

## Evaluation of Patients Developing Anal Incontinence After Vaginal Delivery

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### Abstract

The aim of this study is to evaluate patients who develop anal incontinence after normal delivery. This study is retrospective in nature. Ethics committee permissions were obtained to conduct the study. Body mass index and newborn birth weight of women with anal sphincter injury at birth were within normal limits. In conclusion, anal incontinence is common among reproductive-aged women who give birth vaginally, although it is often a condition that women hesitate to report.

**Keywords:** Fecal incontinence, Labor stage, Second, Women's Health.

### 1. Introduction

Anal incontinence is defined as the involuntary leakage of gas and stool. It negatively affects the quality of life in women. Anal incontinence can lead to pelvic organ prolapse, sexual dysfunction, perineal pain, and permanent sphincter dysfunction (Vale de Castro Monteiro, Pereira, Aguiar et al, 2016; Sideris, McCaughey, Hanrahan et al, 2020). The prevalence of anal incontinence varies between populations. It is reported to be 7.7% in women aged 30-90 years (Assmann, Keszthelyi, Kleijnen et al, 2021). The prevalence of anal incontinence after vaginal or cesarean delivery is reported to be 13-25% within the first 6 months and 1-6% at 12 months (Balsak, Töz, Yıldırım, Tınar, 2017). Various factors contribute to the development of anal incontinence, with birth trauma being the most significant factor in women. Previous rectoanal or obstetric surgical history, obstetric trauma, large baby, assisted vaginal delivery, and prolonged second stage of labor can also contribute to the development of anal incontinence (Assmann, Keszthelyi, Kleijnen et al, 2022). Anal incontinence negatively impacts the quality of life. The diagnosis and treatment of anal incontinence are not fully defined, making diagnosis and treatment complex. One of the significant causes of fecal incontinence is obstetric perianal injuries (Çakır, Yıldırım, 2019). Proper diagnosis and management of sphincter injuries are crucial for preventing anal incontinence in women (Sideris, McCaughey, Hanrahan et al, 2020).

Women should be evaluated for anal sphincter injuries following childbirth. The aim of this study is to evaluate patients who develop anal incontinence after normal delivery.

## **2. Material And Methods**

This study is retrospective in nature. The sample of this study consisted of women aged 18-45 years who gave birth vaginally (assisted and unassisted) at the Istanbul Training and Research Hospital Department of Obstetrics and Gynecology between 01/08/2018 and 01/08/2022, and who developed anal sphincter injuries during childbirth. A total of 9,961 women who gave birth vaginally between 01/08/2018 and 01/08/2022 were screened. Among them, 44 women met the inclusion criteria and were included in the study. Exclusion criteria included cesarean section delivery, history of anal sphincter surgery, or history of anal incontinence. This study received approval from the Istanbul Training and Research Hospital Non-Interventional Clinical Research Ethics Committee with decision number 228 dated 22.07.22. Patients were evaluated for anal incontinence using the Wexner Continence Grading Scale (Table 1) and the Bristol Stool Scale (Figure 1) (Jorge, Wexner, 1993; Vork, Wilms, Penders et al, 2019; Akor, 2021).

The Wexner Continence Grading Scale determines participants' defecation habits during the researcher's interview and assigns a total score between 0 and 20 based on specific scale degrees for each type of incontinence. A score of 0 indicates perfect continence, while a score of 20 indicates total incontinence.

The Bristol Stool Scale consists of visual images. Participants select images to determine their defecation habits, allowing for more objective diagnostic use. Participants are asked how their defecation habits generally are and are required to select from the images. In the Bristol Stool Scale:

- Individuals selecting Type 1 and Type 2 indicate constipation.
- Type 3, Type 4, and Type 5 represent normal defecation.
- Type 6 and Type 7 indicate diarrhea.

## **3. Ethical Considerations**

This study received approval from the Istanbul Training and Research Hospital Non-Interventional Clinical Research Ethics Committee with decision number 228 dated 22.07.22. Informed consent was obtained from the participants.

## **4. Statistical Method**

SPSS 28.0 software was used for analyses. Descriptive statistics, including mean, standard deviation, median, minimum, maximum, frequency, and percentage values, were used to describe the data.

