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TRIMESTER-WISE EVALUATION OF HEMORRHOIDS AND ANAL FISSURES DURING PREGNANCY AND POSTPARTUM: A PROSPECTIVE OBSERVATIONAL STUDY OF WOMEN

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ABSTRACT

Introduction: Pregnant women frequently experience haemorrhoids and anal fissures (HAF), which can significantly impair their quality of life. Despite the condition's prevalence, little is known about its natural course during pregnancy, there is little proof, and there are no official standards or recommendations for therapy.

Aim and Objective: To evaluate the prevalence and risk factors of hemorrhoids and anal fissures during pregnancy and postpartum.

Material and Methods: This was a Prospective observational study carried out in the Department of Obstetrics and Gynecology and Department of Surgery. The Women were assessed in four clinical visits. Those developing perianal diseases were compared with those who did not.

Results: In the present study a total of 300 women were studied out of which there were 147 (49%) who developed perianal disease. Most cases occurred in the third trimester (n=98; 66.6%), followed by the second trimester (n=33; 22.4%) and postpartum period (n=16; 10.9%). Among affected women, 106 (72.1%) had only hemorrhoids, while 41 (27.9%) had both hemorrhoids and anal fissure. Vaginal delivery occurred in 243 women (81%), and 57 (19%) underwent caesarean section. Significant risk factors included constipation (64%), prolonged straining during delivery (≥20 minutes), and baby weight >3900g.

Conclusion: Perianal diseases are common in late pregnancy and early postpartum, strongly associated with constipation, high birth weight, and prolonged second stage of labor.

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

INTRODUCTION

Perianal disorders, such as hemorrhoids and anal fissures, are frequent in pregnant and postpartum women due to physiological changes including increased intra-abdominal pressure, constipation, and vascular congestion. Studies indicate a wide variation in incidence (25–50%) across populations [1]. Up to 85% of pregnant women can have symptoms of HAF. Sixteen percent of patients can be affected in the long term, with symptoms six months after delivery [2,3].

Anal and perianal venous plexus variceal dilatations are known as haemorrhoids. Symptomatic anal cushion hypertrophy is possible. In terms of prolapse, haemorrhoids can be categorised as follows: first degree (no prolapse); second degree (prolapse on straining and spontaneous reduction); third degree (prolapse on straining and need for manual reduction); and fourth degree (prolapsed and irreducible). A "split or tear in the anal canal" is known as an anal fissure [4].

These conditions can impair maternal quality of life and may require intervention if persistent. However, few large-scale prospective studies have examined their incidence and risk factors in a structured, trimester-wise follow-up design [5].

Pregnancy-related increases in circulating blood volume and pressure on the inferior vena cava due to elevated abdominal cavity pressure are the two main causes of HAF.

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 [6].

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].

Despite the condition being common, there are limited formal guidelines, evidence or recommendations on treatment. In addition, there is little known about the natural or predicted course of haemorrhoids and fissures during pregnancy. Women might not ask for medical advice due to not knowing the condition or because the condition is related to an intimate part of the body [9,10].

To recognize occurrence also danger issues of hemorrhoids and fissures throughout pregnancy and afterwards childbirth. Therefore, this study was conducted to estimate the prevalence of hemorrhoids and anal fissures and identify their independent risk factors in a cohort of 300 women followed from the first trimester through one month postpartum.

MATERIAL AND METHODS

This was a Prospective observational study carried out in the Department of Obstetrics and Gynecology and Department of Surgery for a period of 12months i.e, April 2024 to April 2025 at a Tertiary care centre. The Women were assessed in four clinical visits. Those developing perianal diseases were compared with those who did not.

Three hundred pregnant women over the age of 18 years, attending antenatal clinics and consenting to participate, were enrolled.

Each woman was examined by a gynecologist at four intervals:

- First trimester
- Third trimester
- First/second postpartum day
- One month postpartum

Demographic, obstetric, social, and clinical data were collected using structured interviews. Women

were assessed for perianal symptoms including pain, itching, protrusion, and bleeding. If symptomatic, a perianal and anoscopic examination was conducted. The presence of hemorrhoids, fissures, or both was recorded.

Data Analysis: Participants were divided into two groups: those with perianal disease and those without. Risk factors were analyzed using multivariate logistic regression.

RESULTS

In the present study a total of 300 women were studied out of which, 147 (49%) developed perianal disorders, mostly in the third trimester (66.6%). Hemorrhoids alone were present in 72.1%, while 27.9% had both hemorrhoids and anal fissures. Major risk factors included constipation (64%), baby weight >3900 g, and prolonged straining during labor (>20 minutes).

