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## Original Article

# Hemorrhoids and related complications in primigravid pregnancy<sup>☆</sup>



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### ABSTRACT

**Purpose:** To identify the effect of pregnancy on the development of external hemorrhoids and constipation.

**Subjects and methods:** This pilot study involved 61 primigravid women without a history of perianal diseases. Each patient was examined and filled a questionnaire between the 11th and 14th gestational week prior to prenatal screening tests. Patients were re-examined and questioned in relation to perianal symptoms and hemorrhoidal changes again in the 24th and 37th gestational weeks.

**Results:** A total of 5, 8, and 11 women had symptomatic external hemorrhoids with or without perianal complications in the 11–14th, 24th, and 37th gestational weeks, respectively. Meanwhile, 27, 25, and 29 women complained about constipation in the 11–14th, 24th, and 37th gestational weeks, respectively. Only 4 (6.6%) patients experienced painful hemorrhoids. The overall morbidity rate was 18% (11 cases). We found a statistically significant relationship between external hemorrhoids/perianal complications and gestation-induced constipation through logistic regression analysis ( $p < 0.001$ ).

**Conclusion:** Various risk factors and biological explanations exist for the high frequency of hemorrhoids during pregnancy. Because participants were primigravid women without a history of perianal complaints, findings suggest a direct effect of pregnancy itself on the development of external hemorrhoids/perianal symptoms.

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<sup>☆</sup> By evaluating 61 primigravid patients without prior perianal disease, we tried to show the effect of pregnancy on development of external hemorrhoids and constipation.

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## Hemorroidas e complicações relacionadas na gestação de primigestas

### R E S U M O

#### Palavras-chave:

Hemorroida

Gestação

Obstipação

**Objetivo:** Identificar o efeito da gestação sobre o desenvolvimento de hemorroidas externas e obstipação.

**Indivíduos e métodos:** Este estudo piloto envolveu 61 mulheres primigestas sem história de doenças perianais. Cada paciente foi examinada e preencheu um questionário entre a 11<sup>a</sup> e a 14<sup>a</sup> semanas de gestação antes dos exames de triagem pré-natal. As pacientes foram reexaminadas e questionadas sobre sintomas perianais e mudanças hemorroidais novamente na 24<sup>a</sup> e 37<sup>a</sup> semanas de gestação.

**Resultados:** Um total de 5, 8 e 11 mulheres apresentaram hemorroidas externas sintomáticas com ou sem complicações perianais na 11-14<sup>a</sup>, 24<sup>a</sup> e 37<sup>a</sup> semanas de gestação, respectivamente. Enquanto isso, 27, 25 e 29 mulheres queixaram-se de obstipação na 11-14<sup>a</sup>, 24<sup>a</sup> e 37<sup>a</sup> semanas de gestação, respectivamente. Apenas 4 (6,6%) pacientes apresentaram hemorroidas dolorosas. A taxa global de morbidade foi de 18% (11 casos). Encontramos uma relação estatisticamente significativa entre hemorroidas externas/complicações perianais e obstipação induzida por gestação por meio de análise de regressão logística ( $p < 0,001$ ).

**Conclusão:** Existem vários fatores de risco e explicações biológicas para a alta frequência de hemorroidas durante a gravidez. Como os participantes eram mulheres primigestas sem história de queixas perianais, os achados sugerem um efeito direto da gestação em si sobre o desenvolvimento de hemorroidas externas/sintomas perianais.