5. Results

Table 1: Demographic features

	Min-Max	Median	
Age	21.0-39.0	27.0	
BMI	22.2-32.0	26.1	
		<b>n</b>	<b>%</b>
Smoking	No	36	100%
	Yes	0	0.0%
Alcohol Consumption	No	36	100%
	Yes	0	0.0%
Coffee Consumption	No	22	61.1%
	Yes	14	38.9%
Medication Use	No	15	41.7%
	Yes	21	58.3%
Iron Supplement		15	41.7%
Thyroid Medication		4	11.2%
Antibiotic		1	2.8%
Hypertension Medication		1	2.8%
<b>Gravida</b>		11	<b>%</b>
I		12	30.6%
II		5	33.3%
III		6	13.9%
IV		<b>n</b>	16.7%
<b>Parity</b>		18	<b>%</b>
I		13	50.0%
II		4	36.1%
III		1	11.1%
IV		<b>n</b>	2.8%
<b>Previous Delivery Trauma History</b>		11	<b>%</b>
None		9	25.0%
Episiotomy		25	69.4%
Forceps		1	2.8%
Vacuum Episiotomy		1	2.8%

The average age of the women included in the study is 27.8, and the average BMI is 26.5. It was observed that 61.1% of the women do not consume coffee, and 58.8% of them have regular medication use. Among those using medication, 41.7% use iron supplements, 11.2% use thyroid medication, 2.8% use antibiotics, and 2.8% use hypertension medication.

Table 2: Obstetric History Table

<b>Gravida</b>	<b>n</b>	<b>%</b>
I	11	30.6%
II	12	33.3%
III	5	13.9%
IV	6	16.7%
V	2	5.6%
<b>Parity</b>	<b>n</b>	<b>%</b>
I	18	50.0%
II	13	36.1%
III	4	11.1%
IV	1	2.8%
<b>Previous Delivery Trauma History</b>	<b>n</b>	<b>%</b>
none	9	25.0%
Episiotomy	25	69.4%
Forceps	1	2.8%
Vacuum episiotomy	1	2.8%

It was observed that 33.3% of the women included in the study were gravid 2, and 50% had a parity of 1. In the included births, episiotomy was performed in 69%, forceps in 2.8%, and vacuum and episiotomy in 2.8% of cases.

Table 3: Birth Injury and Repair Table:

	<b>n</b>	<b>%</b>
During Birth, External Anal Sphincter Repair+Deep Vaginal Repair	20	55,6%
During Birth, External Anal Sphincter Repair	10	27,8
External Anal Sphincter During Birth, Perineal Laceration + Deep Vaginal External Anal Sphincter Repair	2	5,6%
During Birth, Perineal Laceration+External Anal Sphincter Repair	1	2,8%
During Birth Deep Laceration+External Anal Sphincter Repair	1	2,8%
During Birth, External+External Anal Sphincter Midline Repair	1	2,8%
During Birth Paravaginal + External Anal		

Sphincter Repair	1	2,8%
Within 1 Year Postpartum No Sphincter Repair	32	88,9%
Within 1 Year Postpartum External Anal Sphincter	4	11,1%
	Min-max	Average
Baby's Weight	2570-4305	3620
Weight Gain During Pregnancy	3.0-18.0	10.0
Wexner Continence Assessment Scale Score	0.00-14.0	3.0

The average weight of the newborns is 3535 kg. It was observed that 55.6% of women had external anal sphincter repair and deep vaginal repair during childbirth. Within 1 year after birth, 11.1% of women who did not experience anal incontinence complaints underwent secondary external anal sphincter repair surgery. The average Wexner continence assessment scale score for women is 3.9.

Table 4: Bowel Habits and Bristol Stool Scale Score Table:

Bowel Habits	n	%
Once A Day	23	63,9%
Twice A Day	4	11,1%
Three Times A Day	3	8,3%
Four Times A Day	1	2,8%
Once A Week	1	2,8%
Twice A Week	2	5,6%
Three Times A Week	1	2,8%
Five Times A Week	1	2,8%
Bristol Stool Scale	n	%
Type 1	0	0
Type 2	1	2,8%
Type 3	4	11,1%
Type 4	10	27,8%
Type 5	19	52,8%
Type 6	1	2,8%
Type 7	1	2,8%

The frequency of defecation for the women included in the study is once a day for 63.9%. According to the Bristol stool scale, 52.8% of women reported Type 5, while 27.8% reported Type 4 as their defecation pattern.