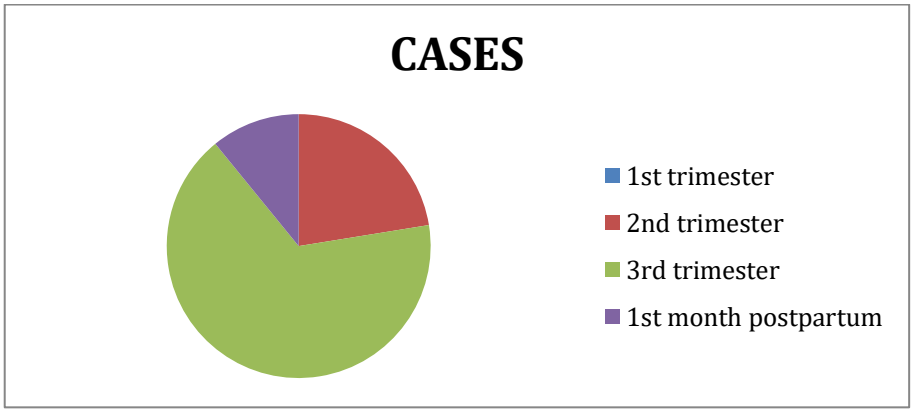
- Age: Mean 30.2 years (range 17–45)
- Parity: 135 (45%) primigravida, 165 (55%) multigravida
- Delivery mode: 243 vaginal (81%), 57 caesarean (19%)
- Perianal history: 126 (42%) had previous history of perianal disease

Table 1. Frequency of Symptoms among 147 symptomatic women

Symptom	Frequency (%)
Perianal pain	147 (100%)
Dull discomfort	93 (63.3%)
Pain on defecation	112 (76.2%)
Protrusion at anus	108 (73.4%)
Bleeding	49 (33.3%)

Table 2. Time of Onset of Perianal Disease

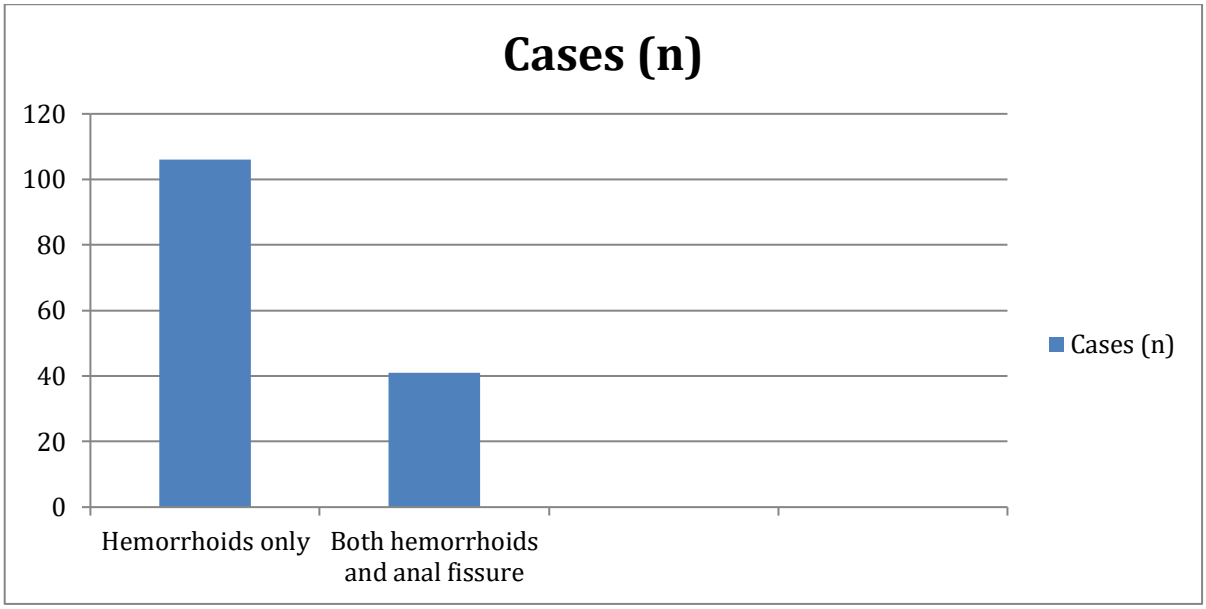
Time	Cases (n)	Percentage (%)
1st trimester	0	0
2nd trimester	33	22.4
3rd trimester	98	66.6
1st month postpartum	16	10.9



Graph No. 1: Graphical representation of Time of Onset of Perianal Disease

Table 3. Diagnosis among Affected Women

Diagnosis	Cases (n)	Percentage (%)
Hemorrhoids only	106	72.1
Both hemorrhoids and anal fissure	41	27.9



Graph No. 2: Graphical representation of Diagnosis among Affected Women

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

Variable	Odds Ratio (OR)	p-value	Significance
Constipation during pregnancy	4.1	<0.001	Significant
Baby weight >3900 g	3.7	0.002	Significant
Straining >20 min during delivery	3.5	0.001	Significant
Previous perianal disease	3.9	0.0005	Significant
Multiparity	1.8	0.05	Borderline

The 49% incidence of perianal disease in this study aligns with earlier research reporting 36–50% prevalence during late pregnancy and puerperium. Hemorrhoids alone were more common than combined lesions. Constipation was a highly significant and preventable risk factor. The third trimester was the most vulnerable phase, attributed to peak intra-abdominal pressure and hormonal influences.

