CASE REPORT

Pseudoappendicitis: abdominal pain arising from thoracic spine dysfunction—a forgotten entity and a reminder of an important clinical lesson

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Accepted 6 September 2016

SUMMARY

Acute or chronic abdominal pain can be mimicked by thoracic spine dysfunction. However, it is comparatively rare and there is frequently a delay in its diagnosis that may lead to unnecessary surgery, or the patient's symptoms being undiagnosed or labelled psychosomatic. The failure to associate thoracic spine dysfunction with abdominal pain persists, despite it being first recognised over 80 years ago. 2 recent such cases are presented. The clinical presentation and diagnostic tests are described, with clear explanation of the treatment and outcome. The case for including the thoracic spine examination in the assessment of patients presenting with acute abdominal or postappendectomy pain that is of unexplained origin is made.

BACKGROUND

Abdominal pain is a common condition and around 40 000 people are admitted to hospital with appendicitis each year in England.¹ Approximately one in every 13 people will develop abdominal pain at some point in their life, and while it can develop at any age, it is most common in those aged under 30 years.¹

While appendicitis is the most common cause of abdominal pain, the American College of Surgeons recognise that other medical disorders may have similar symptoms, such as inflammatory bowel disease, pelvic inflammatory disease, gastroenteritis, urinary tract infection, right lower lobe pneumonia, Meckel's diverticulum, intussusception and constipation.² Interestingly, however, thoracic spine dysfunction is not described in their list of different potential symptom sources.²

It is our aim therefore, to bring this entity to the attention of our general surgery colleagues who are not as familiar with musculoskeletal disorders such as thoracic spine dysfunction.

CASE PRESENTATION

Two cases are presented with similar histories that were both referred to a pain management specialist by the general surgery team with ongoing pain postappendectomy. No visceral cause for symptoms could be found by the surgical team, and their source of symptoms had not been identified.

The first patient (case 1) was a 19-year-old female who presented 2 years after an appendectomy, with a history of preoperative intermittent pricking pain over the right iliac fossa which had not resolved post-surgery. She was reviewed by two general

surgeons, a colorectal surgeon and a pain management consultant, and investigations via MRI, CT scan, ultrasound scan and an X-ray of the abdomen were all negative. The pathology report was normal. The 'intractable pain' was labelled as psychosomatic.

The second patient (case 2) was a 25-year-old male who reported a 6-month history of right iliac fossa pain. He was diagnosed as having appendicitis and the appendix was removed laproscopically. Histology of the appendix was normal. Postsurgery the pain continued and become more severe. He was reviewed by consultants in general surgery, colorectal surgery, gastroenterology and radiology, with subsequent ultrasound scan, MRI, CT scan of the abdomen, a colonoscopy and a barium meal and all were found to be normal. He was left with 10 cm² area of allodynia in the right iliac fossa.

DIFFERENTIAL DIAGNOSIS

On examination, a thorough spinal assessment was completed for both patients by the pain management specialist, and in both cases thoracic spine dysfunction was identified.

When both cases were examined in the prone position there was pain on posterioranterior pressure to the right T11 and T12 transverse processes (right rotational force), but no pain was found when this was repeated on the left side. This was accompanied by pain and tenderness in the right lower quadrant of their abdomen when they were both examined in the supine position.

For case 2, in addition he was extremely tender on palpation over the right iliac fossa, and had exquisite paraspinal tenderness from the level of T1–L1.

For both patients a diagnosis of right-sided thoracic spine dysfunction at the levels of T11–T12 was made in accordance with the diagnostic tests described by Maigne, Cope and Melnick.^{3–5}

In both cases, anterior cutaneous nerve entrapment syndrome (ACNES) was considered as a differential diagnosis due to the specific areas of abdominal tenderness on palpation. ACNES occurs when the terminal branches of the lower thoracic intercostal nerves are entrapped in the abdominal muscles causing localised pain in the abdomen. However, due to the accompanying spinal symptoms, a diagnosis of thoracic spine dysfunction was made for both patients.

