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Long-Lasting Orthostatic Hypotension and Constipation After Celiac Plexus Block; A Case Report

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Abstract

This case report presents a 55 years old man, presented with abdominal pain and diagnosed with a metastatic pancreatic tumor, who developed long lasting orthostatic hypotension and constipation following a celiac plexus block.

Keywords: Celiac Plexus, Orthostatic, Hypotension, Sympathetic Block, Neurolysis, Constipation, Pancreatic Tumor

1. Introduction

The majority (52%) of pancreatic cancer patients are diagnosed at late stages, with a 5-year survival of 3% (1, 2). It is estimated that up to 70% - 80% of patients with pancreatic cancer suffer from severe abdominal pain (3-5), which, could affect the quality of life (6) and participating in weight loss and anorexia (7).

Treatment, according to the 3-step ladder of world health organization (WHO) guideline, is often inadequate or not tolerated in pain management (4) and a celiac plexus block is the next step in controlling the pain (8).

Celiac plexus block and neurolysis are effective in 74% of patients to control the pain at least up to 3 months or until the death (9). However, transient orthostatic hypotension occurred in 20% to 42% of patients and transient diarrhea that occurred in 10% to 25% of patients (10, 11) are among the most common side effects of this intervention. The incidence of nausea/vomiting and constipation are significantly less common in patients after celiac plexus block (10, 11), while the opioid use could be tapered and sympathetic innervation of upper abdomen is blocked.

The hypotension, after an effective celiac plexus block, is usually silent and self-limited and the persistent and deep hypotension is not expected. In this case report, we are presenting a case of pancreatic cancer who developed a deep persistent hypotension that later admitted to palliative care unit to manage severe constipation, while the block seems effective.

2. Case Presentation

An otherwise healthy 55-year-old man complained of abdominal pain in January 2016. A pancreatic mass with multiple liver metastatic lesions was found through physical examination and abdominal sonography. In addition to a hypodense mass (36×32 mm), in the body of pancreas, the CT scan revealed a dilation of the distal part of the pancreatic duct and an involvement of splenic vein, superior mesenteric vein (SMV), and celiac trunk. Based on the poor general condition of the patient, he was not eligible for additional invasive investigational intervention or curative treatment.

The abdominal pain was not well controlled with methadone, 30 mg daily and paracetamol (acetaminophen), 500 mg QID.

The patient was a candidate for interventional pain management. Pre-procedural lab test assessments including coagulation tests, blood cell counts, and metabolic tests were in the normal range.

An experienced pain specialist performed a fluoroscopic-guided bilateral, retrocrural celiac plexus block, in the prone position, by using 20 gaged, 15 cm sharp, curved needles on February 9, 2016. Following negative aspiration and contrast approval, 7 mL of Marcaine 0.25% and 20mg Depo-Medrol were injected in each side. Subsequent to the procedure, the patient experienced dizziness and lack of energy. One week after the procedure, while the pain was well controlled and analgesics were tapered, a systolic blood pressure of 60 mmHg with

positive orthostatic hypotension was recorded for the patient. The patient had no other sign and symptoms of cardiac or respiratory insufficiency in clinical assessment. Despite some general precautions such as hydration and routine workup to excluding other possible causes, the orthostatic hypotension had continued for the next 3 days. However, due to poor prognosis and patient conditions, willing advanced evaluation of hemodynamic and cardiocirculatory assessments was not considered. To restore the blood pressure, fludrocortisone 0.1 mg per day was prescribed and after a week, the blood pressure stabilized to 90/60 mmHg without orthostatic hypotension.

The patient was admitted to the palliative care unit on February 30 for severe constipation despite quite enough doses of laxatives. At the time of admission, he was receiving 10mg of methadone per day and physical examination revealed moderate ascites. Following palliative interventions, the patient was discharged a couple of days later with good control of his symptoms and passed away in May 2016 at home. An autopsy was not performed.

3. Discussion

This case report shows up an unusual consequence of Celiac plexus block. While short-term hypotension and diarrhea are well known and common complications of celiac plexus block, there are reports of other rare complications (12-14). It is known that patients who undergo Celiac plexus block will experience post-procedure hypotension or orthostatic hypotension for 1 to 5 days (15), however, the reports of severe chronic hypotension, similar to this case are less documented (16). To expect any new invasions or metastasis, the interval between last imaging and the occurrence of orthostatic hypotension in this case is low. He had no other sign or symptoms of cardiac, respiratory, vascular, or neurologic involvement in the clinical assessment. While the causes of the persistent hypotension and orthostatic hypotension in this case are not clear and its occurrence is out of mind, it happened in this case.

One of the most common complications after Celiac plexus block is diarrhea, which could be difficult to manage (17-19). Diarrhea is primarily due to loss of sympathetic tone and loss of opioid effects. In this case, peritoneal carcinomatous was discovered after his admission for constipation and abdominal distention. It appeared that combination of Celiac plexus block and a decrease in methadone dosage was not sufficient to overcome the constipation resulted from peritoneal carcinomatous.

After abdominal sympathectomy, patients are usually scheduled for a close to follow up in a problem-based method, we offer a more curious and longer post-procedural follow-up as well as schedule daily visits.

However, the lake of thorough para-clinical assessment to reveal the cardio-circulatory base of the orthostatic hypotension should be considered as a limitation in the discussion of this end staged palliative medicine case.