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## Introduction

Gastrointestinal disorders are common during pregnancy; in fact 0.2–1% of pregnant women need to visit a general surgeon during their pregnancies.<sup>1</sup> Hemorrhoids are also extremely common during pregnancy; however, their exact incidence is not known.<sup>2</sup> One study with 835 patients reported a hemorrhoid prevalence during pregnancy of 86%, which was not different from the same age group.<sup>3</sup> Hemorrhoids are also common in the postpartum period. It has been reported that 33% of these patients are suffering from thrombosed external hemorrhoids, or anal fissures during this period.<sup>4</sup> Although various risk factors have been described, the exact mechanism and biological rationale behind pregnancy-related perianal problems are not clear.<sup>5</sup>

Functional constipation is another common issue during pregnancy, with an incidence ranging between 11% and 38%.<sup>2</sup> Unfortunately, there is not enough data to adequately evaluate the effectiveness and safety of pharmacological and non-pharmacological treatment modalities for constipation in pregnancy.<sup>6</sup> However, some risk factors such as older age, high body mass index, and sedentary occupation have been described.<sup>7</sup>

This pilot study aimed to explore the direct effect of gestation-related hormonal, metabolic, and mechanical changes on the development of hemorrhoids and identify the “risk-factor-free” incidence of external hemorrhoids in pregnancy. For this purpose, we focused on primigravid patients without a history of hemorrhoids or perianal complaints as study subjects.

## Subjects and methods

This study involved 61 primigravid women with singleton pregnancies and no history of perianal diseases or systemic disorders that may predispose to hemorrhoids/anal fissures, such as immune/inflammatory diseases, diabetes mellitus, gastrointestinal tract problems, and related surgical interventions. Each patient was examined and completed a questionnaire including demographic, social, medical, and perianal disease data between the 11th and 14th gestational week prior to their prenatal screening tests. Patients were re-examined and questioned in relation to hemorrhoid occurrence twice more, in the 24th and 37th gestational weeks. Gastrointestinal disorders such as mucous discharge, itching, burning, pain, dyschezia, protrusion, and bleeding were evaluated. Constipation was defined according to Rome IV criteria.<sup>8</sup>

All women were interviewed and examined by the same physician and the informed consent forms were signed by all patients at the beginning of the study. If any perianal symptoms such as perianal discomfort, mucous discharge, itching, burning, pain, dyschezia, and bleeding were registered, women were examined by the surgeon for external hemorrhoids and anal fissures.

Patients with perianal symptoms and hemorrhoids were treated by increasing the fiber content of their diet and fluid intake, and prescribing sitz baths. Advice regarding lifestyle changes to decrease the risk of hemorrhoids, such as physical activity recommendations, was provided individually by a physiotherapist. In addition to these recommendations, pregnant women with infrequent defecation were given information about the importance of developing regular bowel

**Table 1 – Frequency of perianal symptoms of different gestational weeks of pregnancy together with enlarged and swollen external hemorrhoids (n = 61).**

Symptom	11–14th gestational week n (%)	24th gestational week n (%)	37th gestational week n (%)
Discomfort, mucous discharge, itching, burning	4 (6.56%)	7 (11.48%)	7 (11.48%)
Pain, dyschesia, protrusion	1 (1.64%)	–	2 (3.28%)
Anal bleeding	–	1 (1.64%)	2 (3.28%)
Anal fissure	–	–	–
Total	5 (8.2%)	8 (13.1%)	11 (18%)

habits and optimum posture for defecation. Topical analgesics were used where necessary. Oral medications such as tribenozides were avoided due to associated teratogenicity.<sup>9</sup> Patients with thrombosed hemorrhoids, painful protrusion, dyschezia, and bleeding were examined and evaluated by a general surgeon for further investigation and treatment.<sup>10</sup>

Statistical analyses were performed using the Statistical Package for the Social Sciences for Windows 23 (SPSS, Inc., Chicago, IL). This study was approved by the ethics board for non-interventional clinical research at Hacettepe University (GO 16/101-30). All patients gave their informed consent prior to their inclusion to this study. Study was conducted according to Declaration of Helsinki.

## Results

The mean age of the patients was 27.3 years (range: 19–35). A total of 5 (8.2%), 8 (13.1%) and 11 (18%) women developed external hemorrhoids with or without perianal complications in the 11–14th, 24th, and 37th gestational weeks, respectively (Table 1). The overall morbidity rate was 18% (11 cases). Table 1 shows the frequency of perianal symptoms as well as external and thrombosed hemorrhoids in different gestational weeks. Multivariate logistic regression analysis could not demonstrate a statistically significant relationship between external hemorrhoids/perianal complications and maternal age, gestational week at delivery, and birthweight of the neonate.