TREATMENT

For case 1 a therapeutic right paravertebral block (or dorsal root ganglion block) at the T11/T12

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To cite: Garo-Falides B, Wainwright TW. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-216490

level was performed under sterile conditions with X-ray control. Pain relief was obtained instantly.

Case 2 was treated with a right T11, T12 and L1 transforaminal dorsal root ganglion with a local anaesthetic and steroid block. Pain relief was immediate and has remained so.

OUTCOME AND FOLLOW-UP

Both cases remain pain free to date.

DISCUSSION

Diagnostic parsimony and the counterbalance found in Hickam's dictum have very important implications in medical practice. Any set of symptoms could be indicative of a range of possible diseases and disease combinations; though at no point is diagnosis rejected or accepted just on the basis of one disease appearing more likely than another.

The two cases described highlight the importance of considering thoracic spine dysfunction in patients with acute and/or chronic abdominal pain of non-visceral origin. The patients suffered pain for between 6 and 24 months following appendectomy, and were seen by several senior doctors and underwent various procedures before correct diagnosis and treatment was achieved. Had the diagnosis been considered initially by examination of the thoracolumbar junction and prompt referral made, failed appendectomy and considerable distress to the patient may have been avoided. However, there is no criticism of the surgical teams involved because common conditions occur commonly, and in the case of appendicitis no chance could be taken due to the life-threatening need for prompt treatment if appendicitis was believed to be the source of symptoms.

However, this report is an important clinical reminder due to the ongoing postoperative pain experienced by both the patients, and because the link between thoracic spine dysfunction and abdominal pain has not been reported in the literature since Ashby demonstrated effective treatment of abdominal pain of spinal origin with spinal injection in 1977.⁶ Prior to this the association between thoracic spinal dysfunction with the symptoms of abdominal pain was first made by Ussher in 1933 when he described 'the viscerospinal syndrome'.⁷ Subsequently, Wills and Atsatt described five cases of pseudoappendicitis of spinal origin which they cured by injecting the thoracic spine when other treatments failed,⁸ and Harman and Young successfully treated cases of chronic appendicitis, chronic cholecystitis and renal colic by injecting 1% procaine solution into tender areas of the lower thoracic spine and in the muscles of the abdominal wall, when all other treatments failed.⁹ More recently, there has been acknowledgement in the literature of chronic non-visceral sources abdominal pain but with no explicit explanation of thoracic spine dysfunction,¹⁰ and in other articles hip and/or low back pain symptoms have been found to contribute to abdominal pain,¹¹ and the abdominal wall has also been highlighted as the cause of abdominal pain.¹²

Patient's perspective

Case 1 said 'Thanks a million for all your help and support, without your expertise and identification of my problem, I probably would not now have my little family'. Case 2 said 'I was discharged from hospital in so much pain, thank you for identifying and resolving my suffering which had disrupted my life for 10 months'.

Learning points

- ▶ Thoracic spine dysfunction should be considered as a source of symptoms for all patients presenting with abdominal pain.
- ▶ Differential diagnosis and thorough examination of the thoracic spine should especially be considered for the patient presenting with acute or chronic abdominal pain whose symptoms are not originating from the appendix or other common causes of abdominal pain or is presenting postoperatively.
- ▶ Prompt referral to a pain management specialist for patients with thoracic spine dysfunction and abdominal pain can lead to effective diagnosis and treatment.
- ▶ The delay in diagnosis and treatment of these cases may be indicative of a wider lack of awareness of the condition.

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Acknowledgements The authors would like to thank Dr Simon Thomson, consultant in pain medicine, and Mr John Challis, retired orthopaedic surgeon, for their help in completing this work. Our sincere thanks especially to John for his support, review and feedback on the article.

Contributors BG conceived the work and collected, analysed and interpreted the data. He drafted and revised the work, and provided final approval of the version to be published. He agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. TWW interpreted the data. He drafted, edited and revised the work, and provided final approval of the version to be published. He agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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