

Case Report

Abdominal migraine in children-An underdiagnosed entity

Radha Balaji*

Department of Paediatrics, Rajawadi Hospital, Ghatkopar (East), Mumbai, Maharashtra, India

Received: 08 March 2021

Revised: 02 September 2021

Accepted: 11 October 2021

***Correspondence:**

Dr. Radha Balaji,

E-mail: Radhab902@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Abdominal migraine is one of the causes for chronic and recurrent abdominal pains, characterised by recurrent episodes and paroxysms of moderate to severe abdominal pain. Here, we share a case of recurrent severe abdominal pain in a 9-year-old girl who was treated over a period of three months for giardiasis, chronic appendicitis and *H. pylori* infection, in that order. However, after she was correctly diagnosed with abdominal migraine and accordingly treated with drugs used for the treatment of migraine headaches such as propranolol, flunarizine, cyproheptadine and ergotamine tartrate, she responded well to this regimen.

Keywords: Children, Recurrent abdominal pain, Headache, Migraine

INTRODUCTION

Abdominal migraine is a type of functional pain disorder primarily in children and presents with episodes of abdominal pain without any accompanying headache. It is one of the causes for chronic and recurrent abdominal pain with an estimated prevalence of 2.4 % to 4.1% among children.^{1,2} This condition is characterised by recurrent episodes and paroxysms of moderate to severe abdominal pain, usually along the midline periumbilical area or as diffuse pain severe enough to interfere with the daily activities for which no organic cause is found.³ The pain attacks are separated by weeks or months. It is associated with vasomotor and gastrointestinal symptoms such as anorexia, nausea, vomiting, pallor, and photophobia.⁴ While the pathophysiology of abdominal migraine remains largely unknown and untested, there are several hypothesis like autonomic instability, disturbances in the hypothalamic pituitary-adrenal axis and altered motility of the gut wall.⁵ Recently, possible genetic influences and differences in immune and neuronal structures within the bowel mucosa have been put forward as potential underlying physiological

mechanisms for this disorder.^{6,7} Increasingly, the predominant theory in literature is that of visceral hypersensitivity to distension in response to abnormalities in neurophysiology at the level of the gut, spinal cord, or higher cortical systems.⁸ Despite comprehensive diagnostic criteria under the Rome 4 classification of functional gastrointestinal disorders and its inclusion in the international headache society's classification of Headache disorders, it continues to be an underdiagnosed entity as there are no set of features that are specific to this condition.⁹ This condition is rare in adults, however children diagnosed with abdominal migraine may experience migraine headaches as adults.^{9,10}

CASE REPORT

A nine-year-old female child, first by birth order, born of third-degree consanguineous marriage presented with complaints of sudden, severe onset of recurrent periodic abdominal pain on and off for one month and accompanied by an increased frequency of stools. Pain in the abdomen was severe and sudden in onset at any time of the day along the midline. The response to

antispasmodics was poor and the pain lasted for more than one hour, at times persisting for up to two days. There was an increase in the frequency of stools up to three to four times a day associated with mucus. Although there were occasional episodes of nausea and vomiting, there was no history of fever, or weight loss during the period.

Anthropometric parameters and vitals, including blood pressure were normal. On systemic evaluation, and following abdominal examination, the abdomen was soft. There was diffuse tenderness without guarding and rigidity. Also, there was no evidence of hepatosplenomegaly and systemic examination including the cardiovascular, respiratory and central nervous system were normal. Laboratory investigations revealed a Haemoglobin level of 13 gm/dl, total leucocyte count of 12,000 (N 62, L 38, and platelet count of 2 lakhs), and erythrocyte sedimentation of 15 mm at the end of one hour, all within normal ranges. Stool routine examination revealed occult blood with cysts of giardia lamblia. In view of the above findings, a working diagnosis of acute gastrointestinal infection, most probably giardiasis was made. She was treated with an oral antibiotic, and a probiotic in divided doses for ten days. The abdominal pain subsided following this course of treatment.

Furthermore, a repeat stool routine done after a month did not show occult blood or any cyst of giardia lamblia. However, the pain recurred with similar presentation after a month. A similar treatment was pursued, however there was no relief from pain despite treatment for a month. The child was further investigated with an ultrasonography of the abdomen and a paediatric surgical opinion was sought. Ultrasonography revealed a persistent pelvic thickened inflamed appendix. In view of persisting abdominal pain associated with the finding of an inflamed appendix, an elective appendectomy was performed. A subsequent biopsy done was normal. While initially no pain was reported following surgery, it recurred after 2 weeks. Post-operative complications as a cause of pain were ruled out by a repeat ultrasound examination. Since another rare cause for abdominal pain could be *H. pylori* infection, an oesohagogastro-duodenoscopy was done. Endoscopic evaluation showed normal mucosa with no evidence of gastritis or ulcers in the stomach and duodenum. The biopsy conducted was negative for *H. pylori* bacteria.

As the above treatments did not succeed in relieving the pain of the child, we examined the case further by conducting a detailed study of the child's symptoms and also checking the family history thoroughly. During this process, frequent and recurrent episodes of headaches were identified to be occurring in the child. Furthermore, there was a strong family history of migraine in the father. This indicated the possibility of abdominal pain due to abdominal migraine. It was therefore appropriate to seek the opinion of a neurologist. An MRI of the brain and an EEG were done to rule out other conditions that

could be responsible for these symptoms. The findings from both these tests were normal. Despite this finding and based on the family history of migraine concomitant with history of headache and abdominal pain in the child, it was concluded that the child's symptoms could be due to abdominal migraine. Hence, treatment for abdominal migraine was initiated and the child was treated with tablet propranolol (10 mg), tablet cyproheptadine and tablet ergotamine tartrate. Over the course of a month, the child showed remarkable improvement through reduced episodes of paroxysms of pain. Tablet ergotamine tartrate and tablet cyproheptadine was stopped after two months and the treatment was continued with tablet propranolol for close to one year. At the end of a year of treatment the child completely responded to treatment and was free from abdominal pain.

