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Case Report

Adult Abdominal Migraine Presenting with Abdominal Myofascial Pain Syndrome: Case Report

Bhavesh Raithatha, FRCA, NHR Simpson, FRCS, and Niraj G, MD, FRCA

Background: Abdominal migraine in adults is poorly understood and often undiagnosed. It results in recurrent episodes of abdominal pain associated with nausea, vomiting, and retching. Abdominal myofascial pain syndrome is a common but unrecognized cause of chronic abdominal wall pain. Abdominal migraine can result in abdominal myofascial pain syndrome due to either trauma to the rectus abdominis muscle from excessive retching or due to viscerosomatic convergence from underlying esophageal-gastric inflammation.

Objective: Our objective is to present a case report of undetected abdominal migraine in an adult patient presenting with abdominal myofascial pain syndrome and its diagnosis following successful management of abdominal myofascial pain syndrome.

Study Design: This case report describes a patient presenting with 3 different types of abdominal pain to a pain medicine clinic.

Setting: The patient was seen in a tertiary pain medicine clinic based in a university teaching hospital.

Methods: This report describes the successful management of abdominal myofascial pain syndrome by trigger point treatment with depot steroids followed by pulsed radiofrequency treatment.

Results: Successful management of abdominal myofascial pain syndrome resulted in subsequent diagnosis of abdominal migraine. There was improvement reported in pain intensity scores, quality of life, anxiety, and depression scores following the interventional management of abdominal myofascial pain syndrome as well as abdominal migraine.

Limitations: This report represents a single patient presenting with a previously unreported combination of persistent abdominal pain.

Conclusion: Abdominal migraine and abdominal myofascial pain syndrome are often unrecognized conditions that result in significant health care utilization. Undiagnosed abdominal migraine can result in abdominal myofascial pain syndrome and this can result in a delay in the correct diagnosis of abdominal migraine.

Key words: Abdominal migraine, abdominal myofascial pain syndrome, chronic abdominal wall pain, trigger point treatment, viscerosomatic convergence

From : University Hospitals of Leicester, Leicester, United Kingdom

Author for correspondence: Niraj G, MD, FRCA
Address: Consultant in Pain Medicine, University Hospitals of Leicester NHS Trust, Honorary Senior Lecturer, University of Leicester Clinical Research Unit in Pain Medicine, Gwendolen Road Leicester, LE5 4PW
E-mail: Niraj.g@nihr.ac.uk

Abdominal migraine (AM) is a syndrome usually recognized in childhood and considered rare in adults (1-3). It is characterized by unpredictable paroxysms of acute abdominal pain and sufferers are free of abdominal discomfort between bouts (4). Headaches may or may not be associated (5). Etiology is unclear. The International Classification of Headache Disorders (ICHD) published by the International Headache

Society includes the diagnostic criteria for childhood AM (Table 1) (6). However, there is no consensus that this disorder occurs in adults and there are no criteria for diagnosis (2). Abdominal myofascial pain syndrome (AMPS) is a common but often unrecognized cause of chronic abdominal wall pain (CAWP) (7). It occurs as a result of the development of trigger points that cause inadequate muscle relaxation and dysfunction. AMPS can result from either trauma, or more commonly, as a result of a phenomenon of viscerosomatic convergence (7-10). Clinical diagnosis is confirmed upon positive response to trigger point treatment. We present a rare case of AM in an adult patient presenting with AMPS and its successful management.

CASE REPORT

A 46-year old female nurse presented to the pain medicine clinic at a tertiary university hospital with a history of persistent abdominal pain. She described 3 types of abdominal pain. The first was a constant dull ache localized to the left upper and mid-abdomen (Numerical Rating Scale [NRS] 3-5/10). The second pain was reported as an intermittent sharp stabbing pain that occurred 2 to 3 times a day (NRS 6-9/10). These 2 types of pain started 7 months ago.

The third type of pain was described as a severe dull ache coupled with a knife-twisting sensation around her umbilicus that was associated with nausea, reduced appetite, bilious vomiting, and severe retching experienced intermittently 3 to 4 times per year over the last 3 years. The abdominal pain would last between 2 to 24 hours and required visits to the emergency department. These attacks were triggered by stress and tiredness. Treatment included intravenous morphine, antiemetic medications, and hydration. Extensive investigations by the medical and surgical gastroenterology teams revealed a hiatus hernia, gastritis, and positive helicobacter pylori test. A computed tomography (CT) scan of the abdomen did not reveal any abnormality. Following one episode of severe retching, the patient developed the first and second types of abdominal pain.

Table 1. International Classification of Headache Disorders (ICHD) diagnostic criteria – Abdominal Migraine.

ICHD Diagnostic Criteria – Abdominal Migraine	
A	At least 5 attacks fulfilling criteria B-D
B	Attacks of abdominal pain lasting one to 72 hours (untreated or unsuccessfully treated)
C	Abdominal pain has all of the following characteristics: Midline location, periumbilical, or poorly localized Dull or "just sore" quality Moderate or severe intensity
D	During abdominal pain at least 2 of the following: Anorexia Nausea Vomiting Pallor
E	Not attributed to another disorder

The first and second types of abdominal pain caused the greatest dysfunction and were the reason for the visit to the clinic. These pains were aggravated by any activity and partially relieved upon applying heat and massage, resulting in a disturbed sleep pattern and low mood. The impact on daily activities as well as on work was significant. During the daily flare up (second pain), the abdomen swelled up as if the patient were pregnant. Treatment included 35 mg amitryptyline nocte, 4 g acetaminophen, and 120 mg/day codeine that provided 20% relief. The patient's expectation was to receive help with managing the recent-onset pains. Her past medical history included gastritis, hiatus hernia treated with proton pump inhibitor, Raynaud's syndrome, and irritable bowel syndrome (IBS). The patient reported a history of migraine headaches during her teenage years as well as a family history of migraine headaches (mother).

