Current Practice

CHILD CARE IN GENERAL PRACTICE

Diagnosis of the Acute Abdomen in Childhood

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Almost all the deaths and most of the serious complications of acute abdominal conditions in childhood occur in those patients whose operation has been delayed by late diagnosis. It is the awareness of the bad effect of delay that presents the family doctor with a dilemma. Many children have abdominal pain or vomiting at some time in their lives, and in the vast majority it is not due to some serious disease requiring surgery. How is he to distinguish the serious from the trivial? If he is uncertain and decides to see the child again in six or 12 hours is he risking the serious consequences of failing to recognize a true emergency? If he sends the child into hospital at once is he cluttering up hospital beds with children who will come to no harm and would be better at home?

This dilemma cannot be completely resolved, but I think it is worth while to give some time and a lot of attention to certain aspects of the history and to weigh the significance of a number of physical signs.

History, Signs, and Symptoms

Onset

If we are given a history of a sudden onset of symptoms at "twenty past seven" or "five past two" we are apt to think in terms of intestinal obstruction, such as an intussusception or incarcerated hernia, and rightly so, but we must not forget that the mother may tell us what she thinks we want to know—for example, when the child first cried out with abdominal pain. If we now ask, "Was he perfectly all right this morning? Did he go to school to-day?" we may be told, "Oh no, Doctor, he hasn't been at all well for two days; he's been vomiting such a lot; but at twenty past seven when I picked him up he cried out with pain." In the conditions for which surgery is required abdominal pain is nearly always the first or an early symptom. A child with other symptoms, such as vomiting, cough, headache, or fever, for 12 hours or more before the onset of abdominal pain is more likely to have an infection elsewhere, such as in the respiratory tract, renal tract, or meninges, than some trouble in the abdomen requiring surgery. Yet even such a simple guide as this may fail if the child is a stoic: he may have had his tummy-ache for longer than he has vomited. He may grin and bear the pain, but he cannot suppress a vomit.

Character of the Pain

Time is well spent on eliciting further details of the type, severity, duration, and localization of the pain.

Type.—Children have not at their disposal the terms to describe abdominal pain as the adult would, but one question

which I always ask and sometimes find useful is, "Is it like ordinary tummy-ache or is it different?" It is surprising how clearly most children can understand this distinction, and if, to the child, it seems different from ordinary tummy-ache I would be particularly careful before dismissing the pain as of no consequence. This is not to say that the child with "ordinary tummy-ache" may not be starting with an appendicitis, but I think the odds are against it.

Severity.—The severity of the pain is not a sure guide to the severity of the disease or to its urgent need of treatment. It is in any case difficult to assess the severity of a child's pain. If it wakens him at night, if it brings him in from play, if it makes a stoic cry, if he goes off to bed in the middle of "Laramie," then it is a bad pain and merits attention. Besides being an early symptom of serious intra-abdominal trouble, pain is usually a dominant symptom. Yet a child may not actually complain of much pain because he can stand pain better than others, because he is afraid his complaint may get him into trouble or bring him to hospital, because he is too young to complain and can only cry, because he is too ill and has not the strength, or, rarely, because he really has not much pain. We all know from personal experience that an attack of enterocolitis can give us sharp spasms of pain as well as diarrhoea, and no doubt the infant with gastro-enteritis may have some pain, but if his pain is an important aspect of the clinical picture we must be doubly careful before ruling out an intussusception.

Duration.—Even in a young child one can often obtain a clear idea of duration of the pain, and in particular whether it is "coming on and staying on all the time, or coming on and going off." Bouts of pain which come on and last for a few seconds or minutes and then recur a few times during the day but completely disappear in between are unlikely to be due to appendicitis. There are undoubtedly exacerbations of pain in the early stages of appendicitis, but the child is usually not completely free of symptoms in between the bouts.

