



Hemorrhoids: Incidence & Risk Factors in a Corporate Hospital of Eastern India

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Author Details
Dr Akriti Komal M.B.B.S.* ¹ and Dr Devjani Majumadar M.B.B.S. M.R.C.S. ²
Authors Affiliations
¹ DNB Surgery Junior Resident-3 The Peerless Hospital & B.K.ROY Research Center, Kolkata, India
² Senior Consultant cum incharge Breast Clinic, The Peerless Hospital & B.K.ROY Research Center, Kolkata, India
Corresponding Author*
Bassem Abou Merhi
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Abstract: Background: Hemorrhoids are the most common benign anorectal disorder diagnosed in surgical practice. Commonly associated risk factors of this condition are low fiber diet, chronic irregular bowel habit, straining during defecation, pregnancy, sedentary lifestyle, obesity etc. Treatment options for symptomatic first-degree, second degree and early third-degree hemorrhoids are banding and sclerotherapy. Patients with fourth-degree or abnormally large third-degree hemorrhoids is usually surgery. Methods: This prospective study was conducted in the department of surgery at The Peerless Hospital & B.K.ROY Research Center, Kolkata INDIA on cases of Haemorrhoids over two year's period from January 2018 to December 2019. 540 adult patients with diagnosis of hemorrhoids, admitted in surgery department were included in this study. All the demographic data and relevant details were obtained. Results: Most of the patients (48.1%) belongs to the younger age (15-30 years). 63.8% were male patients and 36.2% were female patients. Patients with lower socioeconomic status were the most common sufferers (37.2%) of hemorrhoids. Commonest symptom was rectal bleeding. Present study found risk factors for hemorrhoids were low fiber diet, mixed diet, poor hydration, and chronic irregular bowel habit like constipation or diarrhea, straining during the defecation, low physical activity and obesity. Sclerotherapy (17.8%) and rubber band ligation (4.1%) were non operative treatment of choice. Open hemorrhoidectomy were performed in 73.1 % and stapled hemorrhoidopexy in 5 %. Conclusion: This clinical study of hemorrhoidal disease in this region may help to better understand the trends of this commonly occurring disease in our society. Proper patient education to minimise the risk factor will lead to lower in the incidence of this common disease and avoid associated morbidity.

Keywords: Haemorrhoids; clinical study; Risk factors.

INTRODUCTION:

Hemorrhoids or piles are masses of vascular structure that contain dilated, elongated and tortuous blood vessels present within elastic fibers, smooth muscles and connective tissue of anus and anal canal. Normally these hemorrhoids act as venous cushions but they are the common cause of anal pathology (Marx, J.A. *et al.*, 2006). These venous cushions assist in control

of stool defecation, Whenever there is an enlargement in these cushions, these form a pathological mass known as hemorrhoids. Common presentation is swelling at anal verge, itching, and bleeding per rectum. Painful haemorrhoids are usually inflamed or infected. Hemorrhoids are the most common benign anorectal disorder presenting in clinical practice. In layman's term, any anorectal ailment is termed "piles" in India. In spite of its frequent incidence, only few patients seek medical treatment due to embarrassment and mostly trivial nature of symptoms. Hemorrhoids are more common in the adult population. Men are more frequently affected in comparison to women (Khan, R. M. *et al.*, 2015). Hemorrhoids are categorized as internal and external depending on its location with reference to anatomy. Pectinate or dentate line that divides upper two thirds and lower one third of the anal canal is the demarcation line between external and internal hemorrhoids. External hemorrhoids are covered by skin and found below this line. Internal hemorrhoids are covered with mucosa and are located above this line. Internal hemorrhoids are true haemorrhoids. Various degrees are recognised depending upon extent of protrusion out of anal canal. They are located at 3, 7 and 11 o'clock position due to anatomical disposition of branches of inferior rectal vessels. Internal hemorrhoids are generally classified into first, second, third and fourth degree according to the classification published by Banov *et al.*, (1985). First degree hemorrhoids don't protrude out of the anal canal and diagnosed by surgeon. It may present as bleeding per rectum or anal discomfort. Second degree hemorrhoids protrude with defecation and retract back. Third-degree hemorrhoids protrude and require manual replacement. Fourth degree hemorrhoids protrude all the time and cannot be reduced manually and are persistently prolapsed. Risk factors commonly associated with this disease are low fiber diet, chronic constipation, chronic diarrhea, chronic straining during defecation, pregnancy, and sedentary lifestyle, habit of postponing the bowel movements, obesity and spinal cord injuries etc.



