

Risk Factors For Post Hemorrhoidectomy Anal Stenosis

*¹Ismail Njadat M.D , ²khaled Abu Rumman Md, ³fadi Maaita Md,
⁴feras Almbaidin Md , ⁵qais Al Qusus Md

¹General Surgery Specialist, Royal Medical Services.

²General Surgery Specialist, Royal Medical Services.

³General Surgery Specialist, Royal Medical Services.

⁴General Surgery Specialist, Royal Medical Services.

⁵Anaesthesia Specialist, Royal Medical Services.

Corresponding Author: Ismail Njadat M.D

Abstract

Introduction: Anal stenosis is a disabling but fortunately uncommon disease that is mostly caused by anorectal surgery ,open hemorrhoidectomy is responsible for about 90% of cases. The aim of this study is to analyze whether certain patient and procedure related factors are related to higher risk of stenosis.

Methods: A retrospective study carried out in Prince Hashem Hospital and comprising of all patients who underwent hemorrhoidectomy between 2014 and 2016. Only patients with at least one follow up are included. Data related to many patient and procedure characteristics were collected and analyzed using SPSS 16.

Results: 250 patients were included, 159 males and 91 females with mean age of 33 years. Stenosis was found in 7.2% of cases in a mean follow up period of 4.8 months. Only the presence of previous history of hemorrhoid surgery and the removal of more than 3 piles at one session were associated with higher risk of stenosis (P value 0.038 and 0.001 respectively).

Conclusion: Previous history of hemorrhoid surgery and the number of piles removed at one session are both risk factors for the development of anal stenosis.

Date of Submission: 04-01-2018

Date of acceptance: 22-01-2018

I. Introduction

Anal stenosis is an uncommon, disabling and incapacitating disease [1]. Stenosis may be caused by an intrinsic or extrinsic pathologic process of the anorectum. Anal stenosis may follow almost any condition that causes scarring of the anoderm [2]. Hemorrhoidectomy is the most common cause of anal stenosis, being responsible for about 90% of cases [3]. Other anorectal procedures that can cause stenosis include excision and fulguration of anorectal warts, endorectal flaps and following proctectomy, particularly in the setting of mucosectomy [4]. In addition, anal fissure surgery can lead to anal stenosis, if an internal sphincterotomy was not performed [2]. Post Hemorrhoidectomy anal stenosis results from removal of large areas of the anoderm and hemorrhoidal rectal mucosa, without sparing of adequate muco - cutaneous bridges, which leads to scarring and a progressive chronic stricture. The aim of this article is to study some patient and procedure factors that may predispose patients to this condition.

II. Methods

This is a retrospective study in which all patients who underwent hemorrhoidectomy between 2014 and 2016 in Prince Hashem Hospital were included. Only patients with at least one postoperative follow up visit documented in the patient's file were included. Information gathered from the files included the age ,sex ,grade of the piles, duration of symptoms, previous history of hemorrhoid surgery, number of piles removed at surgery, setting of surgery (whether emergency or elective), last follow up visit, and whether or not the patient developed anal stenosis. The data was analyzed using SPSS 16 for windows. Descriptive statistics and student t tests were used for means and frequency calculations. Chi square and logistic regression were used for binary variables while linear regression was used for other variables. P value less than 0.05 is considered statistically significant.

III. Results

In the mentioned time period, 412 patient underwent hemorrhoidectomy, only 250 patients were included in the study, because either the information were incomplete in the files or patients skipped follow up. In all patients, surgery has been done under general anesthesia and the procedure used was the conventional open hemorrhoidectomy with the patient in lithotomy position.

Patients follow up ranged from one to eight months (mean 4.8 months). The study included 159 males and 91 females with ages ranging from 18 to 56 years (mean 33). Of the 250 patients, only 18(7.2%) developed stenosis, 13 males and 5 females but the gender difference was not statistically significant. The indications for surgery were pile grades 3 to 4, external piles and combined (external and internal) piles. Of those, 35% were grade 4 piles. 29 patients had previous history of hemorrhoid surgery. Of those, 7 developed anal stenosis which has a P value = 0.038. In approximately 50% of the surgeries two piles were removed, compared to one, three or more than three piles in the rest. This factor was found to be the most statistically significant in predicting stenosis, specially when more than three piles were removed at the same procedure. Table (1) summarizes the patients characteristics and the factors studied with their significance. It is shown that only the presence of previous history of pile surgery and the number of piles removed have an effect on the development of anal stenosis.

