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# Chicken and Egg: Peripheral Nerve Entrapment or Myofascial Trigger Point?

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## LETTERS TO EDITORS

A case report by Hong et al. [1], entitled "Successful treatment of abdominal cutaneous entrapment syndrome (ACES) using ultrasound guided injection," underlined the importance of the differential diagnosis of non-visceral pain and pain originating from visceral organs in properly treating chronic abdominal pain. A recent investigation found that ACES was present in 3.6% of patients diagnosed with functional abdominal pain [2]. The case also raised an unanswered question about what differences exist between nerve entrapment and myofascial pain with regard to pathomechanisms and treatment.

The authors did not mention myofascial pain syndrome, which has been proposed as one of the entities to be ruled out in evaluating patients with non-specific abdominal pain. I am sure that it was challenging to locate the trigger point or taut band by palpation of the abdominal muscles. The ultrasound-guided perineural injection of a local anesthetic and steroid led to excellent results, and this case seemed more related to nerve entrapment considering the relapsing nature of myofascial pain syndrome and the fact that there was no direct treatment applied to the trigger point.

There have been conflicting reports and opinions on the pathogenesis of these two disease entities, which seem different in some respects and alike in others [3]. For example, a taut band or trigger point can be found in patients diagnosed with nerve entrapment syndrome, in which nerve irritation or compression might cause secondary hyperalgesia in the muscles supplied by the entrapped nerve [3]. Conversely, nerve compression in myofascial pain syndrome can be attributed to a taut band that entraps the nerve [4,5]. The simultaneous occurrence of myofascial pain in relation to nerve entrapment has been reported [6]. Several factors, including pain characteristics, electromyographic findings, and autonomic dysfunction, have been proposed for the differentiation of these two phenomena. However, there have been no decisive research reports on this controversy.

Reports on nerve entrapment and myofascial pain syndrome may be attempting to explain the same phenomenon from two different points of view; in the clinical setting, they seem intimately connected and indistinguishable. Pain clinicians approaching this type of pain could, I think, direct treatment toward both the muscle and nerve simultaneously using a double-edged saw such as TPI or nerve block while we await sufficient knowledge on the source of pain.

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## REFERENCES


1. Hong MJ, Kim YD, Seo DH. Successful treatment of abdominal cutaneous entrapment syndrome using ultrasound guided injection. Korean J Pain 2013; 26: 291-4.
2. van Assen T, de Jager-Kievit JW, Scheltinga MR, Roumen RM. Chronic abdominal wall pain misdiagnosed as functional abdominal pain. J Am Board Fam Med 2013; 26: 738-44.
3. Quintner JL, Cohen ML. Referred pain of peripheral nerve origin: an alternative to the "myofascial pain" construct. Clin J Pain 1994; 10: 243-51.
4. Hong CZ, Simons DG. Response to treatment for pectoralis minor myofascial pain syndrome after whiplash. J Musculoskelet Pain 1993; 1: 89-131.
5. Wheeler AH. Myofascial pain disorders: theory to therapy. Drugs 2004; 64: 45-62.
6. Qerama E, Kasch H, Fuglsang-Frederiksen A. Occurrence of myofascial pain in patients with possible carpal tunnel syndrome - a single-blinded study. Eur J Pain 2009; 13: 588-91.


# Reply to the "Chicken and Egg: Peripheral Nerve Entrapment or Myofascial Trigger Point?"

## - Use of Hydro-dissection in the Management of Chronic Abdominal Pain


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We appreciate your interest in our work and the comments on our article "Successful treatment of abdominal cutaneous entrapment syndrome (ACES) using ultrasound guided injection" in the KJP. Pain physicians always face the challenge of discriminating myofascial pain syndrome (MPS) and nerve entrapment as the primary cause of pain. However, as you pointed out, controversies regarding the sequence of onset of MPS and nerve entrapment are still unresolved - "Chicken and Egg".

The diagnosis of ACES is based on the finding of a constant site of tenderness that is superficially located, with a small area of maximal tenderness that can be localized with a fingertip (trigger point). A small area with somatosensory alterations surrounding the trigger point is often found in ACES, possibly enabling discrimination between a myofascial and a radicular cause of pain [1]. According to previous reports, MPS and radiculopathy are less frequent causes of abdominal wall pain [2,3]. Owing to the special anatomical features of the abdominal wall itself, there is a greater likelihood of pain due to nerve entrapment than due to MPS. ACES is thought to be an ischemic neuropathy caused by entrapment of lateral or medial anterior cutaneous branch of intercostal nerves 7-12. The cutaneous nerve branches through the rectus abdominisis so variable and abrupt that ischemia can easily develop under circumstances such as increased abdominal pressure, which can cause entrapment of the nerves in the muscular foramen [4]. Furthermore, even though MPS is associated with the abdominal wall, it is very difficult to find the taut band that is essential to diagnose MPS. Locating it mainly depends on physician's ability and experience in clinical practice. However, even experts may find it difficult, if the taut band is small and exists deep within the abdominal muscle [5]. ACES diagnosis is confirmed by local subfascial anesthetic injection of an anesthetic agent. This injection has both diagnostic and therapeutic value in these patients. It has been hypothesized that the injected volume leading to release of an entrapped

nerve [6]. This technique could be called "hydro-dissection" rather than nerve block or trigger point injection (TPI). A previous finding on attenuation of pain levels in patients following saline injection may support this suggested mechanism [7]. Under ultrasound guidance, we injected 10 ml of a local anesthetic agent, and confirmed the hydro-dissection of suspected nerve entrapment area via the image.

In general, we are in agreement with your comments regarding the "Chicken and Egg" question; however, for management of chronic abdominal pain, we suggest that pain physicians administer a new kind of concept of injection, so called "hydro-dissection" under ultrasound guidance. We hope that the techniques used in our study aid pain physicians in gaining more knowledge of ACES: an intriguing syndrome that is very common, but largely unrecognized.

## REFERENCES

1. Applegate WV. Abdominal Cutaneous Nerve Entrapment Syndrome (ACNES): a commonly overlooked cause of abdominal pain. Perm J 2002; 6: 20-7.
2. Roumen RM, Scheltinga MR. Abdominal intercostal neuralgia: a forgotten cause of abdominal pain. Ned Tijdschr Geneeskd 2006; 150: 1909-15.
3. Srinivasan R, Greenbaum DS. Chronic abdominal wall pain: a frequently overlooked problem. Practical approach to diagnosis and management. Am J Gastroenterol 2002; 97: 824-30.
4. Applegate WV, Buckwalter NR. Microanatomy of the structures contributing to abdominal cutaneous nerve entrapment syndrome. J Am Board Fam Pract 1997; 10: 329-32.
5. Gerwin RD, Shannon S, Hong CZ, Hubbard D, Gevirtz R. Interrater reliability in myofascial trigger point examination. Pain 1997; 69: 65-73.
6. Kanakarajan S, High K, Nagaraja R. Chronic abdominal wall pain and ultrasound-guided abdominal cutaneous nerve infiltration: a case series. Pain Med 2011; 12: 382-6.
7. Boelens OB, Scheltinga MR, Houterman S, Roumen RM. Randomized clinical trial of trigger point infiltration with lidocaine to diagnose anterior cutaneous nerve entrapment syndrome. Br J Surg 2013; 100: 217-21.

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