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Acute Transverse Myelitis in a Case of Gastric Adenocarcinoma Following Gastrectomy: A Rare Occurrence

Mide Adenokarsinomu Tanılı Hastada Gastrektomi Sonrası Gelişen Nadir Bir Durum: Akut Transvers Miyelit

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Abstract

Acute transverse myelitis is a rare complication after surgical intervention. This is most likely related to the use of spinal or epidural anesthesia and is very rare after general anesthesia. In this article, we aimed to present a case of acute transverse myelitis that developed after laparoscopic total gastrectomy under general anesthesia.

Keywords: Transverse myelitis, General anesthesia, Gastrectomy, Adenocarcinoma, Magnetic resonance imaging.

Özet

Cerrahi müdahaleden sonra akut transvers miyelit nadir görülen bir komplikasyondur. Bu durumun öncelikle spinal veya epidural anestezi ile ilişkili olabileceği düşünülmekte olup genel anesteziden sonra çok nadir görülmektedir. Bu yazıda genel anestezi eşliğinde laparoskopik total gastrektomi sonrası gelişen akut transvers miyelit olgusunu sunmayı amaçladık.

Anahtar Kelimeler: Transvers miyelit, Genel Anestezi, Gastrektomi, Adenokarsinom, Manyetik rezonans görüntüleme.

Introduction

Transverse myelitis is a rare focal inflammatory disorder of the spinal cord, resulting in motor, sensory, and autonomic dysfunction such as paraplegia [1]. Demyelinating, infectious, hematologic, rheumatologic, and vascular disorders are the most common causes [2,3]. Acute transverse myelitis after surgery is also a rare but devastating complication. According to the literature, it is mostly related to spinal or epidural anesthesia and cases with general anesthesia are quite exceptional [4-6]. In this case report, we present a gastric cancer patient who developed acute transverse myelitis following laparoscopic total gastrectomy under general anesthesia.

Case Report

A 61–year old man presenting with weight loss and abdominal pain was diagnosed with adenocarcinoma of the stomach in December

2019. He had no other past medical history. He received neoadjuvant docetaxel, oxaliplatin, leucovorin, and 5-fluorouracil (FLOT-4). After four cycles of chemotherapy, repeat imaging showed a decrease in tumor size and he was scheduled for a laparoscopic total gastrectomy for proximal gastric cancer in March 2020.

General anesthesia was induced without applying epidural anesthesia. The surgery was uneventful. However, he developed paraplegia and urinary retention on postoperative day two.

Examination by a neurologist revealed the absence of the reflexes in both lower limbs and decreased thermal nociception on both dermatome T10-T12 also bladder and rectal dysfunction. Neurophysiological measures such as MEP (motor evoked potentials), SSEP (somatosensory evoked potentials), and NVC (nerve conduction velocity) were not performed. Increased signal was greater than two-thirds of the cross-sectional area of the cord on T2 weighted magnetic resonance imaging (MRI) (Figure 1A). An emergent contrast-enhanced thoracolumbar spine MRI demonstrated a long segment intramedullary hyperintensity extending from T10 to L1. Ischemia of the spinal cord was ruled out and there was no lesion such as abscess and hematoma on contrast-enhanced MRI (Figure 1.B).

Additional tests were performed to rule out specific conditions such as infectious diseases, malignancies, paraneoplastic syndromes, autoimmune disorders and to reach a final diagnosis. Laboratory tests for hepatitis, syphilis, brucella, Lyme disease and anti-amphiphysin, anti-Hu, anti-Yo, anti CV2, anti Ma2, anti Ri, Sox1 antibody, Zic4, GAD65, and neuromyelitis optica antibodies had negative results. Cerebrospinal fluid (CSF) examination could not be performed due to the patient's preference.

Based on the mentioned results, he was diagnosed with acute transverse myelitis. High-dose intravenous methylprednisolone treatment was initiated (1 gr daily for three days and 500 mg daily for a week). The patient was hospitalized for rehabilitation, but the patient did not respond to treatment. He was still paraplegic after a month. He was referred to the physiotherapy unit.

