

Clinicopathological Profile of Haemorrhoids in North East IndiaAbhijit Bhoyate¹, Lekshmi Priya R.², G.S. Moirangthem³^{1,2}Junior Resident, Department of General Surgery, Regional Institute of Medical Sciences, Imphal, Manipur University, India.³Professor, Department of General Surgery, RRegional Institute of Medical Sciences, Imphal, Manipur University, India.

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Corresponding Author: Dr. Lekshmi Priya R.

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Abstract:**Background:** Haemorrhoids are one of the most common benign anorectal problems worldwide. Haemorrhoids are vascular cushions within the anal canal usually found in three main locations: left lateral (3 O' clock), right posterior (7 O'clock) and right anterior (11 O'clock) positions in the upper anal canal.**Methods:** In the present study, we have endeavored to profile the spectrum of hemorrhoids among the patients who underwent conventional open haemorrhoidectomy at Regional Institute of Medical Science Hospital, Imphal, from Sept 2015 to Aug 2017. We also have studied risk factors of haemorrhoids, relative frequency of different types and their clinical features. Finally, we have attempted to correlate the clinical results with histopathological findings.**Results:** This observational study of 48 cases who underwent open conventional haemorrhoidectomy (Milligan Morgan) was done to evaluate the spectrum of clinical pattern and histopathological findings. The histopathological examination of haemorrhoidectomy specimen, irrespective of types and degree of the lesion is found to be 'Venous' component only in all patients (100%), with haemorrhage (extravasation of blood) in 17 patients (35.4%) and features of thrombosis in 2 patients (4.2%).**Conclusion:** These finding is suggestive that haemorrhoidal mass is submucosal cushion of dilated and tortuous venous component only. As we did not find any arterial component in the histology, the findings of previous workers that haemionorrhoidal mass is arteriovenous malformation needs further evaluation and confirmation in larger series.**Keywords:** Anal cushions, Arteriovenous malformations, Clinical features, histopathology.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

According to Merck Manual definition, haemorrhoid is a "Varicosities of veins of the haemorrhoidal plexus, often complicated by inflammation, thrombosis and bleeding" [1]. But a recent definition of haemorrhoids is "Vascular cushions, consisting of thick submucosa containing both venous and arterial blood vessels". The vascular cushions participate in the venous drainage of the anal canal as well as the continence mechanism. In fact, Haemorrhoids are a normal part of human anatomy, in contrast to haemorrhoidal disease, which is manifested by prolapse, bleeding, and itching.

Sliding downwards of anal cushions is the latest proposed theory. The association of haemorrhoids with straining and with irregular bowel habits is compatible with this theory. Repeated stretching of submucosal treitz muscle causes disruption and results in prolapse. Studies found that the anchoring and supporting connective tissue in haemorrhoids disintegrated and fragmented.

Materials and methods

The present Observational study was conducted on patients with Haemorrhoids admitted in surgical wards of Regional Institute of Medical Sciences, Imphal during a period from September 2015 to August 2017. A total of 48 patients were included in the study.

Inclusion Criteria

Patients having haemorrhoids, confirmed on proctoscopy, who were admitted in all the units of the Department of Surgery and had underwent open conventional hemorrhoidectomy (Milligan Morgan Hemorrhoidectomy) from September 2015 to August 2017.

Exclusion Criteria

Haemorrhoids managed by non-conventional haemorrhoidectomy, Haemorrhoids managed non-operatively.

Study Variables

1. Sociodemographic factors: age, sex, socioeconomic status, occupation,
2. Risk factors: family history, diet, history of constipation and straining,
3. Symptoms: bleeding per rectum, prolapse, a painful/painless mass, discharge, and pruritus (irritation),
4. Clinical findings: Grades of haemorrhoids, number and locations of pile mass, haemorrhoids with complications,
5. Histopathological findings.

Statistical Analysis: The data was entered and analysed by the SPSS 21 v, using Student's t-test for continuous variables and chi-square test for

categorical variables. P value of < 0.05 was considered statistically significant.

Ethical Approval

The study was conducted after getting clearance from the Institutional Ethics Committee.

Results and Observations

a. Sociodemographic Factors

Gender: 64.6 % of patients were males and 35.4% were females in the study.

