Introduction

Anterior abdominal cutaneous nerve entrapment syndrome (ACNES) is neuropathic pain caused by entrapment in the abdominal muscles of the terminal branches of the thoracic intercostal nerves, which can radiate throughout the affected dermatome. There is an increase in pain after contraction of the abdominal muscles, with no relationship between pain and meals or bowel function.

Diagnosis is clinical, so an adequate history and physical examination are necessary, without significant findings being observed in complementary tests.

The main treatment consists of injecting a local anesthetic along with corticosteroids into the trigger points, thereby obtaining immediate pain relief.

ACNES should be considered in the differential diagnosis of chronic abdominal pain, as it can be resolved by the primary care physician and avoids the performance of multiple complementary tests, as well as visits to multiple specialists. This article will enhance the readers’ understanding of ACNES and assist primary care physicians in effectively diagnosing this syndrome.

Case Report

We present the case of a 70-year-old man, with no history of interest, who went to his family doctor’s office for epigastric pain of 6 months’ duration, unrelated to eating, which increased with activities involving the muscles rectus abdominis. On examination, the patient reported increased pain at the tip of the finger on deep palpation of the left lateral border of the rectus abdominis with radiation of the same towards the dorsal region.

Laboratory tests with anti-transglutaminase antibodies, fecal calprotectin detection, endoscopy, abdominal ultrasound, and abdominal computed tomography were requested, with no significant changes observed.
Due to the absence of significant findings in the complementary tests and the persistence of abdominal pain after analgesic treatment prescribed with paracetamol, metamizole, and tramadol, the diagnosis of ACNES was suspected. Next, a local infiltration was performed at the point of greatest pain with mepivacaine plus corticosteroids, obtaining immediate relief of abdominal pain, which supports the diagnosis of that syndrome.

Six months after the infiltration, the patient continued without pain, after which the diagnosis of ACNES was confirmed.

**Discussion**

Anterior abdominal cutaneous nerve entrapment syndrome (ACNES) is caused by entrapment in the abdominal muscles of the terminal branches of the thoracic intercostal nerves in roots 8-12, causing severe neuropathic pain,[5] which can sometimes radiate throughout the entire abdomen affected dermatome.[6] Patients present a point of pain located on the lateral edge of the rectus abdominis muscle, producing an increase in pain after contraction of the abdominal muscles (positive Carnett's sign).[7] In addition, there is no relationship of pain with meals or bowel function.[8]

We found various factors that can aggravate this pathology, including increased abdominal muscle tension, sitting or lateral decubitus on the affected side.[9]

The prevalence varies from 15% to 30%. Entrapment can be caused by intra- or extra-abdominal pressure, ischemia, or localized scarring.[10]

The diagnosis of ACNES is based on an adequate history and physical examination of the patient, with pain being the dominant symptom. The increase in pain is conditioned by factors that increase the tension of the abdominal muscles. In addition, complementary tests do not show significant findings, misdiagnosing patients with irritable bowel syndrome.[4]

To establish the diagnosis of ACNES, the presence of well-localized abdominal pain together with an adequate response to the injection of a local anesthetic at the trigger point is necessary, with normal laboratory and imaging tests.[9]

The differential diagnosis of this syndrome should be made with other pathologies that cause pain in the abdominal wall such as Spigelian hernia, rectus sheath hematoma, diabetic thoracic polyradiculopathy, herpes infection, and slipping rib syndrome, among others.[8]

There are different treatments for this affection, among which the injection of a local anesthetic in the trigger points combined with corticosteroids that produces immediate relief of abdominal pain, which provides the diagnosis of ACNES. In the case of patients who present recurrent pain, after three injections of local anesthetic plus corticosteroids in the same location in one year, surgical treatment will be considered through anterior neurectomy.[9]

Family physicians play an important role in the differential diagnosis of chronic abdominal pain as they are usually the first physician to see the patient. Patients may present with long-standing abdominal pain that does not subside with usual analgesics and that is accentuated by increased abdominal pressure. To establish the diagnosis, it is essential to perform a thorough clinical history and a good physical examination. The treatment can be carried out in the primary care consultation, since it consists of the infiltration of local anesthetic together with corticosteroids at the point of maximum pain. This treatment achieves pain remission in between 38% and 87% of cases.[7]

**Conclusion**

A case of ACNES is presented that may be one of the causes of chronic abdominal pain, which is one of the most frequent reasons for consultation in the family doctor's office. Appropriate treatment by infiltration of local anesthetic together with corticosteroids can avoid multiple unnecessary complementary tests and referral to various specialists.

**Key messages**

1. Anterior abdominal cutaneous nerve entrapment syndrome (ACNES) is a cause of chronic abdominal pain, which can influence the daily activity of patients.
2. The diagnosis of ACNES is clinical, so complementary tests are not necessary.
3. For the treatment of ACNES, it is necessary to infiltrate the point of maximum pain with a local anesthetic together with corticosteroids.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal their identity.

**Ethical approval**

This article does not contain any studies with human or animal subjects performed by the authors. The authors attest that this case report was determined not to require Institutional Review Board/Ethics Committee review, and the corresponding protocol/approval number is not applicable as this was a retrospective case report.

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**Conflicts of interest**

There are no conflicts of interest.
Sanchez Galindo: Chronic abdominal pain due to entrapment of the anterior abdominal cutaneous nerve (ACNES): About a case

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