Hence prevention is better than cure in cases of the hemorrhoids. Several treatment options are available for patients with hemorrhoid, who do not respond to conservative medical management (Jacobs, D. 2014; Rivadeneira, D. E. *et al.*, 2011; Altomare, D. F. *et al.*, 2006; & Buntzen, S. *et al.*, 2013). Treatment guidelines are available from the American College of Gastroenterology (ACG) (Wald, A. *et al.*, 2014). ACG recommends that patients with symptomatic first- to third-degree hemorrhoids initially be treated with increased fiber and adequate fluid intake and can be managed by various OPD procedures, including banding, sclerotherapy, and infrared coagulation and ligation (Wald, A. *et al.*, 2014). Patients with fourth-degree or large third-degree hemorrhoids usually necessitate hemorrhoidectomy surgery if they are nonresponsive to less invasive procedures (Wald, A. *et al.*, 2014). Complications of untreated symptomatic hemorrhoid may include bleeding, thrombosis, secondary infection, ulceration, abscess, and incontinence. There is very less published epidemiological study on hemorrhoidal diseases which categorized the risk factors in India. The aim of this prospective study is to assess the incidence, risk factors and suitable treatment options in patients with haemorrhoid in a government teaching Hospital catering free medical services to a large population in this part of India.

METHODS:

The present prospective study was undertaken in the Department of Surgery, The Peerless Hospital & B.K. ROY Research Center, and Kolkata India. Data of patients examined and treated at this hospital were collected from OPD and IPD departments of this hospital. 540 adult patients with diagnosis of hemorrhoids, fulfilling all the inclusion criteria were included in this study. All the relevant details were obtained from medical records with all demographic details. Data were tabulated using detailed proforma. Following details of patients were recorded like age, sex, socioeconomic status, symptoms and risk factors. In all cases with hemorrhoids, final diagnosis was made on the basis of detailed history, clinical & digital per rectal examination and proctoscopy. External examination with inspection of the anal and perianal region was done to find external piles mass including sentinel piles, prolapsed internal piles and fissure or perianal ulceration. Digital per rectal examination were usually done to rule out any pathology like rectal carcinoma, rectal polyp, hypertrophied anal papilla, thrombosed internal piles etc. The anal sphincter tone was assessed. Proctoscopy was done in each case to see the internal hemorrhoids with their location and to rule out any pathology. Conservative management was

preferred in first, second and some third degree hemorrhoid. Patients with fourth degree or large third-degree hemorrhoids were subjected to open hemorrhoidectomy surgery or stapled hemorrhoidopexy. All the relevant collected data was compiled and analysed.

Inclusion criteria: Patients with hemorrhoid of age group 15 to 70 years who were admitted in surgery ward were included in the study.

Exclusion Criteria: Patients with piles secondary to anorectal tumor, pregnant female patients and patients less than 15 years of age were excluded from study.

Statistical Methods: Results were shown in tables, comparing their numbers and percentages by scientific calculator and standard appropriate statistical formula.

Ethical Permission: Yes

RESULTS:

The aim of this study was to evaluate the data of patients with hemorrhoids to explain the demographic details and risk factors associated with hemorrhoids. Records of patients with hemorrhoids who were admitted in surgical wards Results were recorded in tabulated form. Following observations and results were obtained.

