REFRESHER COURSE FOR GENERAL PRACTITIONERS

INDIGESTION IN CHILDHOOD

BY

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Indigestion, or dyspepsia, occurs frequently in childhood, and it may be acute or chronic. Sometimes the symptoms are due to a particular disease, such as hepatitis or tuberculous peritonitis, that can be recognized and demonstrated; but many patients with indigestion recover without a definite pathological cause being discovered. It is to these patients that I want especially to call attention, and for two main reasons: though recovery takes place the child suffers discomfort and his parents have a worrying time; and the doctor may be faced with a perplexing clinical problem while he is searching for the cause of the illness. To compare dyspepsia with other examples of disordered function, such as dyspnoea or dysuria, is to realize that careful clinical examination, supported when necessary by special investigations such as radiography, blood studies, etc., will usually show the reason for a child's shortness of breath or difficulty with micturition; but the cause of dyspepsia often remains a matter for speculation. Has it been due to some peculiar sensitivity to certain foods? Is it that the secretion of saliva, or of gastric juice, of trypsin or bile, is temporarily disordered? Has the detoxicating action of the liver decreased temporarily? There are many possible theories and explanations, and the doctor—perhaps feeling dissatisfied with “indigestion” as a diagnosis—should have a satisfactory plan to follow.

There are four stages in the medical handling of these cases. The first is to recognize the clinical picture (grouping of symptoms and signs) justifying a provisional diagnosis of indigestion; the second is to consider, and if possible exclude, those pathological states that might be responsible for the symptoms and signs noted; the third is to weigh up the possible effects of (a) constitutional type; (b) faults in dieting; (c) unhygienic habits; (d) subnormal general health, and (e) nervous factors in causing the illness; and the fourth is to recommend treatment. It is not, of course, intended that these stages should be considered independently; each has a relationship to the others, and together they form a basis for the proper study of each case. In discussing them I shall begin by taking stages one and two together, dealing first with the acute and then with chronic indigestion.

Acute Indigestion

The common symptoms of acute indigestion (due, for instance, to overeating, or to taking unsuitable food) are malaise, then nausea, then vomiting, and sometimes abdominal pains of a colicky type. Diarrhoea may begin soon after vomiting has started, and the motions quickly become watery, and perhaps green in colour. The temperature may rise to about 99.5 or 100° F. (37.5 or 37.8° C.) after the child has been ill for an hour or so. His breath often becomes offensive, his tongue quickly shows a coating, and frequently he looks pale and anxious. Dehydration may develop if there is much vomiting or diarrhoea, but by this time the provisional diagnosis of indigestion may have been

discarded in favour of, say, acute gastro-enteritis. Acute indigestion may be expected to subside within two or three days, but illness such as gastritis, gastro-enteritis, and enterocolitis usually last longer, and vomiting or diarrhoea—or both—are likely to be more persistent.

Every child presenting the clinical picture described above should be carefully examined at least once daily until recovery has occurred or an alternative diagnosis has been made. There are, of course, many illnesses that begin with nausea and vomiting, abdominal discomfort, coating of the tongue, and other symptoms commonly found in simple indigestion, and experience shows that confusion occurs particularly with the following:

Tonsillitis and sometimes pharyngitis. (The throat of every ill child should be examined, with a good light.) The temperature usually rises quickly, the tonsillar lymphatic glands are often found to be slightly tender when carefully palpated, but few children with tonsillitis complain that the throat feels sore. There may be pain and tenderness in the right iliac fossa—sometimes resulting in an unnecessary appendicectomy.

Pneumonia, especially in the earlier years of life. It is important to note even an occasional cough, tachypnoea, and movements of the alae nasi. Abdominal tenderness and perhaps even some “guarding” may occur when the pleura is involved.

Measles.—Some cases start with vomiting, diarrhoea, and pyrexia.

Urinary Infection.—The child's genitalia should be examined and a drop of the urine should be seen under the microscope, to exclude the presence of pus cells. This is especially important when a febrile child is found to be shivering.

