Chronic Appendicitis

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A STUDY of the literature suggests that few authorities are in agreement about the entity "chronic appendicitis" and the way in which it manifests itself. A number of authors deny that it exists. Alvarez (1940), after a review of 385 patients who had been subjected to appendicectomy for non-acute symptoms, concluded that "chronic appendicitis is the rarest of intra-abdominal diseases." McClure (1931) and Cohen (1950) would limit the diagnosis of chronic appendicitis to those who have had recurring attacks of acute or sub-acute appendicitis. Shelley (1938) and Warren and Ballantine (1941) would confine the use of the term "chronic appendicitis" to those with persistent or recurrent right-sided pain. Warren and Ballantine believe that persistent or recurrent right-sided pain is unrelated to past or present pathology in the appendix. Other authors, notably Ogilvie (1937 and 1948) and Love (1947), believe dyspepsia may be a manifestation of chronic appendicitis. Crymble and Forsythe (1949) recognize two presentations of chronic appendicitis in children, namely, recurrent umbilical pain and recurrent right-sided pain.

A review of 400 consecutive patients who had been operated upon for appendicitis was undertaken in an attempt to clarify our own ideas about chronic appendicitis. It was hoped to determine whether persistent or recurrent symptoms had been cured by operation.

NATURE OF SERIES AND METHOD OF FOLLOW-UP.

There were 400 patients in the series under review. All patients were operated upon in Banbridge Hospital during a 3½-year period, beginning in mid-December, 1946. An attempt was made to trace all surviving patients after an interval of at least one year from the time of operation. In all, 241 patients were interviewed and re-examined. Seventy-five others replied to a questionnaire. The patients' general practitioner sent a report in a further 51 cases. There were three post-operative deaths and 30 patients could not be traced. At the follow-up enquiry was made about the occurrence of chronic or recurrent abdominal symptoms before and after the operation. The case notes were not always explicit about the presence or absence of previous persistent or recurrent abdominal symptoms because, in the excitement of an emergency admission to hospital, patients often forgot all about previous non-acute symptoms. The cases were grouped according to whether previous non-acute symptoms were cured, greatly relieved, only slightly improved, or unchanged by operation. Patients in the last two groups, together with some others who developed post-operative symptoms, have been classified as failures.

In the whole series females outnumber males in the ratio 11 : 9. The preponderance of females is due to the greater frequency of symptoms of non-acute appendicitis in young women and adolescent girls. In 222 cases of acute appendicitis males outnumbered females in the ratio 13 : 9.

Definitions and Classification of Cases.

The diagnosis of acute appendicitis has been reserved for those patients admitted as emergencies, operated upon within 24 hours and in whom the appendix was macroscopically inflamed. A definite colour change in the mucosa of the appendix has been taken as the minimum criterion upon which to base the diagnosis of acute appendicitis. The cases of appendix abscess treated conservatively in the first instance are included in the diagnosis "acute appendicitis." The diagnosis of "non-acute appendicitis" is applied to cases operated upon within 24 hours of admission in which macroscopic evidence of inflammation was lacking. Those patients who were admitted as emergencies and only operated upon after a period of observation and investigation are also included in the diagnosis of "non-acute appendicitis." A few patients who were observed for longer than 24 hours and in whom a purulent appendix was found have been justifiably included with those suffering from acute appendicitis. Patients admitted from the waiting-list for appendicectomy have been arbitrarily added to the group "non-acute appendicitis."

By definition all chronic cases must have had previous symptoms to be recognised as such. In addition, if persistent or recurrent symptoms were cured by appendicectomy it may be assumed that dysfunction of the appendix, in the absence of any other known factor, was responsible for those symptoms. There were 45 patients admitted from the waiting-list and emergency admissions totalled 355. Of the latter, 197 had symptoms before the attack for which they were admitted to hospital. Thus, persistent or recurrent abdominal symptoms were present in 242 patients, but as 20 of these could not be traced, 222 are included in this review. These 222 cases could be easily separated into one of four groups :—

1. Recurrent attacks resembling mild or occasionally severe appendicitis 46 cases
2. Recurrent or persistent right-sided pain - - - - 94 cases
3. Recurrent attacks of abdominal colic - - - - - 45 cases
4. Dyspepsia - - - - - - - - 37 cases

Recurrent symptoms of appendicitis.

It is generally agreed that one attack of appendicitis predisposes to a future attack and the clinical picture of recurrent appendicitis is well recognised. Of the 46 patients in this group 37 were admitted as emergencies and 9 from the waiting-list. In 17 patients the appendix was acutely inflamed. The severity of the ultimate attack bore an interesting relationship to the frequency of previous attacks. The more numerous the attacks, the less frequently was the appendix severely inflamed and in none of those with numerous attacks had the inflammation progressed to the point of pus formation. There were six failures in this group. However, analysis of these shows that the results of appendicectomy in cases of recurrent appendicitis are more favourable than this failure rate of 13 per cent. would

suggest. Two patients who had acutely inflamed appendices still complained of slight central abdominal pain. Two listed as failures had tender grid-iron scars—one, however, recovered spontaneously at the end of two years. Another developed a peptic ulcer and was probably wrongly diagnosed at the outset. The sixth patient, whose abdominal symptoms remained unchanged, had been admitted from the waiting-list.

