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# Anterior cutaneous nerve entrapment syndrome (ACNES) in a Palliative care setting

## Abstract

Chronic pain emanating from the abdominal wall is frequently unrecognized or confused with visceral pain, often leading to extensive diagnostic testing before an accurate diagnosis is established. Anterior cutaneous nerve entrapment syndrome (ACNES) is one of the most frequent causes of chronic abdominal wall pain.

**Keywords:** pain, palliative, nerve block, abdominal pain

## Introduction

Chronic abdominal wall pain often poses diagnostic challenges, frequently leading to extensive and unnecessary investigations [1]. Anterior cutaneous nerve entrapment syndrome (ACNES), a prevalent cause of chronic abdominal wall pain, warrants special attention in palliative care settings due to its significant impact on patients' comfort and quality of life [2].

## Case presentation

Recently, a 31-year-old male patient was diagnosed with ACNES in 2020. He presented with severe, localized abdominal pain persisting for several months, associated with a positive Carnett's sign (pain aggravated by movement and with abdominal muscles'

tension). Despite an initial Numeric Rating Scale (NRS) pain score of 7, his reliance on as-needed (SOS) analgesics provided inconsistent relief, highlighting the inadequacy of current pain management strategies.

Upon a comprehensive evaluation, initiated was a structured pain management plan. Recognizing the importance of addressing all the aspects of pain management, a multifaceted approach was employed. This included administration of a transverse abdominis plane (TAP) block for targeted pain relief. Additionally, the oral analgesics regimen was optimized with NSAIDs and Gabapentin for their neuropathic pain management properties. Patient education emphasizing the consistent use of analgesics to prevent breakthrough pain, alongside detailed information about ACNES and its treatment, was integral to the intervention. Through this intervention, the patient's

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**Table 1. Possible therapeutic options in this case scenario [3–9]**

Therapeutic option	Description	Indications	Advantages	Disadvantages
Local anesthetic injections	Injection of local anesthetic at the site of nerve entrapment	Diagnostic and therapeutic for ACNES	Immediate pain relief	The short duration of the effect
TAP block	Regional anesthesia technique targeting nerves in the abdominal wall	Moderate to severe ACNES pain	Longer duration of pain relief	Requires expertise, potential complications
Oral analgesics	NSAIDs, acetaminophen for mild to moderate pain	Mild to moderate pain	Non-invasive, easy administration	Limited efficacy in severe pain, side effects
Opioid analgesics	Step 2 opioids for moderate pain, Step 3 opioids for severe pain	Moderate to severe pain	Effective for severe pain	Risk of tolerance, dependence, side effects
Topical analgesics	Lidocaine patches, capsaicin cream	Localized pain	Targeted relief, minimal systemic effects	Limited efficacy, skin irritation
Anticonvulsants	Gabapentin, pregabalin for neuropathic pain	Neuropathic pain	Effective for neuropathic pain	Sedation, dizziness, potential for misuse
Antidepressants	Tricyclic antidepressants (e.g., amitriptyline), SNRIs	Neuropathic pain, comorbid depression	Effective for chronic pain and depression	Side effects, potential for drug interactions
Physiotherapy	Physical therapy, abdominal muscle exercises	Adjunctive therapy for chronic pain	Improves muscle strength, reduces pain	Requires patient motivation and participation
Psychological support	Counseling, CBT	Chronic pain with a psychological component	Addresses emotional and psychological aspects	Requires access to trained professionals
Surgical intervention	Neurectomy, nerve decompression	Refractory ACNES not responding to other treatments	Potentially curative for severe cases	Invasive, potential surgical risks
Acupuncture	Traditional Chinese medicine technique	Adjunctive therapy for pain management	Minimal side effects, complementary approach	Variable efficacy, requires multiple sessions

ACNES — anterior cutaneous nerve entrapment syndrome; CBT — cognitive-behavioral therapy; NSAIDs — non-steroidal anti-inflammatory drugs; TAP — transversus abdominis plane; SNRIs — serotonin-norepinephrine reuptake inhibitors

pain significantly decreased from an NRS score of 7 to 2, demonstrating the efficacy of this approach. This outcome underscores the pivotal role of targeted pain management strategies and effective communication in palliative care.