Intra-abdominal inflammation and intestinal obstruction—for instance, appendicitis, peritonitis (usually streptococcal or pneumococcal), intussusception, volvulus, etc. In this group occur the most serious diagnostic errors, but in the space available I cannot do more than make brief comments upon them. Emphasis must be placed upon the need for a detailed history and accuracy in abdominal and rectal examination. Appendicitis is fairly common at all ages, except perhaps in the first year of life, and in childhood the localizing signs are often less distinctive than in the adult. It is essential that abdominal examination should be carried out with great care and gentleness, and as soon as possible after the onset of symptoms. When this is done the significance of localized tenderness in the right iliac fossa or under the lower edge of the liver is great, and there may be some reflex spasm of the overlying abdominal muscles; but these signs may disappear again within a few hours, especially when generalized peritonitis develops.

Pneumococcal peritonitis causes fever, vomiting, abdominal pain (generalized, but especially in the lower half of the abdomen), diarrhoea, and sometimes a vaginal discharge of a yellow or greenish-yellow colour. The child's general appearance may suggest a pulmonary rather than an abdominal infection, and there may be herpes labialis. Intussusception causes intermittent attacks of colic, at first lasting only a few minutes and waking the child from sleep. Careful abdominal palpation between the bouts of colic will usually reveal the tumour. At first the motions are normal, and then a little blood-stained mucus may be seen, Henoch's purpura presents a very similar clinical picture,

except that there is no abdominal tumour and petechiae may be found on the skin. Intestinal obstruction complicating hernia is less common in children than in adults; it is unlikely to be missed if a thorough examination is made, including inspection of the hernial orifices.

"Acidosis."—This term, though unsatisfactory as a diagnosis, calls attention to a clinical syndrome of some importance. A highly strung child, usually with parents of a similar constitutional type, is seized with severe and repeated vomiting. Even drinks of water may be returned, and the child becomes pale, distressed, and restless; there is oliguria and constipation, and a dangerous metabolic upset develops rapidly. Many different causes may bring on an attack—eating too many chocolates, a head-cold or tonsillitis, excitement, or a nervous shock, and it is obvious that the clinical picture is dependent mainly upon the constitutional make-up of the patient.

Chronic Indigestion

Though the clinical picture of subacute or chronic indigestion comprises a rich variety of symptoms and signs, the cases may be usefully divided into two main types. The first, often associated with excessive or unwise dieting, includes children that are well-built—frequently oversized—and with some of the following complaints: coated or "geographical" tongue, offensive breath, a sallow, muddy, pale, or pasty complexion with dark lines (described by the mothers as blue or black) under the eyes, hiccup, flatulence, epigastric discomfort, frontal headaches, and an appetite that may be excessive or impaired. The second type is illustrated by the thin, lanky child with flabby flesh, faulty posture, rather bluish and cold hands and feet, laxity of ligaments, and in general an appearance that makes his mother comment that he is going thin and looks very weedy, especially when he is with other children of the same age. Usually his appetite is said to be very small, but in other respects his symptoms may include any combination of those noted in the first type.

More detailed analysis of the symptomatology shows how wide may be the variations from case to case. In some, the abdominal discomfort is trivial; in others there may be severe pain in any part of the abdomen, and the child may cry, double-up, and become pale. These pains are usually of short duration, but they recur and may be excited by taking food. Sometimes they are accompanied by a desire to defaecate, but this does not always relieve the pain. The abdomen is often distended, especially when the child is thin and has flabby muscles; the distension is gaseous. The motions vary in character—sometimes normal, sometimes constipated, and often of a pale, grey, and greasy appearance for several days in succession. It is at these times that the abdominal discomfort and distension are likely to be most troublesome. In some of the more highly strung children with indigestion the motions may be mucoid, "like jelly," and either white or almost translucent. In these cases the descending colon may be spastic. Often there are curious changes of behaviour; the child is abnormally restless and active, but tires quickly and becomes apathetic. Many are said to behave as if they are unhappy; they become irritable, quick-tempered, moody, and may be rude to adults. At night their sleep is disturbed, they are restless, grind their teeth, dream about frightening experiences, and have night-terrors. When they wake up in the morning their sleep does not seem to have done them good. Some—and especially those that have been given food late in the evening—wake after about an hour of sleep and scream with abdominal pain. A cough of "habit spasm" type is quite common; migraine and vertigo are less frequent. Pains in the limbs are sometimes troublesome, and may arouse suspicions of rheumatic infection, especially when there is a low-grade fever.

