"APPENDICITIS"

WITH CASES

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SOME CASES OF APPENDICITIS WITH REMARKS AND A PLEA FOR EARLY OPERATION.

THIS subject is one of the most interesting in modern surgery from the fact that it is only recently that the Appendix and not the Caecum has been proved to be responsible for so many different forms of abdominal mischief, which formerly were, as a rule, undiagnosed, and the resulting Peritonitis pronounced "Idiopathic".

THE subject of Appendicitis was discussed at a meeting of the Northumberland & Durham Medical Society in the Winter Session of 1894. The later known facts about disease of the Appendix and its treatment as given by Dr Drummond, Dr Rutherford Morison, and Dr Hume, seemed quite a revelation to most of the Country practitioners who were present.

THIS discussion was listened to by me with all the more interest as my first (diagnosed) case of Appendicitis had occurred some time previously (Case No:I.)
The old expectant treatment was followed in this case till the patient died of Septic Peritonitis.

MY second case occurred in June of the following year and profiting by the discussion and my former experience I advised removal of Appendix at the earliest possible moment and the Patient made a good recovery.
(See Case No:II.)

Term "Typhlitis" &c

THE term Typhlitis strictly speaking means inflammation limited to the serous walls of the Caecum. Then "Perityphlitis" conveys the idea that the inflammation has extended to the peritoneal covering of the bowel.

"Typhlitis" as a disease per se is now acknowledged to be so extremely rare that few surgeons have seen it.

The term "Perityphlitis" although still used by Treves and others may be useful clinically, but pathologically it is a misnomer and fails to point to the real offender, the Appendix.

Term Appendicitis

THE TERM "Appendicitis" has been objected to by some on the grounds of defective Etymology. But having been adopted by American Surgeons it has tended to rivet more attention to the real cause of the mischief, also to a thorough investigation of its pathology.

THE term "Perityphlitis" will probably continue to be used clinically to indicate generally inflammation in the region of Caecum; but the terms "Appendicular Peritonitis" or "Appendicitis" are now finding most favour as being more precise.

History.

IT IS a curious fact that until recent times the Appendix was not thought of as a factor in diseases of

the abdomen. Now it is recognised as the most frequent and almost the only cause of Peritonitis, General or Local, excluding Tubercle, Cancer, and Uterine disease.

Mestivier. THE first to draw attention to inflammatory lesions of the Appendix was Mestivier, about the middle of the Eighteenth Century. With the exception of a few scattered papers it may be said that what we now know of Pathology and treatment has been gathered within the last 20 years.

Hawkins P.6. FROM an Historical account by Hawkins there seems to have been little attention paid to the Vermiform Appendix in the Post Mortem Room. Pyhsicians also seem to have taken for granted that the Caecum was the seat of the mischief.

DUPUYTREN in 1833 handed down the Caecum theory of Perityphlitis.

COPELAND in 1834 advanced in that he recognised that the Appendix might be the seat of severe trouble in the Caecal region and even the origin of fatal Peritonitis.

JOHN BURN came nearer the truth in 1837. He mentioned Ulceration of the Appendix and minimised the importance of the Caecum, also cast doubt on cases mentioned by Dupuytren, and believed that they were all due to disease of the Appendix.

HAWKINS P. 9.

THE first to state his entire disbelief in the occurrence of a Peritonitis due to the Caecum was With of Copenhagen in 1880. Then in 1886 Fitz in his Article on the Statistics and Pathology relating to the Appendix and its diseases placed the whole matter on a clear basis. Finally Osler dismisses Typhlitis, or an inflammation of the Caecum proper as,

"A doubtful and uncertain malady, the pathology of "
"which is unknown but which clinically is still "
"recognised by authorities; a majority of the cases"
"are unquestionably due to Appendix disease".

Anatomy

THE Appendix is a degenerated ancestral Caecum and is situated at the posterior and lower part of the Caecum partially concealed behind it.

In the usual position it has its tip pointing upward and inward towards the spleen, and behind the Caecum and its Mesentery.

But the positions in which the Appendix may be found vary considerably and this is important as regards diagnosis and prognosis.

The average length of Appendix is 3½ inches but its extremes seem to be from one inch to nine inches.

The Appendix is usually patent to its extremity and its lumen admits an ordinary Surgical Probe.

VASCULAR SUPPLY.

THE Vascular supply is said to be derived from a small branch of the Ilio-Colic Artery which runs along the free edge of the Mesentery. Treves believes that obliteration of this vessel by kinking or otherwise is a probable cause of necrosis of the Appendix.

Dr Morison in Edinbr: Med. Jrnl. March 1897

Dr Rutherford Morison points out that there are other sources of supply not only from small branches of the Mesentery, but also from a fairly active circulation between the Caecum and Appendix.

CAECAL FOSSAE.

FROM a Clinical point of view the most important point in the regional anatomy of the Appendix is its relation to the Peritoneum and with the Caecum.

LOCKWOOD as quoted by Hawkins describes three Fossae.

Hawkins P.17.

I. ILIO-COLIC Fossa in the angle formed by the Ileum with the Colon - The ascending Colon is the outer boundary, the Ileum its lower boundary, and the Mesentery for its floor.

II. ILEO-CAECAL FOSSA - situated behind the angle of junction of the Ileum and Caecum which have both to be lifted up in order to see its mouth. It is bounded on the right by the Mesentery of the ascending Colon and on the left by the Mesentery. This Fossa is often divided by the Mesentery of Appendix into two compartments.

