THE "MEDICAL APPENDIX" IN CHILDREN AND ADULTS*

BY

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It is well recognized that an abnormal appendix may give rise to abdominal symptoms which do not at all clearly suggest that they owe their origin to the condition of the appendix itself. Such cases may be found in both children and adults, and I am here attempting to classify them into types for their easier recognition and to discuss their diagnosis. Such syndromes as I am concerned with are often spoken of as those of "appendix dyspepsia," but some at least of the cases do not at all well simulate anything that would pass as "dyspepsia," and I have therefore used the term "medical appendix" to emphasize that it is characteristic for this type of case to come up for diagnosis to the physician rather than to the surgeon.

The appendix may produce abdominal symptoms in two ways: by being obstructed or by being inflamed. Obstruction and inflammation of the appendix are closely associated, either predisposing to the other. In both conditions pain is a prominent symptom, but it is only when the inflammatory process has reached a certain degree that localizing signs develop; then the pain shifts from the umbilical region to the right side, and guarding of the muscles, tenderness, and rigidity may become demonstrable.

In Children

In children the "medical appendix" is met with in two groups of cases:

1. *Dyspeptic Type*.—In this there is no more than abdominal pain, referred to the umbilicus, and sharp like colic in nature. It may recur at any time of the day or night, but it commonly occurs at meals. The pain is often severe while it lasts, doubling the child up, making it change colour and perhaps lie down on the floor; but it does not regularly lead to an action of the bowels, nor is it associated with diarrhoea. It usually lasts but a few minutes, after which the child will resume eating.

2. *Acidosis Type*.—In the second type in children the symptoms are more severe and the illness more definite. The pain in the centre of the abdomen is as before, but it is more severe, lasts longer, and is sooner or later followed by vomiting, which only partially relieves it. The attack may last for some hours, but is usually better after twelve hours' rest or sleep, though some discomfort may remain for twenty-four hours or more. Failing improvement the pain will shift to the right iliac fossa, and the evidence of appendicitis will become increasingly clear; but where the attack is brief and comparatively mild there is a danger of overlooking the real nature of the illness and of making a facile diagnosis of "acidosis."

DIAGNOSIS

To take together these two types of "medical appendix" in children, their diagnosis rests upon the following points:

(a) The earliest and most important symptom is abdominal pain in the umbilical region. This, though not necessarily long-lasting, is comparatively severe and tends to recur with or without vomiting. Much stress may be

laid on this point, for the dyspepsias of childhood are not of a painful type unless the bowels are much out of order; and in a child who is comparatively well, whose motions are fairly regular and healthy, and who is not being perpetually dosed with unsuitable aperients, there is practically nothing other than an appendix which will produce recurrent unexplained attacks of abdominal pain. The fact that there is no adequate explanation of the recurrent attacks of abdominal pain is much in favour of their being due to the appendix. In the same way the appendix cases may be recognized among the various types of recurrent vomiting ("acidosis") in children. These may be due to many causes: overfeeding and a faulty diet; transient infections, particularly of the nose and throat; migraine in which headache is the first symptom preceding the onset of vomiting and pain; constipation and intestinal derangement and their treatment; and excitement and emotional fatigue in nervous children. The characteristic of the appendix group is that the pain precedes the vomiting, is severe and recurrent, and is inadequately explained on other grounds.

(b) An accurate clinical history is of great importance and is often by itself diagnostic. The exact march of events must be precisely determined, to bring out clearly the points already mentioned. It is by no means rare to find that the recurrent attacks date from an abdominal illness in which the possibility of appendicitis was raised and discarded.

(c) Examination of the abdomen in an interval between attacks is seldom of help, but during or immediately after an attack signs of tenderness in the right iliac fossa are sufficient, in a child, to show that the appendix is involved. It is of importance to palpate the abdomen with gentleness: to dig the tips of the fingers roughly down to the appendix region may give rise to any entirely false impression. A positive diagnosis may be made with confidence if palpation, properly performed, produces tenderness (sharp or bruise-like), a sensation of nausea, or pain referred to the transverse or descending colon. Tenderness elicited by rectal examination is of similar significance. It is to be noted that the difficulties in diagnosis connected with mere caecal distension in adults do not occur in children.

(d) In doubtful cases radiological examination of the appendix may be of great value in confirming the diagnosis (see below).

In Adults

The syndromes arising from obscure disease of the appendix in adults are better appreciated than in children, and may therefore be more briefly described.

1. *Gall-stone Type*.—A sudden and severe attack of appendicular colic may exactly resemble gall-stone colic, especially at its onset. Such a possibility must therefore be kept in mind, and particular attention should be paid to this point as the attack passes off, since it is then that there is the best chance of obtaining evidence incriminating the appendix.

2. *Peptic Ulcer Type*.—The best-recognized type of appendix dyspepsia is that which simulates clinically the syndrome of duodenal ulcer. The resemblance may be extraordinarily close. In both conditions there may be the same sharp abdominal pain, which may occur in the middle of the night as well as during the day, and is relieved by food, alkalis, or the vomiting of highly acid gastric juice. In other words, a diseased appendix can set up the same hypersecretion and pylorospasm as an ulcer. Radiologically, too, much the same picture may be seen in

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the two groups of cases: the initial hold-up of the meal by pyloric spasm, the later rush through the imperfectly distended duodenal cap, the vigorous hyperperistalsis and rapid emptying of the stomach. Careful investigation of the history will often show that the earliest abdominal symptoms were suggestive of appendicular or colon pain, and that the pseudo-ulcer symptoms have supervened later.

