

CLINICAL VIGNETTE

INTEGRATIVE MEDICAL THERAPY FOR DUMPING SYNDROME

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Case Report

A 73-year-old man with chronic gastroesophageal reflux disease status post transhiatal esophagectomy with pyloroplasty due to high-grade dysplasia (stage I carcinoma) at the gastroesophageal junction presented with four years of abdominal pain and diarrhea secondary to dumping syndrome. Subsequent to his surgery, he developed diarrhea 4-5 times per day accompanied by severe abdominal pain that twice required hospitalization. His abdominal pain was worse with eating large meals, and the diarrhea was aggravated by intake of dairy products and stress and was not controlled with loperamide. The patient also reported increased abdominal bloating, borborygmus, a “stuck” sensation in the throat, significant weight loss, cold hands and feet, and recurrent hemorrhoids. He had no fever, blood in his stool, sick contacts, recent travel or antibiotic use.

His medical history was significant for hypercholesterolemia and gout. In addition to loperamide, he was taking pravastatin, allopurinol, baby aspirin, and a calcium supplement.

On physical exam, vital signs were within normal limits. He was a thin male in no apparent distress. His abdomen was soft, non-tender, and without masses. His tongue was dry and he had no appreciable lymphadenopathy. Most recent surveillance imaging studies, including computerized tomography and positron emission tomography scans had revealed no recurrence of the carcinoma or other pathology, and his last esophagogastroduodenoscopy was negative.

A comprehensive treatment regimen, including acupuncture, acupressure, Chinese nutrition, and stress management was initiated. Acupuncture utilized the following main points: Large Intestine 4 and 10, Stomach 36 and 25, Ren 6 and 12, Pericardium 6, and Liver 3. He was

taught self-acupressure of the above acupuncture points, instructed to avoid raw, cold, and “damp” foods while incorporating ginger, mint, and citrus peel into his diet, and counseled on the importance of stress management.

After three weekly treatments, his diarrhea decreased to once per week with no abdominal pain off loperamide. After ten treatments, he continued to have no abdominal pain with complete resolution of his diarrhea. He also normalized his other gastrointestinal symptoms, maintained his weight, eliminated his cold hands and feet, and felt much more energized. Moreover, he has not needed further hospitalization and is only seeing his gastroenterologist and thoracic surgeon on an annual basis for surveillance.

Discussions

Dumping syndrome, which results from anatomic and physiologic changes introduced by gastric surgery, is a complication that occurs in approximately 10% of patients¹. It is the most common and often disabling postprandial syndrome observed after gastric surgical procedures. Dumping results from altered gastric reservoir capacity or interference with its extrinsic innervation that disturbs the motor function and ability of the stomach to empty. The motor function of the gut involves the transmission of signals via a bi-directional network between the central nervous system and enteric neurons resulting in locally released mediators that alter the excitability of smooth muscle cells and influence visceral hypersensitivity.

As described by Hertz in 1913, because of the rapid transit of gastric contents, treatment is often aimed at dietary modification to minimize osmolality presented to the small intestine,

medication to lower blood glucose as a result of a high glycemic load, or surgical correction of the pylorus to slow down the movement of food in the stomach². However, an evidenced-based integrative approach utilizing other natural therapies may help minimize patients' need for more aggressive and invasive measures.

Traditional Chinese medicine, including acupuncture has historically been used to treat gastrointestinal symptoms. Various studies have demonstrated that acupuncture may be effective through altering acid secretion, gastrointestinal motility, and visceral pain. For example, acupuncture at ST36 causes muscle contractions via the somato-parasympathetic pathway, while at Ren12 leads to muscle relaxation via the somatosympathetic pathway^{3,4,5}. Furthermore, the established antinociceptive effects of acupuncture at PC6 and ST36 may be beneficial to patients with abdominal pain and visceral hypersensitivity^{6,7}.

In addition to eliminating common trigger foods, certain dietary inclusions from a Chinese nutritional perspective may be helpful. Ginger (*Zingiber officinale*) has traditionally been used in China for gastrointestinal symptoms. Its effectiveness was documented in the literature nearly twenty years ago as it was found to contain flavonoids that exhibit a spasmolytic effect to counter hypermotility states of the gut^{8,9,10}. Peppermint (*Mentha piperita*) may also help abdominal pain and diarrhea. In a review that pooled data from nine studies, it was determined that peppermint oil had a substantial spasmolytic effect on the smooth muscles of the gastrointestinal tract^{11,12}. Furthermore, tangerine peel (*Pericarpium citri reticulatae*), in the form of citrus pectin, has been shown to prolong intestinal transit, lessen stool liquidity, and relieve symptoms of post-gastrectomy dumping syndrome¹³.

Stress may play a prominent role in functional gastrointestinal symptoms, including abdominal pain and diarrhea. Data clearly demonstrate that stimulation of colonic transit is a consistent response of the gastrointestinal tract to stress¹⁴. A growing evidence base for mind-body interventions, such as cognitive behavioral therapy and relaxation therapy has been established to improve gastrointestinal symptoms¹⁵.