III. THE SUBCAECAL FOSSA described by Lockwood runs up

behind Caecum and Colon. It is less often present than the other two Fossae. It separates the layers of the Meso-Colon. Its mouth is at the junction of the Caecum and Colon.

STRUCTURE. THE minute structure of the Appendix is similar to that of the Caecum and, generally, the physiological action is the same, Viz, absorption. This favours inspissation of fluid and formation of Faecal concretions.

The most important fact in connection with the structure of the Appendix is its remarkable richness in lymphoid Tissue.

It has been pointed out and emphasised by Bland Sutton and others that in this and other ways the mucous membrane closely resembles the lymphoid structure of the Tonsils. It has also been observed that the inorganic constitutents of the concretions found in the Appendix are almost identical with those found in the Tonsil. Besides small aggregations of lymphatic tissue in the inter-glandular columns of retiform tissue there are also large aggregations of lymphatic tissue or lymphoid follicles in the deepest part of the Mucosa and as a rule in the Sub-mucosa. These follicles are formed of dense clumps of lymphoid cells

Hawkins P.20

Hawkins P.20

ETIOLOGY. THIS abundant lymphatic supply and similarity of tissue to that of the Tonsils may prove to be the key whereby may be explained cases of simple relapsing Appendicitis, and those cases of simple Appendicitis where the symptoms were severe without having caused suppuration.

The marked tendency to recurrence of attacks of Tonsillitis in certain individuals may be compared to sudden onset of inflammation of the Appendix without any apparent exciting cause. Also to the frequent recurrence of Appendicitis.

RHEUMATISM has long been considered to have a close relationship to Tonsillitis and therefore it is to be expected that Rheumatism should be mentioned as a predisposing cause of inflammation of Appendix. This has not been proved, and as to the real cause there is no certainty. The latest theory is that like Tonsillitis, Appendicitis is begun by an infective inflammation.

THERE are many objections to the old theory that the attack was entirely due to mechanical irritation from foreign bodies or Enteroliths.

AT FIRST the explanation seems probable when we see so many cases where the perforation has been limited

ETIOLOGY contd: to the site of an Enterolith or Faecal concretion.

The mechanical danger we can imagine might be increased by the effects of a chill sending the blood from surface of body and thus causing engorgement of the Mucosa of Appendix.

We know on the other hand that the presence of a foreign body per se does not set up inflammation. And also that the most acute form may occur without the presence of a concretion; e,g, Cases Nos: II and V.

FAECAL CONCRETIONS. THE part played by Faecal concretions as a cause of acute inflammation of Mucosa and perforation of the Appendix was demonstrated by Lockwood at a Meeting of the Medical Society, London, 27th January 1900.

HE shewed that in these concretions there were masses of Bacteria. He also shewed that these concretions were always associated with ulceration of the Mucosa, Bacterial invasion of Mucosa and Sub-mucosa, with extension of the inflammation through the "muscular gaps" to the Peritoneum.

We have therefore in the presence of a concretion the combined effects of mechanical irritation, with Bacterial

STRAIN invasion. As an exciting cause we might add "Strain", causing sudden tension, and in the presence of a concretion it might act like the spark to a train of gunpowder. In two of my cases the patients felt pain immediately after lifting something.

ETIOLOGY
continued.

ERRORS in diet.

THIS is supposed to be an exciting cause but chiefly in relapsing cases.

MICRO ORGANISMS.

THE most constant is the Bacillus Coli as it is a normal inhabitant of the intestines. Many other varities have been found and are mentioned by Lockwood; Viz, Cocci Diplococci, short ovoid bacilli, long slender bacilli, short thick bacilli, leptothrix and spores, and spore-bearing bacilli.

Lockwood British Med: Jrnl. 27. Jany 1900

What is at present unexplainable is why the Bacillus Coli & Co should at certain times be quite harmless and at others specially virulent and noxious, or, why the Appendix is specially liable to attack by these and other micro-organisms. The same difficulty occurs as to the cause of Tonsilitis.

DIRECT VIOLENCE.

DIRECT violence has caused Appendicitis and it is more likely to do so in the presence of concretions. In a less degree it may be imagined that although a concretion or foreign body may remain a long time quiescent, any sudden tension of the Appendix might cause erosion of mucosa, or, the position of the concretion might be changed by a sudden strain.

THE attack of simple Follicular Appendicitis by itself might have passed off harmlessly, but the presence

ETIOLOGY continued

of a concretion might cause such an increase of tension that the powers of resistance in the tissues are overcome and the case result in suppuration and possibly perforation.

PATHOLOGY.

THE lesions resulting from whatever may have been the exciting cause in the diseased Appendix are the effects of inflamation from the most simple to the most severe.

IN the most simple there may be only swelling or thickening. This condition may proceed to ulceration and cicatrisation causing contraction of the lumen and partial or complete obliteration.

Further, the inflammation may proceed to suppuration and perforation and finally sloughing or gangrene with partial or complete separation; e,g,Cases IV and VII.

THE inflammation may be chronic or acute,and if it results in perforation it may lead to abscess limited by walls formed by inflammatory adhesions, or it may lead to General Peritonitis.

CLASSIFI-CATION

TREVES gives a description of five divisions partly based on clinical observation.

The three classes mentioned by Dr Drummond and by Dr Rutherford Morison are also based on Clinical Characteristics :-

CLASSIFICATION continued.

Dr Rutherford Morison in Edinbr:Med: Jnl. Jany 1897

I. Appendicitis with a localised dry form of Peritonitis Such may be simple, recurrent, or relapsing. This is called Follicular Appendicitis by Dr Drummond.

