The abducens nerve is known as the sixth cranial nerve (CN VI) and is characterized by the longest intracranial course of all cranial nerves [1]. The abducens nerve is a pure motor neuron that provides lateral retraction of the eyeball with innervation of the musculus rectus externus. CN VI palsy has been included in the literature as a rare complication, among all spinal blockades, of spinal anesthesia. Isolated unilateral CN VI palsy was considered after excluding differential diagnoses. Ocular palsy and diplopia regressed with conservative treatment during follow-up, and the patient was discharged. This article aims to show that CN VI palsy is a rare complication of spinal anesthesia, which can be observed in the emergency department.

**Key Words:** emergency department; sixth cranial nerve palsy; spinal anesthesia
omination was normal, and eye movements were limited in the left lateral gaze. Brain computed tomography, brain diffusion magnetic resonance imaging, and magnetic resonance venography were requested for differential diagnosis of the patient. Lesions, cerebral vein thrombosis, and other pathological signs in the brain were not observed on radiological images. The patient was admitted to the neurology clinic considering CN VI palsy due to spinal anesthesia. The cerebrospinal fluid (CSF) opening pressure was measured as 2.8 cm H$_2$O, and other CSF parameters were normal on lumbar puncture (LP) performed the next day. Additional follow-up data of the patient were as follows: CSF glucose 61 mg/dl, simultaneous blood glucose 134 mg/dl, and CSF albumin 12.3 mg/dl. Pathology was not detected in viral or bacterial serology. An improvement was observed in ophthalmoplegia on the second day of hospitalization with conservative treatment, and the patient was discharged.

**DISCUSSION**

CN VI is the nerve with the most common palsy in all cranial nerves due to its long course and shape. Isolated abducens palsy is rarely observed in younger and healthy people but is more frequent in elderly patients with hypertension and diabetes [4]. The patient’s head generally turns to the side of the palsy, as the lateral eyeball motion is hindered [2]. Tumors, leukemia and lymphoma, vascular lesions, hemorrhages, sarcoidosis, infections, and inflammatory lesions should be considered in differential diagnosis.

Patient complaints range from diplopia to complete lateral rectus palsy. Symptoms can occur between one day and three weeks after dural-arachnoid puncture. Of the total cases of such palsy, 80% are unilateral [5]. The incidence of complaints of diplopia and headache due to CN VI palsy after spinal anesthesia is between 0.012% and 0.020% in all blockages [6]. In a previous retrospective study, CN VI palsy was observed in only two of 11,600 diagnostic LPs, an incidence of 1/5,800. Spinal anesthesia was administered to 2,255 patients between 2008 and 2011, and CN VI palsy occurred in one [7]. The hypotheses for injury mechanism are CFS leakage due to dural puncture and intracranial hypotension due to loss of CFS that causes caudal shift of the brain stem and CN traction. As a result, the CN VI is stretched and experiences demyelination [5]. It is difficult to generalize treatment and prevention because there are few published case reports in the literature. The use of small-diameter and non-cutting needles reduces the risk of intracranial hypotension. Therefore, the risk of post-dural puncture headache and CN VI palsy can be reduced. The first-line therapy is conservative care. However, epidural blood patch (EBP) can be useful if symptoms do not improve [8]. An EBP applied early after onset of ocular symptoms can restore CFS pressure, reduce the morbidity of CN VI palsy, and improve diplopia [5,9]. The patient in this case responded to conservative treatment, as has been shown in the literature.

Patients undergoing surgery under spinal anesthesia might present to the emergency department with symptoms such as headache, dizziness, and diplopia. Early detection of CN VI palsy in these patients can reduce the morbidity and permanent damage associated with anesthesia complications.

**CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

**ACKNOWLEDGMENTS**

The abstract of this study has been previously presented at the 7th International Medicine and Health Sciences Research Congress.

The authors would like to thank M.D. Aysegul Korkut for helping in preparation of this paper.

**ORCID**

Mustafa Korkut https://orcid.org/0000-0003-1665-1601
Cihan Bedel https://orcid.org/0000-0002-3823-2929

**AUTHOR CONTRIBUTIONS**

Conceptualization: MK. Data curation: all authors. Formal analysis: all authors. Methodology: all authors. Visualization: MK. Writing–original draft: MK. Writing–review & editing: all authors.

**REFERENCES**