

Delayed Intracerebral Hemorrhage after DBS For Parkinson's Disease

WSSFN 2025 Interim Meeting. Abstract 0035

Hana Chudy,¹ Marina Raguz,¹ Petar Marcinkovic,¹ Valentino Racki,^{2,3} Elisa Papic,^{2,3} Mario Hero,^{2,3} Vladimira Vuletic,^{2,3} Darko Chudy.^{2,4}

¹ Dubrava University Hospital, Zagreb, Croatia ² University Hospital Center

³ University Hospital Centre, Rijeka, Croatia

⁴ Faculty of Medicine, University of Rijeka, Rijeka, Croatia

⁴ School of Medicine, University of Zagreb, Zagreb, Croatia

Corresponding author: Marina Raguz. email: marinaraguz@gmail.com

How to Cite: Chudy H, Raguz M, Marcinkovic P, Racki V, Papic E, Hero M, et al. Delayed Intracerebral Hemorrhage after DBS for Parkinson's Disease: WSSFN 2025 Interim Meeting. Abstract 0035. NeuroTarget. 2025;19(2):25.

Abstract

Introduction: Deep Brain Stimulation (DBS) of the subthalamic nucleus (STN) is a well-established treatment for advanced Parkinson's disease (PD), offering significant symptomatic relief. Although DBS is generally considered safe, it carries risks, including the potential for delayed complications such as intracerebral hemorrhage (ICH).

Method: We present a rare case of a 67-year-old male with PD who developed delayed ICH after undergoing bilateral STN DBS. Initially, the patient showed no neurological deficits postoperatively, with imaging confirming correct lead placement and no signs of hemorrhage. However, on the second postoperative day, the patient developed sudden right-sided hemiparesis. A CT scan revealed ICH alongside the left lead. The hemorrhage was managed conservatively, and the patient underwent extensive physical therapy, leading to significant improvement. Over the next two weeks, the patient's condition improved, and follow-up CT scans showed complete resolution of the ICH. At this point, the left lead stimulation was initiated, further improving the patient's PD symptoms. This case illustrates the potential for delayed ICH following STN DBS, emphasizing the need for ongoing monitoring and individualized treatment strategies.

Discussion: This case highlights that even in the absence of immediate postoperative abnormalities, delayed hemorrhagic events can occur, underscoring the dynamic nature of post-DBS recovery. Identifying risk factors for delayed ICH and establishing standardized monitoring protocols may help mitigate such events and guide early intervention.

Conclusions: This case underscores the importance of vigilant postoperative monitoring and individualized management strategies in STN DBS patients. Early detection and appropriate management of complications such as ICH are crucial for minimizing risks and ensuring optimal patient outcomes. The potential for delayed complications highli-

ghts the need for continuous follow-up, even in the absence of immediate postoperative issues.

References

1. Chudy H, Raguz M, Marèinkoviæ P, Raèki V, Papiæ E, Hero M, Vuletiæ V, Chudy D. Delayed intracerebral hemorrhage after deep brain stimulation for Parkinson's disease. *Case Rep Neurol.* 2025;17(1):62–71. doi:10.1159/000546056. PMID: 40510686; PMCID: PMC12162119.
2. Hariz MI, Blomstedt P, Zrinzo L. Deep brain stimulation between 1947 and 1987: the untold story. *Neurosurg Focus.* 2010;29(2):E1. doi:10.3171/2010.4.FOCUS10106.
3. Cheyuo C, Vetkas A, Sarica C, Kalia SK, Hodaie M, Lozano AM. Comprehensive characterization of intracranial hemorrhage in deep brain stimulation: a systematic review of literature from 1987 to 2023. *J Neurosurg.* 2024. 22;141(2):381-393. doi: 10.3171/2024.1.JNS232385.