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TRIMESTER-BASED ASSESSMENT OF HEMORRHOIDS AND ANAL FISSURES DURING PREGNANCY AND POSTPARTUM: A PROSPECTIVE STUDY AMONG WOMEN"

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ABSTRACT

Introduction: Hemorrhoids and anal fissures are among the most frequent anorectal disorders affecting pregnant and postpartum women. Physiological, hormonal, and mechanical changes during gestation increase susceptibility to perianal pathology.

Aim and Objective: This prospective study aimed to assess prevalence, trimester-wise distribution, and associated risk factors for hemorrhoids and anal fissures among pregnant women across tertiary care centres in North India.

Material and Methods: A total of 510 pregnant women were enrolled from three tertiary care centres between April 2024 and September 2025. Each participant underwent clinical evaluation at four intervals—first trimester, third trimester, immediate postpartum, and one month postpartum. Women with gastrointestinal, inflammatory bowel, or malignancy-related conditions were excluded. Data were analyzed using SPSS v26 with logistic regression.

Results: Out of 510 women, 252 (49.4%) developed perianal disorders. The majority occurred in the third trimester (n = 173; 68.6%), followed by the second trimester (n = 54; 21.4%) and postpartum period (n = 25; 9.9%). Hemorrhoids alone were present in 180 (71.4%) cases, while 72 (28.6%) had both hemorrhoids and fissures. Constipation (64.2%), prolonged second stage of labour, and birth weight >3900 g were key risk factors ($p < 0.05$). Vaginal delivery was observed in 414 (81.2%) and cesarean section in 96 (18.8%).

Conclusion: Perianal disorders remain a common maternal morbidity during late pregnancy and postpartum, predominantly driven by constipation, high fetal weight, and prolonged labour. Early antenatal screening and preventive measures are critical for reducing incidence and improving quality of life.

Keywords: Pregnancy, postpartum, hemorrhoids, anal fissures, constipation, perianal disorders, multicentric study

INTRODUCTION

Hemorrhoids and anal fissures are among the most common perianal disorders encountered during pregnancy and the postpartum period. Physiological and hormonal alterations—such as increased venous pressure, reduced intestinal motility due to progesterone, and the mechanical effects of the enlarging uterus—predispose pregnant women to these conditions [1,2].

Hemorrhoids are essentially dilated varices of the anal venous plexus, and fissures are defined as linear tears in the anoderm, often resulting from passage of hard stools and chronic constipation. The reported prevalence of these disorders during pregnancy and after childbirth varies between 25% and 50%, with most cases presenting in the third trimester or early postpartum period. Large cohort studies demonstrate that almost half of all pregnant women may experience at least one form of perianal disease, which aligns with the incidence found in both Western and Asian populations.

The prevalence of hemorrhoids during pregnancy varies between 30% and 50%, with most cases developing during the third trimester or soon after delivery [3–5]. Anal fissures are less common but often coexist with hemorrhoids due to chronic constipation, straining, and passage of hard stools [6,7].

Progesterone-mediated smooth muscle relaxation slows intestinal transit, resulting in constipation, while mechanical pressure from the gravid uterus compresses pelvic veins and the inferior vena cava, promoting venous stasis [8]. Postpartum, the strain of vaginal delivery and high birth weight infants further exacerbate these effects [9,10].

Despite their frequency, perianal disorders are often underreported due to embarrassment and stigma. Studies have shown that less than half of affected women seek medical attention [11,12]. The resultant pain, bleeding, and discomfort can significantly impair maternal wellbeing, disrupt sleep, and hinder postnatal recovery [13].

Recent literature emphasizes prevention through adequate hydration, dietary fiber, physical activity, and stool softeners [14,15].

However, data from large Indian cohorts remain limited. Therefore, this study was undertaken to evaluate trimester-wise incidence, risk factors, and clinical patterns of hemorrhoids and anal fissures among pregnant women attending tertiary care centres in North India

MATERIAL AND METHODS

Study Design and Setting

This prospective observational study was conducted in Uttar Pradesh between April 2024 and September 2025 in the Department of Obstetrics and Gynaecology.

Sample Size

A total of 510 pregnant women aged 18–45 years were recruited using stratified random sampling.

Inclusion Criteria

1. Pregnant women attending antenatal clinics at any gestational age.
2. Consent for participation and follow-up up to one month postpartum.

Exclusion Criteria

1. Pre-existing anorectal disorders (hemorrhoids, fissure, or prolapse).

2. Chronic inflammatory bowel disease or colorectal carcinoma.
3. Systemic illness (e.g., cirrhosis, coagulation disorders).
4. Non-consenting participants.

Data Collection

Participants were assessed in four phases: first trimester, third trimester, within 48 hours postpartum, and one month postpartum.

Symptoms recorded included pain, itching, bleeding, protrusion, constipation, and straining. Diagnosis was confirmed by per rectal and anoscopic examination when required.