Localization.—Many of the non-specific abdominal pains in children are localized in the peri-umbilical region, the child often pointing with one finger to the spot. In the more serious lesions the pain may not be well localized and even in appendicitis the classical movement of pain to the right iliac fossa may not be recorded. Quite often the nearest one can approach to this classical symptom is some indication that the pain is more on the right side of the abdomen than on the left.

Vomiting

Vomiting in association with abdominal pain must always make one suspect an urgent surgical condition. The character of the vomitus is more important than the mere fact of vomiting. If the vomitus changes from gastric to intestinal contents, ileus due to peritonitis or intestinal obstruction is

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likely. In some infants a "parenteral ileus" due to serious infection elsewhere may lead to the vomiting of bile-stained intestinal contents. On the other hand, if vomiting is the dominant element in the illness, such as may occur in hepatitis, disease of the renal tract, or meningitis, the vomitus is likely to be gastric contents and secretions, perhaps with some yellow bile. Repeated vomiting may be the cause of the abdominal discomfort of which the child complains.

Physical Signs

There is only one part of the physical examination during which it is essential to have a quiet and co-operative child, and that is during abdominal palpation. The family doctor in the child's home is far more likely to have the opportunity for a good feel at the abdomen than the doctor in hospital. Assuming that the child is quiet, the aim is to find out whether there is acute tenderness, real guarding, or a lump.

Most of us examine a child standing or kneeling at the child's right side, and I am sure that a number of the false-positive findings of right iliac fossa tenderness are due to our fingers hurting the child as a result of the fingers being more at right angles to the abdominal wall when feeling the right side than they are when feeling the left. Really acute tenderness is very suggestive of serious intra-abdominal trouble, especially if there is a great contrast in the reaction when palpating the two sides of the abdomen. Tenderness over the descending and sigmoid colon when the bowel is rolled under the fingers is not an abnormal sign, and some pain may be felt on similar deep palpation of the caecum and ascending colon. When the inflamed or even perforated appendix is behind the caecum, in the pelvis, or running across the abdomen behind some loops of ileum, the acute reaction to superficial pressure may not be present, but firm pressure really does hurt the child. The chief difficulty lies in assessing tenderness when the child is already crying. It is still worth while deliberately palpating both sides for comparison, for the intensity of the cry and even its quality may change when a really tender area is pressed.

It is sometimes recommended that the abdomen should be palpated from behind when the child is held in his mother's arms, but I have seldom found this necessary and have gained little from it. Flexing the child's hips and knees may help, but even this manoeuvre may make the child uncomfortable and make him cry and tense his muscles. I seldom test for hyperaesthesia.

Though I would regard rectal examination as the next most important procedure, it will not be next in sequence. The doctor is likely to pay particular attention to signs in the chest that suggest pneumonia, enlarged tonsils which may be associated with mesenteric adenitis but do not rule out appendicitis, and tenderness in the loin suggestive of renal infection. Two other points of interest in differential diagnosis are worth noting. An inverted respiratory rhythm within a few hours of the onset of abdominal pain should make one remember epidemic myalgia as a possible cause, especially when there is a high fever and abdominal rigidity. Secondly an infective lesion anywhere in the right lower limb may cause an iliac adenitis without any signs of inguinal adenitis.

A frequent comment on rectal examination is "tender high up on the right," but a painful response on the part of the child to palpation high up on the right is useless unless deliberately compared with palpation in a corresponding position on the left. If an ungreased portion of the finger-cot drags against the skin or the finger catches one of the rectal valves there may be a cry of pain without any real tenderness of the para-rectal region.

Auscultation of the abdomen is worth while if one hears plenty of activity of the bowel when other signs have pointed to peritonitis and ileus. Absence of bowel sounds is seldom

so diagnostic, because the frequency of sounds is normally so variable.

Two Acute Abdominal Emergencies

It might now be worth while describing some of the variations in the clinical picture of two only of the common acute abdominal emergencies in children.