IV. Discussion

Anal stenosis, although rare, is one of the most feared and disabling complications of anorectal surgery[5]. Hemorrhoidectomy is responsible for almost 80 to 90% of cases, anorectal surgical procedures associated with Cohn's disease are responsible for about 3.3%, the remaining are caused by other anorectal surgeries, trauma, inflammatory bowel disease, radiation therapy, venereal disease, tuberculosis, and chronic laxative abuse[2,3,6]. The reported incidence of anal stenosis following hemorrhoidectomy ranges from 0.8 to 10% in different studies. In our study, it causes 7.2% of this condition. The type of procedure used was found to be a significant factor in the development of stenosis, for example, the whitehead hemorrhoidectomy in which a large portion of mucosa is denuded has the highest incidence of stenosis, that's why it has been abandoned by most surgeons[2], nevertheless, others found that the difference was not significant and the Whitehead technique was and is still used as the procedure of choice for circumferential prolapsing and bleeding hemorrhoids and mucosa[7]. Other procedures used included closed hemorrhoidectomy, open (Milligan-Morgan) hemorrhoidectomy and stapled rectal mucosectomy. In all these procedures, anal stenosis is less frequent than whitehead technique[2], but there were conflicting results for which was the superior one. While some authors found no difference [8], others found that stapled rectal mucosectomy is better in terms of early and late complications [9]. In our study, only the open conventional approach was used. Presence of previous history of hemorrhoid surgery was found in our study to increase the risk of stenosis, which was concordant with other studies [10]. Then mechanism is unexplained but it may be related to the already present scar tissue which adds to the risk. Minimal information was found in the literature about the number of piles which should be removed in one session, but classical teaching warns us not to resect more than two, usually opposing, piles to avoid stenosis. No studies were found to reject or support such an issue, but in our study, we found that the number of piles removed is the most significant factor associated with stenosis. This specifically holds true when more than three piles were resected at the same session and can be explained by the fact that, removing more mucocutaneous tissue increases the risk of stenosis. Some authors suggest limited hemorrhoidectomy, in which only problematic piles were removed. They claim that anal stenosis risk is lower and fewer than 2 percent of patients will require further procedural intervention of their hemorrhoidal disease[11].

V. Conclusion

Previous history of hemorrhoid surgery and the number of piles removed at one session both are risk factors for the development of anal stenosis. More research on procedural details is needed to find the best approach for management of hemorrhoid disease.

References

- [1]. Casadesus D, Villasana LE, Diaz H, Chavez M, Sanchez IM, Martinez PP, Diaz A. Treatment of anal stenosis: a 5-year review. *ANZ J Surg.* 2007;**77**:557–559
- [2]. Giuseppe Brisinda, Serafino Vanella, Federica Cadeddu, Gaia Marniga, Pasquale Mazzeo, Francesco Brandara, and Giorgio Maria. Surgical treatment of anal stenosis. *World J Gastroenterol.* 2009 April 28; **15**(16): 1921–1928
- [3]. Brisinda G. How to treat haemorrhoids. Prevention is best; haemorrhoidectomy needs skilled operators. *BMJ.* 2000;**321**:582–583
- [4]. Katdare MV; Ricciardi R. Anal stenosis. *Surg Clin North Am.* 2010 Feb;**90**(1):137–45
- [5]. Angelita Habr-Gama; Carlos Walter Sobrado; Sergio Eduardo Alonso de Araújo; Sergio Carlos Nahas; Ingrid Birbojm; Caio Sergio Rizkallah Nahas; Desidério Roberto Kiss. Surgical treatment of anal stenosis: assessment of 77 anoplasties. *Clinics vol.60 no.1 São Paulo Jan./Feb.* 2005
- [6]. Milsom JW, Mazier WP: Classification and management of postsurgical anal stenosis. *Surg Gynecol Obstet* 1986 , **163**:60-64
- [7]. Wolff BG, Culp CE. The Whitehead hemorrhoidectomy. An unjustly maligned procedure. *Dis Colon Rectum.* 1988 Aug;**31**(8):587-90
- [8]. orrea-Rovelo JM, Tellez O, Obregon L, Miranda-Gomez A, Moran S: Stapled rectal mucosectomy vs. closed hemorrhoidectomy: a randomized, clinical trial. *Dis Colon Rectum* 2002 , **45**:1367-74; discussion 1374-5
- [9]. Shalaby R, Desoky A: Randomized clinical trial of stapled versus Milligan-Morgan haemorrhoidectomy. *Br J Surg* 2001 , **88**:1049-1053
- [10]. Sven Petersen, Gunter Hellmich, Dietrich Schumann, Anja Schuster and Klaus Ludwig .Early rectal stenosis following stapled rectal mucosectomy for hemorrhoids. *BMC Surgery* 2004, **4**:6

- [11]. Hayssen T K, Luchtefeld M A, Senagore A J. Limited hemorrhoidectomy: results and long-term follow-up. *Dis Colon Rectum*. 1999;42:909–914. discussion 914–905]

Tables and Figures

Table (1): Patients’ characteristics and the factors studied with their significance.

	Total	stenosis group (n=18)=7.2%	Nonstenosis group(n=232)	P value
Age(mean)	33.15	35.5	33	0.190
Gender male	159(63.6%)	13	146	0.895
Female	91	5	86	
Grade				0.714
3	66	5	61	
4	88(35.2%)	5	83	
External	35	2	33	
Combined	61	6	55	
Duration of symptoms (mean,months)	7.57	8.9	7.5	0.073
Setting				0.124
Emergency	19	2	17	
Elective	231(92.4%)	16	215	
Previous surgery				0.038
No	221(88.4%)	11	210	
Yes	29	7	22	
Number of piles removed				<0.001
One	50	0	50	
Two	124(49.6%)	3	121	
Three	46	4	42	
More than three	30	11	19	

Ismail Njadat M.D."Risk Factors For Post Hemorrhoidectomy Anal Stenosis." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 17, no. 1, 2018, pp. 63-65