II. Appendicitis with a localised collection of pus or inflammatory products. The fluid may be localised by adhesions or by retro-caecal position of Appendix, and the condition may be acute or chronic.

III. Appendicitis with perforation into the general Peritoneal Cavity and diffuse Peritonitis.

DIAGNOSIS. WHEN met with in a typical form Appendicitis may not be difficult to diagnose. It is safe to say that nearly every case of acute Peritonitis arises from Appendicitis.

NOTE as exceptions, perforating gastric ulcer and perforation of bowel in Typhoid Fever, as in Case No:X.

FROM my own limited experience I believe a large number of cases are diagnosed and treated at first as ordinary intestinal Colic, sometimes called locally, "Cramp in the Stomache".

Next day the temperature with more localised tenderness helps to clear up the diagnosis.

In case of a female (Case No:V.) there was a distinct tumour in the Pouch of Douglas and I was almost inclined

DIAGNOSIS continued. to believe the case was either one of Salpingitis or some quick growing tumour of the Broad Ligament.

ERRORS IN DIAGNOSIS. IN another case of a female where there was no history of Gonorrhoea although pain on micturition was admitted, there was great pain in both Iliac Fossae.

Operation revealed double Salpingitis and the tip of the Appendix very much inflamed lying over brim of Pelvis.

THE Appendicitis was in this case said to be only accidental and secondary. But if the Appendix tip had been a slough it is likely that the Salpingitis would have been secondary.

ANOTHER error in diagnosis with regard to Case X is very instructive. In an apparently mild Sporadic case of Typhoid the Ileum was perforated near McBurney's spot. The resulting General Peritonitis was suspected to be from perforation of the Appendix.
The most grave mistake is to treat any mild case as not serious.

SYMPTOMS.

PAIN. THE most notable symptom is pain which is seldom absent altogether till after perforation and localised abscess. Yet this symptom is not at first diagnostic unless sudden, severe, and localised. It is usually spread across the bowels above the Umbilicus and does not always become definite till the day after the attack. The pain

SYMPTOMS continued.

PAIN.

also has paroxysms of intensity, but never exactly leaves between the peristaltic movements like Colic. The patient generally feels that if the bowels acted he would be better, and also wishes to pass wind

THE pain symptom may often mislead and especially if Appendix happens to lie in an unexpected position.

The absence of pain about the end of the first week may indicate presence of pus localised with gangrene of Appendix as in Case No: IX. In one of my worst cases the pain was never agonising but the temperature was 104° and the vomiting continuous.

On the other hand in Case No:VI which was probably only simple Catarrhal Appendix the pain was agonising for several days. Tenderness over Caecum was quite distinct but the symptoms all subsided on the 8th day.

TENDERNESS. ON pressure is more definite as a symptom if located between Anterior Superior Spine of the Ilium and the Umbilicus. In two of my cases the attack was preceded for some hours by moderate pain and feeling of discomfort.

CONSTIPATION. CANNOT be called a symptom but as a rule patients have been previously constipated and diarrhoea is rare.

A great danger is run of converting a simple into a fatal case by treating the Constipation - Purgatives are dangerous at any stage.

SYMPTOMS continued.

VOMITING.

VOMITING is seldom absent or long deferred but it comes, as a rule, immediately after the acute pain.

It is not so severe as in abdominal obstruction, from intussusception or other mechinical means, and may be more easily arrested by Morphia and Bismuth Mixture, also by abstinence from food.

If vomiting should occur during later stage of a green colour or with Faecal odour it is a most unfavourable sign

RIGIDITY.

RIGIDITY of the abdominal muscles on the right side is found early in acute cases and this hardness is quite distinct before perforation or formation of tumour.

As a result of the rigidity and pain, the patient is afraid or unable to move abdomen in breathing.

DISTENSION OF ABDOMEN

DISTENSION is not common in the early stage. If the distension is found by measurement to be increasing, the prognosis is grave, and immediate operation necessary, even though the pain and the distress of the patient seem to be subsiding. Patient may even say he feels better (Case No: IX.)

PRESENCE OF TUMOUR.

DURING the first few days it is difficult to define any tumour, partly owing to rigidity of the muscles and

SYMPTOMS continued.

partly because there is only an ill defined mass formed of bowels and Mesentery over the Caecal region.

Presence of Tumour.

This mass partly adhering together may contain a pocket of highly infectious fluid.

On the 4th and 5th day the tumour may be localised by percussion and pus is likely to be formed.

In very acute cases there may be no Tumour, the Septic material having eacaped into the Peritoneal Cavity before adhesions had time to form.

TEMPERATURE AND PULSE.

THE rise of temperature in the early stage is of some importance to diagnosis as pointing to the fact of inflammation and negativing a diagnosis of temporary obstruction or irritation of bowels from error in diet causing ordinary Colic.

There is severe pain in Hepatic Colic, but absence of temperature and presence of Jaundice is diagnostic. If the temperature keep up to 102° or upwards even if the pulse should remain about 80, the case is likely to end in Suppuration.

In cases where the contents of the Appendix have escaped into a closed adhesion sac, the pulse and temperature may be moderate and not even give a guide to the gravity of the case.

In a case however where the pulse is 120 and temperature moderate the prognosis is unfavourable as

SYMPTOMS continued. it denotes General Septic Peritonitis. This condition is only met with later and therefore more useful for prognosis than diagnosis.

RIGORS. ARE NOT frequent at beginning of the attack - when present indicate the formation of pus. Accompanied by high temperature and profuse sweating they indicate Sepsis and approaching collapse. (See Case No:I.)

