

CLINICAL VIGNETTE

An Integrative Approach to Chronic Abdominal Wall Pain

Lawrence B. Taw, MD, FACP

Introduction

Chronic abdominal wall pain is a common, yet often overlooked, cause of chronic abdominal pain for which patients often undergo an extensive and unrevealing workup before being diagnosed.¹⁻² Here, a case of chronic abdominal wall pain is described and successfully treated with an integrative approach involving a series of trigger point injections, use of a transcutaneous electric nerve stimulator (TENS), and lifestyle modification.

Case Presentation

A 30-year-old, wheelchair bound female with a past medical history of cerebral palsy, asthma, depression, and seizures presented with right lower quadrant abdominal pain. The abdominal pain developed six months prior resulting in evaluation at an outside emergency room. CT urogram showed only a small pleural effusion, transvaginal ultrasound was normal, and abdominal ultrasound demonstrated a 3.7cm echogenic lesion in the left hepatic lobe. She was treated for a urinary tract infection and discharged with follow up with her primary care physician (PCP).

The patient saw her PCP who obtained plain films of the right hip and intraarticular right hip joint injection without improvement of the pain. She also tried physical therapy with no benefit. Her gynecologist, performed a pelvic exam which was normal. CT of the abdomen and pelvis was unremarkable except for an indeterminate liver mass of the left lobe. Magnetic resonance imaging of the abdomen confirmed the mass was consistent with focal nodular hyperplasia requiring no further surveillance. The patient consulted with a gastroenterologist, and endoscopy and colonoscopy were normal.

The patient was referred to East-West Medicine where she presented with her parents who provided much of the history. The right lower quadrant abdominal pain was described as sharp and constant. It was not associated with eating or bowel movements. The pain was better with lying down, but woke her up every few hours throughout the night. She had to stop her job due to the pain. She denied any nausea, vomiting, diarrhea, constipation, fever, or chills. Pregabalin and dicyclomine were tried without relief. At this time, her medications included acetaminophen with codeine three times a day, trazodone, fluoxetine, montelukast, albuterol and fluticasone inhalers, and ethinylestradiol/levonorelgestrel pill. She had no history of prior abdominal surgeries.

On physical exam, vital signs were normal. She was thin and her abdomen had discrete areas of tenderness along the lateral edge of the right rectus abdominis muscle without rebound. Otherwise her exam was unremarkable.

The patient's presentation was consistent with chronic abdominal wall pain for which she underwent a diagnostic and therapeutic trial of trigger point injections with 1% lidocaine. Her parents were advised to have the patient out of her wheelchair to change positions throughout the day and to use a transcutaneous electrical nerve stimulator (TENS) with pads applied locally to help manage the pain.

At her second visit one month later, the abdominal pain was much improved. The patient woke up just once a night instead of every few hours. She no longer required codeine and was only taking acetaminophen twice a day. At her third visit two months later, she was off acetaminophen and woke up only a few times a week due to the pain. She was able to return to work.

Discussion

The patient with chronic abdominal pain provides a unique challenge to a variety of physicians, including primary care providers, gastroenterologists, gynecologists, pain management specialists, and general surgeons. According to some estimates, 10-30% of patients presenting to gastroenterologists with chronic abdominal pain are eventually diagnosed with chronic abdominal wall pain (CAWP).³ The estimated incidence of abdominal wall pain is 1 in 1800 individuals. Although cases have been reported in children and older adults, the peak incidences are between the ages of 15 to 20 and 35 to 45 years.⁴

The most common cause of CAWP is anterior cutaneous nerve entrapment syndrome, which mostly affects middle-aged adults and appears to be four times more prevalent in women than in men. Other causes of CAWP include myofascial pain, nerve irritation in a surgical scar, hernia, rectus sheath hematoma, abdominal wall endometriosis, or compression of thoracic spinal nerves by tumor or slipped rib syndrome. Due to the abdominal wall being the source of the pain, the pain tends to have no relationship to eating or bowel function, but is often affected by position or posture. On physical exam, a positive Carnett's sign is often telling when tenderness is unchanged or increased while abdominal muscles are contracted. This was

difficult to elicit in this patient due to her history of cerebral palsy, but localized, active trigger points were able to be identified.