Examination of the abdomen did not reveal any mass, allodynia, or altered sensation to cotton wool. There were tender trigger points in the rectus abdominis muscle spanning the entire left upper quadrant. Carnett's sign was positive. The provisional diagnosis was AMPS secondary to a combination of trauma (retching) and viscerosomatic convergence (gastritis, esophagitis). A trial with 5% lidocaine plaster failed to provide any benefit.

To confirm the diagnosis, the patient underwent ultrasound-guided trigger point injections with a mixture of 60 mg depomedrone and 15 mL of 0.5% levo-bupivacaine. Eight trigger points were identified in Zone 1 and Zone 2 of the rectus muscle through

a combination of needle sign and positive myofascial twitch response (7). As the patient was part of an ongoing prospective audit into AMPS management, 3 questionnaires (Brief Pain Inventory-Short Form [BPI-SF], Hospital Anxiety Depression Scale [HADS], Euro Quality of Life-5 Dimensions [Euro QoL 5D]) were completed at baseline and 3 and 6 months following treatment (Table 2) (7). The patient reported significant benefit (60%) from the intervention, lasting for 7 months. She was able to reduce amitriptyline to 10 mg nocte and stopped codeine. When the pain returned to baseline levels 11 months later, the patient underwent pulsed radiofrequency treatment targeting the trigger points (7).

The patient reported 80% relief for 6 months and 50% ongoing relief at the 12-month clinic review.

However, the patient continued to experience the third type of severe pain requiring 2 additional visits to the emergency department. During the first attack, the patient's general physician (NS) suggested a diagnosis of AM. However, no specific treatment or prophylactic medication was begun. During the second attack a month later, the on-call consultant in the emergency department confirmed the diagnosis of AM. The patient was started on 0.5 mg of pizotifen nocte and rectal ondansetron, oral cyclizine, and metoclopramide. The patient was able to manage the third type of pain at home and has not required further visits to the emergency department.

Subsequently, the patient's mother confirmed that the patient had similar intermittent episodes of severe abdominal pain, nausea, and vomiting when the patient was between 8 and 9 years old, requiring multiple hospital visits. The symptoms had subsided during her teenage years.

Table 2. Patient's outcomes following Trigger Point Treatment in the management of abdominal myofascial pain syndrome (AMPS)

	BPI 'Worst Pain in 24 h'	**BPI Severity**	**BPI Interference**	**Euro QoL 5D**	**HADS A, D**
Baseline	8/10	20/40	57/70	10/15	10, 12
3/12 Steroids	4/10	13/40	32/70	7/15	
6/12 Steroids	6/10	18/40	34/70	8/15	6, 7
Pre-PRF	8/10	24/40	52/70	9/15	8, 10
3/12 PRF	2/10	8/40	7/70	6/15	
6/12 PRF	3-4/10	10/40	7/70	7/15	5, 3
12/12 PRF	4/10	12/40	12/70	7/15	

Abbreviations: BPI, Brief Pain Inventory Short Form; HADS, Hospital Anxiety Depression Scale; A, Anxiety; D, Depression; PRF, Pulsed Radio Frequency Treatment; QoL 5D, Quality of Life 5 Dimensions.

DISCUSSION

We present a case of AM in an adult patient with secondary AMPS. AM and AMPS are often unrecognized conditions in adults (2,3,7). Patients undergo unnecessary investigations; multiple visits to specialists and the emergency department cause significant patient distress as well as health care costs (2,3,7,11,12).

Childhood AM is recognized by both ICHD as well as ROME III criteria as a functional gastrointestinal disorder (2,13). The current belief is that childhood AM is limited to childhood (1). Dignan et al found that 61% of childhood AM resolved in their series of 54 children, although a third of patients continued to suffer from recurrent abdominal pain well into their teens (14). There are no specific criteria to diagnose AM in adults. Roberts et al recommend utilizing the ICHD criteria in adults as well as a positive response to tryptans in diagnosing AM (2).

Our patient had a complex initial presentation. There were 3 distinct types of abdominal pain. The first 2 types of pain were causing the most dysfunction and clinically resembled AMPS. During and subsequent to the clinic consultation, the third type of pain was not given significance by either the patient or the pain physician due to its intermittent nature (3-4 episodes per year, duration of 48 h), attributing the attacks to gastritis and IBS as well as not considering AM in the differential diagnosis. However, once the AMPS symptoms were sufficiently controlled with interventions, the third pain type gained significance and was subsequently correctly diagnosed. The symptoms fulfilled the ICHD diagnostic criteria and the patient

reported a positive response to prophylaxis with Pizotifen, thereby confirming the diagnosis of AM.

This case report carries clinical significance for 2 reasons. We agree with Roberts et al that AM can occur in adults and should be considered as a differential diagnosis in patients presenting with recurrent abdominal pain. However, a diagnosis of AM is considered when the patient has recurrent bouts of acute abdominal pain with a symptom-free period between bouts. Development of AMPS secondary to possible trauma from retching as well as viscerosomatic convergence from gastritis resulted in a constant pain. This contributed to a delay in the diagnosis of AM. Only after AMPS symptoms were controlled was a diagnosis of AM possible. The patient underwent multiple visits to the emergency department and the general physician, and underwent extensive investigations including blood tests, upper gastrointestinal endoscopy, CT scan, and ultrasound scan of the abdomen. This amounts to significant health care utilization despite not reaching a correct diagnosis. Secondly, this is the first report of adult AM causing AMPS and its successful management. The patient was able to resume full-time work and experienced significant improvement in her quality of life.

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