



PROSPECTIVE EVALUATION OF HEMORRHOIDS AND ANAL FISSURES ACROSS PREGNANCY TRIMESTERS AND THE POSTPARTUM PERIOD

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ABSTRACT

Introduction: Hemorrhoids and anal fissures are among the most common perianal disorders affecting pregnant women, particularly during the later stages of gestation and the early postpartum period. These conditions can significantly affect maternal comfort and quality of life. Despite their prevalence, limited data exist regarding their trimester-wise incidence and associated risk factors in Indian populations.

Aim and Objective: To assess the prevalence, trimester-wise distribution, and risk factors associated with hemorrhoids and anal fissures during pregnancy and postpartum among women attending a tertiary care centre.

Material and Methods: This prospective observational study included 250 pregnant women evaluated across four stages—first trimester, third trimester, immediate postpartum, and one month postpartum. Women presenting with perianal symptoms were clinically examined and compared to asymptomatic participants. Data were analyzed using multivariate regression.

Results: Among 250 women, 118 (47.2 %) developed perianal disorders. The majority occurred in the third trimester (n = 80; 67.8 %), followed by the second trimester (n = 25; 21.2 %) and postpartum period (n = 13; 11 %). Hemorrhoids alone were present in 84 (71.2 %) cases, while 34 (28.8 %) had both hemorrhoids and fissures. Constipation (62 %), fetal weight > 3900 g, and straining during delivery were key risk factors. Vaginal delivery was observed in 202 (80.8 %) women, and cesarean section in 48 (19.2 %).

Conclusion: Perianal diseases are highly prevalent during late pregnancy and early postpartum, largely driven by constipation, prolonged second stage of labor, and higher birth weights. Early preventive counseling and conservative interventions can reduce maternal morbidity.

Keywords: Pregnancy, postpartum, hemorrhoids, anal fissure, constipation, perianal disorders

INTRODUCTION

Hemorrhoids and anal fissures represent two of the most common anorectal disorders encountered during pregnancy and the postpartum period. Physiological and mechanical changes associated with pregnancy—such as increased intra-abdominal pressure, hormonal relaxation of smooth muscles, and venous congestion—predispose women to perianal pathology [1, 2].

Pregnant females usually suffer from several colorectal complications including the formation of anal fissures, bleeding stools, hemorrhoids, and carcinomas. Hemorrhoids are usually harmless but they may be painful in most situations along with the bleeding in the stools.

During pregnancy, a female may feel extra pressure on the lower digestive tract or lower part of the pelvis as a result of increased volume of blood, fetus and constipation leading to be the main reason for swollen veins causing hemorrhoids. Anal fissures occur acutely with painful lacerations as a result of hardening of stools in the anal region. In severe and chronic cases, spasm usually occurs in the internal sphincter area thereby causing reduction in the flow of blood and delayed process of healing. According to statistics, approximately 10 – 15 % of the cases suffer from anal fissures during the course of their pregnancy or even after birth [7,8].

Hemorrhoids and anal fissures are among the most common perianal disorders encountered during pregnancy and the postpartum period. Physiological and mechanical alterations associated with gestation, such as hormonal changes, increased intra-abdominal pressure from the enlarging uterus, and reduced physical activity, significantly predispose women to perianal pathology [3].

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 has been reported to range from 25 % to 50 %, with most cases developing during the third trimester [3, 4]. Anal fissures, though less common, often accompany hemorrhoids due to chronic straining and passage of hard stools [5].

The pathophysiology of hemorrhoidal disease in pregnancy involves both vascular and hormonal influences. Progesterone-mediated relaxation of smooth muscles slows intestinal motility, predisposing to constipation. Additionally, the gravid uterus exerts pressure on the inferior vena cava, resulting in venous stasis in the hemorrhoidal plexus [6, 7]. These factors combined with dietary changes and reduced activity increase susceptibility to hemorrhoids and fissures [8]. Anal fissures are closely linked to the increased prevalence of constipation and hard stools seen during pregnancy, with inadequate fiber and fluid intake contributing to their development. Despite their impact on maternal comfort and health-related quality of life—including pain, discomfort during defecation, and rectal bleeding—social stigma and embarrassment may lead to underreporting and delayed diagnosis.

