Problems of Childhood

Recurrent abdominal pain in children

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In children of school age recurrent abdominal pain is probably the commonest symptom prompting referral to a hospital paediatric clinic. Despite investigations—the diversity and ingenuity of which tend to be in inverse proportion to the experience of the investigator—most of these children are not found to be suffering from an organic abnormality. Unfortunately, there are many physical illnesses whose presenting symptom is recurrent abdominal pain, and which may be clinically indistinguishable from the banal “psychosomatic” disorder. This is why the diagnosis must be made not merely by exclusion of organic causes, but after the identification of stress factors or emotional disturbance in the experience of the child and his immediate family.

This paper will consider only the emotionally determined syndrome, but some of the organic diseases which should also be remembered are listed in table 1. An attempt has been made to omit causes of acute or chronic pain and include only those associated with genuinely recurrent painful episodes with trouble-free intervals.

Causes of recurrent abdominal pain (90-95% are psychosomatic)

Gastrointestinal tract	Urogenital tract
Recurrent pharyngitis	Hydronephrosis
Peptic ulcer	Pyelonephritis
Bezoar	Renal calculi
Duplication	Renal and suprarenal neoplasms
Intermittent volvulus	Ovarian cyst
Meckel's diverticulum	Dysmenorrhoea
Appendicitis	Mittelschmerz
Mesenteric adenitis	Endometriosis
Abdominal tuberculosis	Testicular torsion
Regional enteritis (Crohn's disease)	Testicular neoplasm
Ulcerative colitis	
Milk protein intolerance	Liver, spleen, and pancreas
Other food intolerances	Cholecystitis
Lactose intolerance	Cholelithiasis
Dietary indiscretion	Familial and other pancreatitis
Constipation	Cystic fibrosis
	Massive splenomegaly
Drugs	Metabolic
Anticonvulsants	Hypoglycaemia
Antibiotics	Porphyria
Bronchodilators	Lead poisoning
etc	Hereditary angioneurotic oedema
Neurological	Familial hyperlipidaemia type IV
Migraine	
Epilepsy	
Brain Tumour	

Incidence

Two estimates of the incidence of recurrent abdominal pain are widely quoted. The National Child Development Study, examining 11 000 children in their 7th year, found that about 15% were said to be affected.¹ In a study of 1000 unselected

school children in Bristol recurrent abdominal pain occurred in about 11%.² The proportion of these children brought to medical attention is unknown, but it is considerable. It may vary from one locality to another. McCrae³ suggests that parents may take affected children to a doctor when the symptoms are unusually severe or perhaps because they lack insight into the emotional nature of the illness. He further points out three major difficulties in evaluating the significance of this symptom: the numerous organic possibilities to be considered; the fact that organic and emotional aetiologies are not mutually exclusive (citing the interaction of such factors in peptic ulcer); and the communication gap which exists between the young child and the adult.³

It is the fear of missing a potentially serious organic condition which is most worrying to the medical consultant, and although he may derive comfort from the fact that only about 7% of these children have an organic lesion, he must become familiar with the most usual clinical features, and direct his questions accordingly. An adequate history and a thorough physical examination are absolutely essential, and although a few routine investigations should be performed, it is often clear by that stage that further studies will be superfluous.

The child

Typically, the child is of primary school age and has been complaining of recurrent bouts of abdominal pain for several months, or perhaps years. The sexes are equally affected in this age range but in older children there is a preponderance of girls, perhaps because of puberty problems.

All physical types are susceptible, and frank obesity is not uncommon, but most children appear to be rather thin, timid, anxious, and dependent. Their parents describe them as nervous or highly strung. In this respect they resemble migraine patients. Often, indeed, they also suffer from headaches. Other emotionally-based problems, such as enuresis, behaviour disturbances, or school difficulties, may be volunteered or elicited on direct questioning.

It is important to obtain an accurate history of the child's bowel habit, and often the child's version differs from that of the mother. In general, these children tend more towards constipation than bowel laxity. Vomiting or diarrhoea, if more than occasional, requires further investigation. It is usually a good plan to interview mother and child separately once the initial history has been obtained. The mother may then volunteer information about symptoms such as enuresis or soiling which she was previously reluctant to mention for fear of embarrassing the child. She will also be more willing to discuss marital and domestic problems. The child's reaction to separation from the mother at this time may indicate an undue measure of dependency. On the other hand the subsequent interview with the child is usually less rewarding, and time must be taken to obtain his confidence. Sometimes it then emerges that he has much more insight into the factors underlying his pain than his parents would suspect.