It will be appreciated that in childhood chronic indigestion is more likely to show itself by general ill-health than by well-defined symptoms and signs pointing to an alimentary disorder. Hence, in the differential diagnosis, infec-

tions such as tuberculosis, rheumatic disease, and intestinal parasites must be included; and in some cases the coeliac syndrome (including fibrocystic disease in the pancreas), megacolon, intestinal malformation, recurrent intussusception, peptic ulceration, and Krohn's disease may require consideration, perhaps with the aid of radiography, and examination of the blood and faeces. Usually, however, it is reasonable to order treatment and to postpone further clinical investigation until its effect is observed.

Treatment

The treatment to be recommended for a child suffering with subacute or chronic indigestion is largely a question of common sense; but it must also take account of the possible influence of those factors, such as constitutional type, whose assessment formed the third stage in investigating the patient (see p. 197). Some children are born with a sub-normal capacity for digesting their food, especially fats, and any attempt made to fatten them up by giving cream, eggs, and extra butter is likely to cause indigestion, and especially when the child's appetite is not as hearty as the mother would wish. There is an obvious tendency in these cases for the child to be offered an unusually varied diet, the mother searching for any kind of food that the child likes and can take without ill-effects; and soon the child is virtually in charge of his own diet. The position should be carefully explained to the parents, and it is best to recommend rather small helpings of as normal a diet as the child can take, provided that the fat content (butter, cream, egg yolk, meat fat, etc.) is kept rather low. As a result, the child's appetite increases, he makes better use of the food taken ("Now good digestion wait on appetite"), and he will gradually learn to digest his food more satisfactorily. To encourage this there should be a very gradual increase of the amount of fat and other ingredients offered to him, and by this means the patient can usually be saved from becoming a food faddist in adult life.

Dietetic faults account for many cases of indigestion in childhood, and they concern feeding habits (the technique of feeding) as well as the food itself. The history must be taken in considerable detail, and it is best to make a complete record of all solids and liquids taken during an average period of 24 hours, and to ask whether the child feeds in company with other children and whether persuasion is used. One of the commonest stories is that the child "eats nothing"; and there is no doubt that some of these children have developed "negativism" towards feeding as a reaction to the mother's attitude at meal-times, and they may, in fact, take less food than is desirable. On the other hand, a detailed history often shows that the mother is mistaken and the child is taking more nourishment than he needs, usually as extra milk, cream, and butter, and perhaps with cocoa at bedtime. Useful rules are to forbid foods (which include milk, biscuits, and cake) between meals; to offer a relatively small first helping, with a second helping if the child asks for it; and to have the child take his food in company with other children if this can be arranged. Many of these patients make better progress when they are taking their meals at school than at home, because they are not bothered by attempts at persuasion and they imitate the feeding habits of the other children. It is often difficult to convince the conscientious, over-anxious parents of an only child that they would get better results—and much happier results—both for themselves and the child if they were to allow their child to become hungry. It is indeed sad that some children are denied the pleasure of having hunger to satisfy, and are at the same time condemned to indigestion, hunger being the normal initiator of the digestive processes.

The dyspeptic children of educated parents suffer more often from excess of fat than excess of carbohydrate; but the child that is eating large quantities of bread, cakes, pastry, sweets, and potatoes is undoubtedly liable to indigestion with gaseous distension of the abdomen. Food that is eaten too quickly and is not masticated thoroughly

may cause trouble, and parents should see that their children pay regular visits to the dental surgeon and clean their teeth properly. In childhood general hygiene seems to play a more important part in relationship to digestion than it does in adult life; hence such questions as sleep and rest, exercise, sunshine and fresh air, cleanliness of the body, and the maintenance of reasonable discipline all need consideration in the treatment of chronic indigestion. Similarly general ill-health—for instance, anaemia and sub-acute respiratory infections—impair digestion and should receive appropriate treatment.

Finally, nervous instability and indigestion are intimately related in childhood. Parents who worry unnecessarily, or disagree about the management of the child, create a fretful environment; and there are many other circumstances, including infidelity between parents, or death of one of the parents, that disturb the atmosphere of security found in a normal, happy home-life, and upset a child's nervous system and his digestion. These cases are perhaps the most difficult to treat effectively, requiring tactful and sympathetic understanding.

Medicines play a secondary part in the treatment of chronic indigestion, but they have their uses. A rhubarb and soda mixture is often helpful; and the pale child with a poor appetite and coated tongue will usually be helped by a mixture containing 5 to 10 minims (0.3 to 0.6 ml.) of dilute hydrochloric acid, and 10 to 15 minims (0.6 to 0.9 ml.) of glycerin of pepsin (*B.P.C.*), taken thrice daily immediately after food. Medicinal charcoal is useful when there is gaseous distension of the abdomen; and the passage of pale motions is an indication for 5 gr. (0.32 g.) doses of pancreatin (*B.P.*), given with 10 gr. (0.64 g.) of sodium bicarbonate two hours after food. Pancreatin granules (enteric coated) can be obtained, and are palatable to children.