FACIAL EXPRESSION. IS prognostic also. At beginning of attack the face may be anxious but not pinched. When pinched and grey the case is generally hopeless even though pulse and temperature may be moderate.

FREQUENT DESIRE TO MICTURATE. THIS symptom is not very frequent at beginning of attack. It occurred in my first case but only became severe during the last 12 hours of life.

If the symptom should occur early it would be apt to cause a mistake in diagnosis.

Cases of Appendicitis may be due to tubercular or malignant disease. Accurate diagnosis from the symptoms in such cases may be almost impossible, but it is a safe rule, emphasised by all modern surgeons, that acute Peritonitis in the male means Appendicitis, no matter whether there is tenderness at McBurney's spot or not.

PROGNOSIS. SINCE it has been acknowledged by all competent

PROGNOSIS continued.

Surgeons that apparently mild cases may end fatally, and on the other hand cases with a very severe onset suddenly suddenly subside and recover, Prognosis is very difficult and uncertain. But as prognosis forms the basis of treatment the life of the patient depends on the judgment of the Surgeon.

The patient may be lost by wasting valuable time in expectant treatment instead of getting rid of the origin of the mischief by operation. The differences of opinion expressed by the best Surgeons are rather bewildering, and to say the least, not very helpful to the Country Surgeon.

Suddenness of onset with high temperature does not always mean bad prognosis although it may be so as a general rule.

In my first fatal case the onset was sudden and severe (Case No:I) but in my second fatal case the onset was slow and high temperature only came on the third day of illness.

This uncertainty of prognosis has led many Surgeons to advise early operation as the rule, following the example of the American Surgeons McBurney, Senn, Morris, &c who now advise operation as soon as Appendicitis has been diagnosed.

PROGNOSIS CLASS I. THE prognosis of simple cases is good, as the attack may pass off in a few days with careful treatment, that is, if the patient has not been dosed with purgatives, has perfect rest in bed with opiates, and no food.

After recovery, patient should not feel pain or tenderness over McBurney's spot. If he does there is great danger of a second attack.

Since Lockwood has proved that a very innocent looking Appendix (excised after an apparently simple attack) may be full of all kinds of Bacteria invading the Mucosa and working their way to the Peritoneum through the "muscular gaps" it is probable that a first attack instead of being a protection from, predisposes to a second.

If no adhesions have formed during the first attack the second is likely to proceed to ulceration and perforation ending in General Peritonitis.

After a second or third attack it is agreed that the prognosis is improved. It is alleged that a succession of slight attacks may cause obliteration of the lumen and thus end in a natural cure.

This however has not been proved.

CLASS II. CASES in Class II are in more serious danger as the Appendix has probably been perforated and the localisation

CLASS II. continued of the pus depends on the position of the Appendix and the presence of adhesions formed by previous attacks. Prognosis in such cases is not possible till after operation. The adhesions may be sufficient to form a sac or may be so tender as to break easily into the Peritoneal Cavity.

CLASS III. CASES of perforated or gangrenous Appendix with diffuse Peritonitis, are almost hopeless. Recovery from such a condition after operation is very rare.

I believe it possible that some cases described with symptoms of General Peritonitis and which have recovered have had adhesions among the intestines with pockets of Septic materials but that the entire Peritoneum has not been involved and that therefore the Peritonitis was not quite "General".

The area of Septic infection would be therefore to a certain extent restricted.

TREATMENT. LESS than twenty years ago the treatment of this disease was the "expectant", and cases were left entirely to the Physician.

The patient was kept at rest and poulticed till the resulting abscess (if any) pointed on the surface and was opened, or, it may have burst into Caecum or into

TREATMENT continued

the bowel, or, if adhesions were not sufficient, the result was General Peritonitis.

The expectant treatment is still the rule in simple Follicular and relapsing Appendicitis. The patient is kept in bed on milk diet and ought not to be purged as movement of the bowels might prevent formation of adhesions.

To relieve pain and give rest to bowels, opiates are required. Hypoderms of Morphia 1/3 grain are generally sufficient. No purgatives or enemata should be allowed in early stage. Poultices and Fomentation give relief and can do no harm. I have not tried leeches, but they are highly recommended. If used they should be kept away from field of possible future operation.

By the mouth a little hot water and teaspoonful doses of soda water and milk may be given.

As Morphia may mask the symptoms and deceive both Patient and Practitioner it might be withheld for a time till developements could be watched, unless the pain is urgent.

If the results prove satisfactory at the end of the 4th or 5th day, less limitation of fluid diet may be allowed, and if temperature falls to normal a little change of posture may be allowed.

If the great amount of abdominal distension should

TREATMENT continued.

cause discomfort a soap and water enema should be carefully injected. Should this prove unsatisfactory 5 grs of Colomel should be given, followed in a few hours by Saline Mixture in small and repeated doses till bowels act .

The above expectant treatment should not be presevered with if at the end of the second day there is no sign of decline of disease. If there be distinct increase (by measurement) of abdomenal swelling there would be less risk in operation than in allowing the case to go on to General Peritonitis.

EARLY OPERATION

AMERICAN Surgeons were the first to show that Laparotomy for Appendicitis was a means of saving many lives that would have been lost by the expectant treatment.

Recognising the extreme rapidity with which the Appendix may slough, if the onset is severe and temperature high, it has been laid down as a rule by most American and many English Surgeons that operation should not be delayed if after 24 to 48 hours the symptoms showed no improvement.

