



# Evaluation of Postoperative Headache, Back Pain and Urinary Retention in Benign Anorectal Surgical Patients Under Spinal Anesthesia

## Spinal Anestezi Altında Selim Anorektal Cerrahi Hastalarında Postoperatif Baş Ağrısı, Bel Ağrısı ve İdrar Retansiyonunun Değerlendirilmesi

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### ABSTRACT

**Aim:** Benign anorectal diseases are common surgical procedures in general surgery. Various anesthetic techniques are utilized during surgical procedures. In this study, postoperative headache, urinary retention, and back pain were evaluated in patients operated under spinal anesthesia.

**Method:** The incidence of postoperative headache, urinary retention and back pain was evaluated in patients operated under spinal anesthesia for benign anorectal disease (hemorrhoidal disease, pilonidal cyst, anal abscess, anal polyps, anal fissure, and anal fistulas) between January 1, 2016 and January 1, 2017. Patients for whom data was not available or who were operated under general or local anesthesia were excluded from the study.

**Results:** Of the 302 patients whose data could be reached, 242 (80.1%) were operated under spinal anesthesia, 56 (18.5%) were operated under local anesthesia, and 4 (1.3%) were operated under general anesthesia within the 1-year period evaluated. Patients operated under spinal anesthesia included 152 (62.8%) patients with pilonidal cyst, 29 (12%) with hemorrhoidal disease, 41 (16.9%) with anal fistulas, 13 (5.4%) with anal abscess, 5 (2.1%) with anal fissures, and 2 (0.8%) with anal polyps. Postoperative headache was seen in 6 (2.5%) of the patients operated under spinal anesthesia, 3 (50%) of whom required rehospitalization for headache. The patients were treated conservatively with fluid replacement, caffeine, and nonsteroidal anti-inflammatory therapy. Urinary retention was seen in 6 (2.5%) patients and treated with temporary urinary catheterization. Permanent urinary retention was not seen any of the patients. None (0%) of the patients had back pain.

**Conclusion:** Spinal anesthesia has low complication rates and can be a preferred anesthetic technique for benign anorectal disease surgery.

**Keywords:** Spinal anesthesia, benign anorectal diseases, headache, urinary retention, back pain

### ÖZ

**Amaç:** Selim anorektal hastalıklar genel cerrahi pratiğinde yaygın olarak yapılan ameliyatlardır. Cerrahi prosedürde işlem için farklı anestezi tipleri tercih edilebilmektedir. Spinal anestezi altında opere edilen hastalarda postoperatif baş ağrısı, idrar retansiyonu ve bel ağrısı şikayetlerinin oranları değerlendirildi.

**Yöntem:** 1 Ocak 2016 ila 1 Ocak 2017 tarihleri arasında kliniğimizde benign anorektal hastalıklar (hemoroidal hastalık, pilonidal sinüs, anal apse, anal polip, anal fissür ve fistül) nedeniyle spinal anestezi altında opere edilen hastalarda postoperatif baş ağrısı, idrar retansiyonu ve bel ağrısı şikayetlerinin oranları değerlendirildi. Verilerine ulaşılamayan, genel anestezi veya lokal anestezi altında opere edilen hastalar çalışmadan çıkarıldı.

**Bulgular:** Benign anorektal hastalıklar nedeniyle bir yıl süre içerisinde 302 opere edilen hastanın 242'si spinal anestezi (%80,1), 56'sı lokal anestezi (%18,5), 4'ü genel anestezi (%1,3) altında opere edildi. Spinal anestezi uygulananların 152'si (%62,8) pilonidal sinüs, 29'u (%12) hemoroid, 41'i (%16,9) anal fistül, 5'i (%2,1) anal fissür, 2'si (%0,8) anal polip ve 13'ü (%5,4) anal apseydi. Spinal anestezi uygulanan hastaların 6'sında (%2,5) baş ağrısı izlenirken 3'ü (%50) tekrar yatış gerektirdi. Tüm hastalar konservatif (sıvı replasmanı, kafein, steroid yapıda olmayan anestetikler) olarak tedavi edildi. Altı hastada (%2,5) idrar retansiyonu izlendi ve geçici idrar kateterizasyonu ile tedavi edildi. Kalıcı idrar retansiyonu izlenmedi. Hiçbir hastada bel ağrısı şikayeti izlenmedi (%0).

