12.8%), and also unsatisfactory outcome was higher in control group (28.2%) in comparison to case group (5.1%). Higher satisfactory and unsatisfactory result obtained in control group may be attributed to non application of compressive probe after haemorrhoidectomy. Statistically, good result was significantly high ($P < 0.05$) in case group in comparison to control.

Discussion

Haemorrhoidectomy is the method of choice in the

Table I: Patient data

Variables	Case (n=40)		Control (n=40)		P value
Age (years)	42.70 ± 7.88		43.55 ± 6.71		0.605 ^{ns}
Mean ± SD	No.	(%)	No.	(%)	P value
Sex					0.633 ^{ns}
Male	28	(70.0)	26	(65.0)	
Female	12	(30.0)	14	(35.0)	
Associate diseases					0.269 ^{ns}
Polyp of anal canal	4	(10.0)	8	(20.0)	
Anal fissure	1	(2.5)	1	(2.5)	
Anal stenosis	3	(7.5)	1	(2.5)	
Condyloma of anus	1	(2.5)	1	(2.5)	
Prolapse of anal mucosa	4	(10.0)	0		
None	27	(67.5)	29	(72.5)	
Blood transfusion					0.001 ^{**}
Required	0		9	(22.5)	
Not required	40	(100.0)	31	(77.5)	
Hospital stay (days)	6.83 ± 0.98		12.30 ± 1.54		0.0001 ^{***}
Mean ± SD					
Variables	Case (n=40)		Control (n=40)		P value
Haemoglobin (g/dl)					
Preoperative	13.04 ± 0.56		12.57 ± 0.80		0.003 ^{**}
Mean ± SD					
Postoperative	12.84 ± 0.56		11.23 ± 1.00		0.0001 ^{***}
Mean ± SD					
Mean change	-0.20		-1.34		
Percent change	-1.54		-10.73		
Unpaired Student's 't' test/Chi-square test ns = Not significant, ** = Significant ($P < 0.01$), *** = Significant ($P < 0.001$)					
Table II: Outcome of treatment					
Outcome	Case (n=39)		Control (n=39)		P value
	No.	(%)	No.	(%)	
Good	32	(82.1)	21	(53.8)	
Satisfactory	5	(12.8)	7	(17.9)	0.012 [*]
Unsatisfactory	2	(5.1)	11	(28.2)	
Chi-square test * = Significant ($P < 0.05$)					



Compressive probe for the treatment of Haemorrhoids.

treatment of bleeding haemorrhoids. The compressive probe applied after haemorrhoidectomy revealed better results in comparison to haemorrhoidectomy alone. Long term compression in haemorrhoidal zones of anorectum results in the reduction of influx of blood on arteriovenular anastomoses of cavernous bodies and simultaneous elimination of stagnation of blood in the haemorrhoids. Therefore, the pressure in the lumen of cavernous bodies is reduced; they are drained and the lumens of the cavernous bodies collapse. In addition to this, at pressure on haemorrhoids, the nerve receptors are irritated, simulates the contraction of muscles of anal sphincters, which even more signifies compression on haemorrhoids and accelerates the process of collapse of walls of ecstatic vessels. There is an oxygen deficiency in tissues of haemorrhoids, the physicochemical properties of walls of pathologically changed vessels and their surrounding tissues are changed; stimulation of development of young connective tissues and the process of cicatrization is magnified⁷.

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The walls of pathologically changed vessels of haemorrhoids in connection with a long time compression and local hypoxia are squeezed, gradually scleroses, emptying of haemorrhoids and bleeding ceases⁸.

From our data, we found that the application of compressive probe in the conservative method of treatment of bleeding haemorrhoids intended for stoppage of haemorrhoidal bleeding, lowering of activity of arteriovenular anastomoses, normalization of microcirculation in cavernous bodies, and thus it was effective as conservative treatment of bleeding haemorrhoids. The duration was for 4 hours per day, and the process was repeated for 4 5 times at an interval of 1 4 days⁷.

The application of compressive probe after surgical treatment of bleeding haemorrhoids was directed to stop the residual bleeding, restoration of bloodflow and normalization remaining cavernous bodies, adaptation of edges of sutures mucosa and to reduce perianal oedema. The time of application of compressive probe was for 24 hours after operation.

Conclusion

The application of compressive probe at the end stage of haemorrhoidectomy in patients of bleeding haemorrhoids provided the elimination of stagnation of blood in the cavernous derivations, resulting in all and aseptic pasting together of their walls, sclerosis and shrinkage of haemorrhoidal clusters. Thus, it prevented relapse of haemorrhoids in the long term.

References

1. Dultsev Yu V, Titov A Yu, Coauth. Haemorrhoidectomy with suturing apparatus. *J Surg* 1989; 2:115 118.
2. Vorobeov GI, Glagodorni LA. Choice of methods of treatment of haemorrhoids. *J Surg* 1999; 8:50 55.
3. Rivkin VL, Kapuller LL. Haemorrhoids, constipation. *M Medpractice* 2000; 158.
4. Akopian Ea B, Nazarov L Yu, et al. Surgical treatment of haemorrhoids. *Bull Surg* 1989; 142:113 116.
5. Stelzner F. Haemorrhoidectomy a simple operation? Incontinence, stenosis, fistula, infection and fatalities. *Chirurg* 1992; 63:316 326.
6. Standards Task Force American Society of Colon and Rectal Surgeons. Practical parameters for the treatment of haemorrhoids. *Dis Col Rect* 1993; 36:1118-1120. <http://dx.doi.org/10.1007/BF02052259> PMid:8253007
7. Digeshwar T. Compression method in the treatment of haemorrhoids [PhD dissertation in medical science]. Moscow 1993.
8. Goldin Va and Degeshwar T. Modern method of treatment of bleeding haemorrhoids. In: Actual problems in clinical surgery (collection of works of Moscow Medical and Dental Institute after name of NA Semashka). Moscow 1993L 94 7. PMid:1597095