TMJ
Case report
Published by OJS
dx.doi.org/10.4314/tmj.v28i2

OPEN ACCESS JOURNAL

An abdominal migraine presenting with paroxysmal episodic abdominal pain in a 5-year old male patient: A case report

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Published by OJS
dx.doi.org/10.4314/tmj.v28i2

Abstract

Key Clinical Message

Presentation of abdominal migraine poses a challenge in diagnosis. We present a case of a 5-year old boy with chronic abdominal pain of which different modalities of treatment including laparotomy were given without improvement until anti-migraine drug was initiated. More research is needed to better understand and manage abdominal migraine.

Keywords: Abdominal migraine, children, chronic abdominal pain

Published by OJS
dx.doi.org/10.4314/tmj.v28i2

Introduction

An abdominal migraine (AM) is a variant of a migraine headache that most commonly occur among children between ages of 7 to 12 years, it is estimated that 1-4% of children are affected by an abdominal migraine(1). Making the diagnosis of AM poses a challenge to clinicians because of children's inadequate ability to describe their pain experiences and the fact that clinicians mostly overlook this diagnosis (2).

The International Headache Society's International Classification of Headache Disorders-II (ICHD-II) added Abdominal Migraine in the diagnostic criteria in 2004(3,4) see Box 1 and Rome III Pediatric Criteria for Functional Gastrointestinal Disorders (FGIDs) added another one in 2006(5) see Box 2.

Along with benign paroxysmal torticollis of infancy, the benign paroxysmal vertigo of childhood and cyclic vomiting syndrome, AM is currently classified as childhood episodic syndromes, and, therefore, common precursors of a migraine(6). Typical symptoms of AM include acute episodic, midline periumbilical dull abdominal pain, lasting for hours to days, and usually accompanied by pallor, nausea, vomiting, flushing and photophobia (7).

The pathophysiological mechanism is not fully understood but current thinking implicates on the vascular and neurologic cascade in the presence of genetic, this has often been attributed to the suboptimal response to treatment and thus the recommended approach is avoidance triggers and prophylactic treatment with anti-migraine medications(8).

We present a case of a five-year-old boy with recurrent episodes of paroxysmal periumbilical for one year which was not relieved by analgesics. Exploratory laparotomy done at three different times did reveal any signs for suggestive etiology; however, the patient improved significantly after the initiation of anti-migraine medications.

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Case Report

We are reporting the case of a 5-year old male patient who presented with the history abdominal pain for about 1 year. The pain was of acute in onset, dull in nature, located around the umbilicus, episodic with each episode lasting for two to three days. The pain has been on occasions associated with nausea and vomiting: however, the patient denied the history of neither diarrhea nor constipation. There is no accompanied history of fever, headache, and loss of balance or episodes of altered level of consciousness. The abdominal pain was not relieved by analgesics, but there was some relief during sleep. There was no history of physical or sexual abuse and overall psychiatric assessment was unremarkable.

Corroborative information revealed that his ten-year-old sister has been diagnosed with Migraine headaches usually with recurrent episodes of periumbilical abdominal pain though she is now doing well on carbamazepine after a trial of beta blockers and tricyclic antidepressant which made her dizzy and lethargic without any significant improvement.

On physical examination, there was some tenderness around the umbilicus; the rest of findings were normal. Laboratory findings were all normal. The patient's complete workup included: stool and urine examination, complete blood count, liver function test and renal function test. All imaging including abdominal ultrasound were normal.

Exploratory laparotomy was done on three different occasions. These were followed by short-term relief, however, symptoms recurred afterward. At this point, the diagnosis of Abdominal Migraine was thought and the patient was started on carbamazepine 100mg once a day which made a significant improvement within a week and the patient has remained symptom-free since then.

Discussion

An abdominal migraine is an episodic syndrome usually found in pediatric patients, although adult cases have been documented to be on the rise. Typically, AM presents with episodic severe abdominal pain and vasomotor symptoms; nausea and vomiting being the commonest (9). Before

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dx.doi.org/10.4314/tmj.v28i2

the inclusion of AM in IHS diagnostic guidelines and its recognition in Rome classification of functional gastrointestinal disorders, AM was a poorly understood disorder.