Constipation was present in 2 (44.3%), 25 (41%), and 29 (47.5%) women in the 11–14th, 24th, and 37th gestational weeks, respectively (Table 2). In this study, we found a statistically significant relationship between external hemorrhoids/perianal complications and gestation-induced constipation using logistic regression analysis ( $p < 0.001$ ).

A statistically significant increase in the prevalence of external hemorrhoids/perianal complications by gestational age was found in this study, which may have been due to the small sample size. Additionally, we also found a statistically significant relationship between lower birthweight values and perianal complications.

**Table 2 – Constipation at different gestational weeks.**

Constipation	n = 61
11–14 gestational week	27 (44.3%)
24th gestational week	25 (41%)
37th gestational week	29 (47.5%)

## Discussion

Hemorrhoids, especially thrombosed ones, are not only a disease but also a social problem, as more than one third of women at reproductive age suffer from this condition.<sup>3,5</sup> Furthermore, thrombosed hemorrhoids as well as those with concomitant anal fissures can lead to serious complications.

There is wide spectrum of risk factors for occurrence of hemorrhoids, and becomes increasingly complex during pregnancy.<sup>5,11</sup> The question is the presence of a wide range of perianal symptoms and the different treatment modalities due to the severity of the symptoms, from simple topical treatments to surgical interventions together with different drugs.<sup>10,12–14</sup> Another problem is the lack of prospective randomized epidemiological studies in this field.

In this study, we examined the effect of pregnancy itself on the occurrence of external hemorrhoids in a specific group of patients, i.e., primigravid women without a history of perianal diseases, and excluded those with immune and inflammatory diseases, diabetes mellitus, gastrointestinal tract problems, and previous rectal and perianal surgery. In our small clinical series, we observed hemorrhoids and related complications in 18% of cases, which is much lower than expected.<sup>5</sup> External hemorrhoids/perianal complications were present in 5 (8.2%), 8 (13.1%) and 11 (18%) women in the 11–14th, 24th and 37th gestational weeks, respectively. The development of hemorrhoids is thus strongly related to the direct effect of the hormonal, metabolic, and mechanical changes during the course of pregnancy. The effect of birth trauma was not examined in this study.

In our study, constipation was present in 27 (44.3%), 25 (41%), and 29 (47.5%) women in the 11–14th, 24th, and 37th gestational weeks, respectively. We found a statistically significant relationship between external hemorrhoids/perianal complications and gestation-induced constipation, which is most probably due to increased intra-abdominal pressure and impaired enlarged uterus and pelvic floor interaction. A statistically significant association was also found between lower birthweight and perianal complications. This might be due to the obstetrical complications leading to low birthweight, which may also affect the uterus-pelvic floor interaction.

Constipation is very common during pregnancy and a predisposing factor for hemorrhoids. Increased fiber and water intake, and defecation training are advocated to resolve constipation and indirectly alleviate the symptoms of hemorrhoids. In our study, hemorrhoid complaints increased despite dietary recommendations and physiotherapy interventions such as physical activity advice and toilet habit training. The

reason for this increase may have been that the study participants failed to follow the recommendations, which presents a limitation to this study. There is a need for further research where the adherence of pregnant women to the proposed recommendations is monitored.

Postural changes, increased intra-abdominal pressure, abdominal wall and pelvic floor trauma, metabolic changes, pregnancy-related growth factors, and the impaired perfusion of gastrointestinal tract structures due to the weekly growth of neighboring gestational structures might be causes for developing external hemorrhoids. Future research needs to determine the main risk factors behind these pathological developments and perianal problems including external and thrombosed hemorrhoids. The elimination of hemorrhoid risk factors may lead to a higher quality of life during pregnancy, which is an outcome expected from perinatal medicine and physicians in modern societies.

### Conflicts of interest

The authors declare no conflicts of interest.

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