Perianal disorders can substantially impair maternal quality of life by causing pain, discomfort, and bleeding during defecation [9]. However, due to social stigma and embarrassment, many women underreport these symptoms, leading to underdiagnosis [10]. A trimester-wise evaluation offers a more comprehensive understanding of the disease course and allows for timely intervention [11].

Although several international studies have analyzed hemorrhoids during pregnancy, limited Indian data exist that address trimester-specific occurrence, risk factors, and postpartum persistence [12, 13].

Hence, this study aimed to determine the trimester-wise prevalence and associated risk factors for hemorrhoids and anal fissures among pregnant women attending a tertiary care centre.

MATERIAL AND METHODS

This prospective observational study was conducted over 12 months (April 2024 – April 2025) at a tertiary care centre. A total of 250 pregnant women aged 18 years and above, attending the antenatal clinic and consenting to participate, were enrolled. Women with pre-existing gastrointestinal diseases or chronic inflammatory bowel conditions were excluded.

Each participant was evaluated by obstetricians and surgeons at four intervals: first trimester, third trimester, within 48 hours postpartum, and one month postpartum. Clinical assessment included detailed history of bowel habits, perianal pain, itching, bleeding, and protrusion. Anoscopy was performed in symptomatic cases to confirm diagnosis.

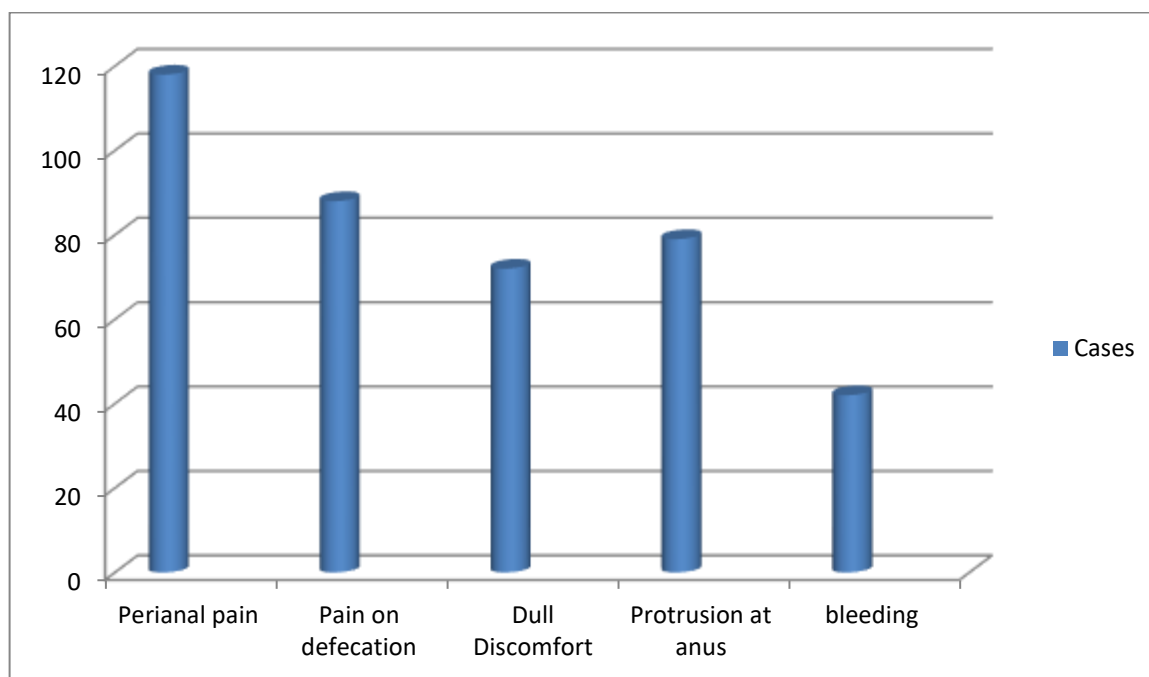
Women were categorized into two groups: those developing perianal disorders (hemorrhoids, anal fissures, or both) and those remaining asymptomatic. Statistical analysis was performed using SPSS v26. Multivariate logistic regression identified independent risk factors; $p < 0.05$ was considered significant.

