Progressive Paraplegia After Bariatric Surgery - Micronutrient Deficiency Versus COVID-19

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INTRODUCTION

Laparoscopic sleeve gastrectomy (LSG) has become the most common bariatric procedure performed in the United States. With over 250,000 LSG performed annually, a broad array of postoperative complications may arise.

CASE REPORT

22 y/o female BMI 43.8 underwent LSG. During follow up, she had persistent vomiting. At postoperative week 5, the patient was admitted for intractable nausea. She was tested for COVID-19, which came back positive. Supportive care was provided and the patient was discharged home.

Postoperative week 10, the patient developed numbness and tingling in bilateral lower extremities (BLE), with progressive weakness and difficulty standing. She began having severe dysesthesia of her feet, with loss of BLE reflexes and proprioception. Her symptoms then progressed to weakness in her distal upper extremities. Due to her progressive paraplegia, she was admitted to the hospital and started on high dose intravenous thiamine, MVI, and vitamin B. Workup included a vitamin panel, zinc, copper, RPR, ESR, CRP, and MRI cord/brain. All results came back normal. A lumbar puncture demonstrated mildly elevated protein. With a presumed diagnosis of Guillain-Barre syndrome (GBS), she was treated with IVIG, and subsequently discharged to rehab.

DISCUSSION

Complications from bariatric surgery are often associated with micronutrient deficiencies. The most common deficiencies include iron, folate and vitamin B12. These complications tend to occur more commonly after gastric bypass, however, they can manifest after LSG as well. Neurologic symptoms after LSG are often preceded by rapid weight loss, persistent vomiting, or lack of dietary/supplemental intake.

Neurological complications after LSG range from 1-16%, and most commonly manifest as peripheral neuropathies. Other complications include Wernicke encephalopathy, GBS, myelopathy, and paresthesia. Timely diagnosis and early intervention are required to prevent permanent impairment.

To further complicate matters, one must also consider that COVID-19 can manifest with neurologic symptoms. Many people are aware of the associated anosmia and dysgeusia. However other symptoms may affect the central and peripheral nervous systems. Specifically GBS, GBS variants and other peripheral neuropathies have been associated with COVID-19. Again, expeditious diagnosis and timely interventions are critical.

CONCLUSION

Although uncommon, neurological complications after bariatric surgery must be promptly recognized. Surgeons should utilize a multidisciplinary approach to help establish a diagnosis. These complications are most commonly related to micronutrient deficiencies. However, in today's climate one must also remember the neurologic effects of COVID-19. Prompt diagnosis is imperative in all circumstances, in order to avoid long-term disability.

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