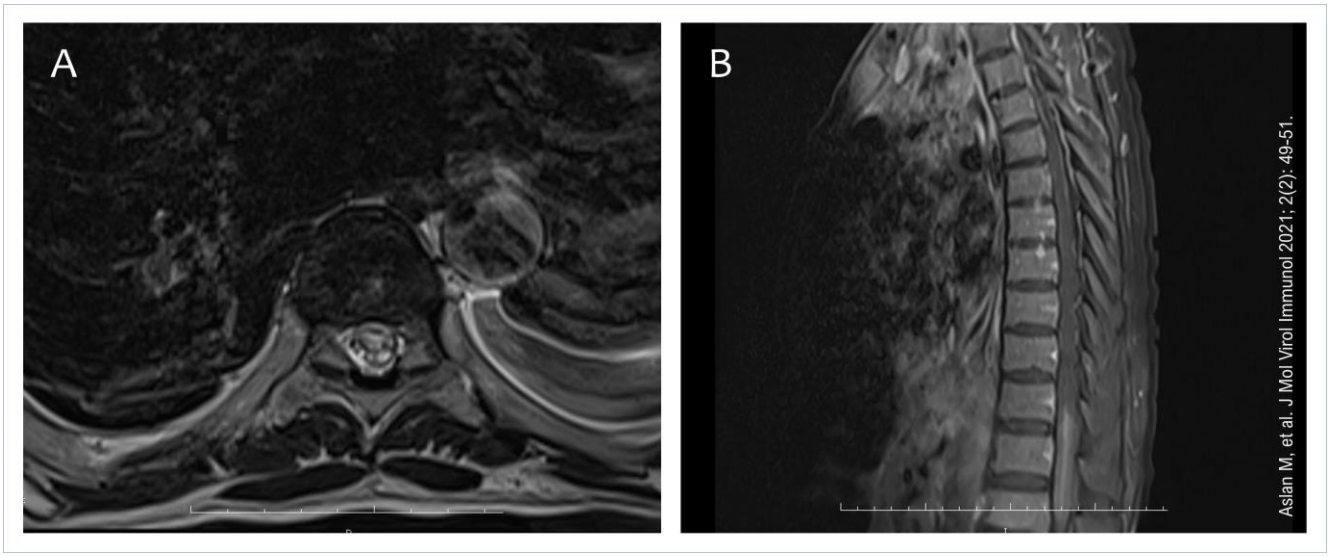

Figure 1. (**A**) Axial T2-weighted magnetic resonance image shows intramedullary hyperintensity occupying greater than two-thirds of the cross-sectional area of the spinal cord. (**B**) Contrast-enhanced T1 weighted sagittal magnetic resonance image reveals diffuse enhancement of spinal cord at T10-L1 level.

Discussion

Transverse myelitis is a rare focal inflammatory disorder of the spinal cord, resulting in motor, sensory, and autonomic dysfunction [1]. In the majority of acute transverse myelitis cases, the etiology is unknown. Infectious causes, paraneoplastic syndromes, and autoimmune diseases like neuromyelitis optica, acute disseminated encephalomyelopathy, multiple sclerosis must be considered as a differential

diagnosis. Contrast–enhanced MRI is a useful tool to diagnose the abnormality and rule out the compressive etiology like hematoma or abscess [7].

The relationship between anesthesia and acute myelitis is controversial, there are a few studies addressing a possible association and transverse myelitis mainly attributed to the use of spinal and epidural anesthesia [8,9]. Gutowski and Davies reported a case of acute transverse myelitis occurring after surgery under general anesthesia without epidural anesthesia [10]. In our case, the patient developed acute transverse myelitis on a postoperative day two following general anesthesia without the use of spinal or epidural anesthesia. Therefore, we speculate general anesthesia as a reason to cause acute transverse myelitis in our patient. However, 15-36% of transverse myelitis patients cannot be given a specific diagnosis [1,11]. Administration of high-dose intravenous methylprednisolone is meant to be the first treatment option to restore neurologic function [1,12,13]. Although a high dose of steroid was also applied in our case, there was no response to treatment. More evidence is needed to guide the treatment policy.

Conclusion

In conclusion, transverse myelitis is a devastating condition that can occur following surgery. Although the relationship between anesthesia and acute myelitis is controversial, transverse myelitis is mainly attributed to the use of epidural or spinal anesthesia. This case shows that general anesthesia may also be the reason to cause this condition.

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