PAIN MEDICINE CASE REPORTS

ISSN 2768-5152

Volume 9, Number 6, pp. 301-304

Abdominal Wall Abscess as a Nonvisceral Cause of Chronic Abdominopelvic Pain: A Case Report

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Background: Chronic abdominal pain often presents as a diagnostic challenge due to a broad differential. Abdominal wall pain is often overlooked and mistaken for visceral pain. Extensive diagnostic workups, such as laboratory tests, imaging, and endoscopic procedures, are frequently performed and yield inconclusive results.

Case Report: A 29-year-old woman presented with chronic lower abdominal pain following a cesarean section. Diagnostic workup, including imaging and consultations, was unrevealing. On examination, the pain was localized over the prior incision site with a positive Carnett's sign. Point-of-care ultrasound revealed a hypoechoic lesion in the abdominal wall. Ultrasound-guided aspiration yielded purulent fluid, and cultures grew Streptococcus parasanguinis. The patient experienced symptom relief following aspiration and underwent surgical excision.

Conclusions: Abdominal wall abscesses are a rare but treatable cause of chronic abdominal pain. Carnett's sign and point-of-care ultrasound are valuable tools for early diagnosis, which can prevent unnecessary testing, facilitate targeted treatment, and improve outcomes.

Key words: Abdominal wall abscess, chronic pain, Carnett's sign, Streptococcus parasanguinis, case report

BACKGROUND

Determining the etiology of chronic abdominal pain often proves to be a diagnostic challenge, frequently involving numerous diagnostic tests that can prolong treatment and increase unnecessary health care costs (1). Chronic abdominal wall pain is a subset of abdominal pain that is often underrecognized or mistaken for visceral pain (2). Examples of potential sources of pain in the abdominal wall include myofascial pain, subcutaneous endometriosis, tumors, hernias, and nerve entrapment syndromes. Infection, though less common, should also be considered in the differential diagnosis of chronic abdominal wall pain. Careful evaluation for nonvisceral sources of abdominal wall pain can help reduce extensive diagnostic tests and focus treatment options for patients.

In this case report, a positive Carnett's sign and an abdominal ultrasound performed at an outpatient clinic were able to identify an abdominal wall abscess as the culprit for a patient's chronic abdominal pain. This case highlights the clinical utility of these accessible, low-cost tools, which can guide clinicians toward accurate diag-

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Disclaimer: There was no external funding in the preparation of this manuscript.
Conflict of interest: Each author certifies that he or she, or a member of his or her immediate family, has no commercial association (i.e., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted manuscript.
Patient consent for publication:Written informed consent was not obtained from the patient for publication of this case report and accompanying images. Per institutional policy, case reports are exempt from requiring consent when all patient identifiers are removed.
This case report adheres to CARE Guidelines and the CARE Checklist has been provided to the journal editor.
Accepted: 2025-06-24, Published: 2025-10-31

nosis and effective management. Our report contributes to the growing literature emphasizing the importance of considering abdominal wall sources in patients with persistent, unexplained abdominal pain.

CASE PRESENTATION

A 29-year-old woman with no significant past medical history presented to the outpatient pain clinic with chronic abdominal pain in the pelvic region. The pain started 6 years ago after a cesarean section delivery. Cosmetic abdominoplasty was performed 2 years after the initial pain onset, which did not alter her abdominal pain. A comprehensive workup, including basic lab work, noncontrast computed tomography (CT) scan of the abdomen and pelvis, transvaginal ultrasound, and a gastroenterology consult, was unrevealing. Upon physical examination, she was able to identify an area of maximal tenderness in the lower abdominal region, immediately above the cesarean section incision line. Her pain worsened with abdominal muscle engagement and palpation to this area. Trigger points were identified and a positive Carnett's sign was determined, both concordant with her usual symptoms. At this point, the differential diagnosis included an abdominal trigger point, scar neuroma, abdominal wall abscess, gastrointestinal fistula, or an old hematoma.