Epidemiological data on AM is very limited; however the prevalence in the pediatric population has been estimated to range from 0.4% (10) and 4% (11). A study done in the USA concluded that AM could be under-diagnosed in children presenting with recurrent abdominal pain (11). In one study, about 50% of the boys had positive family history of a migraine, while only 34% of the girls had a positive family history (12). Our patient had a sibling with migraine headaches. Co-existence of abdominal pain and migraine headaches has been reported in a number of studies. Our patient had no history of migraine headaches (13,14). Immediate prognosis for this patient appears favorable, however, parents and caretakers should be educated about the possibility Migraine headaches in the future as AM has a potential to transform into migraine headaches in the future (15,16).

The diagnosis of AM is made based on IHS or the Rome III criteria after exclusion of other causes of periodic abdominal pain such as inflammatory bowel disease and disaccharide intolerance. Our patient fulfilled the IHS and Rome III criteria for the diagnosis of AM, and we could not establish any alternative diagnosis during examination and investigations of this patient. Explorative laparotomy was also negative on three different occasions.

The pathogenesis of AM is incompletely understood. Despite other functional GI disorders being related to mitochondrial disease (17), hypothalamic-pituitary-axis dysfunction and gene mutations (17), such associations have not been studied in AM. Data on the long-term prognosis of AM is also scarce. One study documented complete remission among 34% of patients after 10 years follow-up (18).

The management of AM has not been widely studied. There are no published data that provide evidence for the management of the disease. Approach to its management includes the exclusion of other common medical or surgical conditions like in other functional abdominal disorders. No drugs that have been studied for the treatment of AM. Some medications such as beta blockers, flunarizine, and tricyclic antidepressants have been shown to be useful for prophylaxis (19,20).

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Our patient showed a good response to carbamazepine and has remained symptoms free up to date.

Conclusion

AM is a relatively common condition in children; it should be considered in children presenting with episodic abdominal pain. Studies on the epidemiology, pathogenesis and treatment are needed to better understand and manage this condition.

Conflict of interest

The authors have no conflict of interest to declare

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Authors' contribution

GM managed the patient, AAN, GM, BCM did a literature search and wrote the manuscript. All authors have read and approved the final manuscript.

Acknowledgments

We acknowledge the staff of Paradise specialized clinic for their support.

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Box 1. Diagnostic criteria for abdominal migraine as established by the International Headache Society and reported by the International Classification of Headache Disorders II, 2004

Definition

An idiopathic recurrent disorder occurring primarily in children and characterized by episodic midline abdominal pain manifesting in attacks normality between episode intensity and associated with vasomotor symptoms, nausea, and vomiting.

Criteria

A. At least five attacks fulfilling criteria B-D
B. Attacks of abdominal pain lasting 1 to 72 hours
C. Abdominal pain has all the following characteristics:
    1. Midline location, periumbilical or poorly localized
    2. Dull or "just sore" quality
    3. Moderate to severe intensity
D. During abdominal pain, at least 2 of the following:
    1. Anorexia
    2. Nausea
    3. Vomiting

Published by OJS
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4. Pallor

E. Not attributed to another disorder; history and physical examination findings do not suggest gastrointestinal or renal disease, or such disease has been ruled out by appropriate investigations

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Box 2. Rome III diagnostic criteria* for abdominal migraine

For a diagnosis of abdominal migraine, *all* of the following must apply:

1. Paroxysmal episodes of intense, acute periumbilical pain that lasts for 1 hour or more
2. Intervening periods of usual health lasting weeks to months
3. Pain interferes with normal activities
4. Pain is associated with two or more of the following:
    a. Anorexia
    b. Nausea
    c. Vomiting
    d. Headache
    e. Photophobia
    f. Pallor
5. No evidence of an inflammatory, anatomic, metabolic, or neoplastic process considered that explains the patient's symptoms