Recurrent abdominal pain in children

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Although there is often a hidden agenda in cases of recurrent abdominal pain, most children with this common problem can be helped.

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Remember

- Recurrent abdominal pain in children is a complex biopsychosocial problem and requires time – make sure you allocate at least 30 minutes for a consultation.
- There is often a hidden agenda, such as a family history of bowel cancer, a past history of serious illness in a parent or sibling, postnatal depression, marital discord or a major life event.[1-3]
- As the child's family physician, you have an advantage in already knowing the family's culture and what they value and what they worry about.
- The original series on abdominal pain, published in 1958, suggested that only about 8% of children who present with recurrent abdominal pain had an identified organic cause.[4] A series published in 2004 suggested that about 30% will have an organic cause found, and that most others will have an explanation that can lead to resolution, commonly irritable bowel syndrome (IBS).[5]

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The views published in this series are those of the author and not necessarily indicative of those held by all members of the Digestive Health Foundation or GESA.

Assessment

- Think lumen, mucosa, immune response, neuronal response.

History

Consider the issues listed below when taking the history.

Fetal period, birth and first year

- Fetal period and birth – emotional or physical stress/trauma, illness, difficult birth, more than 24 hours delay in passing meconium.
- First year of life – colic, reflux, sleep, breastfeeding problems, gastroenteritis, allergy, trouble when starting solids, use of antibiotics and analgesics (particularly ibuprofen).

Problems in the fetal period and first few months of life appear to sensitise the gut to pain in genetically susceptible individuals, and may set them up for somatisation, anxiety disorders and IBS in later life.

Early gut infections and NSAID use may cause increased intestinal permeability that allows microorganisms, toxins and food antigens unprecedented access to the immune system and sensory nerves (systems that are potentially involved in the symptoms of IBS and inflammatory bowel disease [IBD]).

The use of more antibiotics in the years immediately prior to the diagnosis of IBD has been noted. This may be a marker of relative innate immune deficiency, or the antibiotics themselves may decrease commensal diversity, another factor that has been noted in IBD.

Preschool and primary school years

- Preschool years – attachment issues, urinary tract infections, threadworm infection, constipation, iron deficiency, post-gastroenteritis disaccharidase deficiencies (usually lactase), coeliac disease, tonsillitis.
- Primary school years – bullying, camping holidays, boredom, learning difficulties.

Generally, children in this age group are happy to go to school; missing days is a significant warning that something is amiss, and requires careful questioning and maybe some parental time spent sitting in the playground watching what goes on. Children usually have a keen sense of justice, and bullying must be addressed or there will be lasting misery. Learning difficulties are often not noticed in the first few years of schooling. Physical activity is important; get children away from electronic gadgets and get them outdoors – children who are physically underextended and electronically overstimulated are troublesome.

Rapid growth and inadequate red meat intake (less than four serves a week) may result in iron deficiency, although polyps are a cause of blood loss.

After camping trips, children may bring back unwanted guests in the form of various bugs, such as *Giardia lamblia* or the more controversial *Blastocystis*

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hominis. Giardiasis should be treated with metronidazole (Flagyl, Metrogyl, Metronide) or tinidazole (Fasigyn, Simplotan). *B. hominis* has been cultured more in patients with IBS than in controls, and is likely to be found in greater concentrations in patients with IBS, but there is much debate about its pathogenicity. If no other diagnosis is indicated, children with persistent symptoms may benefit from a trial of treatment with metronidazole to eradicate *B. hominis*.

High school years

- Adolescence – travel, perfectionism, anorexia, cyberbullying, depression, sporting excess, sleep deprivation, NSAIDs use, antibiotics, relationships, drugs and alcohol use, post-infectious IBS, and coeliac disease and IBD.

The average adolescent appears to juggle the computer with frequent interruptions from internet messaging services, mobile phone text messages and blasting rock music while apparently 'studying'. Teenagers may annoy each other by excluding individuals from social events or, sometimes, by more disagreeable activities such as participating in character assassinations using messages sent via mobile phones or the internet. They occasionally exercise madly but forget to drink fluids. Many worry about love and, occasionally, sexually transmittted infections. They eat junkfood and expect doctors to give them a magic pill to fix everything. A look at their daily diet can be horrifying. Girls pop pills for menstrual aches, and a few give themselves a nasty gastritis. Despite this, they appear to be an astonishingly positive and caring generation, concerned about justice and the world's mess. Some detective work and fine-tuning can resolve many of their issues.

Examination

- Growth assessment – check weight and height measurements on growth charts.
- Abdomen – look for tenderness (especially right iliac fossa), masses and enlarged liver and/or spleen, and inspect the perianal area. Rectal examination has limited use; it is mainly helpful in young children with constipation or children with symptoms suggesting rectal or anal pathology.
- Skin – look for eczema, rash.
- Other – check conjunctivae for anaemia, mouth for ulcers, teeth for enamel defects, tonsils for pitting, lymph glands for lymphadenopathy, lower limbs for neurological sensation, and perianal region for fissures, fistulae and neurological sensation.

