

Original Research Article

A study of clinico-etiological profile and its association in patients of hemorrhoids and varicose veins

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ABSTRACT

Background: Hemorrhoidal disease (HD) and chronic venous disease (CVD) are prevalent vascular conditions sharing mechanisms such as venous hypertension, pelvic congestion, and connective tissue degeneration. Despite their frequent overlap, concomitant occurrence is often under-recognized. This study aimed to estimate the prevalence of coexisting HD and CVD, identify associated risk factors, and assess clinical correlations to guide integrated management.

Methods: This cross-sectional observational study was conducted at GSVM medical college, Kanpur between June 2023 and December 2024. A total of 140 patients were enrolled (70 HD, 70 CVD). Detailed demographic, clinical, and lifestyle data were collected. HD was assessed by digital rectal examination and graded using Goligher's classification, while CVD was confirmed by duplex ultrasonography and classified using CEAP criteria. Statistical analysis was performed using IBM SPSS version 29, with $p < 0.05$ considered statistically significant.

Results: Of the 140 patients, 60 (42.9%) presented with concomitant HD and CVD, 59 (42.1%) with isolated HD, and 21 (15.0%) with isolated CVD. A statistically significant association was observed between the presence of HD in patients with CVD (54.3%) compared to CVD in patients with HD (31.4%) ($p = 0.0043$). (22.0%). Age > 50 years ($p = 0.035$) was significantly associated with the occurrence of concomitant disease.

Conclusions: A substantial prevalence of concurrent HD and CVD was observed, particularly in older individuals with occupational risks. The higher occurrence of HD among CVD patients supports the role of systemic venous insufficiency in anorectal pathology. Routine screening for HD in CVD patients is recommended for comprehensive management.

Keywords: Hemorrhoidal disease, Chronic venous disease, Chronic venous insufficiency, Concomitant pathology, Risk factors, Varicose veins

INTRODUCTION

Hemorrhoidal disease (HD) and chronic venous disease (CVD) are prevalent vascular conditions that significantly impact global health. HD refers to the symptomatic enlargement and distal displacement of anal cushions resulting from venous congestion and connective tissue weakening, manifesting as bleeding, prolapse, itching, pain, and fecal soiling.¹ CVD encompasses varicose veins, venous reflux, chronic venous insufficiency, and

venous ulcers, primarily caused by valvular incompetence leading to retrograde blood flow and venous hypertension.²

Both conditions share similar risk factors including aging, prolonged standing, obesity, and increased intra-abdominal pressure. HD affects more than 50% of adults over 50 years, while CVD prevalence varies between 10-30% globally.³ Recent evidence suggests these disorders may coexist more frequently than previously recognized,

with shared pathophysiological mechanisms involving venous congestion and vascular integrity loss.

The CHORUS study, one of the largest international observational studies, found that 51.2% of patients with HD also had signs and symptoms of CVD.¹ The venous drainage systems of the rectum and lower limbs interconnect via the inferior mesenteric, internal iliac, and inferior vena cava systems, suggesting that venous congestion in lower extremities may transmit to the hemorrhoidal venous plexus.^{4,5}

Despite growing research on these conditions separately, limited studies have systematically investigated their coexistence and shared pathophysiology.^{1,2,6,7} Most clinical guidelines address these disorders independently, potentially missing underlying venous dysfunction contributing to both conditions.⁶ This study aims to evaluate the prevalence of concomitant HD and CVD, analyze associated risk factors, and assess clinical correlations to support integrated management strategies.^{3,7-10}

METHODS

This observational cross-sectional study was conducted at the Department of General Surgery, G. S. V. M. medical college, Kanpur, from 2023 to 2025. A total of 140 patients were enrolled: 70 with HD and 70 with CVD. Patients were recruited from outpatient and emergency departments after obtaining written informed consent. The study was approved by the institutional ethics committee following declaration of Helsinki principles.

Inclusion criteria

All patients in OPD/emergency with consent sought for the same. Patients with symptomatic varicose veins or hemorrhoids were included.

Exclusion criteria

Patients with peripheral arterial disease (ankle-brachial

pressure index <0.8). Patients with previous history of deep vein thrombosis (DVT). Patients having chronic liver disease and patients having onset of hemorrhoids during pregnancy were excluded.¹¹⁻¹³

HD was assessed by digital rectal examination and graded using Goligher's classification, while CVD was confirmed by duplex ultrasonography and classified using CEAP criteria.⁸ Demographic, clinical, and lifestyle data were collected using structured proforma including age, gender, BMI, occupational exposure, constipation duration, and stool consistency using Bristol stool scale.

Data were analyzed using IBM SPSS version 21.0. Descriptive statistics summarized patient characteristics. Continuous variables were compared using independent t-test or Mann-Whitney U test. Categorical variables were analyzed using Chi-square or Fisher's exact test. A $p < 0.05$ was considered statistically significant.

RESULTS

The study enrolled 140 patients with equal distribution between HD and CVD groups. Age distribution showed 68.5% of cases in 31-70 years range, with a statistically significant association between age and disease distribution ($p = 0.035$). Male predominance was observed (65.7%) across all categories, though gender showed no significant correlation with disease coexistence ($p = 0.544$). Majority of patients were overweight (25.7%) or obese (39.3%), but BMI showed no significant association with disease distribution ($p = 0.368$).