Conclusion

Dumping syndrome is a common complication experienced by patients after gastric surgery. Its impact upon quality of life is often frustrating and at times debilitating. Currently, treatment usually focuses on symptomatic relief through the use of medications or surgical revision. However, both provide limited benefit while introducing potential side effects, which has led to the exploration of alternative medicine for possible solutions. The literature examining the role of alternative therapies in the treatment of dumping syndrome is limited. Despite this, there is a growing evidence base that suggests some natural, safe, and cost-effective measures are available. Here we describe a case of post-operative dumping syndrome that was treated successfully with a comprehensive, integrative approach incorporating acupuncture, self-acupressure, Chinese nutritional therapy, and stress management. Further research investigating the potential therapeutic efficacy of non-pharmacologic interventions for dumping syndrome is warranted.

Disclosure Statement

The authors declare no conflicts of interest.

REFERENCES

1. **Ukleja A.** Dumping syndrome: pathophysiology and treatment. *Nutr Clin Pract.* 2005 Oct;20(5):517-25. Review. PubMed PMID: 16207692.
2. **Hertz AF.** IV. The Cause and Treatment of Certain Unfavorable After-effects of Gastro-enterostomy. *Ann Surg.* 1913 Oct;58(4):466-72. PubMed PMID: 17863076;PubMed Central PMCID: PMC1407579.
3. **Takahashi T.** Acupuncture for functional gastrointestinal disorders. *J Gastroenterol.* 2006 May;41(5):408-17. Review. PubMed PMID: 16799881.
4. **Tatewaki M, Harris M, Uemura K, Ueno T, Hoshino E, Shiotani A, Pappas TN, Takahashi T.** Dual effects of acupuncture on gastric motility in conscious rats. *Am J Physiol Regul Integr Comp Physiol.* 2003 Oct;285(4):R862-72. PubMed PMID:12959921.
5. **Tada H, Fujita M, Harris M, Tatewaki M, Nakagawa K, Yamamura T, Pappas TN, Takahashi T.** Neural mechanism of acupuncture-induced gastric relaxations in rats. *Dig Dis Sci.* 2003 Jan;48(1):59-68. PubMed PMID: 12645791.
6. **Diehl DL.** Acupuncture for gastrointestinal and hepatobiliary disorders. *J Altern Complement Med.* 1999 Feb;5(1):27-45. Review. PubMed PMID: 10100029.

7. **Gu Y.** Treatment of acute abdomen by electro-acupuncture--a report of 245 cases. *J Tradit Chin Med.* 1992 Jun;12(2):110-3. PubMed PMID: 1495331.
8. **Nadkarni KM.** Zingiber Officinale. In Indian Materia Medica. 1976, 1308-1315.
9. **Di Carlo G, Autore G, Izzo AA, Maiolino P, Mascolo N, Viola P, Diurno MV, Capasso F.** Inhibition of intestinal motility and secretion by flavonoids in mice and rats: structure-activity relationships. *J Pharm Pharmacol.* 1993 Dec;45(12):1054-9. PubMed PMID: 7908974.
10. **Ghayur MN, Gilani AH.** Pharmacological basis for the medicinal use of ginger in gastrointestinal disorders. *Dig Dis Sci.* 2005 Oct;50(10):1889-97. PubMed PMID: 16187193.
11. **Grigoleit HG, Grigoleit P.** Gastrointestinal clinical pharmacology of peppermint oil. *Phytomedicine.* 2005 Aug;12(8):607-11. Review. PubMed PMID:16121522.
12. **Koretz RL, Rotblatt M.** Complementary and alternative medicine in gastroenterology: the good, the bad, and the ugly. *Clin Gastroenterol Hepatol.* 2004 Nov;2(11):957-67. PubMed PMID: 15551247.
13. **Lawaetz O, Blackburn AM, Bloom SR, Aritas Y, Ralphs DN.** Effect of pectin on gastric emptying and gut hormone release in the dumping syndrome. *Scand J Gastroenterol.* 1983 May;18(3):327-36. PubMed PMID: 6369514.
14. **Mönnikes H, Tebbe JJ, Hildebrandt M, Arck P, Osmanoglou E, Rose M, Klapp B, Wiedenmann B, Heymann-Mönnikes I.** Role of stress in functional gastrointestinal disorders. Evidence for stress-induced alterations in gastrointestinal motility and sensitivity. *Dig Dis.* 2001;19(3):201-11. Review. PubMed PMID: 11752838.
15. **Kearney DJ, Brown-Chang J.** Complementary and alternative medicine for IBS in adults: mind-body interventions. *Nat Clin Pract Gastroenterol Hepatol.* 2008 Nov;5(11):624-36. doi: 10.1038/ncpgasthep1257. Epub 2008 Sep 30. Review. PubMed PMID: 18825145.

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