Acute Appendicitis

Many would regard the typical picture of appendicitis in childhood as being found in a child of 8 to 12 years of age with central abdominal pain, later moving to the right iliac fossa; vomiting or at least retching would occur; there would be anorexia, and the child would have tenderness and guarding in the iliac fossa. The disease is certainly less common in the younger child, but even the child of 2 to 4 years old may have the disease and present with vomiting and pyrexia and a lot of crying due to pain, but not specifically complaining of soreness of the abdomen.

The two phases of pain may not be recognized by the child, but he will usually admit some continuous pain right from the onset. Vomiting or retching may never occur, but anorexia is invariable. Pyrexia is not rare in the younger child because the diagnosis is made relatively late. The right side of the abdomen is almost always more painful to deep pressure than the left, but in some children the appendix may lie across the front of the abdomen and the tenderness may be behind the right or behind the left rectus or occasionally well across to the left side. If the appendix is behind some loops of small bowel, retro-caecal, or in the pelvis, there may be virtually no abdominal tenderness, certainly not on superficial palpation, and one must rely on deliberate palpation of the right flank or the pelvis to find a positive sign. Suprapubic pain and tenderness, even with dysuria and a few white cells in the urinary sediment, is far more likely to be due to appendicitis than cystitis, which is a rarity in childhood.

None of us would like operation to be delayed in our own child, and the diagnosis of appendicitis in childhood should be followed by operation as soon as possible except under two circumstances. The child may be really ill with peritonitis, and a few hours of intravenous fluids and gastric suction will vastly improve the outlook. If the child is obviously getting better when the diagnosis is made, his appetite is returning, there is no vomiting, or his pyrexia is settling, it is reasonable to wait for the healing process to continue and remove the appendix as soon as one considers that the child has completely recovered. There is then no chance of a flare-up while waiting for "interval appendicectomy." In all other circumstances urgent operation is obligatory. Too often a child with a mass in the right iliac fossa is treated conservatively even when he is clearly deteriorating. When at last operation can no longer be put off the child is very ill, with widespread peritoneal infection and perhaps obstruction of the small bowel. Except in the two circumstances described above the diagnosis of appendicitis demands urgent operation, and the probability of appendicitis demands hospital admission.

Acute Intussusception

The classical picture of the sudden onset of spasms of acute abdominal pain in an infant of 6 to 12 months old, with vomiting and the passage of a red-currant-jelly stool, is found in about half the cases, and it is in the remaining half that diagnosis presents some difficulties. Pain is nearly always felt, but may not be expressed as screaming, rather by intermittent writhing in the cot. True vomiting may not occur, but if not

the child usually retches during the earlier phases of the disease. Blood may not be passed per rectum by 50% of the children during the time they are in the care of the family doctor, but the diagnosis is not thereby excluded. Rectal examination will show some blood in perhaps another 25% at that time. Absolute constipation is by no means the rule, and perhaps one in five children will pass several loose stools, leading to a diagnosis of gastro-enteritis. This is the greatest danger, for treatment of an enteric infection is then started and the true nature of the condition may not be realized until the child is very ill 24 or 48 hours later.

Intussusception does not often come the way of the family doctor. He may see only one or two in his professional career and he may make a serious and, indeed, fatal mistake if he relies exclusively on the classical triad of symptoms—severe spasmodic pain, vomiting, and the passage of blood per rectum.

TO-DAY'S DRUGS

Drugs in the Treatment of Ear Infections

Any discussion on modern drugs used in the treatment of ear infections is bound to favour antibiotics at the expense of older and less fashionable preparations. This is only natural, since these drugs have revolutionized otological practice, not only by the prevention of deafness, but also by the prevention of fatal intracranial complications. In pre-antibiotic days ear, nose, and throat wards invariably included cases of brain abscess or meningitis, but nowadays these are rarities, and more often than not the sequelae of chronic rather than acute otitis. As regards deafness the natural history of acute otitis media progressing to mastoiditis is curtailed by treatment with penicillin, and the end result with respect to hearing is vastly improved by this drug. Despite the availability of antibiotics and their wide usage to-day there still remains a great deal of ignorance about their proper deployment in the treatment of ear infections. The dependence on topical preparations for acute otitis media is only one example of irrational use of antibiotics.