**Sonuç:** Benign anorektal hastalıkların cerrahisinde spinal anestezi düşük komplikasyon oranları ile uygulanabilen bir anestezi tekniğidir.

**Anahtar Kelimeler:** Spinal anestezi, selim anorektal hastalıklar, baş ağrısı, idrar retansiyonu, bel ağrısı



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## Introduction

Benign anorectal diseases (such as hemorrhoidal disease, anal fissures, anal fistulas, anal abscesses, and anal polyps) present a wide-scale problem in surgical practice.<sup>1,2,3,4,5</sup> In addition to different surgical techniques, different anesthetic procedures (general anesthesia, spinal anesthesia and other blocks, local anesthesia) are also performed.<sup>6</sup> Patients may experience postoperative problems related to both surgery and anesthesia. Complications related to anesthesia are especially challenging for surgeons.

In this study, we evaluated patients who underwent benign anorectal surgery under spinal anesthesia for headache, back pain, and urinary retention, which are common postoperative complications of spinal anesthesia.

## Materials and Methods

After obtaining institutional approval, we retrospectively reviewed the files of 302 patients who had been operated for benign anorectal diseases (pilonidal sinus, hemorrhoidal disease, anal fistulas, anal fissures, anal abscesses, and anal polyps) between January 1, 2016 and January 1, 2017 at the University of Health Sciences Elazığ Training and Research Hospital Clinic of General Surgery in accordance with the 2013 Declaration of Helsinki. Patients whose files were incomplete or inaccessible and those who were operated under general or local anesthesia were excluded from the study. A total of 242 patients whose surgery was performed under spinal anesthesia were included in the study. Data were collected from the patient's medical records and readmission records and information about postoperative problems was obtained via telephone interviews. The demographic data of patients included in the study (age, gender), their reasons for undergoing surgery, anesthesia-related complications (headache, back pain, and urinary retention), and the distribution of spinal anesthesia by age group (<20 years, 20-40 years, 40-60 years, and >60 years) were evaluated. Patients signed an informed consent form for the surgical procedure and subsequent treatment, and the necessary permission was obtained to use their data in our analyses. Obtaining the consent of an ethics committee was not necessary for this retrospective clinical study. However, consent was obtained from the hospital management for processing the data.

## Statistical Analysis

SPSS software, version 15.0 was used for the statistical analysis of data. Independent groups were compared using a t-test. Analysis of variance was used to compare groups with multiple variables.

## Results

The files of 302 patients who had been operated within the one-year period between January 1, 2016 and January 1, 2017 at our hospital and whose information could be accessed were retrospectively reviewed. Of these patients, 242 (80.1%) had surgery under spinal anesthesia, 56 (18.5%) with local anesthesia, and 4 (1.3%) under general anesthesia. The 60 patients who had been operated under general or local anesthesia were excluded from the study.

Surgical indication for the patients operated under spinal anesthesia was pilonidal sinus for 152 (62.8%), hemorrhoids for 29 (12%), anal fistula for 41 (16.9%), anal abscess for 13 (5.4%), anal fissure for 5 (2.1%), and anal polyps for 2 (0.8%) of the patients.

Of the 242 patients in the study, 206 (85.1%) were male and 36 (14.9%) were female. The mean age of the entire patient group was 28.17±9.94 years (17-61 years). The mean age of male patients was 28.21±10.39 years (17-61 years), while the mean age of female patients was 27.92±6.93 years (17-40 years).