Table-1: Age wise distribution

Age group (years)	Total admission	%
15-30	260	48.1%
31-50	155	28.7%
51-70	125	23.2%
Total	540	100.00%

Age wise highest number of patients belongs to the young age group of 15-30 years years.

Table-2: Sex Wise Distribution

Sex	Total admission	%
Male	344	63.8%
Female	196	36.2%
Total	540	100.00%

The male to female ratio was 1.7:1. Out of total 540 admitted cases, 63.8% were male patients and 36.2% were female patients.

Table-3: Socioeconomic status wise distribution

Socioeconomic Groups	Total admission	%
Lower	285	52.8%
Middle	220	40.7%

Upper	35	6.5%
Total	540	100.00%

Patients with low socioeconomic status were most commonly affected group (52.8%%) followed by middle class suffering with hemorrhoids.

Table-4: Symptoms

Complaints	Number of patients%	
Bleeding per rectum	314	58.1%
Pain during defecation	268	49.6%
Pruritus ani	172	31.9%
Discharge	96	17.8%
Prolapsed swelling	126	23.3%
Soiling	35	6.5%

Most common symptom was bleeding per rectum (58.1%). Other symptoms were pain during defecation (49.6%), pruritus ani (31.9%), discharge (17.8%), prolapsed swelling 23.3% and soiling (6.5%).

Table-5: Common Risk Factors for haemorrhoids

Factors	Number of patients%	
Dietary habits	Low fiber diet	106 19.6%
	Mixed diet	364 67.4%
	Poor hydration	154 28.5%
Bowel habits	Chronic constipation or diarrhea	3.5 56.5%
	Straining during defecation	195 36.1%
Amount of physical activity	Low physical activity	128 23.7%
	Obesity	80 14.8%

Common associated risk factors with hemorrhoidal disease include low fiber diet consumption, chronic irregular bowel habit including constipation and or diarrhea, chronic straining during defecation due to various factors, pregnancy, sedentary lifestyle, habit of postponing the natural urge of bowel movements, obesity and spinal cord injuries etc.

Table-6: Clinical Types of hemorrhoids present

Clinical Types	Number of patients	%
External hemorrhoid	94	17.4%
Internal hemorrhoid	First degree	22 04.1%
	Second degree	78 14.4%
	Third degree	196 36.3%
	Fourth degree	150 27.8%
Total	540	100.0%

Diagnosis of clinical types of hemorrhoids was based on naked eye examination, digital per rectal examinations and proctoscopy.

Table-7: Management Protocol of haemorrhoids

Management Type	Procedure	No.	%	%
Conservative management	Rubber band ligation	22	4.1%	21.9%
	Sclerotherapy	96	17.8%	
Operative management	Open hemorrhoidectomy	395	73.1%	78.1%
	Stapled hemorrhoidopexy	27	5.1%	
Total		540	100.0%	100.0%

Non-operative procedures were performed for first degree, second-degree and early third degree hemorrhoids and are mostly carried out on outpatient basis. Patients with fourth degree, complicated or large third-degree hemorrhoids were treated by open hemorrhoidectomy surgery or stapled hemorrhoidopexy.

DISCUSSION:

Hemorrhoids are one of the commonest anorectal diseases affecting substantial number of the population. Age distribution of cases reveals that most common age group affected with hemorrhoids in our study was relatively younger age group (15-30 years). It was a bit different from the observations of conducted. Rivadeneira, D. E. *et al.*, (2011) where most common sufferer age group was below 40 years. This was similar

to the findings (Khan, R. M. *et al.*, 2015; & Johanson, J. F., & Sonnenberg, A. 1994). Male preponderance was found in our study, the male to female ratio was 1.7:1. This may be due to a higher likelihood of men seeking treatment for their hemorrhoids and shyness by women to seek medical advice for this condition. A male predominance (66.7%) compared to the females (33.3%) was noted by Rivadeneira, D. E. *et al.*, (2011). Similar observation was made by Ali, S. A., & Shueb,