Basic tests

- Stool examination – once for microscopy, culture and sensitivity (including rotavirus), and twice for ova and parasites, and for *Clostridium difficile* toxin. A 2 L ice cream container placed in the toilet may be used to collect a portion of the 'mushy stool'.
- Blood – full blood count, erythrocyte sedimentation rate, C-reactive protein level, iron studies, IgA level, and levels of antigliadin antibodies and t-transglutaminase or endomysial antibodies. Note that few patients with IBD have totally normal parameters; most have at least one of raised platelets, iron deficiency, raised inflammatory markers, perianal findings or growth slowing.
- Urine culture.
- Other tests, as necessary:
  – other blood tests may include urea and electrolytes, liver function tests, Epstein–Barr virus antibody levels, and cytomegalovirus antibody levels
  – imaging, i.e. abdominal x-ray, ultrasound by those experienced in paediatric findings
  – upper gastrointestinal endoscopy , i.e. colonoscopy, plus biopsy for histopathological diagnosis.

Management

Attention should be paid to the child's diet and psyche. Identified causes of abdominal pain should be treated as outlined below.

- Infections – treat parasite and threadworm infections; if they result from exotic travel, consult an infectious disease specialist.
- Bullying or learning difficulties – write to the school; refer to an educational psychologist.
- Constipation – the evidence for most treatments is relatively poor and indirect. I recommend the eating of up to seven serves of fruits and vegetables daily (to increase the fibre content of the diet), the drinking of water, the giving of food treats at weekends only, and the use of stool softeners and fibre supplements such as lactulose and psyllium hydrophilic mucilloid (Metamucil) and/or the osmotic laxative macrogol 3350 (Movicol). Stimulant laxatives (such as bisacodyl [Durolax] and sennosides a and b [Senokot]) are second-line after diet modification and stool softener use, and are for short term use only. A trial studying the use of gentle transcutaneous electrical stimulation (TENS) to stimulate the bowel to empty in chronically constipated young people (aged 10 years and over) is currently under way at the Murdoch Childrens Research Institute in Melbourne. (For further details, please contact Janet Chase, physiotherapist, via the Royal Children's Hospital, Melbourne, switchboard, phone 03-9345 5522.) Preliminary results are promising and the treatment is well-tolerated.[6]
- IBS – the evidence for most treatments is poor, but as an English study has shown abdominal pain to be associated with a low fibre diet in children who satisfied the criteria for diagnosis of IBS,[5] an increase in dietary fibre (as for constipation) may help. Avoidance of particular junkfoods that precipitate

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symptoms for a given individual may assist; these foods are generally those high in fat (such as hamburgers and hot chips) or high in simple carbohydrates (such as soft drinks, fruit juices and sweets). Hypnotherapy has been used consistently during the past 10 years to reduce intestinal and nonintestinal manifestations of IBS,[7] and many hypnotherapists are well trained to treat children and young people. A recent study has shown that a probiotic (*Bifidobacterium infantis 35624*) reduced abdominal pain and bloating as well as normalising the immune response in adults with IBS.[8] Unfortunately this strain is not yet available in Australia and it appears properties are strain specific so this finding cannot be generalised to other probiotics. Finally, an antibiotic active against anaerobic bacteria (metronidazole) has been used in low doses to improve symptoms in IBS thought to be due to bacterial overgrowth into the small intestine.[9] (Note, however, that patients with suspected overgrowth should be referred.)

- Iron deficiency – once the cause has been established, iron deficiency may be treated with ferrous sulfate (Ferro-Liquid) or ferrous sulfate plus folic acid (Fefol); start with a low dose and increase slowly.
- Coeliac disease – patients with positive antibodies for coeliac disease require referral for a duodenal biopsy. If the biopsy confirms the diagnosis, referral to a dietician for advice on a gluten free diet is appropriate. Advise the patient after the biopsy that more information on the condition is available from the Coeliac Society (www.coeliac.org.au).
- IBD – patients with suspected IBD may be referred for upper gastrointestinal endoscopy, colonoscopy and biopsy. Primary nutritional therapies using pleasant-tasting whole protein complete formulae are now available as an alternative to corticosteroids for children with Crohn's disease; these therapies have equivalent efficacy to corticosteroids in inducing remission in young people.[10] IBD is a lifelong relapsing and remitting condition and the young person and family require support from the GP as well as a gastroenterologist and a dietitian. More information is available from the Australian Crohn's and Colitis Association (see www.acca.net.au). The efficacies of antibiotics and probiotics in treating IBD are under review. There is likely to be more information available in the near future as the evidence for Crohn's disease as an immunodeficiency syndrome evolves.

Follow up

Once treatment has been initated, ensure that you continue to see the child regularly until the problem resolves and the family are happy. If the problem is not resolving, reconsider the treatment and possibly refer the patient. MT

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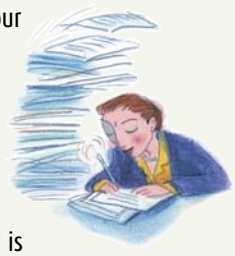

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