Analysis of disease distribution by gender showed that of the 206 male patients, 137 (66.5%) had pilonidal sinus, 22 (10.7%) had hemorrhoids, 34 (16.5%) had anal fistula, 11 (5.3%) had anal abscess, and 2 (1%) had anal fissure. Among the 36 female patients, 15 (41.7%) had pilonidal sinuses, 7 (19.4%) had hemorrhoidal disease, 7 (19.4%) had anal fistula, 3 (8.3%) had anal fissures, 2 (5.6%) had anal abscesses, and 2 (5.6%) had anal polyps (5.6%).

Evaluation of postoperative complications after spinal anesthesia revealed that 6 (2.5%) of the patients experienced headache, and 3 (50%) of these patients required readmission. Five of the patients with headache were male and 1 was female. There were no significant gender

**Table 1.** Complications of spinal anesthesia according to gender

Complications		Gender		p
		Male	Female	
Postoperative headache	Yes	5	1	0.9
	No	201	35	
Urinary retention	Yes	6	0	0.3
	No	200	36	
Back pain	Yes	0	0	-
	No	206	36	
Readmission	Yes	2	1	0.37
	No	204	35	

Headache  $R^2=0.006$ , Urine retention  $R^2=0.009$ ,  $R^2$  could not be calculated for back pain, Readmission  $R^2=0.003$

**Table 2.** Complications of spinal anesthesia according to age group

Complications		Age groups				P
		<20 years	20-40 years	40-60 years	>60 years	
Headache	No	13	191	29	3	0.71
	Yes	0	6	0	0	
Urinary retention	No	12	192	29	3	0.52
	Yes	1	5	0	0	
Back pain	No	13	197	29	3	-
	Yes	0	0	0	0	
Readmission	No	13	194	29	3	0.88
	Yes	0	3	0	0	

Headache  $R^2=0.000$ , Urinary retention  $R^2=0.004$ ,  $R^2$  could not be calculated for back pain, Readmission  $R^2=0.003$

differences in rates of headache or readmission ( $p>0.05$ ) (Table 1). There were also no differences in frequency of headache and readmission based on age groups ( $p>0.05$ ) (Table 2). All patients were conservatively treated (fluid replacement, caffeine, nonsteroidal anesthetics).

Urinary retention was observed in 6 patients (2.5%) and was treated with temporary urinary catheterization. All of these patients were male. However, there was no statistically significant difference in gender distribution between the groups ( $p>0.05$ ). No statistically significant differences were observed between the age groups ( $p>0.05$ ) (Table 1). Permanent urinary retention did not occur in any of the patients.

None (0%) of the patients complained of back pain.

## Discussion

Benign anorectal diseases (such as hemorrhoidal disease, anal fissures, anal fistulas, anal abscesses, anal polyps) pose a wide-ranging problem for surgeons in practice. Although it is not possible to accurately determine the incidence and prevalence of anal fissures, they are the most important of the common anorectal diseases.<sup>1</sup> Similarly; about half of the population consults a physician at least once in their lives for hemorrhoidal diseases.<sup>2</sup>

Surgical complications are expected after patients undergo an operation. However, when patients are evaluated holistically, anesthesia-related complications are also seen in clinical practice. The surgeons who are primarily responsible for the patient have to overcome problems as they arise.