DISCUSSION

Perianal disorders such as hemorrhoids and anal fissures are commonly reported in pregnant and postpartum women, with prevalence rates ranging from 25% to 50% globally. The physiological and mechanical changes during pregnancy contribute significantly to the development of these disorders. The increased intra-abdominal pressure due to the enlarging uterus, progesterone-mediated smooth muscle relaxation, and vascular dilation are central contributing factors. Constipation, often aggravated during pregnancy, is a major risk factor that intensifies venous pressure and precipitates the development of hemorrhoids.

Our study observed a 49% incidence of perianal disease in a cohort of 300 pregnant women. This finding is consistent with multiple studies including Abramowitz et al. (2005) [11], who reported an incidence rate of approximately 40% during the third trimester. Similarly, Tosal Herrero et al. [12] (2001) and Wald (2003) [13] corroborated a high prevalence of hemorrhoidal symptoms, primarily in late gestation. In our study, 72.1% of the affected participants had isolated hemorrhoids, and 27.9% presented with concurrent anal fissures.

The third trimester emerged as the most vulnerable period in our study, with 66.6% of perianal disorders identified during this phase. This aligns with the observations by Uustal Fornell et al. (2004) [14], who emphasized the peak in pelvic venous pressure and reduced gastrointestinal

motility. Anoscopically confirmed hemorrhoids were more prevalent than fissures, suggesting that vascular engorgement supersedes mucosal trauma in frequency.

A significant risk factor identified in our study was constipation during pregnancy, present in 64% of symptomatic women. This is supported by the findings of Johanson and Sonnenberg [15], who demonstrated that constipation alone can increase the risk of hemorrhoids four-fold. Dietary modifications and sedentary lifestyles further contribute to bowel irregularities, especially in late pregnancy.

The relationship between fetal macrosomia and perianal disease has been described in prior literature. Our study indicated that birth weight >3900 g increased the odds of perianal disorders by 3.7 times, a finding parallel to the study by Cataldo et al. [16] Increased fetal weight correlates with increased intra-abdominal and perineal pressure during delivery.

Another notable finding from our study was the association of prolonged straining during delivery (>20 minutes) with perianal complications. Jhee et al. (2015) [17] highlighted that excessive perineal strain not only contributes to hemorrhoidal prolapse but also increases the risk of fissure formation due to trauma and ischemia to the anoderm. Active management of the second stage of labor is critical to reduce these complications.

Prior history of perianal disease significantly increased recurrence rates in our cohort. This trend has been reported by Abramowitz and Batallan (2013) [18], who suggested that compromised vascular integrity and previous sphincter trauma predispose to recurrences, especially in multiparous women. Our study found multiparity to have a borderline association, aligning with this hypothesis.

The role of preventive strategies has been well documented. Alonso-Coello et al. (2005) [19] conducted a systematic review and found fiber supplementation to be highly effective in reducing both constipation and hemorrhoid severity. Similar interventions are recommended by Deans et al. [20] and are feasible during prenatal care. Despite their benefits, implementation in routine obstetric practice remains suboptimal.

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 [21] 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) [22] 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.

Recent research by Lee et al. (2016) [23] and Vazquez (2010) [24] focused on non-pharmacological management including warm sitz baths, hydration, stool softeners, and pelvic floor exercises. In our setting, we found that early counseling on bowel habits and diet was associated with fewer symptomatic cases in the postpartum visit. Though not statistically analyzed, this observational insight should be explored in further intervention trials.

The uniqueness of our study lies in its trimester-wise structured follow-up and postpartum re-evaluation. Many previous studies relied on single-time-point or retrospective designs, potentially missing interval-specific symptomatology. Our data support the utility of multi-phase clinical assessments for early identification and timely intervention of perianal conditions.

While surgical management is rarely indicated during pregnancy due to fetal concerns, conservative measures are both safe and effective. Lohsiriwat (2015) [25] emphasized individualized therapy based on symptom severity and quality-of-life impact. Education on perineal hygiene, dietary fiber intake, and avoiding prolonged sitting or straining can alleviate symptoms without adverse effects.

In conclusion, our study highlights the multifactorial nature of hemorrhoids and anal fissures in pregnancy. Risk stratification using modifiable and non-modifiable variables should be part of routine prenatal evaluation. Future research should aim at long-term postpartum follow-up and interventional trials focusing on preventive strategies to enhance maternal quality of life.

Conservative measures such as increased dietary fibre, increased fluid intake and bath salts were effective in relieving symptoms for the majority of patients [26].

CONCLUSION

Perianal disorders are common in pregnancy, especially in the third trimester and postpartum. Risk factors like constipation, prolonged second stage of labor, and high birth weight should be addressed through antenatal counseling and preventive care. Timely diagnosis and conservative treatment can reduce maternal morbidity.

Limitations

This study is limited by its single-center design and short follow-up duration. Self-reported symptoms may introduce recall bias. Dietary intake and physical activity data were not systematically recorded, which could influence constipation prevalence.

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.

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