MORRIS of New York and Murphy of Chicago go further. They recommend operation as soon as they have diagnosed the case to be Appendicitis.

TREATMENT continued.

Extent of operation.

MANY Surgeons of more conservative tendency limit the operation to a mere opening of Abscess Cavity with drainage. This is the expectant treatment and is frequently overdone in relapsing cases where it has been pursued so long that the patient could not bear the shock of a radical cure by Laparotomy.

A CASE in point is related by Dr Rutherford Morison in Lancet 24th February 1900 :-

" A boy who had four previous attacks was seriously "ill on the 5th occasion,with doubtful diffuse Septic "Peritonitis. In this case the Abscess was simply "incised and six months after the developement of a "similar illness occurred with a localised abscess "which this time burst into Caecum. On the 7th attack "OPeration was undertaken before rupture, with removal "of Appendix".

TREVES SURGERY.

IN Treves Surgery we are taught that a collection of Pus should be opened and drained only. That no search is to be made for the Appendix because to excise the Appendix at the bottom of an Abscess is not in accordance with Surgical principles. Further we are told that if a gangrenous Appendix should appear at the opening of an Abscess it may be snipped off or, if only perforated,may be ligatured and cut away. We are also taught that as

PRINCIPLES

TREVES SURGERY continued.

a matter of fact after an Abscess has once formed, very little more is heard of the Appendix.

After seeing Case No:XI, and such a case as that mentioned by Dr Morison, one is inclined to doubt the usefulness of such advice.

As for the Surgical principle "not to search for Appendix" it is disregarded every day in this district and with excellent results; e,g, Case IX.

OPERATION for simple Follicular or Relapsing Appendicitis with dry adhesions.

THE operation of excision of Appendix in simple Follicular Appendicitis, is still a matter of controversy. It may become the rule as in America to excise Appendix as soon as diagnosed and not wait for a second attack which might prove fatal.

I think it cannot be doubted that the first attack is sufficient to prove predisposition to the disease.

The patient therefore ought to be advised not to wait for a second attack.

I believe the safest rule is "in all cases to operate as soon as you can". The risk in an operation for this class of cases is usually very small.

If from abnormal position of Appendix the operation cannot be completed the patient is not in a worse position after operation.

CLASS II.

Appendicitis with localised Peritoneal Abscess.

THE expectant plan of treatment in these cases is now recognised to be so risky to life that most Surgeons advise operation at earliest possible chance.

See Cases mentioned above.

Where adhesions of Peritoneum to abdomenal wall have formed shutting off Abscess Cavity, or where it would be risky to tear adhesions, it may be necessary to leave Appendix and be content to drain Abscess.

In case of the boy mentioned by Dr Morison, he was in a state of collapse and excision could not be attempted on that occasion.

CLASS III. Acute Appendicitis with perforation or Gangrene followed by General Peritonitis

THIS condition is to be suspected in cases suddenly attended with agonising pain with high temperature after a few days previous uneasiness. Gangrene of the Appendix may occur in such a case in 24 hours.

Operation to be successful must be early or the case soon becomes hopeless. Dr Morison has removed Appendix in twelve such cases. Ten recovered and 2 died.

The operation was performed within 72 hours of attack. In my case (No:VII) the operation was not performed till the 4th day. It mey be mentioned however that although the case was recognised to be hopeless, the result as regards relief of pain was really beneficial and this alone would have justified the operation.

CLASS III. continued

UNLESS the patient is moribund an operation ought to be performed, as, after all, the Peritonitis may be localised by adhesions and the patient recover.

REASONS FOR ADVISING EARLY OPERATION

ONE reason for advising early operation may be gathered from the fact of the great advances made in modern Abdominal Surgery.

I. Safety of operation

The mere laparotomy has been made so safe by modern Aseptic Surgery that the danger of an exploratory incision has been reduced almost to nil.

SUTURING.

ALSO by the method of suturing the abdominal walls in layers the chances of a Ventral Hernia are very much reduced. Sufficient experience has been obtained since McBurney's second paper in 1891 to confirm his opinion that "removal of the Appendix before the "inflammatory process has reached the serous coat is "one of the safest operations in Surgery"

II. Difficulty of Diagnosis and Prognosis

IT IS allowed by nearly all writers on the subject that in some so called mild cases it is impossible to distinguish in the early state if necrosis or perforation has begun. In these cases we are wise after the event.

III. Danger of delay.

WHY should we look on while the disease is

endangering the life of the patient ?. We do not know when or where the abscess may burst. Moreover we may allow the patient to drift from a condition in which the operation for excision is almost certainly safe, to a condition where the case may be complicated by adhesions as well as Septic products.

I believe the day will soon come when it will not be regarded as good surgery to wait for the formation and localisation of pus.

If it were possible to predict that the Appendix would always burst with a very small perforation and that there would likewise always be sufficiently strong adhesions formed in order to keep the Septic matter strictly localised, one might look on the progress of the case with equanimity, but as this can not be done a case of Appendicitis will always be one of great anxiety for the Medical Attendant till the cause of the mischief has been removed.

C A S E I.

ACUTE APPENDICITIS. DIFFUSE PERITONITIS.

D E A T H

T.N.,Miner,Aged 21,Burradon Colliery,4th March 1893.

Never had any previous illness; said he had strained himself at work and came home with severe pain in the abdomen especially above the Umbilicus.

He was constipated and vomited frequently during the night. Treatment was,hot fomentations to abdomen and purgatives followed by enemata. Movement of the bowels gave no relief. Pain was intense and had to be relieved by opiates.