Symptom analysis revealed distinct patterns between isolated and concomitant cases. Bleeding was significantly more prevalent in concomitant HD cases (90.9%) compared to isolated HD (74.6%) ($p < 0.05$). Constipation duration showed no significant correlation with disease type, though patients with prolonged constipation (>5 years) comprised the majority across all groups. Bristol stool scale distribution was similar across disease categories ($p = 0.972$).

Table 1: Demographic and risk factor distribution.

Characteristics	Total, (n=140) (%)	Isolated HD, (n=59) (%)	Isolated CVD, (n=21) (%)	Concomitant, (n=60) (%)	P value
Age >50 years	69 (49.3)	28 (47.5)	14 (66.7)	27 (45.0)	0.035*
Male gender	92 (65.7)	38 (64.4)	12 (57.1)	42 (70.0)	0.544
BMI ≥ 25 kg/m ²	91 (65.0)	39 (66.1)	12 (57.1)	40 (66.7)	0.368
Standing ≥ 9 hrs	28 (20.0)	9 (15.3)	7 (33.3)	12 (20.0)	0.132
Constipation >5 years	96 (68.6)	40 (67.8)	12 (57.1)	44 (73.3)	0.221

* $p < 0.05$ statistically significant.

Table 2: Symptomatology and risk factor analysis.

Symptoms	Isolated HD (%)	Isolated CVD (%)	Concomitant (%)	P value
Bleeding	74.6	N/A	90.9	<0.05*
Itching	62.7	N/A	27.3	<0.05*
Pain	6.1	N/A	12.5	0.456

Continued.

Symptoms	Isolated HD (%)	Isolated CVD (%)	Concomitant (%)	P value
Soiling	24.2	N/A	12.5	0.234
Constipation >5 years	67.8	57.1	73.3	0.221
Hard stool (Bristol 1-3)	44.2	16.3	39.5	0.972
Normal stool (Bristol 4-5)	38.7	16.1	45.2	0.972
Standing ≥9 hours	15.3	33.3	20.0	0.132

*p<0.05 statistically significant

Disease distribution analysis revealed 42.9% concomitant cases, 42.1% isolated HD, and 15.0% isolated CVD. Stratification of concomitant cases showed that 54.3% of CVD patients also had HD, while only 31.4% of HD patients had CVD (p=0.004). This asymmetric distribution suggests venous disease serves as a stronger predictor of anorectal vascular congestion than reverse.

Table 3: Disease distribution and concomitance analysis.

Disease category	N	Percentage (%)
Isolated HD	59	42.1
Isolated CVD	21	15.0
Concomitant HD + CVD	60	42.9
HD in CVD patients	38/70	54.3
CVD in HD patients	22/70	31.4

p=0.004 for HD in CVD vs CVD in HD.

DISCUSSION

This study demonstrates a high prevalence of concomitant HD and CVD (42.9%), nearly equal to isolated HD cases (42.1%). The statistically significant asymmetric relationship between HD in CVD patients (54.3%) versus CVD in HD patients (31.4%) supports the hypothesis that chronic venous hypertension and stasis predispose patients to hemorrhoidal engorgement more than localized anorectal pathology progresses to systemic venous dysfunction.⁵

Age emerged as a significant determinant (p=0.035), with HD predominating in younger groups due to lifestyle factors, while CVD increases in older adults due to progressive vascular dysfunction. The male predominance (65.7%) aligns with previous research, though gender itself does not influence disease coexistence (p=0.544). Despite the majority being overweight or obese, BMI showed no significant correlation with disease distribution, suggesting other factors like constipation, straining, and occupational behaviors play larger roles.⁶

Symptom analysis revealed distinct patterns with bleeding significantly more prevalent in concomitant HD cases (90.9% vs 74.6%, p<0.05), suggesting that concurrent venous insufficiency may exacerbate hemorrhoidal symptoms. The lack of correlation between constipation duration and disease type (p=0.221) indicates that chronic straining alone does not

independently predict disease coexistence, emphasizing the multifactorial nature of these conditions.

These findings have important clinical implications. Patients with lower limb venous insufficiency should be routinely screened for hemorrhoidal symptoms, particularly those with risk factors like obesity and prolonged standing.¹² Treatment strategies should be individualized: predominant hemorrhoidal symptoms require dietary modifications and minimally invasive procedures, while significant venous insufficiency needs targeted vascular interventions including compression therapy and endovenous ablation.¹³⁻¹⁵

Limitations

Include single-center design limiting generalizability, reliance on self-reported data subject to recall bias, and cross-sectional design capturing relationships at one time point. Future research should employ longitudinal designs with larger multicenter samples to clarify causal relationships and optimize therapeutic strategies.

CONCLUSION

This study reveals a high prevalence of coexisting HD and CVD (42.9%), particularly in older adults. The significantly higher rate of HD in CVD patients (54.3%) supports the hypothesis of systemic venous insufficiency contributing to anorectal vascular pathology. Routine screening for HD in CVD patients should be integrated into clinical practice. A multidisciplinary approach addressing both vascular and anorectal pathologies is essential for optimal patient care.

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