Although most anorectal procedures are relatively simple, there may be pain, reflexive movements, tachypnea, and laryngeal spasm (Brewer-Luckhardt reflex) when anesthesia is inadequate. Therefore, the primary consideration when

selecting an anesthetic method is to adequately suppress pain sensation. General, regional (spinal, epidural, caudal), or local anesthesia methods may be preferred alone or in combination to achieve this.<sup>6</sup>

When used alone, regional anesthetic techniques do not involve endotracheal intubation, which prevents airway trauma, myalgia, and complaints such as postoperative nausea and vomiting. Other advantages of regional anesthesia are easier postoperative pain control and shorter recovery time.<sup>6</sup>

Spinal anesthesia (subarachnoid block or intrathecal injection) is a procedure-involving blockage where the nerve roots pass through the subarachnoid space.<sup>7</sup> This neuroaxial blockage method has a wide field of usage, such as in general surgery, orthopedics, and gynecological operations. It is preferred due to its fast onset of effect, safe and rapid recovery, and minimal side effects.<sup>6</sup>

Spinal anesthesia can cause extreme or adverse physiological responses, as well as complications associated with drug toxicity and positioning of the needle/catheter. The most common of these complications are postoperative headache, urinary retention, and back pain, which are the most challenging outcomes faced in surgical practice.<sup>6,7,8,9</sup>

A postdural puncture headache (PDPH) can occur as a result of any dural injury. It is typically bilateral, frontal or retroorbital, or occipital and extending to the nape. The pain is constant and intense, and may be accompanied by photophobia and nausea. The pain is exacerbated by sitting or standing, and diminished or relieved by lying flat. Onset usually occurs after 12 to 72 hours, but may occur earlier.<sup>7,8,9,10,11,12,13,14</sup> It is believed to develop as a result of leakage from the dural defect. High traction on the blood vessels contributes to the pain. The incidence of PDPH increases with the thickness of the needle used. Other risk factors are young age, female gender, and

pregnancy.<sup>7,8,9,10,11,12,13,14</sup> Therefore, the incidence is high in obstetric patients due to accidental puncturing of the dura with epidural needles (20-50%). It occurs at a rate of 3-4% in those who are given spinal anesthesia for cesarean section. Although these complications were mostly observed in male patients in our study, no statistical difference was observed in terms of gender. In addition, while headaches were more common in patients aged 20-40 years, there was no statistical difference among the age groups. Conservative treatment includes the recumbent position, oral or intravenous fluid administration, analgesics, and caffeine. Stool softeners and a soft diet are also a part of conservative treatment. The pain can last for several days. The blood patch procedure can be utilized in patients who do not respond to conservative treatment within 12-24 hours.

Urinary retention results from reduction of bladder tone and inhibition of the micturition reflex due to the blockage of the S2-S4 nerve roots with by the local anesthetic. It is more common in males.<sup>7,14,15</sup> Although urinary retention was observed more frequently in male patients in our study, there was no statistically significant difference between the genders. Heat application and transient urinary catheterization are often therapeutic; however, persistent bladder dysfunction despite urine monitoring may be a sign of severe neurological damage.<sup>7,8</sup>

Back pain can occur as a result of the spinal needle causing various degrees of damage in the tissues through which it passes. Postoperative back pain may be associated with local inflammatory response with or without muscle spasms. Even in general anesthesia, back pain can occur at a rate of 25-30%. Acetaminophen, nonsteroidal anti-inflammatory agents, and hot or cold compresses are sufficient for treatment. While usually benign, it may also be a sign of various problems such as epidural hematoma.<sup>7,8</sup>

Spinal anesthesia is a technique, which can be applied with low complication rates in surgical treatment of benign anorectal diseases.

## Ethics

**Ethics Committee Approval:** Obtaining the consent of an ethics committee was not necessary for this retrospective clinical study. However, consent was obtained from the hospital management for processing the data.

**Informed Consent:** Patients signed an informed consent form for the surgical procedure and subsequent treatment, and the necessary permission was obtained to use their data in our analyses.

**Peer-review:** Internally peer-reviewed.

## Authorship Contributions

Concept: M.B.B., B.H.K., A.B., Design: M.B.B., N.K., A.A., Data Collection and Processing: Z.Ö., B.G., A.B., A.A.B.,

M.B.B., Analysis and Interpretation: M.B.B., B.H.K., Literature Search: M.B.B., A.A.B., A.B, Writing: M.B.B., A.A.B.

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