Consequently, self-limited hypotension and/or orthostatic hypotension is common following the celiac plexus block and neurolysis, however, we should consider exceptional cases and should follow patients after the block. Furthermore, thorough assessment of bowel habits should not be forgotten after effective celiac plexus block neurolysis and tapering the opioids, while it's possible to develop severe constipation even after sympathetic neurolysis and opioids reduction.

References

1. American Cancer Society . *Cancer Facts Figures 2017*. American Cancer Society; 2017. Available from: https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2017/cancer-facts-and-figures-.pdf.
2. Siegel R, Naishadham D, Jemal A. Cancer statistics, 2013. *CA Cancer J Clin*. 2013;**63**(1):11–30. doi: 10.3322/caac.21166. [PubMed: 23335087].
3. Grahm AL, Andren-Sandberg A. Prospective evaluation of pain in exocrine pancreatic cancer. *Digestion*. 1997;**58**(6):542–9. doi: 10.1159/000201499. [PubMed: 9438600].
4. Wong GY, Schroeder DR, Carns PE, Wilson JL, Martin DP, Kinney MO, et al. Effect of neurolytic celiac plexus block on pain relief, quality of life, and survival in patients with unresectable pancreatic cancer: a randomized controlled trial. *JAMA*. 2004;**291**(9):1092–9. doi: 10.1001/jama.291.9.1092. [PubMed: 14996778].
5. de Oliveira R, dos Reis MP, Prado WA. The effects of early or late neurolytic sympathetic plexus block on the management of abdominal or pelvic cancer pain. *Pain*. 2004;**110**(1-2):400–8. doi: 10.1016/j.pain.2004.04.023. [PubMed: 15275792].
6. Staats PS, Hekmat H, Sauter P, Lillemoe K. The effects of alcohol celiac plexus block, pain, and mood on longevity in patients with unresectable pancreatic cancer: a double-blind, randomized, placebo-controlled study. *Pain Med*. 2001;**2**(1):28–34. doi: 10.1046/j.1526-4637.2001.002001028.x. [PubMed: 15102315].
7. Johnson CD, Berry DP, Harris S, Pickering RM, Davis C, George S, et al. An open randomized comparison of clinical effectiveness of protocol-driven opioid analgesia, celiac plexus block or thoracoscopic splanchnicectomy for pain management in patients with pancreatic and other abdominal malignancies. *Pancreatology*. 2009;**9**(6):755–63. doi: 10.1159/000199441. [PubMed: 20090396].
8. Arcidiacono PG, Calori G, Carrara S, McNicol ED, Testoni PA. Celiac plexus block for pancreatic cancer pain in adults. *Cochrane Database Syst Rev*. 2011;(3). CD007519. doi: 10.1002/14651858.CD007519.pub2. [PubMed: 21412903].
9. Rykowski JJ, Hilgier M. Efficacy of neurolytic celiac plexus block in varying locations of pancreatic cancer: influence on pain relief. *Anesthesiology*. 2000;**92**(2):347–54. doi: 10.1097/00000542-200002000-00014. [PubMed: 10691219].
10. Mercadante S. Celiac plexus block versus analgesics in pancreatic cancer pain. *Pain*. 1993;**52**(2):187–92. doi: 10.1016/0304-3959(93)90130-H. [PubMed: 8455966].
11. Polati E, Luzzani A, Schweiger V, Finco G, Ischia S. The role of neurolytic celiac plexus block in the treatment of pancreatic cancer pain. *Transplant Proc*. 2008;**40**(4):1200–4. doi: 10.1016/j.transproceed.2008.03.115. [PubMed: 18555148].

12. Radpay B, Parsa T, Dabir S, Hashemi SM. Acute respiratory failure as a rare complication of celiac plexus block in a patient with adenocarcinoma of the ampulla of vater. *Tanaffos*. 2012;**11**(2):54–7. [PubMed: 25191416].
13. Kaplan R, Schiff-Keren B, Alt E. Aortic dissection as a complication of celiac plexus block. *Anesthesiology*. 1995;**83**(3):632–5. doi: 10.1097/00000542-199509000-00027. [PubMed: 7661368].
14. Petersen EW, Pohler KR, Burnett CJ, McAllister RK. Pulmonary Embolism: A Rare Complication of Neurolytic Alcohol Celiac Plexus Block. *Pain Physician*. 2017;**20**(5):E751–3. [PubMed: 28727720].
15. de Leon-Casasola OA. Critical evaluation of chemical neurolysis of the sympathetic axis for cancer pain. *Cancer Control*. 2000;**7**(2):142–8. doi: 10.1177/107327480000700204. [PubMed: 10783818].
16. Stafford B. More complications of coeliac plexus blockade. *Aust N Z J Med*. 1991;**21**(5):782–3. doi: 10.1111/j.1445-5994.1991.tb01394.x. [PubMed: 1759933].
17. Jain P, Dutta A, Sood J. Coeliac plexus blockade and neurolysis: an overview. *Indian J Anaesth*. 2006;**50**(3):169–77.
18. Toukhy ME, Campkin NT. Severe diarrhea following neurolytic coeliac plexus block: case report and literature review. *Am J Hosp Palliat Care*. 2011;**28**(7):511–4. doi: 10.1177/1049909111402185. [PubMed: 21422068].
19. Yang A, Brown J, Mak E. Persistent Diarrhea after Celiac Plexus Block in a Pancreatic Cancer Patient: Case Report and Literature Review. *J Palliat Med*. 2016;**19**(1):83–6. doi: 10.1089/jpm.2015.0117. [PubMed: 26381724].