Next day temperature 104°, pulse 112, tenderness all over abdomen. Tenderness more distinct over right Iliac Fossa, no tumour.

For next three days patient was restless and could not sleep unless under the influence of Morphia hypoderms; still sick and could take no food.

On the fifth day the temperature fell to 101° and the patient was more comfortable,but still under opiates.

On the 6th and 7th days temperature fluctuated from 101° to 102° and pain symptom was not so urgent. The abdomen was not very tense,but still very tender on pressure.

On the 8th day, after a rigor, temperature rose to 105^{o}, pulse 140. Face anxious and pinched, constant and painful efforts to pass water, profuse sweating.

Died on morning of 9th day.

C A S E II.

ACUTE APPENDICITIS WITH PERITONITIS.

Removal of Appendix 72 hours after commencement

RECOVERY.

J.A. a Farmer aged 29 was seized while at work on morning of 17th June 1894 with pain in abdomen. Had been out of sorts and complaining of loss of appetite for a week before.

The pain began in left Epigastric region and was attended with rumblings of wind. He stuck to work and went out again in the afternoon though the pain was no better. In the evening he took a dose of Pyretic Saline which increased the pain so much that he could not rest all night, and towards morning vomited twice.

His bowels were moved several times. He was unable to get up next morning and his pulse was 100 and temperature 99°.

The second night he was still restless and pained. On the morning of the third day the pain and tenderness had become localised in the Right Iliac Region. This morning he complained of bladder symptoms, frequent and urgent desire to pass water and ability only to pass a little at a time.

His pulse was 100, temperature 102° in the morning; in the evening the pulse was 100 and temperature 103°.

He looked pinched and ill. Abdomen was swollen, tender and hard all over. His pain came on in paroxysms and was attended by rumblings but he could pass no wind.

OPERATION

An operation was performed by Dr Rutherford Morison of Newcastle-on-Tyne about 72 hours after the beginning of the attack.

On opening the abdomen a small quantity of flaky straw-coloured fluid escaped. The Caecum was intensely red and had spots of lymph on it. There were no adhesions. The swollen hard appendix was easily found on the outside of the Caecum. It was removed in the usual way, the Caecum and outer pouch sponged dry, and abdomen closed in layers.

The Appendix externally as well as being enlarged and hard, looked as if its central portion was distended by pus. On slitting it open a sloughing ulcer was found opposite the yellow stained spot on Peritoneum which was the only coat left between its dirty contents and the Peritoneal Cavity. There was no enterolith.

The wound healed by first intention and patient made an uninterrupted recovery.

He has no hernia.

C A S E III.

SIMPLE APPENDICITIS. RECOVERY WITHOUT OPERATION.

J.A., Palmersville, Aged 14, August 14th 1894, Driver in pit was sent home suffering from severe pain in abdomen, with vomiting, and was constipated.

Was prescribed Calomel followed in two hours by Pyretic Saline after which bowels moved and pain was much relieved. No temperature was taken. Pulse 96. Got a Bismuth and Morphia Mixture.

Next morning pain not so severe, but abdomen tender on pressure all over, but not much swollen. There was no lump, but distinctly greater tenderness over McBurneys spot; no vomiting. Temp 102°6 · Pulse 112.

Next day temperature 101°6 Pulse 104. Still tenderness on pressure but general abdominal pain less severe.

During the next three days the temperature and abdominal symptoms gradually subsided and patient was at work in four weeks.

Patient has left the district and I am not aware if there has been any recurrence.

C A S E IV.

ACUTE APPENDICITIS. GANGRENE OF APPENDIX. ABSCESS. ABSCESS OPENED. RECOVERY.

G.W. Miner, aged 32, Burradon Colliery, no previous illness, was seized in the pit with severe pain in abdomen suddenly on morning of Friday 6 September 1895.

Went to bed and was poulticed and took Castor Oil. Temperature was 101° Pulse 112. Intense pain was relieved by Morphia. Bowels acted, but with no relief of pain.

On Saturday temperature 103° Pulse 120, required Hypoderm of Morphia to relieve pain. Abdomen hard and tender all over but not much swollen. Vomiting frequently.

Next day localised tenderness in Right Iliac Fossa was distinct and diagnosis clear.

On the 4th day acute symptoms subsided & temperature ranged from 99° to 101° till the 10th day when I found the patient sitting up dressed, with a temperature of 100° pulse 96 and tenderness in Right Iliac Fossa.

I saw him in bed on the 12th day. The pain over abdomen generally was increased. Temperature 101°. Tenderness over Caecal region greater; dulness extended from Liver to Pouparts Ligament. Muscles over right side of abdomen rigid

OPERATION Abscess was opened by Dr Arnison at Newcastle Infirmary and while discharge was flowing the entire

Gangrenous Appendix flopped out.

The patient made a good recovery.

REMARKS The rapid and complete recovery from this operation was no doubt due to the accidental extrusion of the Appendix. Had a portion only of the Appendix sloughed off there would in all probability have been a recurrence of the abscess.

Patient is still working as a coal hewer.

C A S E V.

ACUTE APPENDICITIS. PERFORATION. ABSCESS IN POUCH OF DOUGLAS. REMOVAL OF APPENDIX. RECOVERY

Miss E.A.H. Aged 16. West Moor. 20th January 1896. Felt violent pain across abdomen chiefly above Umbilicus during afternoon, vomited in evening.

Case was diagnosed as Colic and Aperient Powder of Calomel and Scammony was prescribed as the patient was constipated.