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THE MEDICAL RESEARCH COUNCIL'S REPORT FOR 1951-2

This year clinical research is the subject for the introductory essay in the Medical Research Council's annual report.* The choice is timely. Plans for developing clinical research within the framework of the Health Service were published last week as a White Paper (*Journal*, July 18, pp. 140 and 147), and there have been signs elsewhere, notably from the College of General Practitioners, that the profession as a whole is becoming more research-minded in its approach to clinical problems. The Medical Research Council speaks with authority on this subject. It is therefore particularly interesting to learn that, although the first research unit to be set up by the Council after the first world war was a clinical one—the Department of Clinical Research at University College Hospital Medical School—the promotion of clinical research at that time is now thought to have been premature. True, the department proved outstandingly successful, both in the work emanating from it and, even more, as a school for clinical investigators. But this was owing to the genius of the unit's director, the late Sir Thomas Lewis, a man in advance of his age. For the most part clinical problems defied investigation—as

distinct from observation—because the necessary chemical and instrumental methods were lacking. Medical research was therefore concentrated on the pre-clinical subjects where appropriate techniques were available. By the middle 1930's, however, Lewis's pupils were filling university chairs of clinical medicine and taking up research appointments; at the same time new techniques of investigation were being elaborated. The stage was set for bringing the scientific method to the bedside. By 1939 the Medical Research Council had three clinical research units: by 1948 there were 18. In 1948, also, the National Health Service began, and virtually all clinical facilities passed to the Health Departments. The time had clearly come to review the administrative arrangements for clinical research, particularly those concerning access to patients, and to define the fields of the Health Departments and the Council. Against this background discussions began between the Standing Medical Advisory Committee of the Ministry of Health and the Medical Research Council which have culminated in the issue of the White Paper.

Review of Research

In its last two annual reports the Council has selected a few branches of research for extended review; the rest of the Council's work is given in summary fashion. This practice is helpful, as it allows for the presentation of a new advance in historical perspective and often makes it possible to forecast its future; but it has the disadvantage that the picture of the Council's work is necessarily only fragmentary. This year 11 subjects are reviewed in the report: chromatography, mental deficiency, preventive medicine in obstetrics, nervous control of glandular function, food-poisoning, drug resistance, haemophilia, diseases of the ear, the thyroid gland, poliomyelitis, and the physiology of the erythrocyte. In all these fields there have been interesting, and sometimes spectacular, advances: it is possible to describe only a few of them here.

While in the last 20 years the maternal mortality has been quartered, stillbirths and neonatal deaths have shown no comparable decline. In Aberdeen socio-medical studies are defining some of the causes of this wastage. It is known that those stillbirths which occur without warning and for no obvious reason are generally due to asphyxia. Now it has been shown that they are associated with post-maturity, and further that the post-mature infant has an abnormally low blood-oxygen level; a low foetal blood-oxygen is also found in some other pathological states of pregnancy.

New ideas on the training of high-grade mental defectives have been developed. Until quite recently it was the practice to teach them skilled or semi-skilled trades such as carpentry and boot-repairing; but it was found in a group investigated that not one was able to support himself outside hospital in the trade he had been taught. The answer is to train them for unskilled work. This has had remarkable results: boys who had previously been idle were able to go out on licence to work in neighbouring factories and on building sites, with benefit to themselves as well as to the community. In 1951 patients on daily licence from the colony where these experiments were done earned £30,000, of which over half was returned to the Treasury for their board and lodging. There are 20,000 feeble-minded patients of working age in hospitals in Britain, and the importance of this work is obvious.

Clinical advances have included the recognition of a new form of bacterial food-poisoning, the development of methods for testing the hearing of very young children, and the separation of "Christmas disease" (*Journal*, December 27, 1952, p. 1378) from true haemophilia.

Knowledge of the causes of food-poisoning has advanced far since the days when ptomaines were blamed; now all are familiar with the cases caused by salmonella organisms, staphylococcal toxin, and, less commonly, unusual proliferation of bacterial types not ordinarily pathogenic to man.

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