Recurrent right-sided pain.

There were 94 patients in this group. Of these 87 had had one or more attacks of pain in the right iliac fossa, and 7 had had persistent right-sided pain for periods ranging from one month to one year. This group shows a striking preponderance of females; there were only 20 males in the group, and teenage girls account for over half of the female cases. Seventy-seven patients were admitted as emergencies, but a final diagnosis of acute appendicitis was made in only 25 of these. The ultimate attack in some cases was typical of acute appendicitis, but in 19 cases the patient maintained that symptoms had been localised throughout the attack to the right side. Among these 94 patients with right-sided pain 18 also suffered from dyspepsia. These will be discussed in a later paragraph. Of the 76 patients who did not have associated dyspepsia 6 have been classified as failures.

In two cases symptoms were unchanged and a third has now similar pain on the left side. One patient had recurrence of abdominal pain after an interval of freedom of one year. Another patient required two years' convalescence and still has vague abdominal pain. The sixth patient developed pleurisy in the immediate post-operative period and two years later tuberculous salpingitis. As enlargement of mesenteric glands was noted at the primary operation she was probably suffering from tuberculous mesenteric adenitis and not appendicitis.

Recurrent abdominal colic.

Attacks of central abdominal colic without localising symptoms had occurred in 45 of the patients who were reviewed. In many cases the symptoms had been sufficiently severe for the patient to seek medical advice, and 5 patients had previously been admitted to hospital during an attack. Ten patients presented as acute obstructive appendicitis and all of them had purulent appendicitis. Six, including a man of 65 years who had attacks of severe colic for 20 years, had had numerous attacks of colic, 3 had only had one attack and 1 had had two previous attacks. The post-operative diagnosis was acute appendicitis in 27 cases; non-acute in 12 cases; and 6 cases had been admitted from the waiting-list because of attacks of colic. Operation was not entirely successful in 3 of this group of 45 patients. Two admitted as emergencies with non-acute appendicitis were classified as failures; one on account of a tender scar and the other because of the onset of heartburn one year after operation. The third patient who had been admitted from the waiting-list continued having symptoms following removal of a normal appendix which had been suspected radiologically of containing a fæcalith.

Reflex dyspepsia.

In addition to the 18 patients already mentioned whose predominant complaint was right-sided pain but who also had upper abdominal symptoms of indigestion, heartburn or epigastric discomfort, there were 37 patients with previous symptoms of dyspepsia only. Of those with dyspepsia only, 29 were admitted as emergencies following the onset of symptoms of acute or non-acute appendicitis. In 22 the dyspepsia was relieved by appendicectomy. In only two of these was the dyspepsia, preceding the final attack, sufficiently severe for medical advice to be sought for it alone. Dyspepsia recurred post-operatively in 7 patients, of whom 3 are now known to have peptic ulceration. The 8 patients submitted to operation in an attempt to cure dyspepsia do not show such favourable results. Only four were cured. One has developed typical, but mild symptoms, of a peptic ulcer. Another patient whose symptoms recurred in six weeks has been fully investigated elsewhere and is now content because a definite diagnosis—"dyspepsia"—has been made! The third patient, a hypochondriac, whose symptoms could be reproduced by pressure localised radiologically to the appendix, soon found symptoms to replace those relieved by appendicectomy. The fourth was fully investigated before operation. Tenderness was found at McBurney's point and a barium meal examination was negative. Fifteen months after appendicectomy, her symptoms became more severe. On radiological examination the gastric mucosa was thought to be abnormal and she was referred elsewhere for a further radiological examination at which nothing abnormal was found. Within one year laparotomy at a third hospital revealed an inoperable carcinoma of stomach.

Of the 18 patients with right-sided abdominal pain who also suffered from dyspepsia eight are regarded as failures. Three males continued to have dyspepsia, although they were cured of their right-sided pain. Four females continued to suffer from right-sided pain but were cured of dyspepsia. The eighth patient, a female, had hæmatemesis from a duodenal ulcer two years after appendicectomy.

Discussion.

There is considerable divergence of opinion regarding the conditions which should be embraced by the term "chronic appendicitis." The four groups into which patients in the present series have been divided are all mentioned by at least one of the authors referred to in the opening paragraph. Furthermore, the results in this series show that a large number of patients have been cured by appendicectomy.