M. F. R. (2017) who found 55% male predominance. Socioeconomic status has a significant effect on patients with hemorrhoids and our study showed that patients with lower socioeconomic status were most commonly affected group (52.7%) with hemorrhoids. This is in contrast with the findings of Johanson, J. F., & Sonnenberg, A. (1994) who noted higher incidence in upper socioeconomic status individuals than lower]. This association of haemorrhoid to socioeconomic status may be due dietary preferences in various strata of society that alters bowel habit and lack of physical activity in this group. Most of the patients presented with more than one complaint. The most common symptoms of hemorrhoids in the present study is bleeding per rectum (58.1%) followed by pain during defecation (49.6%), pruritus ani (31.9%), discharge (17.8%), prolapsed swelling (23.3%) and soiling (6.5%). Similar findings were found by Ali, S. A., & Shueb, M. F. R. (2017). But this data was contrary to those of Nikooiyan *et al.*, (2016) in their study in which the most common symptoms was pruritus (45.8%); other symptoms observed by him were discharge (41.6%) and the anal pain (22.5%).

Risk factors of haemorrhoids are not understood completely. Kann *et al.*, stated that "all etiologic and risk factors work toward stretching and slippage of the hemorrhoidal tissue (Kann, B. R., & Whitlow, C. B. 2004)." As the supporting tissue of the anal cushions weakens, downward displacement of the cushions can occur, causing venous dilation and prolapse (Lestar, B. *et al.*, 1989; Loder, P. B. *et al.* 1994). In the present study, risk factors noted for hemorrhoids were low fiber diet, mixed diet, poor hydration, chronic constipation or diarrhea, straining at defecation, lack of physical activity and obesity.

Constipation and prolonged straining are supposed to be the main risk factor to cause hemorrhoids in present study. Hard stool passage and increased intra-abdominal pressure could lead to obstruction of venous return, resulting in engorgement of the hemorrhoidal plexus which in turn leads to development of hemorrhoid (Loder, P. B. *et al.*, 1994).

Passing hard stool increases shearing force on the anal cushions. However, recent evidence questions the importance of constipation in the development of this common disorder (Johanson, J. F., & Sonnenberg, A. 1990). Several autours have failed to find any significant association between hemorrhoids and constipation, while some reports suggested that diarrhea is a risk factor for the development of hemorrhoids (Johanson, J. F., & Sonnenberg, A. 1994). Low fiber intake, high intake of spicy and non-vegetarian mixed diet, junk food consumption and poor hydration were found to be the risk factors of hemorrhoids in the present study. Increasing dietary intake of fiber, vegetarian less spicy diet and adequate hydration can minimise and prevent the hemorrhoid by reducing the

constipation which is by and large a known risk factor for development of hemorrhoids. According to Anne F. Peery *et al.*, (2015).