Next day, the bowels having acted, the patient was apparently relieved, but the temperature was 102°Pulse 112. All over the abdomen was tender on pressure; extra tenderness was found on right side from loin down to Pouparts Ligament, but no defined tumour.

In a few days the symptoms subsided so that the patient could take light food and the bowels acted with the help of small dose of Saline Mixture. The temperature however was never less than 99° to 101°.

On February 1st the pain suddenly increased over McBurneys spot. Muscles felt hard all over right side though there was not much swelling over the abdomen. A well defined Tumour was felt above the Caecal region.

On February 2nd by P.V. a hard round tumour about the size of a Tangerine Orange could be felt in the

neighbourhood of the right Ovary.

Diagnosis. Perforated Appendix with Pus in Pouch of Douglas.

OPERATION On February 3rd a sloughing Appendix was excised by Dr Hume and drainage tube left. No attempt to drain by Douglas Pouch. Owing to defective drainage the wound was opened on the 4th day. This delayed recovery and a weak Cicatrix was the result.

REMARKS. This Case resembles No: IV with regard to the rapid subsidence of the acute pain and high temperature. The round hard mass in Pouch of Douglas felt like a Dermoid of Ovary.

C A S E VI.

SIMPLE APPENDICITIS. (Recurrent ?) RECOVERY.

G.B., Cartman, Aged 57, Killingworth, 27th October 1896.

Had intense pain across abdomen which came on gradually. He was retching and vomiting and could not lie in one position for the acute pain.

There was constipation, no Jaundice or any special localised pain over liver or Iliac Fossa, nor any symptoms of Renal Calculus.

Patient had had a similar attack three years previously which subsided in a few days after treatment with Aperients Enemata Poultices and Morphia Hypoderms.

Similar treatment on this occasion had the effect of lessening the pain, and bowels acted well.

Next day Hypoderms of Morphia had to be renewed as the pain was still very acute. Temperature 102° Pulse 112.

The abdomen was swollen and tympanitic, also tender to pressure all over. During the next 4 days although the bowels were again relieved by Calomel and Enemata the pain was still severe and had to be kept under by Morphia. The temperature still kept about 101°.

On the 6th and 7th days there was distinct tenderness over McBurneys spot but no defined mass

On the 8th day the temperature fell to 99° and the Patient gradually recovered

REMARKS. The diagnosis in this case were not quite satisfactory. The pain and vomiting at first looked like that of acute obstruction but as there was a temperature and no relief after movement of bowels, obstruction could not have been the cause.

Patients suffering from Appendicitis generally prefer to lie on the back or partly on the left side with right leg semiflexed. In this case the patient seemed to feel most comfortable on his face and abdomen, or partly on left side when pain was very violent.

C A S E VII.

ACUTE APPENDICITIS. SLOUGHING OF APPENDIX. GENERAL PERITONITIS. DEATH.

Miss M.R. aged 21. Forest Hall. 16th March 1898. Had been complaining of loss of appetite for a few weeks. Got wet on Saturday the 12th during a Bicycle ride. Did not feel well, but had a walk on Sunday the 13th. Had a bad night on Tuesday and could not sleep for pain in abdomen and vomiting. Parents thought she was bilious or had Influenza and gave mild apperients although there was no marked constipation.

On the evening of the 16th she had severe pain in abdomen which was also tender on pressure, though not particularly so over McBurney's spot. The most intense pain complained of was over right hip-joint.
No distension of abdomen. Pulse 120, Temperature 103°.4 slight diarhoea.

On the 17th temperature 104° Pulse 140. Decided tenderness on right side over McBurney's spot. Sickness and vomiting still distressing in spite of Bismuth and Morphia Mixture. No food could be kept in stomache.

Consulted with Dr Hume of Newcastle-on-Tyne who confirmed diagnosis and advised operation.

OPERATION. Incision was made in right Linea Semilunaris and a dirty Sloughing Appendix almost detached from Caecum was found. There had been no adhesions round Caecum and Appendix. There was foul stinking pus in the Cavity of Pelvis. Abdomen was closed except lower end where a glass tube was inserted for drainage of Pelvis. No attampt to drain through Pouch of Douglas.

Patient recovered from operation well and felt more comfortable. Temperature fell to 100°. Next day it was 99° in the morning and 101°.2 evening.

On the 20th the temperature rose to 103°.2, Pulse 140. The case was septic. Patient had anxious pinched look and frequently vomited green faecal smelling fluid.

Patient gradually sank and died on the 10th day after operation

REMARKS. This case seemed hopeless from the first. The operation was successful however in relieving the patient from the acute pain from which she previously suffered. She was more comfortable and never complained of acute pain after the operation.

C A S E VIII.

OBSCURE CASE

PROBABLY APPENDICITIS WITH PERFORATION

ABSCESS IN RIGHT ILIAC FOSSA

R E C O V E R Y

Mrs C. widow of Miner. Aged 68. Burradon Colliery

17th May 1899

Was a big strong healthy woman able to do her work till 9 months previous to operation. Said that two years ago she had suffered from pain in abdomen which was followed by a lump. After she got better the lump disappeared and no more notice was taken of it.

In the first week of September 1898 she had an attack of Influenza and did not make a satisfactory recovery. at that time there was no lump or pain in abdomen.

For several months after patient complained of weakness and loss of appetite. On 13th November 1898 she had urgent gastric symptoms; Dyspepsia and Vomiting.

These symptoms became chronic and patient was confined to bed more or less till January 1899. Patient slightly improved during February and until March the 6th when the vomiting returned and she became Jaundiced without having previous Hepatic pain. By the end of March the Jaundice cleared away and the patient improved in appetite and strength. She was always constipated.