Performing local trigger point injections with a local anesthetic or glucocorticoids can be both diagnostic and therapeutic.⁵⁻⁶ In addition to trigger point injections, “dry” needling of these points has been utilized with some success.⁷ In a randomized controlled trial, local acupuncture and anesthetic injections were both effective in reducing clinical pain in women with abdominal myofascial pain syndrome.⁸ Nerve stimulation may also be of benefit,⁹ and furthermore, may be performed from the convenience of home through the use of a transcutaneous electrical nerve stimulator (TENS). Other therapeutic options include physical therapy, massage, oral and topical analgesic agents, activity and exercise modifications, or in severe and refractory cases, neurectomy may be considered.¹⁰

This patient with CAWP responded favorably to a short series of trigger point injections, activity modification, and the use of a TENS unit at home. Not only did her pain markedly improve, but she was able to sleep better, return to work, and stop all her analgesic pharmacotherapy. CAWP patients often undergo expensive diagnostic testing and imaging to rule out visceral sources that may be avoided if properly diagnosed and treated early with trigger point injections and directed self-care. Physicians should be aware that CAWP is a common and often missed clinical diagnosis, but if identified accurately can reduce unnecessary testing and be effectively treated with a combination of therapeutic options.

REFERENCES

1. **Kamboj AK, Hoversten P, Oxentenko AS.** Chronic Abdominal Wall Pain: A Common Yet Overlooked Etiology of Chronic Abdominal Pain. *Mayo Clin Proc.* 2019 Jan;94(1):139-144. doi: 10.1016/j.mayocp.2018.09.018. PMID: 30611441.
2. **Glissen Brown JR, Bernstein GR, Friedenber FK, Ehrlich AC.** Chronic Abdominal Wall Pain: An Under-Recognized Diagnosis Leading to Unnecessary Testing. *J Clin Gastroenterol.* 2016 Nov/Dec;50(10):828-835. doi: 10.1097/MCG.0000000000000636. PMID: 27548731.
3. **Srinivasan R, Greenbaum DS.** Chronic abdominal wall pain: a frequently overlooked problem. Practical approach to diagnosis and management. *Am J Gastroenterol.* 2002 Apr;97(4):824-30. doi: 10.1111/j.1572-0241.2002.05662.x. PMID: 12003414.
4. **van Assen T, Brouns JA, Scheltinga MR, Roumen RM.** Incidence of abdominal pain due to the anterior cutaneous nerve entrapment syndrome in an emergency department. *Scand J Trauma Resusc Emerg Med.* 2015 Feb 8;23:19. doi: 10.1186/s13049-015-0096-0. PMID: 25887961; PMCID: PMC4327965.
5. **Greenbaum DS, Greenbaum RB, Joseph JG, Natale JE.** Chronic abdominal wall pain. Diagnostic validity and costs. *Dig Dis Sci.* 1994 Sep;39(9):1935-41. doi: 10.1007/BF02088128. PMID: 8082500.
6. **Suleiman S, Johnston DE.** The abdominal wall: an overlooked source of pain. *Am Fam Physician.* 2001 Aug 1;64(3):431-8. PMID: 11515832.
7. **Hong CZ.** Lidocaine injection versus dry needling to myofascial trigger point. The importance of the local twitch response. *Am J Phys Med Rehabil.* 1994 Jul-Aug;73(4):256-63. doi: 10.1097/00002060-199407000-00006. PMID: 8043247.
8. **Mitidieri AMS, Baltazar MCDV, da Silva APM, Gurian MBF, Poli-Neto OB, Candido-Dos-Reis FJ, Nogueira AA, Rosa-E-Silva JC.** Ashi Acupuncture Versus Local Anesthetic Trigger Point Injections in the Treatment of Abdominal Myofascial Pain Syndrome: A Randomized Clinical Trial. *Pain Physician.* 2020 Sep;23(5):507-518. PMID: 32967393.
9. **McGrady EM, Marks RL.** Treatment of abdominal nerve entrapment syndrome using a nerve stimulator. *Ann R Coll Surg Engl.* 1988 May;70(3):120-2. PMID: 2970241; PMCID: PMC2498727.
10. **Oor JE, Ünlü Ç, Hazebroek EJ.** A systematic review of the treatment for abdominal cutaneous nerve entrapment syndrome. *Am J Surg.* 2016 Jul;212(1):165-74. doi: 10.1016/j.amjsurg.2015.12.013. Epub 2016 Feb 10. PMID: 26945611.