A focused point-of-care ultrasound evaluation was then performed in the clinic, which revealed a hypoechoic lesion (Fig. 1) at the site of her pain. Ultrasound-guided aspiration of the lesion yielded 5 mL of thick brown fluid, and the patient experienced significant pain relief after aspiration. Cytologic and pathologic analysis of the aspirate revealed inflammatory cells and bacterial growth of Streptococcus parasanguinis. A follow-up abdomen and pelvis CT scan with contrast confirmed the presence of a 3.4 cm fluid collection/abscess (Fig. 2). The patient was then referred to a general surgeon and subsequently underwent excision of the abscess.

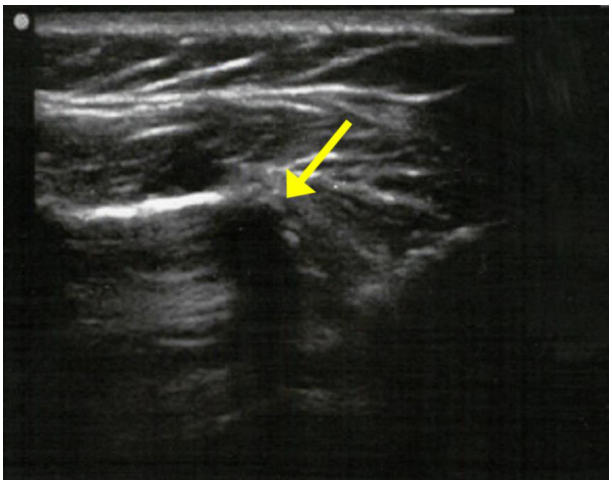

Fig. 1. A limited ultrasound evaluation revealed a hypoechoic lesion (shown by yellow arrow) in the area of her pain.

DISCUSSION

Chronic abdominal wall pain can present with many different etiologies. The differential diagnosis includes entrapment of T7-T12 cutaneous nerve branches, surgical injury to these nerves, and entrapment by local scarring or the direct effects of masses or lesions, such as hematoma or abscess (3,4). Anterior cutaneous nerve entrapment syndrome is the most common cause of abdominal wall pain, which was first described in 1971 (5). In such cases, injection of local anesthetics at the pain site or nerve block can provide immediate pain relief and help confirm the diagnosis (6). Furthermore, surgical incisions, such as Pfannenstiel incisions used in cesarean deliveries, are also known to increase the risk of nerve entrapment or complications involving the abdominal wall.

In this case, the patient presented with chronic pain localized to the lower abdominal wall near her cesarean section incision. When evaluating an abdominal wall mass, it is important to consider endometriosis as a potential cause. Endometrial tissue can either develop de novo or through iatrogenic implantation (7). Symptoms can typically present with localized pain and/or a palpable mass, with symptoms that may fluctuate in severity with the menstrual cycle (8). Although these symptoms did not present in the patient, the location of her symptoms warranted the consideration of endometriosis early in the diagnostic process.

To help differentiate visceral from abdominal wall sources of pain, Carnett's sign is a useful bedside maneuver in both adult and pediatric patients (4,9). The maneuver is performed by asking the patients to tense their abdominal muscles by lifting their head or legs while lying supine. The examination in this case revealed that the patient's pain worsened, which indicated a positive Carnett's sign and that her pain likely originated from the abdominal wall itself.