Sedentary life style, obesity and lack of physical activity was also one of the risk factors of hemorrhoids. this fact has been corroborated by Khan *et al.*, (2015) in their study. On the contrary, Anne F. Peery *et al.*, were of the view that sedentary behavior was associated with a reduced risk, but not physical activity (Trompetto, M. *et al.*, 2015). Neither being overweight nor obese was associated with the presence of haemorrhoids. In our study, the types of hemorrhoids were diagnosed after performing examination of the patient. In present study, many of the admitted patients were related to external hemorrhoid. Late third and fourth degree internal hemorrhoids were operated. As most of the patients, with first and second degree were usually treated as outpatient daycare with less invasive procedures outlined in the tables. Majority (73.1%) of higher degree of piles underwent hemorrhoidectomy. In few cases they were admitted for conservative treatment and procedures like sclerotherapy and rubber band ligation in ward. Study by Riss *et al.*, (2012) observed that out of 277 patients of hemorrhoids, 72.9%, were classified as grade I, 18.42% as grade II, 8.16% as grade III, and only 0.53% as grade IV. two less invasive methods of management were done in our study based on the degree of hemorrhoid present and were reserved for first- degree, second-degree hemorrhoids and early third degree hemorrhoids, these cases were treated on outpatient basis and few cases required admission. Sclerotherapy was most common non operative treatment, performed in 96 patients (17.8%) by injecting chemical agents like 5% phenol in almond oil or hypertonic salt solution into the sub mucosa to induce the fibrosis²¹. Rubber band ligation was performed in selected patients in 22 (4.1%) with third-degree hemorrhoids. Rubber band ligation causes ischemic necrosis and scarring, leading to fixation of the connective tissue to the rectal wall. RBL can be safely performed in one or more than one hemorrhoidal mass in a single session²². Operative treatment were usually indicated when the conservative measures failed or cases with with complication and 4th degree disease. Most common procedure performed in the present study was open hemorrhoidectomy (73.1%). Excisional hemorrhoidectomy was found to be the most effective treatment for hemorrhoids with very low recurrence rate compared to other modalities (CERATO, M. M. *et al.*, 2014). Stapled hemorrhoidopexy was performed in only 27 patients (5%) due to high cost factor. Stapled hemorrhoidopexy was introduced since 1998 (Uba, A. F. *et al.*, 2004). A circular stapling device is used to excise a ring of redundant rectal mucosa proximal to hemorrhoids and resuspend the hemorrhoids back within the anal canal. A recent metaanalysis compared the surgical outcomes between stapled hemorrhoidopexy and hemorrhoidectomy, which showed that stapled hemorrhoidopexy, was associated

with less pain, earlier return of bowel function, shorter hospital stay, earlier return to normal activities, and better wound healing. Patient satisfaction and acceptance was high with this technique (Burch, J. *et al.*, 2008).

CONCLUSION:

Hemorrhoids are quite common benign anorectal disease and are usually found in patient's recognised risk factors like chronic constipation, improper dietary habits, lack of physical activity and obesity. To reduce its incidence and morbidity, patients need to be educated modify his dietary habits; to increase his daily physical activity. Measures to avoid constipation is also very important.

REFERENCES:

1. Ali, S. A., & Shueb, M. F. R. (2017). Study of risk factors and clinical features of hemorrhoids. *International Surgery Journal*, 4(6), 1936-1939.
2. Altomare, D. F., Roveran, A., Pecorella, G., Gaj, F., & Stortini, E. (2006). The treatment of hemorrhoids: guidelines of the Italian Society of Colorectal Surgery. *Techniques in coloproctology*, 10(3), 181. DOI:10.1007/s 10151 - 006-0277-y
3. Banov, J. L., Knoepf, J. L., Erdman, L. H., & Alia, R. T. (1985). Management of hemorrhoidal disease. *Journal of the South Carolina Medical Association* (1975), 81(7), 398-401.
4. Buntzen, S., Christensen, P., Khalid, A., Ljungmann, K., Lindholt, J., Lundby, L., ... & Qvist, N. (2013). Diagnosis and treatment of haemorrhoids. *Dan Med J*, 60(12), B4754.
5. Burch, J., Epstein, D., Baba-Akbari Sari, A., Weatherly, H., Jayne, D., Fox, D., & Woolacott, N. (2009). Stapled haemorrhoidopexy for the treatment of haemorrhoids: a systematic review. *Colorectal disease*, 11(3), 233-243.
6. Burch, J., Epstein, D., Baba-Akbari, A., Weatherly, H., Fox, D., Golder, S., ... & Woolacott, N. (2008). Stapled haemorrhoidectomy (haemorrhoidopexy) for the treatment of haemorrhoids: a systematic review and economic evaluation. *Health Technol Assess* 12(8), 1-193.
7. CERATO, M. M., CERATO, N. L., PASSOS, P., TREIGUE, A., & DAMIN, D. C. (2014). Surgical treatment of hemorrhoids: a critical appraisal of the current options. *ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo)*, 27(1), 66-70.
8. Jacobs, D. (2014). Clinical practice. Hemorrhoids. *N Engl J Med*. 371(10), 944-51. doi:10.1056/NEJMc1204188.
9. Johanson, J. F., & Sonnenberg, A. (1990). The prevalence of hemorrhoids and chronic constipation: an epidemiologic study. *Gastroenterology*, 98(2), 380-386.
10. Johanson, J. F., & Sonnenberg, A. (1994). Constipation is not a risk factor for hemorrhoids: a case-control study of potential etiologic agents. *American Journal of Gastroenterology*, 89(11), 1981-1986.
11. Kann, B. R., & Whitlow, C. B. (2004). Hemorrhoids: diagnosis and management. *Techniques in Gastrointestinal Endoscopy*, 6(1), 6-11.
12. Khan, R. M., Itrat, M., Ansari, A. H., & Zulkifile, M. (2015). A study on associated risk factors of haemorrhoids. *J Biol Sci Opinion*, 3(1), 36-38.
13. Lestar, B., Penninckx, F., & Kerremans, R. (1989). The composition of anal basal pressure. *International journal of colorectal disease*, 4(2), 118-122.
14. Loder, P. B., Kamm, M. A., Nicholls, R. J., & Phillips, R. K. S. (1994). Haemorrhoids: pathology, pathophysiology and aetiology. *British journal of surgery*, 81(7), 946-954.
15. Loder, P. B., Kamm, M. A., Nicholls, R. J., & Phillips, R. K. S. (1994). Haemorrhoids: pathology, pathophysiology and aetiology. *British journal of surgery*, 81(7), 946-954.
16. Lohsiriwat, V. (2012). Hemorrhoids: from basic pathophysiology to clinical management. *World journal of gastroenterology: WJG*, 18(17), 2009-17. doi: 10.3748/wjg.v18.i17.2009.
17. Marx, J.A., Hockberger, R.S., Walls, R. (2006). Rosen's Emergency Medicine: Concepts and Clinical Practice. 6th ed. Philadelphia, Pa: Elsevier; 2006. 1509-12.
18. Nikooiyan, P., Sardo, H. M., Poursaeidi, B., Zaherara, M., & Ahmadi, B. (2016). Evaluating the safety, efficacy and complications of electrotherapy and its comparison with conventional method of hemorrhoidectomy. *Gastroenterology and hepatology from bed to bench*, 9(4), 259-267.
19. Riss, S., Weiser, F. A., Schwameis, K., Riss, T., Mittlböck, M., Steiner, G., & Stift, A. (2012). The prevalence of hemorrhoids in adults. *International journal of colorectal disease*, 27(2), 215-220.
20. Rivadeneira, D. E., Steele, S. R., Ternent, C., Chalasani, S., Buie, W. D., Rafferty, J. L., & Standards Practice Task Force of The American Society of Colon and Rectal Surgeons. (2011). Practice parameters for the management of hemorrhoids (revised 2010). *Diseases of the colon & rectum*, 54(9), 1059-1064.
21. Trompetto, M., Clerico, G., Cocorullo, G. F., Giordano, P., Marino, F., Martellucci, J., ... & Ratto, C. (2015). Evaluation and management of hemorrhoids: Italian society of colorectal surgery (SICCR) consensus statement. *Techniques in coloproctology*, 19(10), 567-575.
22. Uba, A. F., Obekpa, P. O., & Ardill, W. (2004). Open versus closed haemorrhoidectomy. *The Nigerian Postgraduate Medical Journal*, 11(2), 79-83.
23. Wald, A., Bharucha, A. E., Cosman, B. C., & Whitehead, W. E. (2014). ACG clinical guideline: management of benign anorectal disorders. *American Journal of Gastroenterology*, 109(8), 1141-1157. (Quiz) 1058. doi: 10.1038/ajg.2014.190. Epub 2014 Jul 15.
24. Yeo, D., & Tan, K. Y. (2014). Hemorrhoidectomy-making sense of the surgical options. *World Journal*

