IMMEDIATE OPERATION IN ACUTE APPENDICITIS

A FURTHER NOTE ON SIXTY-SIX CONSECUTIVE CASES

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Since publishing my paper on "The Fallacy of Expectant Treatment in Acute Appendicitis,"¹ I have operated upon a further sixty-six consecutive cases. The results obtained confirm me in the belief, expressed in that paper, that immediate operation is greatly preferable to delayed operation. Signs are not wanting latterly which show that the general trend of opinion is in the same direction. Some of the most devoted adherents of the delayed operation have cooled off very considerably, and accounts in textbooks are very much modified or relegated to small print.

Unfortunately, even yet, gross misstatements are common, and the advocates of immediate operation are accused of insisting that the appendix should be removed forthwith at all stages of the disease, whether an abscess is present or not. Therefore it is still necessary to emphasize most firmly that immediate operation does not mean removal of the appendix at all costs. In the majority of cases it can be removed without difficulty or danger. In exceptional cases it may be both difficult and dangerous, and no surgeon of experience would attempt to remove it. Practically always this means a fixed appendix plus an abscess.

I have already pointed out the advantages of immediate operation in these cases as compared with the extremely anxious nursing problem under the delayed method. Under the former drainage can be established, the diagnosis is confirmed, the type of caecum and appendix is ascertained, and the acute stage can be allowed to settle down without the necessity of watching the patient hour by hour.

In the sixty-six consecutive cases primary appendectomy was performed in sixty-five, and in one the appendix was removed by a second operation a month later; there were sixty-four recoveries and two deaths. The two deaths are slightly above the average of 2.5 per cent. in my previous series of 551 cases, but in neither can the principle of immediate operation be blamed, as can be seen from the details.

TWO FATAL CASES

The first case, No. 47869, was a poorly nourished girl of 15½ with a history of pulmonary tuberculosis in infancy. She was operated upon on the day of onset. The appendix was acutely inflamed but had not perforated; it was removed and the wound was closed without drainage. Next day her temperature was 101°, but she felt "quite well." The second day after operation signs of diffuse peritonitis were present. The wound was reopened and about half a pint of brownish purulent fluid evacuated; there was no faecal odour and the appendix stump area was intact. She died the third day after operation, the post-mortem report being: "Generalized peritonitis, presumably beginning in appendix region." I regret that owing to some error we had no bacteriological report on the peritoneal exudate—presumably death was due to a virulent streptococcal infection.

The second fatal case, No. 41584, was a woman of 35 who had been ill for some days (number not stated) and on admission showed signs of diffuse peritonitis. At operation there was a typical obstructive appendicitis with gangrenous mucous membrane and perforation. The appendix was removed and the wound drained. She died the fifth day after operation.

Statistical Details of Sixty-six Cases

The following tables (I to IV) give the statistical details of the sixty-six cases:

TABLE I

Days from Onset	Limited to Appendix		Local Peritonitis		Diffuse Peritonitis		Local Abscess	
	R.	D.	R.	D.	R.	D.	R.	D.
1	5	1						
2	18	0	5	0				
3	9	0	1	0	1		2	0
4	1	0	1	0				
5	1	0						
6	1	0					2	0
7								
8								
9							1	0
10+	6	0					2	0
Not stated	6	0			1		2	0
Totals ...	47	1	7	0	1	1	9	0

64 recoveries; 2 deaths.

Comment on Table I.—In the sixteen cases operated upon in the so-called "negative phase" from the third to fifth day there were no deaths. From a total of only sixty-six cases this would not be of any great significance. Its value lies in the confirmation it gives to the conclusion drawn from a similar table of 551 cases in my previous paper—namely, that there does not appear to be any set relation between the operative mortality and the time since onset, at any rate so far as the third to fifth day period is concerned. All the cases in Group I showed definite inflammatory changes in the appendix up to actual gangrene of the mucous membrane. In one case in this group operated upon on the third day the lateral wall of the caecum was much thickened and inflamed (? tuberculosis) and a partial resection was performed. Microscopical section showed acute inflammation only.

TABLE II

Age Groups	Male		Female		Total	
	R.	D.	R.	D.	R.	D.
0-9	1	0			1	0
10-19	13	0	8	1	21	1
20-29	10	0	11	0	21	0
30-39	6	0	3	1	9	1
40-49	4	0	4	0	8	0
50+	3	0	1	0	4	0
Totals ...	37	0	27	2	64	2

Comment on Table II.—The absence of children under 10 is due to the fact that we do not as a rule admit children under 12 to the Infirmary. This does not affect the issue, since it is generally agreed that children are not suitable subjects for delayed operation.

TABLE III.—Localized Abscess. Details of Operation

	Cases	Deaths
Appendectomy and no drainage	1	0
Appendectomy and tube drainage	7	0
Drainage only	1	0
Totals	9	0

¹ *Brit. Journ. Surg.*, 1934, xxi, No. 83.

Comment.—As will be seen from Table I these cases were operated on any time from the third to the tenth + day inclusive, and the appendix was removed in all but one. This patient, a woman aged 21, had an eventful history. A gynaecologist drained a pelvic abscess by posterior colpotomy in May, 1934. She was readmitted as an emergency in March, 1935, when I drained a pelvic abscess above the pubis, but made no attempt to remove the appendix. Appendicectomy was performed a month later, and she made a good recovery. If these cases are added to the eighty-eight cases of abscess previously reported, with three deaths, it gives a mortality of practically 3 per cent.