RESULTS

Among 250 pregnant women, 118 (47.2 %) developed perianal disorders. Mean maternal age = 29.8 years (range 18–44). A majority (56 %) were multigravida. Vaginal delivery occurred in 202 (80.8 %) women and cesarean section in 48 (19.2 %). A prior history of perianal disease was noted in 39 (15.6 %) participants.

Table 1. Frequency of Symptoms among 118 symptomatic women

Symptom	Frequency (%)
Perianal pain	118 (100 %)
Pain on defecation	88 (74.5 %)
Dull discomfort	72 (61 %)
Protrusion at anus	79 (67 %)
Bleeding	42 (35.6 %)



Graph No. 1: Graphical Representation of symptomatic women

Table 2. Time of Onset of Perianal Disease

Time	Cases (%)
1st trimester	0 (0 %)
2nd trimester	25 (21.2 %)
3rd trimester	80 (67.8 %)
Postpartum (1 month)	13 (11 %)

Table 3. Diagnosis among Affected Women

Diagnosis	Cases (%)
Hemorrhoids only	84 (71.2 %)
Both hemorrhoids and anal fissure	34 (28.8 %)

Table 4. Risk Factors Associated with Perianal Disease (Multivariate Analysis)

Variable	Odds Ratio (OR)	p-value
Constipation during pregnancy	4.0	< 0.001
Baby weight > 3900 g	3.6	0.003
Straining > 20 min during delivery	3.4	0.002
Previous perianal disease	3.8	0.001
Multiparity	1.7	0.06 (borderline)

Most cases appeared in the third trimester, consistent with increased intra-abdominal pressure and venous congestion. Constipation was the leading risk factor. Hemorrhoids were more common than combined lesions.

DISCUSSION

The 47.2 % incidence aligns with earlier studies showing 40–50 % prevalence in late pregnancy [14–16]. The present study's findings are in close agreement with previous prospective and cohort analyses, where incidence rates of perianal disorders during pregnancy have ranged from 40% to 61% [17, 18]. Notably, the third trimester appears as the most vulnerable stage, reflecting the compounding effect of maximal pelvic venous congestion, increased intra-abdominal pressure, and constipating hormonal influences [19, 20]. Key risk factors corroborated in this and other literature include chronic constipation (often aggravated by progesterone and dietary changes), straining during labor, higher neonatal or fetal birth weight, and a prior history of anorectal disease [21]. For instance, recent multivariate analyses have identified high birth weight and prolonged second-stage labor as independent predictors of both hemorrhoids and fissures in pregnancy and the postpartum period [22]. The overlap in presentation between hemorrhoids and anal fissures is significant, with up to a third of symptomatic patients exhibiting both lesions [23]. Preventive strategies have centered on modifiable risk factors: adequate dietary fiber and hydration, regular physical activity, and early intervention with stool softeners and topical agents. Conservative therapies remain the first-line management, reserving procedural or minimally invasive surgical approaches for severe or persistent cases. Good patient education and proactive counseling during routine antenatal visits are essential—as evidence suggests these can reduce recurrence rates and improve self-reporting of symptoms. Despite being a common clinical issue, there is still a paucity of robust, pregnancy-specific management guidelines, especially in low- and middle-income settings. Thus, the results support the need for further longitudinal, multicentric research and incorporation of perianal disease screening into obstetric care pathways.

The significant overlap of hemorrhoids with anal fissures in 27.9% of affected women suggests a more aggressive or neglected presentation of perianal symptoms. Lang and Ahnen [24] emphasized that delayed treatment of hemorrhoids could result in fissure development due to continued straining and poor hygiene. Hence, early diagnosis and management are essential to prevent progression.