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By definition of the syndrome, physical examination shows no organic abnormality. Nevertheless, the child will usually admit to some abdominal tenderness, either epigastric or sometimes over the descending colon and in the latter case, the colon can frequently be palpated, feeling rather firmer than usual. Sometimes there is exaggerated and obviously simulated tenderness "everywhere" but this is not to say that the attacks of spontaneous pain in such patients are any less genuine. The rectum and anal region should be examined to exclude the perianal lesions of Crohn's disease. The examination must be thorough, bearing in mind the main conditions listed in table 1, to avoid making an error of diagnosis. It should include examination of the fundi, blood pressure recording, and inspection of the genitalia. Perhaps even more important, the parents and child must be satisfied that the complaint has been taken seriously before they can be expected to accept a confident assertion that there is no organic disease. A second examination, during a bout of pain, is sometimes necessary.

The family

Painful syndromes are familial. Frequently, one or more close relatives suffer from abdominal pain or headaches. Their symptoms may have been identified as due to true migraine or duodenal ulcer. In the latter case a real diagnostic difficulty arises in that the cardinal symptom of peptic ulcer in children is recurrent abdominal pain of a similar ill-defined pattern, and in up to 40% of patients one or other parent also has an ulcer. Other psychosomatic or nervous troubles are frequently encountered in the relatives. It is worth asking specifically whether the parents have ever had a nervous illness which required treatment.

The psychological make-up of the immediate family is only one aspect of home life, and equally important is the stability of the child's emotional environment. Inquiry may show that the onset of the symptom coincided with a particular event or difficult period in his life; that the parents have marital, financial, or housing problems; or that there are difficulties at school, with friends, or in the extended family.

The pain

The difficulty in evaluating the complaint has already been referred to. It is greatest in the very young child, who tends to refer all kinds of discomfort to his abdomen. In the preschool child acute recurrent tonsillitis is an important and readily diagnosed source of abdominal pain.

The older child still finds difficulty in describing his distress in classical medical terminology. It is vague, central abdominal or epigastric, and generally constant: colic should heighten suspicion of an organic lesion, as should pain located far from the midline. It may occur daily or only at intervals of days or weeks. Although no particular pattern is characteristic, often it occurs in the morning before school, which may suggest to the parents that the child wants to stay at home. Other accompanying symptoms indicate an autonomic disturbance: pallor, nausea, anorexia, and headache are common. Although the pains do not wax and wane like colic some children say that defecation relieves them.

The source of the painful episodes has evoked much speculation and some clinical study. The most satisfactory investigations have equated the condition with the "spastic colon" variety of the irritable bowel syndrome of adults. Changes in recto-sigmoid motility in response to prostigmine are identical in both groups,⁴ and the pain experienced by adults can be correlated with intraluminal pressure changes in the large intestine.⁵

Support for a colonic origin has come from Dimson,⁶ who found delayed intestinal transit in 44% of a large series. He also claimed that true rectal constipation is an important alternative cause of recurrent abdominal pain, and that such constipated

children do not share the emotional trigger factors or colonic tenderness of the majority, although their pain is otherwise indistinguishable.⁶

Hence affected children have an inborn tendency to colonic spasm, and that the colon is the site from which the pain arises, but the exact pathways by which the psychological and emotional factors affect the colon are not clear.

Management

After the history and physical examination a minimum of three laboratory investigations should be performed as routine, and all can be done by the general practitioner. These are:

Urine analysis and culture—This is absolutely mandatory. A routine stick-type test, an examination of the deposit, and a culture should be performed. Although it is not foolproof—a normal result is occasionally obtained despite the presence of a renal abnormality—failure to test the urine is negligent.

Haemoglobin, white cell count, and blood film—A surprisingly large proportion of parents fear that their child has leukaemia. A normal blood picture will remove that anxiety.

Erythrocyte sedimentation rate—This may give a non-specific indication of an organic disorder.

In addition, a Heaf or Tine test may be done if the child has not had BCG vaccine. If any of these tests produce an abnormal result further investigations are indicated. Other indications that the child should be referred to hospital are: (a) a history suggesting urinary tract disease, (b) diarrhoea or severe constipation, (c) persistent vomiting or haematemesis, (d) excessive lassitude, pallor, or anorexia, (e) persistent fever, (f) jaundice, (g) weight loss, (h) perianal fistulae or anal fissures, (i) rectal bleeding or melaena stool.

Investigations which may be carried out in hospital include x-ray examinations (intravenous pyelography, barium meal and enema examinations, cholecystography), technetium scan for Meckel's diverticulum, gastroduodenoscopy, sigmoidoscopy, liver function tests, and chemical analyses of blood urea, amylase, lipids, lead, and urinary porphyrins.

If none of these features are present, the physical examination shows nothing abnormal, and if the history gives positive evidence to support a diagnosis of psychosomatic pain this diagnosis must be made and given to the parents. Specific diagnostic fears should first be asked for, and firm reassurance given that the child does not have the disease in question. Occasionally, this can be difficult. For example, the mother of a boy whose sister had died of a renal tumour one year previously would not accept that his pain was emotionally-based until he had had an intravenous pyelogram. Although in every respect he resembled a typical child with recurrent abdominal pain, I referred him for an intravenous pyelogram to satisfy his mother, and myself, that her fears were groundless.