## 6. Discussion

Birth-related perianal injuries that can occur after vaginal delivery can result in anal incontinence. Our study found that women who developed anal incontinence after vaginal

delivery had regular bowel habits and an average body mass index of 26.1. Women reported no constipation complaints. The average Wexner continence scale score indicated that women experienced changes in their gas, liquid discharge, stool, pad usage, or lifestyle, with a mean score of 3.9. A study conducted in Denmark (2020) reported that a body mass index of 29 or higher was associated with an increased risk of anal sphincter injury during childbirth (Gommesen, Nohr, Qvist et al, 2020).

It was observed in our study that 55.6% of women who experienced anal sphincter injuries during childbirth had undergone external anal sphincter repair and deep vaginal repair. A study in India reported a rate of major birth injuries of 20.9% (Gundabattula, Surampudi, 2018).

A study involving 4888 deliveries reported that 1.7% of women experienced third and fourth-degree perineal tears (Lincová, Neumannová, Mikysková et al, 2019). Another study reported an anal sphincter injury rate of 78.5% (Levin, Rottenstreich, Tsur et al, 2021). In contrast to our study, a study involving 79,000 women reported an anal sphincter injury rate of 0.02% (Chill, Karavani, Lipschuetz et al, 2021).

While there is a suggested association between anal incontinence and newborn birth weight in the literature, our study found an average newborn birth weight of 3535 kg. However, 55.6% of the included women had undergone external anal sphincter repair during childbirth. A study by D'Souza et al. (2020) suggested that women with newborn birth weights of 4000 kg or higher had twice the risk of anal sphincter injury during childbirth (D'Souza, Monga, Tincello et al, 2020). Kwok et al. (2019) found an association between newborn birth weight and the development of anal sphincter injury and subsequent fecal incontinence (Kwok, Wan, Cheung et al, 2019).

In our study, 11.1% of women who did not experience anal incontinence complaints within 1 year after childbirth underwent secondary external anal sphincter repair. The complaints of incontinence disappeared in these patients. In a study by Şimşek et al. (2018), secondary sphincter-vagino-perineoplasty was performed on 7 women with obstetric anal sphincter injuries, resulting in the resolution of incontinence complaints. There was a regression in the Wexner incontinence score (Şimşek, Esencan Yılmaz, 2017).

## **7. Anal Incontinence and Nursing**

In women who present with fecal incontinence, a comprehensive medical evaluation should be conducted, including a general examination, detailed medical history, mental status assessment, anorectal examination, and diagnostic tests (Şimşek, Ateş, Dirican et al, 2018). The National Institute for Health and Care Excellence (NICE) in the United Kingdom has expressed that specialized clinical nurses can perform this evaluation (NICE, 2018). The Royal College of Nursing (RCN) has stated that specialized nurses with informed consent from women can perform digital rectal examination to assess fecal incontinence (RCOG, 2023).

The International Continence Society (ICS) emphasizes the importance of training and supporting nurses working on fecal incontinence and enhancing the quality of life for incontinent women (Şimsek, Ateş, Dirican et al, 2018). Nurses play an important role in instructing women during pregnancy on strengthening pelvic floor muscles through Kegel exercises, promoting healthy lifestyle behaviors, and providing nutrition education. Increasing the availability of childbirth preparation classes and ensuring that women are prepared for childbirth by effective pushing during labor are essential. Regulating bowel habits to prevent constipation is crucial. Women should be evaluated for fecal incontinence in the postpartum period (Şimsek, Ateş, Dirican et al, 2018; Şimşek, Esencan Yılmaz, 2017).

### **8. Conclusion**

In conclusion, anal incontinence is common among reproductive-aged women who give birth vaginally, although it is often a condition that women hesitate to report. It negatively affects their quality of life. While the newborn birth weight and weight gain during pregnancy were found to be within normal averages, episiotomy was performed during childbirth in women who experienced anal sphincter injuries. Although complaints of anal incontinence decreased within 1 year after birth, secondary anal sphincter repair surgery was performed in 11.1% of cases.

To reduce anal sphincter injuries during childbirth and prevent the development of fecal incontinence, careful medical history taking and physical examinations are important. Perianal injuries associated with childbirth in women who give birth vaginally may result in temporary or permanent incontinence. Therefore, the presence of fecal incontinence should be evaluated after childbirth, and advanced diagnostic methods should be used when necessary. The number of studies related to fecal incontinence should be increased.

**9. Limitation of The Study:** The study was conducted in a single center and cannot be generalized to the society. Comprehensive study is needed.

**10. Conflict of Interest Statement:** The authors declare no conflict of interest.

**11. Financial Support:** This study did not receive any financial support.

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