DISCUSSION

The international classification of headache disorders III criteria and Rome IV classification of functional gastrointestinal disorders criteria specify the various symptoms for abdominal migraine. In our case a clinical diagnosis of abdominal migraine was made on the basis of recurrent episodes of severe incapacitating periumbilical pain lasting for more than an hour, nausea, pallor, headache and family history of headache in the father. The increased frequency of stools with mucous in this child is rare and uncommon symptom and not included in the Rome IV criteria. Also, features like anorexia and photophobia which are one of the major criteria for diagnosis were absent in this child. Further it had been observed that the prevalence of abdominal migraine is higher girls in comparison to boys.² Also, history of travel sickness was a common complaint, though not formally analysed in the children and their family members.¹⁰ According to Lanzi et al a significant proportion of children who suffer from abdominal migraine suffer from motion sickness.¹² This association was not there in our child. As the child exhibited at least two of the suggested criteria along with the abdominal pain, a subjective diagnosis of abdominal migraine was made as there were no proven objective markers to correctly make the diagnosis.¹³

Limitations

There are no specific tests to diagnose abdominal migraine. A diagnosis of abdominal migraine in this case was concluded on the basis of complaints of recurrent persistent abdominal pain lasting for up to three months associated with a strong family history of migraine. A few indicators of abdominal migraine were absent in this child. Further, many of the symptoms of abdominal migraine overlap with functional abdominal pain. Although they are considered separate entities with their own separate diagnostic criteria it is often difficult to distinguish them as they all share common associated symptoms such as pallor, anorexia, nausea and photophobia. Thus, proceeding with treatment of

abdominal migraine on the basis of few indicators and positive family history of migraine was an experimental approach, and should not be generalised. Therefore, we need to constantly monitor the response to treatment in order to identify the underlying cause.

CONCLUSION

This is a typical case of diagnosis by exclusion. Abdominal migraine is a lesser-known entity and is underdiagnosed by both general paediatricians and paediatric gastroenterologists. It is characterised by paroxysmal episodes of periumbilical pain and other vasomotor or gastrointestinal symptoms severe enough to interfere with daily activities. Had we known earlier the history of headache in this child as well in the family we could have avoided subjecting the child to the trauma of a surgical intervention like appendectomy and any other procedures like oesohagogastro-duodenoscopy. More awareness about the essential clinical characteristics of the disease would improve diagnostic accuracy and guide clinicians in choosing the appropriate management for these patients at optimal cost of treatment. This case study illustrates the importance of determining if the child's family has a history of headaches especially when conventional treatment and investigation do not help in arriving at the correct diagnosis within a period of 4 to 6 weeks. Also, it is pertinent to note that negative findings on MRI and EEG do not rule out abdominal migraine.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Abu-Arafeh I, Russell G. Prevalence and clinical features of abdominal migraine compared with those of migraine headache. Arch Dis child. 1995;72:413-7.
2. Mortimer MJ, Kay J, Jaran A. Clinical epidemiology of childhood abdominal migraine in urban general practice. Dev Med child Neurol. 1993;35:243-5.
3. Evans RW, Whyte C. Cyclic vomiting syndrome and abdominal pain in adults and children. H7 august. 2014;2014:573-81.
4. Scicchitano B, Humphreys G, Mitton SG, Thiagarajan Jaiganesh T. Abdominal migraine in childhood: a review. 2014;2014(5):73-81.
5. Cuvellier JC, Lepine A. Childhood periodic syndromes. Paediatric Neurol. 2010;42:1-11.
6. Bremmer AR, Sandhu BK. Recurrent abdominal pain in children. Indian paediatrics. 2009;46:375-9.
7. Bently D, Kehely A, Al-Bayat M, Michie CA. Abdominal migraine as a cause of vomiting in Children: a clinician's view. J Paediatr Gastroenterol Nutr. 1995; 21(1):S49-51.
8. Zeuter DK, Hyams JS. Recurrent abdominal pain in children. J paediatric Gastroenterology Nutr. 2002;49:53-71.
9. Olesen J. The International classification of headache disorder, Second Edition. Cephalgia. 2004;24(1):9-160.
10. Farquhar HG. Abdominal migraine in children. Br Med. 1956;1(3):1082-5.
11. Classification and diagnostic criteria for headache disorders, cranial neuralgias and facial pain. Headache classification committee of the international Headache society. Cephalgia. 1988;8(7):1-96.
12. Lanzi G, Balouttin U, Ottolini A, Rossano Burgio F, Fazzi E, Arisi D. Cyclic vomiting and recurrent abdominal pains as migraine equivalents. Cephalgia. 1983;39(2):115-8.
13. Popovich DM, Schentrup DM, Mc Alhany AL. Recognising and diagnosing abdominal migraines. J Paediatric Health care. 2010;24(6):372-7.

Cite this article as: Balaji R. Abdominal migraine in children-An underdiagnosed entity. Int J Contemp Pediatr 2021;8:1899-901