Furuncles and Furunculosis

The treatment of furuncles and furunculosis of the external meatus depends on the stage at which they are first seen, whether pus has discharged into the canal or not, and whether pain is still present or otherwise. Both conditions are extremely painful because the meatal skin is so tightly bound to the underlying perichondrium with little space for expansion. There is a place for the administration of systemic antibiotics if pus has not already found its way into the meatus. The aims are to limit production of pus and consequently pain, particularly in the early phase, and to prevent diffuse perichondritis with its occasional distortion of the pinna and external meatus. Local treatment to the canal, although less important, has a useful part to play. It helps to relieve pain, reduces the spread of inflammation to neighbouring parts, and draws pus out once the boil or pockets of infection have ruptured.

The choice of an antibiotic usually falls on penicillin, since, though boils are produced by staphylococci, the percentage of resistant organisms is quite small. The decision between oral and intramuscular administration depends on the rapidity of action required rather than on any other considerations. Treatment should be continued for five days at least, notwithstanding rupture of the boil. This policy of continued treatment for an empirical period of time ensures that the organisms do not develop resistance and that perichondritis does not occur.

The diagnosis must be suspected when an infant becomes rapidly ill with abdominal pain, pallor, and lethargy. "He's a different child, Doctor, to what he was an hour or two ago." As with all acute abdominal emergencies in children, thorough but gentle palpation of the abdomen is the only sure way to check the suspicions of serious disease. In late cases the tumour is easily palpable to the left of the midline, but in early cases it needs persistence and persuasion to feel the mass in the right upper quadrant under cover of the liver. At times no mass will be felt but there is guarding of the right upper rectus muscle. In a difficult child the symptoms alone may demand referral to hospital, where abdominal palpation under sedation and a plain film of the abdomen may give the answer. Barium enema by an experienced radiologist with the surgeon in attendance may not only confirm the diagnosis but allow non-operative reduction in some early cases.

Local treatment is best carried out in the form of a wick impregnated or soaked in a suitable preparation. The value of such treatment before a furuncle has burst is doubted by some, since it seems unlikely that it can have any therapeutic effect on intact skin. The preparations commonly used are glycerin and ichthyol or magnesium sulphate paste (45%).

It should be emphasized that the urine must be tested in cases of recurrent boils and furunculosis.

Otitis Externa

The term otitis externa describes a collection of "inflammations" of the external auditory canal, characterized in each case by a distinctive appearance. Recognition of the type of condition, aided by bacteriological tests, is necessary in order to carry out treatment on a rational basis.

Local treatment nearly always takes precedence over systemic therapy. Apart from the obvious unsuitability of such antibiotics as neomycin, Soframycin (framycetin), and kanamycin, which have markedly ototoxic properties when administered by injection, systemic therapy frequently fails to produce improvement in otitis externa. This may be due to the fact that only a proportion of cases are bacterial in origin, and of the rest not all are bacterially contaminated. In general, systemic therapy is reserved for cases where widespread bacterial invasion has occurred and particularly where perichondritis is a complication.

Local Antibacterial Applications

In discussing local treatment one must emphasize the importance of careful meatal toilet and drying above all other considerations. The question of what vehicle to employ for local application of antibiotics is a difficult one. Generally speaking, cases of otitis externa are prone to recurrence of inflammation when water comes into contact with the ear canal, so that on the face of it drops prepared in an aqueous base ought not to be used. A further drawback in the case of aqueous preparations is the short-lived duration of contact with the meatal skin.

Powder insufflations are effective up to a point, particularly in mild cases, cases of fungal aetiology, and cases of herpes and haemorrhagic bullae. But penetration of the powder into the deep meatus is not always achieved if the patient carries out the treatment himself. The ideal vehicle is an ointment impregnated in a wick and introduced at daily intervals for a week or