Age: The youngest patient was 18 years old and oldest was 87 years old. Mean age was 50.44 years (± 19.08 years).

There was wide range of age distribution from 20 years of age to 80 years of age.

Table 1. Age distribution

Age in years	No. of patients	%
<20	1	2.1
20-30	10	20.8
31-40	7	14.6
41-50	6	12.5
51-60	6	12.5
61-70	9	18.8
71-80	6	12.5
>80	3	6.3
Total	48	100.0

Socio Economic Status: Majority of the patients were in Middle Socioeconomic status group (85.4%), followed by Lower (12.5%) and High (2.1%).

Occupation: 91.7% of patients were manual labourers whereas 8.3% were sedentary workers.

b. Risk factors

Dietary habits: 83.33% of the patients were on mixed diet consuming low fibre mostly non-vegetarian diet and 16.66% were on vegetarian diet containing high fibre diet.

Bowel habits and straining at stool: It was observed that 20.83% of cases had history of constipation, whereas 72.91% cases had history of

straining at stools. Normal bowel habits were seen in only 6.25% cases.

Family history: In the present study 27% of patients had significant family history of either father or mother affected by haemorrhoids and 73% of patients had no any significant family history.

c. Symptoms: Most common presenting symptom was bleeding per rectum accounting for 81.3%.

Out of 48 patients 24 (50%) presented with prolapse.

Pain was present in 31.25% of patients. Pruritus and discharge were present in 20.8% and 12.5% of patients respectively. Anal fissure and Fistula in ano were rare presentation, 4.2% and 2.1% respectively.

Table 2. Symptoms

Symptoms of haemorrhoids	No. of patients (n=48)	%
Bleeding per rectum	39	81.3
Prolapse	24	50
Pain	15	31.25
Discharge	6	12.5
Pruritus / Irritation	10	20.8
Fissure	2	4.2
Fistula	1	2.1

d. Clinical Findings

Number of Pile Masses: Out of 48 patients, 16 presented with 3 pile masses (33.33%), 25 presented with 2 pile masses (52.08%), and 7 presented with single pile mass (14.58%).

Type and Location: Out of 48 patients in the study, 45 (93.75%) had internal haemorrhoids, 3

(6.3%) had combined internal plus external haemorrhoids.

Among internal haemorrhoids patient most common position was 11 o'clock (77.1%) followed by 3 o'clock (66.7%) and 7 o'clock (62.5%). Secondary positions were found in 12.5% of patients.

Table 3: Distribution of types and location of haemorrhoids

Types and position of haemorrhoids	No. of patients (n=48)	%
Internal at 3 o'clock	32	66.7
Internal at 7 o'clock	30	62.5
Internal at 11 o'clock	37	77.1
Secondary positions	6	12.5
Combined (internal plus external)	3	6.3

Grades of Haemorrhoid: Out of 48 patients in study, 31 (64.5%) had third degree haemorrhoids, 10 (20.8%) had second degree, and 7 (14.5%) had fourth degree.

Haemorrhoids with Complication: Out of 48 patients, only 4 (8.4%) had complicated haemorrhoids, out of which 2 patients had thrombosed piles, one had ulceration and one had strangulation as complicated presentation.

a. Histopathological Findings: Irrespective of type and degree of haemorrhoids, pile mass histopathology was showing "venous" component of all dilated vessels in all 48 patients, with haemorrhage (extravasation of blood) in 17 patients (35.4%) and features of thrombosis in 2 patients (4.2%)

Out of 48 patients, mononuclear cells were found in 33 patients (68.8%) and neutrophils in 7 patients (14.6%)

Table 4: Histopathological Findings

Histopathological Findings	No. of patients (n=48)	%
HPE-arterial component	0	0.0
Venous component	48	100.0
Combined	0	0.0
Thrombosis	2	4.2
Infarction	0	0.0
Hemorrhage	17	35.4
Neoplasia	0	0.0
Eosinophils	1	2.1
Mononuclear cells	33	68.8
Neutrophils	7	14.6

Discussion

The present observational study was conducted in the Department of Surgery at Regional Institute of Medical Sciences Hospital Imphal, from the period September 2015 to August 2017. Altogether 48 patients with symptomatic haemorrhoids who underwent open conventional haemorrhoidectomy were included in study.