## Discussion

The present case highlights several important considerations. Characteristic features of ACNES, such as sharp, localized abdominal pain aggravated by movement and with abdominal muscles' tension (positive Carnett's sign) necessitate a structured diagnostic approach. Various interventions, including local anesthetic injections, TAP block, and oral analgesics, offer effective pain relief for ACNES (Table 1). Despite planned invasive interventions

like the TAP block, maintaining consistent analgesic levels is essential for preventing breakthrough pain and ensuring patient comfort. The timing of interventions, including the TAP block, may vary depending on the patient's pain severity and response to initial treatment. The differential diagnoses (Table 2) aid in distinguishing ACNES from other causes of abdominal pain in palliative care settings. While limited literature exists on ACNES within palliative care populations, further research in this area is warranted to enhance understanding and improve management strategies.

This case serves as a reminder of the critical need for healthcare providers to consider conditions like ACNES in the differential diagnosis of chronic abdominal pain [10]. It also emphasizes the importance of educating patients about their conditions and the

**Table 2. Differential diagnoses in a palliative medicine setup**

Condition	Key features	Diagnostic tests
ACNES	Sharp, localized abdominal pain, positive Carnett's sign, pain not associated with visceral symptoms	Positive Carnett's sign, diagnostic nerve block
Cancer-related pain	Persistent, progressive pain localized to a tumor site, possible palpable mass	Imaging (CT, MRI), biopsy
Opioid-induced constipation	Abdominal distension, reduced bowel movements, discomfort, bloating	Clinical diagnosis, abdominal X-ray
Malignant bowel obstruction	Colicky abdominal pain, vomiting, constipation, abdominal distension	Abdominal X-ray, CT scan
Peritoneal carcinomatosis	Diffuse abdominal pain, ascites, history of abdominal malignancy	Ultrasound, CT scan, paracentesis
Chronic pancreatitis	Persistent epigastric pain radiating to the back, weight loss, steatorrhea	Serum amylase/lipase, abdominal CT or MRI
Mesenteric ischemia	Severe, sudden abdominal pain, risk factors like atrial fibrillation, heart failure	CT angiography, mesenteric Doppler ultrasound
Hepatomegaly/liver metastases	Right upper quadrant pain, jaundice, weight loss, anorexia	Liver function tests, abdominal ultrasound, CT
Ascites	Abdominal distension, shifting dullness, fluid wave, underlying liver disease or malignancy	Ultrasound, paracentesis
Peptic ulcer disease	Epigastric pain, possible GI bleeding, nausea, melena	Endoscopy, <i>Helicobacter pylori</i> , testing
GERD	Burning epigastric pain, and acid regurgitation, exacerbated by lying down	Clinical diagnosis, endoscopy
Infectious colitis	Diarrhea, abdominal pain, fever, immunocompromised status	Stool culture, colonoscopy
Opioid withdrawal	Abdominal cramping, agitation, sweating, nausea, diarrhea	Clinical diagnosis, patient history

ACNES — anterior cutaneous nerve entrapment syndrome; CT — computed tomography; GERD — gastroesophageal reflux disease; GI — gastrointestinal; MRI — magnetic resonance imaging

proper use of medications. By doing so, one can prevent the pitfalls of misdiagnosis and inadequate pain management, thereby enhancing patient outcomes and quality of life.

Managing ACNES in palliative care requires a holistic approach, integrating targeted interventions with patient education. By addressing the unique challenges of chronic abdominal wall pain, one can optimize outcomes and enhance the quality of life for patients in palliative care settings [11].

## Article information and declaration

### Data availability statement

The data that support the findings of this study are available from the corresponding author, Dr. Devina Juneja, upon reasonable request.

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### Author contributions

Data collection, writing: original draft preparation — DJ; writing: review and editing — SV; supervision — SM, SB.

### Conflict of interest

The author declares no conflict of interest.

### Ethics statement

The authors certify that they have obtained all appropriate patient consent forms. In these forms, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity.

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### Supplementary material

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