On Wednesday 10th May 1899 there was severe pain in right side of abdomen with tenderness on pressure.

Patient was sick and vomited.

Next day pain more localised in Right Iliac Fossa and a distinct hard lump could be felt and it was very tender.

On the third day the swelling could be seen as it had rapidly increased in size

On the 14th May the presence of pus was evident. The temperature ranged from 99° to 101° till the 6th day after the swelling appeared.

Operation Patient was sent to Newcastle Infirmary where Doctor Morison opened the Tumour as an Abscess and drained.

She made a good recovery and has had no return of the complaint.

Remarks. The diagnosis in this case was obscured by the previous Hepatic symptoms, also by the fact of the tumour being situated so near the Right Ovary.

The presence of pus led to the suspicion of Appendicitis. But even during the operation while exploring by the finger the Surgeon could not be certain whether the Abscess might not be due to malignant disease.

The previous history of a tumour two years before and the subsequent recovery rather point to diagnosis of recurrent Appendicitis.

C A S E IX.

ACUTE FOLLICULAR APPENDICITIS
WITH PERFORATION AND LOCALISED ABSCESS
EXCISION OF APPENDIX. RECOVERY.

J.R.T. aged 12. Killingworth. January 27th 1900.

Till the morning of the 24th January the boy was quite well but in the afternoon he complained of a slight pain in the Right Iliac Fossa.He slept all right.

On the 26th he was sent home from School suffering from severe pain in abdomen and had difficulty in walking home. After getting home he vomited frequently and was restless and pained all night.

Next day his bowels were moved by an Aperient Powder but the pain was not relieved.

When I first saw him on the 27th he was lying with the legs drawn up, abdomen swollen and tender on pressure all over although pain was less severe. There was no abdomenal breathing. Bowels still constipated but vomiting had ceased. No pain on micturition or down the leg. Temperature 102° Pulse 120 Breathing 30.

Distinct dulness over right side and a hard mass was felt extending from the middle of Pouparts Ligament toward the right loin.

On the 28th patient was more comfortable and lying

on the right side. Felt no pain except on pressure, but was still getting small doses of Morphia in a Bismuth Mixture. Temperature had fallen to 99°6 Pulse 94.

On the 29th Patient was sent to Royal Infirmary Newcastle-on-Tyne

OPERATION. February 1st. On operation an abscess was found on right side of Caecum. In the Abscess Cavity the Appendix was found doubled on itself with a perforation at the bend, no concretion. Appendix was removed and abscess drained with a tube and gauze brought out at loin.

The anterior part of incision was closed in layers with catgut and buried catgut for the skin.

Recovery was uninterrupted and the part where the tube was, healed perfectly by Granulation.

C A S E X.

TYPHOID FEVER. PERFORATION OF ILEUM. GENERAL PERITONITIS. DIAGNOSIS, APPENDICITIS.

D E A T H

W.R. aged 14. Longbenton. 11th March 1897.

Complained of headache and slight pain all over the body but no special pain in abdomen. Slightly constipated; temperature 102° Pulse 104.

Several members of family had suffered from mild attack of Influenza a few weeks previously. They had all made good recovery.

The Patient continued in a languid condition for 13 days, having a slight headache, with a moderate temperature, Morning 99°.8 Evening 101°. Pulse 104 to 112.

Patient felt ill but would not lie in bed during the day. Was sleepless and feverish at night, but not delirious.

On the 14th day of illness was suddenly seized with a violent pain in the abdomen which was specially tender over McBurney's spot. Temperature suddenly rose to 104° and Pulse 130. Boy had anxious look and vomited frequently. There was no tumour at the tender spot over right Iliac Fossa.

Next day pain was still severe, the abdomen swollen and tender and it was evident there was General Peritonitis.

OPERATION. An exploratory operation was performed and perforation of Ileum from Typhoid Ulcer was found to be the cause of General Peritonitis.

The patient died in eight hours after operation.

REMARKS. This case is instructive as bearing on the difficulties of diagnosing between Typhoid and Influenza, especially when there are few cases of the former and an epidemic of the latter.

The morning and evening temperatures characteristic of Typhoid should be helpful in diagnosis.

C A S E XI.

ACUTE APPENDICITIS. ABSCESS. ABSCESS OPENED. RECURRENCE THREE MONTHS AFTER. RECOVERY

J.C. aged 18. Putter, Burradon Colliery. Wed: 11th May 1898.

Felt pain in abdomen after lifting a tub. When he got home he vomited and being constipated his mother gave him a dose of Pyretic Saline.

Bowels acted and abdomen was poulticed, but pain was still acute. Temperature $102^{\circ}.8$ Pulse 112.

Next day there was much prostration and pain which was relieved by opiates. On Friday temperature was 102°. Pain and tenderness more distinct on right side of abdomen, the muscles being hard. There was a large area of dulness in right Iliac region.

Next day there was little change in the condition except that palpation was more easily born. Pain was greater over McBurney's spot.

Next two days patient was not much better, temperature 101°, large tumour in right Iliac region.

OPERATION Operation by Dr Page, Newcastle Infirmary. Large Abscess opened and drained. No attempt to find Appendix. Came home in 6 weeks.

Three months after patient had an exactly similar

attack. The Abscess was again opened and drained by the same Surgeon. Patient made a good recovery.

Patient having left the district I have not heard of further recurrence.

REMARKS. The condition of this patient was similar to that of Case No:IV before operation.

There is no comparison as to the efficiency of these two operations and safety from future dangers.