In the study, sociodemographic factors like age, sex, socioeconomic status and occupation were evaluated. Also risk factors for haemorrhoids like diet, family history, history of constipation and straining were studied. Further clinical features of various grades of haemorrhoids were studied and discussed. Clinical diagnosis was correlated with histopathological reports.

Sex distribution: In present study has shown that male (64.6%) were more than female (35.4%)

population to undergo conventional open haemorrhoidectomy. Santos GA *et al*² reported hemorrhoidectomy was more common among female (53.8%) than male (46.2%).

Age distribution: In present study, out of total 48 patients who were submitted to open conventional haemorrhoidectomy, 1 patient (2.1%) was in second decade, 10 patients (20.8%) in third decade, 7 patients (14.6%) in fourth decade, 6 patients (12.5%) in fifth decade, 6 patients (12.5%) in sixth decade; 9 patients (18.8%) in seventh decade; 6 patients (12.5%) in eighth decade; and 3 patients (6.3%) in ninth decade. Mean age was 50.44 years (± 19.08 years). Santos GA *et al* [²] reported the distribution of patients submitted to haemorrhoidectomy was more common in fourth (27.7%), fifth (21.9%) and third (21.0%) decades of age. Pigot F *et al* [³] reported that haemorrhoidal disease patients were younger (47 \pm 14.5 vs. 52

+/- 16.5 yrs; $P < 0.0001$) compared to normal controls and sex ratio was not different from controls.

Socioeconomic Factors: In present study, majority of patients were in middle socioeconomic status (85.4%) followed by lower (12.5%) and high (2.1%).

Risk Factors: As the etiology is not exactly defined some etiological factors were taken into consideration as risk factors for haemorrhoids like occupation, diet, family history, history of constipation, straining at stool as described by Thomson in 1975 [4].

Taking the type of occupation into consideration cases were divided as manual labourers and sedentary workers. There was haemorrhoids preponderance in manual labourers with 91.7% cases. This observation is supported by Warshaw LJ and Turell⁵ who noted that occupational strain and stress played important role in precipitating prolapse of existing internal haemorrhoids.

In the present study 27% cases had family history of haemorrhoids, which is supported by Greham Stewart's theory of familial tendency due to generalized weakness of venous walls due to hereditary predisposition.

In our study, 83% of cases were on mixed diet, low in fibre, which was mostly non-vegetarian. This low fibre diet in turn increases bowel transit time and forms hard stools, which causes constipation and straining of stools. In present study constipation was seen in 20.83% cases and straining was seen in 72.91% cases. Nivatongs [4] has noted constipation and raised abdominal pressure due to straining as predisposing and associated factors of haemorrhoids. [5]

Peery AF *et al* [6] reported that constipation was associated with an increased prevalence of haemorrhoids. Of the fiber subtypes, high grain fiber intake was associated with a reduced .Sedentary behavior was associated with a reduced risk.

Johanson JF and Sonnenberg A [7] performed a case-control study on 325 consecutive patients who underwent proctoscopy. Haemorrhoids were identified in 168 subjects, the remaining 157 served as controls.

The result of this analysis suggests that diarrhoea but not constipation may represent a risk factor for the development of haemorrhoids.

Symptoms and Signs: Most common presenting symptom was bleeding per rectum accounting for 81.3% followed by prolapse 50%. This is exactly same as described by Cintron JR *et al* [8] and Fleshman J *et al* [9]. Pain was present in 31.25% of patients. Pruritus and discharge were present in

20.8% and 12.5% of patients respectively. Anal fissure and Fistula in ano were rare presentation, 4.2% and 2.1% respectively which was similar to what was reported by Shastri *et al.*, 2017 [10] and Shaikh *et al.*, 2013 [11].

Karaca AS [12] reported in his study most common complaints in order of frequency, were prolapse (95%), bleeding (89%), pain (23%), itching (18%), discharge (12%), and anemia (1%). Izadpanah A *et al*¹³ reported in his study the most common symptom was prolapse in 80%, followed by bleeding in 79.8% and pain in 75.2%.

