

Importance of a Physical Examination for Efficient Differential Diagnosis of Abdominal Pain: Diagnostic Usefulness of Carnett's Test in Psychogenic Abdominal Pain

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Abdominal pain can be a challenging complaint for both primary care and specialist physicians because it is frequently a benign complaint, but it can also herald a serious acute clinical condition. An epidemiologic assessment of acute abdominal pain is classified in outpatients complaining of abdominal pain on their first visit to primary care physicians including the following: whole abdominal, epigastric, right subcostal, left subcostal, right flank, left flank, periumbilical, right-lower, mid-lower, and left lower pain (1). Abdominal pain can be categorized as follows: intra-abdominal pain, abdominal wall pain, and referred pain. Patients are often subjected to a variety of procedures in an attempt to find a cause for the abdominal pain. Failure to find a visceral cause for the pain may prompt the physician to apply a functional or psychosomatic label to the patient, with any treatment directed along those lines. However, awareness that abdominal pain may have a non-visceral origin can forestall a fruitless search for intra-abdominal pathology. Abdominal wall pain is most commonly diagnosed on the basis of a patient's history and a physical investigation. A careful history and examination, and noticing symptoms arising from abdominal wall pain, might lead to an accurate diagnosis and appropriate treatment, and it could avoid negative examinations (2-5).

Carnett's test is a clinical test in which abdominal tenderness is evaluated. It is useful for differentiating abdominal wall pain from intra-abdominal pain. While supine, the patient is asked to perform a straight-leg-raising maneuver while the examiner's hand touches the painful site. Raising only the head while in the supine position achieves the same purpose. These maneuvers tighten the rectus abdominis muscles, increasing the pain from the entrapped nerve. True visceral sources of pain are associated with less tenderness when abdominal muscles are tense (2, 6). A previous study

reported that Carnett's test has a sensitivity of 81% and a specificity of 88%. The constant site of tenderness has the highest sensitivity (97%) but the lowest specificity (54%), whereas superficial tenderness has the highest specificity (90%) with a sensitivity of 84%. Another study, proposed criteria for diagnosing abdominal wall pain, and tested 33 patients with abdominal wall pain compared with 62 patients with intra-abdominal pain; they found a sensitivity of 85% and specificity of 97%, which appeared to be better than those for the Carnett's test alone (9). This suggests that clinical methods are sufficient to diagnose abdominal wall pain in most cases and can be used to rule out other possible diagnoses (Table 1) (7-11). If Carnett's test is positive, pain relief after an accurately placed nerve block or trigger point anesthesia injection can lead to diagnostic therapy. Pain relief with anesthesia injection affords excellent reassurance to the patient when effective (3, 12, 13). Carnett's test may not be interpretable in patients who cannot adequately comply with leg or head-raising maneuvers. False positive results may occur from visceral causes of pain that involve the local parietal peritoneum (14).

Psychogenic abdominal pain is inextricably linked to the origin of pain. The pain is often described as severe and persistent, having been experienced for several years and being constantly present. The pain is consistent with the anatomy of the nervous system, and no organic pathological or pathophysiological mechanism can be classified to the physical findings. Patients usually appear well compared with intra-abdominal patients (15, 16). In this issue of *Internal Medicine*, Takada et al evaluated the diagnostic usefulness of Carnett's test for psychogenic abdominal pain, which was established by a retrospective study in 5,399 outpatients with abdominal pain. The differentiation of psychogenic abdominal pain from intra-abdominal pain has not yet

Table 1. Abdominal Wall Pain Diagnostic Criteria

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- The patient indicates a very localized pain (the most severe component covered by a fingertip), OR
 - Fixed location of tenderness, AND
 - Superficial tenderness (at the level of or anterior to abdominal wall muscles), OR
 - Point tenderness diameter is no greater than 2.5 cm, OR
 - Increased point tenderness on abdominal wall muscle tensing (positive Carnett test)
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been addressed (17). Psychogenic abdominal pain is non-visceral abdominal pain as well as abdominal wall pain. Takada et al concluded that the Carnett's test was useful for making a diagnosis of psychogenic abdominal pain as well as for detecting abdominal wall pain. Its application may facilitate a more efficient diagnosis of psychogenic pain.

Clinicians always need to be aware of non-visceral causes for a patient's symptoms. A careful history is crucial, and physical examination should always be performed including Carnett's test. Carnett's test not only relieves the pain and reassures the patient, but also saves numerous unnecessary and often unpleasant investigations. However, Carnett's test is not infallible; a positive test must always be part of the whole clinical picture. Some patients may have false positive results. It is important to closely follow up patients with detailed physical examinations including Carnett's test to accurately determine whether non-visceral abdominal pain is involved.

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