3. *Appendix complicating Ulcer.*—Surgeons are well aware of the harmful effects of a chronic appendix on the clinical course of ulcer cases, and the benefit to the ulcer from the removal of the diseased appendix. A practical point arises in this connexion—namely, that an opaque meal should always include the radiological examination of the appendix, even though an ulcer has already been revealed.

4. *Colon Type.*—Some cases of spasm of the colon owe their origin to a diseased appendix. Their diagnosis is by no means easy, as it is well known that in many instances spastic colitis and caecal discomfort are to be found in those who have already submitted to appendectomy without relief. Nevertheless their recognition is of importance, for if the appendix is gravely at fault there is little chance of a cure until it is removed, and indeed treatment of the colon by lavage may entail a risk of setting up an acute appendicitis. The diagnosis may be approached on these lines: first, by tracing in the clinical history, especially of the early stages, any possible illness which in retrospect might correspond to an attack of appendicitis; secondly, by comparing the frequency or severity of the local pain in the right iliac fossa with the more general discomfort of intestinal indigestion and colitis; and, thirdly, by radiological examination. Finally, it may be borne in mind that in this type of case the appendix shares in the disorder of the colon, and the patient is to some extent predisposed towards acute appendicitis: the supervention of this does not therefore necessarily signify that the correct diagnosis has been missed.

Radiological Examination

In doubtful cases examination by means of an opaque meal may provide valuable confirmatory evidence. The points suggesting disease of the appendix are as follows: (i) tenderness of any part of the appendix under screen control; (ii) shifting of the tender point with artificial displacement of the caecum; (iii) fixation and rigidity; (iv) acute kinking; (v) the presence of concretions; (vi) variations in calibre; (vii) crenation of the mucosa and filling defects; (viii) imperfect filling or delayed emptying; (ix) complete absence of filling, especially after preliminary purgation. This last sign is not to be taken as of significance unless it is accompanied by one or more of the other signs enumerated.

Diagnosis and Results

The diagnosis of each type of disorder due to an abnormal appendix has already been discussed. A positive diagnosis may be claimed to be correct where operation reveals a diseased appendix or leads to a prompt cessation of symptoms. It is not, however, to be expected that operation in a quiet interval will always show macroscopic evidence of disease in the appendix, nor that where spasm and colitis have been present for a long time operation will necessarily cause an immediate freedom from all symptoms. Trying to estimate results from personal experience as fairly as possible, I think that a positive diagnosis of an abnormal appendix reached on the lines indicated is very seldom wrong. The results obtained by operation lead to this conclusion, which is confirmed by the fact

that of four patients who refused operation three have since suffered from acute attacks necessitating surgery. On the other hand it cannot be said that, even with the greatest care, a negative diagnosis is equally reliable, and I am aware of cases which I have passed as normal developing an acute attack within the next few months. Such errors are probably unavoidable if cases are seen only during quiescent intervals.

In children the diagnosis of a "medical appendix" is comparatively easy, and, where correctly made, operation is uniformly and completely successful in leading to a cessation of all symptoms. In them nothing could be more satisfactory. In adults the cases simulating ulcer are very successful, although they may need treatment for the duodenal irritation for some weeks after appendectomy. In the colon group many do obtain relief at once by operation, but in others in which symptoms of colitis and intestinal indigestion have been present for a long time operation will not do more than leave the way free for appropriate medical treatment to be instituted.

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TREATMENT OF GONORRHOEA BY ULERON

A REVIEW OF 120 MALE CASES

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The references in the Continental and world medical literature to the use of uleron in the treatment of gonorrhoea are numerically so formidable that an adequate review of the findings recorded is almost impossible to give. The preparation, which has the structural formula

and is described chemically as 4-(4'-amino-benzol-sulphonamide)-benzol-sulphon-dimethylamide, is a colourless substance, soluble with difficulty in water, and is put up in 0.5 gramme tablets.

First reported upon by Grütz (1937), who used it and allied preparations in a group of thirty-six patients, it was later the subject of investigation by Felke (1937), Fischer (1937), and many others. During 1938 approximately 160 articles appeared describing the results of using the preparation in gonorrhoea, most of them by Continental authorities. I will choose only five of these articles, which seem to give a general picture of what our Continental colleagues have achieved.

Mergelsberg (1938a), using a maximum of three "Stosses"—that is, short courses of treatment—separated by suitable pauses, and not exceeding a total of 12 grammes per three days, found that old gonorrhoea responded best and that results were quite good in complications. His figures are of interest: sixty-nine cases of old gonorrhoea which had preliminary irrigations gave a 77 per cent. cure. W. and K. Gennerich (1938), using similar dosage and a preliminary two to three weeks' irrigation with $\frac{1}{2}$ to 1 per cent. albargin, treated sixty-four cases (fifty-eight of them male), all of whom finally passed tests of cure: fifty-six of these responded to 1, six to 2, and two to 3 "Stosses." Fuhs and Volavsek (1938a), using a seven-day "Stoss," which the makers of the drug consider