Number of pile masses

In present study out of 48 patients, 16 presented with 3 pile masses (33.33%), 25 presented with 2 pile masses (52.08%), and 7 presented with single pile mass (14.58%). Karaca AS [12] reported 97% had multiple pile masses and 3% patients had a single pile mass. [13]

Location of pile mass: In present study, 45 patients (93.75%) had internal haemorrhoids and 3 patients (6.3%) had combined internal plus external haemorrhoids. Among internal haemorrhoids patient most common position was 11 o'clock (77.1%) followed by 3 o'clock (66.7%) and 7 o'clock (62.5%). Secondary positions were found in 12.5% of patients. Karaca AS [12] reported in his study, piles had the usual (clock 3.7.11) localization in 74% of the cases.

Grades of Haemorrhoids: In our study maximum patients were having third degree (64.5%), followed by second degree (20.8%) and few presented with fourth degree (14.5%). In this study in open haemorrhoidectomy group, out of 110 patients 24.5% patients presented with second degree and 75.5% presented with combined third and fourth degree haemorrhoid. In closed haemorrhoidectomy group, second degree were 23.3% and third and fourth degree were 76.6%.

Haemorrhoids with Complications: In present study, only 8.4% patients had complicated haemorrhoids. 4.2% patients had thrombosed piles, 2.1% had ulceration and 2.1 had strangulation as complicated presentation. Exact prevalence of complications of haemorrhoids has yet to be quoted.

Histopathology Finding: In our study, we observed irrespective of type and degree of haemorrhoids, pile mass histopathology was showing venous component of all dilated vessels in all 48 patients (100%), with hemorrhage (extravasation of blood) in 17 patients (35.4%) and features of thrombosis in 2 patients (4.2%). Lohsiriwat V *et al* [14] has observed similar findings in his study.

Aimaiti A *et al* [15] studies observed that

subepithelial vessels of resected grades III and IV haemorrhoid tissues were manifested by obvious structural impairment and retrograde and ruptured changes of internal elastic lamina. Arteriovenous fistulas and venous dilatation were the findings in the anal cushion. In present study out of 48, mononuclear cells were found in 33 patients (68.8%), neutrophils in 7 patients (14.6%) indicating chronic nature of the condition.

Conclusion

This observational study of 48 cases who underwent open conventional haemorrhoidectomy (Milligan Morgan) was done to evaluate the spectrum of clinical pattern and histopathological findings.

From the above observational study the following conclusions were derived

- There is wide range of age distribution among both males and females, as youngest patient in the study was 18 years and eldest 87 years old.
- Etiological factors like diet, occupation, family history of haemorrhoids, history of constipation and straining at stool were significantly associated with haemorrhoids.
- Mixed diet, low in fibre is significantly associated with haemorrhoids (83%).
- There is haemorrhoids preponderance in manual labourers with 91.7% cases.
- Greham Stewart's theory of familial tendency holds true in 27% of cases.
- History of constipation and straining are the predisposing factors in 20.83% and 72.91% of cases respectively, suggest strong association with haemorrhoids.
- Bleeding per rectum (81.3%) followed by prolapse (50%) are the main presenting symptoms of haemorrhoids. Pain, pruritus and discharge are present in 31.25%, 20.8% and 12.5% of patients respectively.
- Anal fissure (4.2%) and fistula in ano (2.1%) are very rare association with haemorrhoids. Presentation with two pile masses (52.08%) is more common than that with three pile masses (33.33%) or single pile mass (14.58%).
- The commonest position of internal haemorrhoids is 11 o'clock (77.1%) followed by 3 o'clock (66.7%) and 7 o'clock (62.5%). Secondary positions are found in very few patients (12.5%).
- Considering the grades, maximum number of patients have third degree internal haemorrhoids (64.5%) followed by second degree 20.8% and fourth degree (14.5%)
- Only 8.4% patients have complicated haemorrhoids in the form of thrombosed piles (4.2%), ulceration (2.1%) and strangulation (2.1%).
- The histopathological examination of haemor-

rhoidectomy specimen, irrespective of types and degree of the lesion is found to be 'Venous' component only in all patients (100%), with haemorrhage (extravasation of blood) in 17 patients (35.4%) and features of thrombosis in 2 patients (4.2%). This finding is suggestive that haemorrhoidal mass is submucosal cushion of dilated and tortuous venous component only. As we did not find any arterial component in the histology, the findings of previous workers that haemorrhoidal mass is arteriovenous malformation needs further evaluation and confirmation in larger series.

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