Statistical Analysis

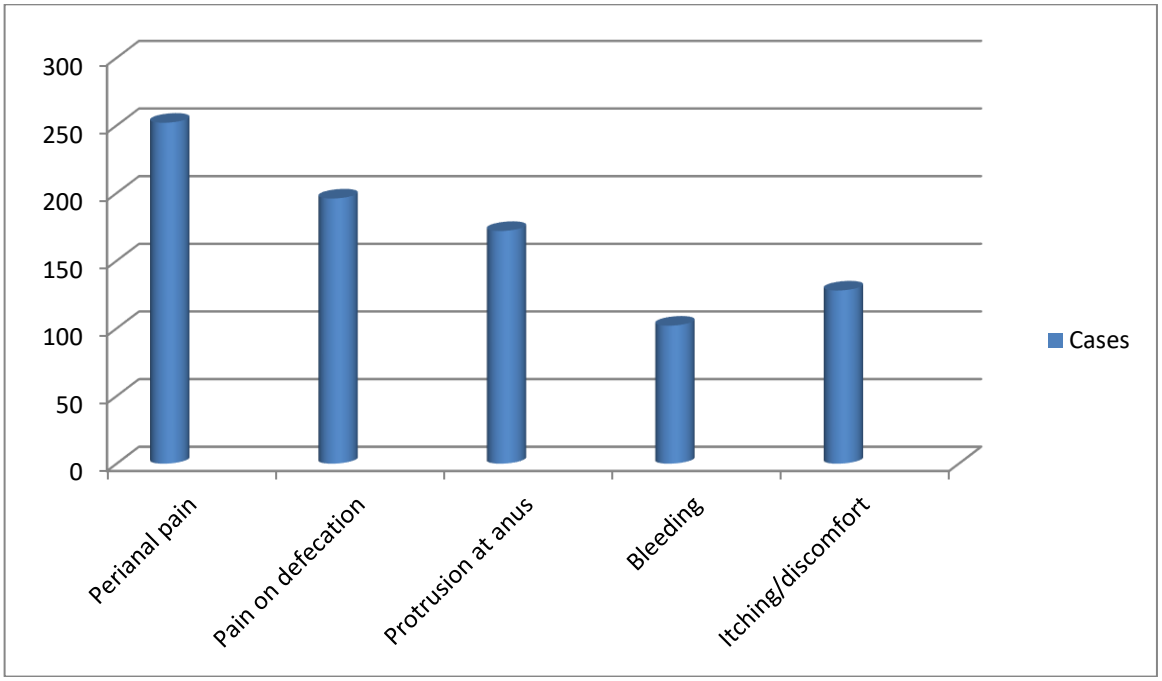
Data were analyzed using SPSS version 26. Chi-square and logistic regression tests were applied to determine significant risk factors. A p-value < 0.05 was considered statistically significant.

RESULTS

Out of 510 participants, 252 (49.4%) developed perianal disorders. The mean age was 28.9 years (range 18–44). Multigravida women represented 58.3%. Vaginal delivery occurred in 414 (81.2%) women and cesarean section in 96 (18.8%).

Table 1. Frequency of Symptoms among 252 Symptomatic Women

Symptom	Frequency (%)
Perianal pain	252 (100%)
Pain on defecation	196 (77.7%)
Protrusion at anus	172 (68.2%)
Bleeding	102 (40.5%)
Itching/discomfort	128 (50.8%)



Graph No. 1: Graphical Representation of Frequency of Symptoms among 252 Symptomatic Women

Table 2. Time of Onset of Perianal Disease

Time of Onset	Cases (%)
1st Trimester	0 (0%)
2nd Trimester	54 (21.4%)
3rd Trimester	173 (68.6%)
Postpartum (1 month)	25 (9.9%)

Table 3. Diagnosis among Affected Women

Diagnosis	Cases (%)
Hemorrhoids only	180 (71.4%)
Hemorrhoids with anal fissure	72 (28.6%)

Table 4. Risk Factors Associated with Perianal Disease

Variable	Odds Ratio (OR)	p-value
Constipation during pregnancy	4.3	<0.001
Baby weight > 3900 g	3.9	0.002
Straining > 20 min during delivery	3.6	0.003
Previous perianal disease	3.4	0.004
Multiparity	1.6	0.08 (borderline)

The majority occurred in the third trimester (n = 173; 68.6%), followed by the second trimester (n = 54; 21.4%) and postpartum period (n = 25; 9.9%). Hemorrhoids alone were present in 180 (71.4%) cases, while 72 (28.6%) had both hemorrhoids and fissures. Constipation (64.2%), prolonged second stage of labour, and birth weight >3900 g were key risk factors ($p < 0.05$). Vaginal delivery was observed in 414 (81.2%) and cesarean section in 96 (18.8%).

DISCUSSION

The present study identified a 49.4% incidence of perianal disorders during pregnancy and postpartum, corroborating global data (40–55%) [16–18]. The third trimester showed the highest prevalence, attributable to maximal venous pressure, hormonal changes, and constipation [19,20].

Constipation emerged as the strongest independent risk factor, consistent with prior findings by Abramowitz et al. [21] and Poskus et al. [22]. Fetal macrosomia and prolonged second stage of labour also significantly increased the risk, as reported by Van Tol et al. [23] and Deans et al. [24].

The coexistence of hemorrhoids and fissures in 28.6% of cases underscores their shared etiopathogenesis. Delayed management often converts hemorrhoids into fissures due to chronic straining [25].

Educational counselling, adequate hydration, high-fiber diet, stool softeners, and proper toilet posture can reduce incidence. Surgical or procedural interventions should be reserved for refractory cases, preferably deferred until after delivery [26–28].

Despite high prevalence, awareness remains low in low- and middle-income countries. Integrating perianal assessment into antenatal care can promote early diagnosis and intervention, improving maternal quality of life [29,30].

CONCLUSION

Perianal disorders, primarily hemorrhoids and anal fissures, are prevalent complications during the third trimester and postpartum period. Constipation, prolonged labour, and high birth weight are major contributors. Preventive measures—particularly dietary counseling and early stool regulation—can minimize morbidity.

LIMITATIONS

This study was limited to short-term postpartum follow-up . Long-term recurrence, management outcomes, and psychological impact were not assessed. Future multicentric longitudinal studies are recommended

ECLARATIONS:

Conflicts of interest: There is no any conflict of interest associated with this study
Consent to participate: There is consent to participate.
Consent for publication: There is consent for the publication of this paper.
Authors' contributions: Author equally contributed the work.

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