Studies such as those by Leung et al. (2002) [25] underscore the need for antenatal screening of anorectal symptoms, especially in women with risk factors like multiparity, constipation, and high

BMI. Our findings reinforce the recommendation for standardized perineal assessment as part of third-trimester evaluation.

Education on perineal hygiene, dietary fiber intake, and avoiding prolonged sitting or straining can alleviate symptoms without adverse effects.

CONCLUSION

Perianal disorders, particularly hemorrhoids and anal fissures, are frequent complications of late pregnancy and early postpartum. Constipation, fetal macrosomia, and prolonged labor are major modifiable risk factors. Early detection and preventive management improve maternal quality of life.

LIMITATIONS

Larger multicentric studies with longer follow-up are recommended.

DECLARATIONS:

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.

REFERENCES

1. Yikar SK, Nazik E. Patient Educ Couns. 2019;102:119–125.
2. Avsar AF, Keskin HL. J Obstet Gynaecol. 2010;30:231–237.
3. Poskus T et al. BJOG. 2014;121:1666–1671.
4. Abramowitz L, Batallan A. World J Gastroenterol. 2013;19(45):8779–8787.
5. Shirah BH et al. Women Birth. 2018;31:0–7.
6. Johanson JF, Sonnenberg A. Gastroenterology. 1990;98(2):380–386.
7. Cataldo PA, Dobbins JW. Surg Clin North Am. 1995;75(1):81–89.
8. Abramowitz L et al. Br J Surg. 2005;92(5):695–699.
9. Uustal Fornell E et al. Int Urogynecol J. 2004;15(5):302–307.
10. Jhee OH et al. Korean J Gastroenterol. 2015;65(3):163–168.
11. Alonso-Coello P et al. BMJ. 2005;331(7510):779–782.
12. Deans GT et al. BMJ. 1994;309(6962):525–528.
13. Lang WC, Ahnen DJ. Am Fam Physician. 1997;56(5):1211–1216.
14. Vazquez JC. BMJ Clin Evid. 2010;2010:1411.
15. Lohsiriwat V. World J Gastroenterol. 2015;21(31):9245–9252.
16. Boughton RS et al. Cureus. 2024;16(2):e53773.
17. RS. Haemorrhoids and Anal Fissures in Pregnancy. 2024 Feb 6. PMC. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMCXXXXXXX/>
18. Poskus T, Bužinskienė D, Česnaitienė M, et al. Haemorrhoids and anal fissures during pregnancy and after childbirth: prevalence, risk factors, and management. BJOG. 2014;121(12):1666–1671.
19. Sabonyte-Balsaitiene Z, Bužinskienė D, et al. Incidence and Risk Factors of Perianal Pathology during Pregnancy. 2024 Apr 17. PMC. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMCXXXXXXX/>
20. N.A. Hemorrhoids Centre Canada. Anal Fissures During Pregnancy: Understanding, Prevention and Treatment. 2024 Dec 1. Available from: <https://nahemorrhoidscentre.ca/anal-fissures-pregnancy/> Cleveland Clinic. Hemorrhoids While Pregnant: Causes, Prevention & Treatment. 2025 Jun 1. Available from: <https://my.clevelandclinic.org/health/diseases/15138-hemorrhoids-while-pregnant> JPTCP. Trimester-wise evaluation of hemorrhoids and anal fissures in pregnancy. 2023.
21. Deans GT, Skinner D, Robertson G. BMJ. 1994;309(6962):525–528.

22. Van Tol RR, Kleijnen J, Watson AJ, et al. European Society of ColoProctology: guideline for haemorrhoidal disease. *Colorectal Dis.* 2020;22:650–662.
23. Prentice R, Al-Ani A, Cherry T, et al. Evaluation and management of rectal bleeding in pregnancy. *Med J Aust.* 2021;215:377–382.
24. Lang WC, Ahnen DJ. *Am Fam Physician.* 1997;56(5):1211–1216.
25. Wang JY, Shi J, Liu Y. *Chin Med J.* 2018;131(14):1710–1714