Subsequent imaging evaluation can be performed using point-of-care ultrasound with a high-frequency ultrasound (5-12 MHz), which allows for quick, noninva-

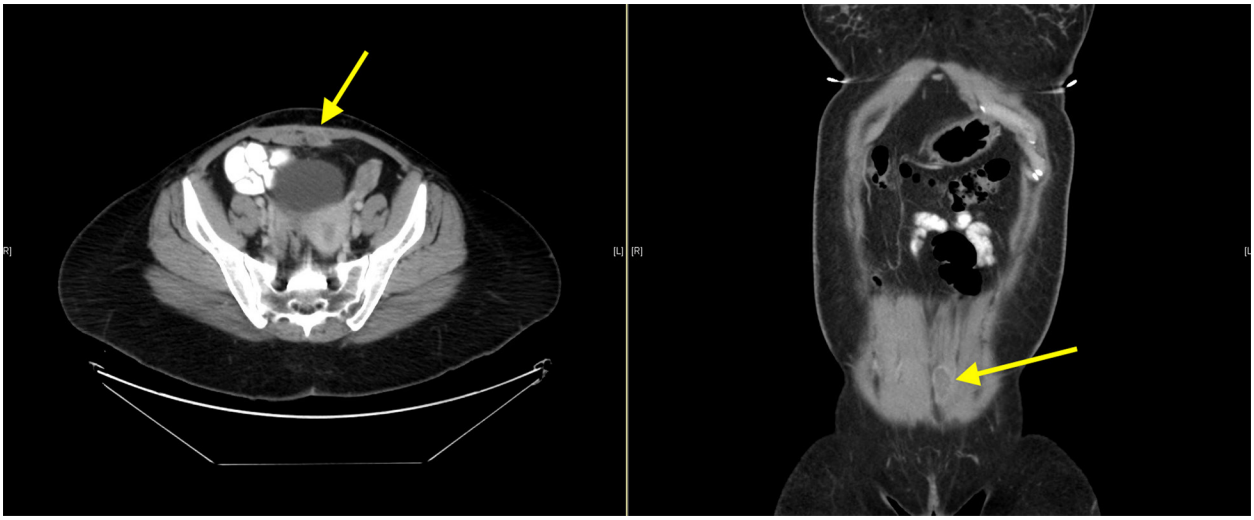

Fig. 2. An abdomen/pelvis CT scan with contrast confirmed the presence of a 3.4 cm fluid collection/abscess (shown in yellow arrows).CT, computed tomography.

sive visualization of affected areas (10). In this case, the ultrasound revealed a hypoechoic lesion, which was an abscess found to contain inflammatory cells and growth of S. parasanguinis (Fig. 1).

S. parasanguinis, a member of the viridans streptococci group, is a common commensal organism in the oral cavity of humans. While S. parasanguinis generally has a low pathogenic potential in immunocompetent individuals, it has occasionally been linked to intraabdominal infections (11). In this case, the exact route of infection remains unclear, but S. parasanguinis has been identified as part of the gastrointestinal flora and has been isolated in cases of perforated appendicitis (12,13). There has also been a reported case (14) of a brain abscess of odontogenic origin caused by S. parasanguinis, highlighting its potential to cause pathology when introduced into sterile sites.

These points illustrate the importance of investigating abdominal wall etiologies in patients with chronic localized abdominal pain, especially when symptoms are localized and persist despite negative findings from traditional workups. It is important to differentiate abdominal wall pain from intraabdominal visceral pain. While S. parasanguinis is an uncommon pathogen in this context, its presence supports the diagnosis of a sterile site infection. The positive Carnett's sign and point-of-care ultrasound confirmed the diagnosis by identifying a hypoechoic lesion consistent with an abscess (Fig. 1). While not all abdominal wall abscesses or pain sources will present with these classic findings, the simple combination of Carnett's sign and point-of-care ultrasound can help streamline the diagnosis of atypical cases.

CONCLUSIONS

This case highlights an atypical cause of chronic abdominal pain secondary to a 6-year-old chronic abscess. Chronic abdominal wall pain is an elusive problem, often leading to extensive workup and interventions. It is important to differentiate abdominal wall pain from intraabdominal visceral pain and appreciate the role of ultrasound as an effective tool for rapid evaluation of these causes. Considering abdominal wall sources early in the diagnostic process can reduce unnecessary testing, prevent delays in care, and support more efficient, cost-effective patient management.

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