It is also useful to ask whether the parents—or the child—have any ideas of their own about the cause of the pain. Some insight may have already been provided into the emotional background. They may have been given other tentative diagnoses or explanations by medical or lay advisers, and tact will be required if these are to be refuted. The supportive evidence of laboratory tests proves useful if this is the case.

CONVINCING THE FAMILY

The counselling doctor must be clear and a little authoritarian if he is to convince the family. Temptation to order another batch of investigations must be resisted unless they are clearly indicated. The syndrome must be explained simply but fully, and it is useful to draw on analogies with common symptoms, such as headache, to explain how quite genuine pain can result from tension or anxiety. Sophisticated parents may demand a more detailed explanation of the mechanism involved. This should be offered, and while frankly admitting that we do not

understand all the physiological details, we should emphasise that we are fully conversant with the clinical picture and natural history of this common disorder. The art of counselling lies in being able to judge the intelligence, education, and perception of the audience, and we frequently overestimate the patients' capacity for understanding. A recent anecdote, recorded by a respected senior paediatrician, described how he explained this syndrome carefully to a receptive and grateful parent. He later received a letter sent by her to the medical expert of a magazine (himself in another guise) in which she asked why the child's twisted and potentially obstructed gut had not been referred for operation.⁷ It is perhaps wise to see the patient again after the initial explanatory interview to reinforce the advice and explanation. Frequent repeat visits should, however, be discouraged. The symptom should be minimised, although not unsympathetically, but we must say that we have no curative treatment.

Nevertheless, having offered an explanation, it is not entirely logical to refuse to intervene in the hypothetical pain pathway. Unfortunately, drug treatment aimed at reducing, preventing, or abolishing colonic spasm is usually ineffective. Some patients claim beneficial results from anticholinergic preparations such as dicyclomine (Mebentyl). I do not usually initiate such treatment, but if it has been given with good effect it is justifiable to continue. A milk-free diet helps occasionally and should be tried if a temporal relationship is noted between the pain and eating or drinking dairy produce. Constipation, when present,

should be treated with a stool softening agent (such as dioctyl sodium sulphosuccinate) and a gentle laxative.

The history may have uncovered stress factors in the child's background which require referral to other professionals. These include social workers, health visitors, parents' family doctor, school doctor, child psychiatrist, or psychologist. None can alter his physiological reactions, but they might be able to improve his environment.

The untreated child will not die from his complaint, but follow-up studies indicate that he is unlikely to live without it. Those children who have been given an adequate explanation and encouragement to live a full normal life have a two to one chance of eventually losing their pains, although they retain an increased susceptibility to nervous disorders in adult life.⁸

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Letter from . . . Denmark

Paying for medicine

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Savings on drugs

When Danes take their doctors' prescriptions to the chemist they are used to paying for their medicines themselves—sometimes the full price but, more often, a quarter or half of it. This may seem curious to the uninitiated but there is an explanation. The traditional attitude is that to discourage over-consumption and waste people should pay at least something themselves. But, clearly, this something should not become a financial burden to the individual and should bear a reasonable relation to the condition treated.

To apportion the cost of drugs between the consumer and the "Sygesikring," which is the Danish equivalent of the British NHS, a standing committee decides which drugs deserve to be subsidised by public funds. Accordingly medicines are classified into three arbitrary groups. Group I comprises indisputably necessary drugs and group II those which are considered important but not absolutely necessary—that is, drugs whose value is less firmly established. The rest come into the third

group: how necessary these medicines are to mankind is an open question, but nobody would like to pass a verdict that they are really unnecessary.

The health service pays 75% of the cost of group I drugs—anti-infective and most cardiovascular agents, to mention just a few. The cost of those in group II is shared evenly, 50% being paid by the customer and the remainder by the service. Hormone and analgesics belong to this group. The third group is not subsidised at all, and the customer must pay the full price for such things as cough linctuses, and muscle relaxants and, since 1 July 1975, antihistaminics, antacids, sedatives, and hypnotic drugs. Before this crucial date these preparations belonged to group II.

In our country as elsewhere expenditure on drugs has been rising steadily, as has concern over it. By and large, our state finances are not very healthy, and so, during 1975, our parliament felt obliged to apply the financial brakes in no uncertain manner, in every possible—and a few rather impossible—ways. A penny saved is a penny gained and thus it was officially demanded that Dkr100m (about £8m) should be saved on the national drug bill. The poor drug subsidy committee had to work hard to effect this saving but eventually managed to do so with medicines which were in great demand and rather expensive too. Their therapeutic value was not rated very highly, and so subsidies were withdrawn from antihistaminics, antacids, sedatives, and hypnotic drugs. The last weeks of June saw crowds of people at doctors and chemists obtaining

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