Recurrent appendicitis has already been discussed briefly. It is a well-recognised condition which we believe should not be included in the term "chronic appendicitis."

Eighty of 94 patients with right-sided pain were cured by appendicectomy. This does not necessarily prove that the appendix is the cause of chronic or recurrent right-sided pain. The fact that 21 of those "cured" had apparently normal appendices throws great doubt on the appendix being the cause of the symptoms and supports Warren and Ballantine (1941) in their opinion that present or past pathology in the appendix is not the cause of the syndrome. There is no doubt that in the mind of the laity right-sided pain is associated with appendicitis, and when

attacks of right-sided pain occur the conscious or even subconscious fear of appendicitis lowers the pain threshold. After the appendix is removed the pain threshold in the well-adjusted patient is restored and any vague pain will be dismissed as unimportant and a clinical cure will result. However, the cases which developed acute appendicitis and whose symptoms were solely an intensification of previous right-sided pain indicate that the appendix can cause such attacks of right-sided pain and it is best in practice to assume a pathological rather than psychological basis for the syndrome. We are of the opinion that the term "chronic appendicitis" used without qualification should be applied only to cases of chronic or recurrent right-sided pain in which no other cause for the symptoms is found.

The frequency of attacks of abdominal colic preceding an attack of obstructive appendicitis was noted by the late Robert Campbell, who, in a paper delivered to the Ulster Medical Society in the 1912 session, clearly differentiated between acute appendicitis and acute appendicular obstruction which rapidly goes on to perforation of the appendix. Wilkie (1914), because of his supporting experimental work, is rightly given credit for first recognising "acute obstruction of the appendix," although he later (1932) gave pride of place to Van Zwalenburg (1909), who mentioned, but did not describe, the condition. It is easy to realize that, following an attack of acute appendicitis, pre-existing attacks of colic must have been due to a lesion of the appendix; it is more difficult to decide that attacks of colic are of appendicular origin. Crymble and Forsythe (1949) advise appendicectomy in children in whom attacks of umbilical pain are associated with tenderness in the right iliac fossa. In the series under review, only six patients with recurrent colic were admitted as non-acute cases and only one was not relieved by appendicectomy. Despite this, we do not feel competent to give advice as to the diagnosis of non-acute cases unless there is other confirmatory evidence. The history of preceding attacks may be useful evidence in the diagnosis of mild or obscure cases. It is considered reasonable, however, to include non-acute cases with only colic as a symptom in the term "chronic appendicitis." They should be designated "chronic appendicitis—recurrent colic."

The present review supports the long-established opinion that lesions of the appendix can cause dyspepsia but very rarely is the dyspepsia alone sufficiently severe for the patient to seek medical advice. When the dyspepsia follows an illness which was or can in retrospect be diagnosed as appendicitis, then a diagnosis of "chronic appendicitis—reflex dyspepsia" is justified. Such a diagnosis, however, can rarely, if ever, be made with confidence even after thorough investigation of the patient. An association with right-sided pain does not lend much support to this diagnosis, because of 18 such patients only 10 were cured, although the majority of the failures were relieved of one or other of these symptoms.

Of the 55 patients who had "dyspepsia" before appendicectomy 5 probably had peptic ulceration at the time of operation and 1 almost certainly had carcinoma of the stomach. This incidence is high, and indicates the difficulty of diagnosis in these cases.

SUMMARY.

Of 400 consecutive cases of appendicitis 367 were followed-up after an interval of at least one year. Of these 222 had persistent or recurrent abdominal symptoms before the illness for which appendicectomy was performed. Patients with recurrent abdominal symptoms fell into one of four groups, which can best be described as "recurrent appendicitis" (46 cases), "recurrent abdominal colic" (45 cases), "recurrent or persistent right-sided pain" (94 cases), and "dyspepsia" (37 cases).

1. Recurrent appendicitis is a well-recognised condition and should not be referred to as "chronic appendicitis."
2. Recurrent or persistent right-sided pain is undoubtedly due, in many instances, to lesions of the appendix and not infrequently precedes acute appendicitis in which the symptoms may remain right-sided. In some cases, removal of a normal appendix cures the patient, and it is suggested that cure may, at times, be psychological rather than physical. The term "chronic appendicitis" should be applied to cases of right-sided pain for which no other cause is found.
3. Recurrent abdominal colic frequently precedes an attack of acute or sub-acute obstructive appendicitis. Only rarely can the cause of the colic be diagnosed before the onset of localising symptoms or signs. The term "chronic appendicitis—recurrent colic" could be used for this type of case.
4. Dyspepsia alone may precede an attack of appendicitis and sometimes follows an attack of appendicitis treated conservatively. Appendicectomy should never be advised for dyspepsia unless there is other evidence that the appendix is abnormal. These cases could be termed "chronic appendicitis—reflex dyspepsia."

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