Thoracic Spinal Cord Stimulation in Patients with Morbid Obesity: A Case Series and Technical Considerations

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Learning Objectives

To bring to light surgical technique and investigate complications related to SCS in patients with morbid obesity.

Introduction

There is increasing evidence that patients with obesity, particularly morbid obesity (body mass index > 40), are at greater risk of complications with spinal decompression and fusion surgery. There is a dearth of literature analyzing the risks of complications in morbidly obese patients undergoing neuromodulation surgery such as spinal cord stimulation (SCS).

Methods

A retrospective chart review was conducted to identify patients with morbid obesity who had undergone thoracic SCS by a single-surgeon.

Results

From 2013 to 2016, 7 patients with morbid obesity were identified with a mean age of 51.71 years (range: 41-65) and mean BMI of 43.24 (range: 39.1-51.5) who had undergone thoracic paddle lead spinal cord stimulation implant with flank pulse generator placement. All patients underwent general anesthesia with SSEP monitoring for thoracic SCS placement.

Diagnoses included:

- Failed back surgery syndrome
- CRPS
- Occipital neuralgia

Spinal Cord Stimulators implanted:

- 2 patients had Boston Scientific SCS implanted
- 4 patients had St. Jude SCS implanted
- 1 patient had a Medtronic SCS implanted

A review of the surgeries showed:

- The surgeries required larger instruments and retractors.
- The surgeries required longer operative times.

No patient developed infection or neurologic deficit but one patient had a culture-negative pulse generator wound dehiscence which required pulse generator explant.

Conclusions

Patients with morbid obesity can safely undergo placement of various thoracic SCS paddle lead systems. Based on this single-center, single-surgeon experience, patients with morbid obesity undergoing thoracic SCS are likely at higher risk for wound complications but can achieve similar efficacy outcomes as normal weight patients.