

A child with recurrent abdominal pain

Commentary by

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A considered approach to diagnosing and investigating recurrent abdominal pain in a child is essential within the confines of a relatively brief GP consultation.

Case scenario

Catherine, who is 8 years of age, has recurring abdominal pain. Each episode lasts for two to three hours and occurs about three times per week, usually during the day. She is growing normally, her appetite is good and there has been no weight loss. The pain does not seem to be related to meals. It is central and does not radiate.

There has been no diarrhoea or constipation, no foreign travel and no family history of bowel disease. There are no urinary symptoms. Physical examination is normal. She is on the 70th percentile for weight and the 50th percentile for height. Her abdominal examination shows no tenderness, no hernias and no organomegaly. What could be causing Catherine's recurrent pain?

Commentary

In approaching recurrent abdominal pain, it is important to keep in mind to first do no harm and to consider whether any aspects of the child's history or examination raise red flags in your mind.

The GP consultation

Within the confines of the GP's 20-minute consultation, it is useful to check off red-flag signs and symptoms, such as:

- Is there vomiting? And if yes, is the vomiting bilious or bloody?
- Are the patient's bowel motions altered, either in baseline frequency or with blood (fresh or melaena)?
- Does the patient report reduced oral intake?
- Has there been weight loss? (Bear in mind a single measurement in time is insufficient to diagnose weight loss or growth failure)
- Does examination reveal tenderness, guarding, organ dysfunction (such as jaundice or pallor), or a mass or organomegaly?

If no red flags are raised, as in Catherine's case, the GP is faced with two options – to reassure or to investigate. If the history and examination results are suitably benign, and the GP is experienced and confident enough, reassurance alone may be all that is necessary. It is extremely helpful to the concerned parent if the practitioner is able to verbalise a diagnosis and discuss his or her rationale for arriving at this conclusion even in the absence of organic pathology. Such personal engagement and concern inspire confidence in the parent. There are, however, occasions when early, non-threatening presentations evolve into a clearer pattern of definite pathology, so

the parent should always be offered a follow-up appointment to review the child's symptoms after an appropriate length of time, for example two to three weeks. Complete the consultation by educating the parent about possible red flag signs and symptoms that they can look out for.

Alternatively, the physician may choose to perform baseline investigations for added reassurance. It should be carefully considered how each investigation can assist in the differential diagnosis. Normal results will prove reassuring to both the family and the physician.

Possible investigations

Some useful investigations in Catherine's case would be the following:

- urine microscopy and culture to screen for a urinary tract infection
- full blood count, including:
 - cell counts to test for infection or haematological differentials
 - haemoglobin level to screen for anaemia, whether of chronic disease, haemolysis or insidious blood loss
 - mean corpuscular volumes to test for chronic nutrient deficiencies (iron, vitamin B12)
 - platelet count to screen for infection, splenic sequestration or immune-mediated destruction
- electrolyte levels, liver function tests and lipase level to screen for renal and liver dysfunction and pancreatitis
- C-reactive protein level to screen for infection
- iron studies to establish chronicity

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1. FUNCTIONAL ABDOMINAL PAIN DIAGNOSES*

Functional dyspepsia

One or more of the following criteria fulfilled for at least four days per month, for at least two months:

- postprandial fullness
- early satiety
- epigastric pain or burning not associated with defaecation
- after appropriate evaluation, the symptoms cannot be fully explained by another medical condition

Irritable bowel syndrome

All of the following for at least two months:

- abdominal pain at least four days per month associated with:
 - defaecation
 - a change in frequency of stool
 - a change in appearance of stool
- in children with constipation, the pain does not resolve with resolution of constipation
- after appropriate evaluation, the symptoms cannot be fully explained by another medical condition

Abdominal migraine

All of the following occurring at least twice, for at least six months:

- paroxysmal episodes of intense, acute periumbilical, midline or diffuse abdominal pain lasting one hour or more
- episodes are separated by weeks to months
- the pain is incapacitating and interferes with normal activities
- stereotypical pattern and symptoms in an individual patient
- the pain is associated with at least two of the following:
 - anorexia
 - nausea
 - vomiting
 - headache
 - photophobia
 - pallor
- after appropriate evaluation, the symptoms cannot be fully explained by another medical condition.

Functional abdominal pain – not otherwise specified

All of the following, at least four times per month, for at least two months:

- Episodic or continuous abdominal pain that does not occur solely during physiological events (e.g. eating, menses)
- Insufficient criteria for irritable bowel syndrome, functional dyspepsia or abdominal migraine
- After appropriate evaluation, the abdominal pain cannot be fully explained by another medical condition

* Based on the Rome IV criteria in: Hyams JS, et al. *Gastroenterology* 2016; 150: 1456-1468.²

of disease. Helpful in establishing whether occult bleeding or malabsorption are present

- total IgA and coeliac serology. Coeliac disease is a common differential in children with recurrent pain and can present in children who appear well
- stool microscopy and polymerase chain reaction testing to screen for infection with micro-organisms such as *Campylobacter jejuni*, *Salmonella*, *Shigella*, *Aeromonas*, *Escherichia coli* and viruses that cause abdominal pain.

If a child has recurring, benign, abdominal pain without red flags and normal investigation results, what then?

Up to 90% of abdominal pain presentations to GPs could be because of nonorganic pathology.¹ Functional abdominal pain disorders are divided into functional dyspepsia, irritable bowel syndrome, abdominal migraine and functional abdominal pain – not otherwise specified.² The criteria

for these diagnoses are briefly described in Box 1, and a brief summary of the steps to diagnosis is provided in Box 2.²

It is often useful to investigate whether the child derives secondary gain from having abdominal pain, for example, not having to attend school. If the answer is yes, then making enquiries about the cause of possible school avoidance may uncover bullying or learning difficulties. In this case, it is vital to communicate with the school counsellor or deputy principal. A referral to a community psychologist or paediatrician is indicated. If no schooling issues are uncovered, advising the parent to ensure the child has an extra load of chores and homework while at home often aids a speedy recovery.

Conclusion

The diagnosis and management of abdominal pain can confound even the most experienced, well-resourced specialist. The GP should not hesitate to seek a second opinion from a paediatrician or emergency department when a patient's presenting condition is acutely concerning. **MI**

2. SUMMARY OF STEPS TO DIAGNOSIS OF RECURRENT ABDOMINAL PAIN IN A CHILD

- Consider red-flag signs and symptoms
- Consider whether baseline investigations are necessary, and why
- Educate the parent to look out for danger symptoms and signs
- Review the patient after an appropriate period of time

References

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