TABLE IV.—Average Stay in Hospital after Operation

	Days
Group I, limited to appendix	11
Group II, localized peritonitis	16
Group III, diffuse peritonitis	27
Group IV, localized abscess	20

Comment.—So far as the last three groups are concerned the disease must take its course, and the above figures are rather less than the average for the previous 551. Group I shows a 1.5 day increase. Of the forty-seven cases in this group thirty-two were discharged between the sixth and tenth day after operation; the remaining fifteen extended from the eleventh to the thirty-fourth day. The delay was due to more or less infection of the abdominal wall, a difficult matter to prevent. I strongly suspect that the case (a boy) discharged on the thirty-fourth day could have been discharged considerably earlier if he had not been extremely useful for running errands in the ward! Without him the average stay for this group would be 10.5.

Post-operative Complications

Apart from the superficial infection of the abdominal wall there was only one case of post-operative complication. This was a man, aged 58, with a history of a swelling in the right lumbar region for three or four weeks, suggesting a carcinoma of the caecum. X-ray negative. Even at operation the diagnosis was obscure until the caecum has been freed and a retrocaecal abscess was found. The appendix was removed and lumbar drainage established. An abscess in the abdominal wound was drained seventeen days later, and he was discharged thirty-nine days after the first operation. He was readmitted a fortnight later with a small intestine fistula. This was closed, and he was finally discharged seven weeks later.

Cases of this type are a difficult problem; the diagnosis is uncertain, and it is probably always wiser to explore than to go on waiting indefinitely. It should be noted that he had already been under observation for three or four weeks before operation.

TABLE V.—Obtained by Adding the 66 Recent Cases to the 551 Already Published—Total 617

I Limited to Appendix			II Local Peritonitis			III Diffuse Peritonitis			IV Abscess			Totals		
R.	D.	Mort.	R.	D.	Mort.	R.	D.	Mort.	R.	D.	Mort.	R.	D.	Mort.
287	1	0.34%	209	6	2.8%	11	6	35.3%	94	3	3.09%	601	16	2.59%

Discussion and Conclusions

Although ideally these figures are by no means perfect and the mortality in diffuse peritonitis is appalling, it is difficult to see how they can be improved until all cases can be operated upon within a day or so of the onset.

At any rate they justify the immediate operation in claiming:

1. A low total mortality.
2. An effective way of dealing with abscesses.
3. A minimum period in hospital.
4. Comparative freedom from post-operative complications.
5. General applicability for all classes of institutions (public or private) and a minimum of special nursing.

On the other hand, apart from the fact that the delayed operation is based on faulty pathology, the published figures are not as good as those for the immediate operation. Even if they were as good they still would not justify the extra trouble and anxiety. As it is, it is open to the following objections:

1. The total mortality is rather greater.
2. The mortality for cases where expectant treatment fails rises to 6 per cent.
3. In any event it is not suitable for children or the aged.
4. The period in hospital is considerably longer, and to this must be added a further period for the subsequent appendicectomy.
5. Post-operative complications are more frequent.
6. It can only be carried out in selected institutions, with a maximum of nursing care and the possibility of demanding an urgent operation at any moment.

Clinical Memoranda

Rheumatoid Arthritis with a Large Number of Subcutaneous Fibrous Nodules

The fibrous nodules of rheumatic fever and rheumatoid arthritis are interesting for several reasons, the chief of them being that they seem to form a link between the two conditions. They are not found outside the rheumatic group of diseases. They are believed to be the result of a specific tissue reaction to a toxin, possibly streptococcal. Rheumatic fever is probably due to streptococcal infection. Those who hold that rheumatoid arthritis is due to infection put streptococci first as possible agents.

These nodules may be thought of in three groups:

1. Nodules of rheumatic fever. Seen in children with cardiac lesions; rarely painful; seldom larger than half a pea; rarely last as long as six months.
2. Nodules of chronic arthritis. For obvious reasons generally seen in adults, but may occur in Still's disease (rheumatoid arthritis of children); not uncommon in the rheumatoid, they are rare in the osteo-arthritic type of arthritis; often painful; may be an inch or more across; often persist for years.
3. "Millet seed nodules," a minute form described by the late Vincent Coates in rheumatic children without cardiac lesions, and in rheumatoid arthritis.

The histology of the subcutaneous nodules and of the so-called "Aschoff's bodies" found in the cardiovascular system and synovial membranes in rheumatic fever, as microscopic periarterial nodules, is the same. Indeed, on the basis of nodules alone it is difficult to avoid the conclusion that rheumatoid arthritis and rheumatic fever have a similar origin.

The following case is of interest because of the numerous nodules present.

A frail lady of 59, who for many years had had minor rheumatic troubles, developed rheumatoid arthritis in 1929. It began in the proximal interphalangeal joints of her fingers and eventually affected all her joints except her hips and spine. Her past history included achlorhydria and a fracture of the left femur in 1925 which had not united, but not rheumatic fever. When admitted to the clinic this year her