

whose life has been jeopardized by severe and recurrent haemorrhages from the stomach. Gastric haemorrhage is known to be toxic in origin in certain cases, as, for example, those in which there is a lesion in the appendix, intestine, or gall bladder; and those also in which the lesion lies in the spleen or liver, or both.

Treatment.

The only treatment for splenic anaemia is splenectomy. The appropriate moment for the removal of the organ is chosen. It is inadvisable to operate soon after a grave haemorrhage, or when the spleen is extremely large. In the latter case, the effect of radium on the tumour should be tried; almost certainly it will cause a rapid and considerable shrinkage in the organ. If this should happily be the case, splenectomy is done when the spleen is at its smallest, and before it has begun to enlarge afresh, as it will certainly do after a few weeks. It is imperative to operate upon cases of this disease as early as possible. No other form of treatment needs consideration; the dangers and difficulties of the operation increase with the lapse of time; early operation means a more certain chance of recovery and a quicker convalescence. In the later stages the mortality of operation is higher, amounting to 25 per cent., as compared with an average of about 10 per cent. In the terminal stages operation becomes so dangerous that only the inevitably fatal outcome of the unhealed disease justifies its performance.

The degree of improvement that may take place is astonishing, even in the late stages of the disease, with advanced involvement of the liver. It is, as W. J. Mayo says, an evidence that the great power of the liver to regenerate its specific cells is utilized to the full.

The difficulties of the operation are greater in splenic anaemia than in any other disease. In almost all cases adhesions binding the organ especially to the under surface of the diaphragm are present. They may be numerous and exceedingly dense, and their separation may cause a copious and grave haemorrhage. But they are never so dense nor so strong as to prevent the completion of the operation. The details of the operation in other respects are the same here as elsewhere. At the Mayo clinic up to September 20th, 1920, 73 operations had been performed, with 9 deaths, equal to 12.3 per cent. The after-results are excellent; the rather high operative mortality is due to the technical difficulties of the late cases, which, apart from operation, would all be fatal.

ON THE END-RESULTS OF COLECTOMIES FOR INTESTINAL STASIS.*

BY

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I propose to give here the results of complete colectomies performed in the years 1913-14. The war necessitated for me, as for many of us, a beneficial patience, in that "cures" were not too easily claimed by too immediate publication, and the term "end-results," tautological, but well understood, will be, I think, here justified.

The cases are only four in number, and one of them died soon after the operation. No excuse is necessary for bringing to notice such a small number, for it is of the small numbers, even of the solitary cases, that the profession desires, and ought to know. If the very wide usefulness claimed for this operation is justified, it ought to be very widely practised; the reasons for its necessity, its results, immediate and remote, and its mortality cannot be too well known.

I had long been interested in the work of Sir Arbuthnot Lane, and having, through his kindness, seen several of his cases and both watched and assisted at the operation of colectomy, I operated on these cases, which were selected as being advanced in type. The details and immediate results are recorded in the BRITISH MEDICAL JOURNAL of 1914,¹ and these I will not now repeat. The "end-results" of the three cases are as follows:

CASE I.

W. C., male, aged 30 at time of operation on November 6th, 1913. I saw him on March 3rd, 1920, six years and three months after the operation. Back at full work as a bricklayer; feels a different man to what he felt before the operation; is no fatter. Quite all right until six months ago, since when he has had occasional abdominal pain, sickness, and diarrhoea. He is a healthy-looking man, with none of the stigmata of stasis. There is a large divarication of the recti, for which he wears a useless flannel binder. I wrote to his doctor, recommending a truss belt and attention to the teeth. I heard from the patient on August 5th that he felt very much better now that he had the new belt, that his teeth had been extracted, and he hoped to have the new set shortly.

CASE II.

A. M. S., female, married, two children, aged 34 at time of operation on March 2nd, 1914. I saw her on April 20th, 1920, six years and two months after the operation. She has got much fatter since the operation, takes food all right, and feels a different woman. Her friends have noticed that she has "cleared wonderfully." She has had two more children since, one now aged 4 and the other 2 years. All right until a few months ago, when she began to have lower abdominal pain and was constipated, her bowels sometimes not acting for a week. Her menstrual history was that her periods had always been profuse and frequent, that from January 14th to March 13th, 1920, there was no period, and she thought she was pregnant; on the latter date she had "flooding," and then a period on April 5th. She is a well-nourished, healthy-looking woman. The abdominal wound is soundly healed and she wears no support. The lower abdominal swelling and tenderness I found on vaginal examination to be associated with an enlarged uterus. I sent her on the same day to Dr. Ewen Maclean, who kindly saw her at once and pronounced her three and a half months pregnant, the fundus of the uterus being inclined backwards and to the right, possibly from parietal adhesions. He considered—the symptoms and physical signs notwithstanding—that miscarriage was not inevitable; also that parietal adhesions were not incompatible with the birth of two children subsequent to the operation. I heard from her on August 6th that the pregnancy was progressing naturally, and recently her doctor, Dr. McMichael of Vowchurch, Hereford, has written to me to say that she was confined on September 29th last and is going on well.

CASE III.

C. W., female, married, five children, aged 44 at the time of operation on April 30th, 1914. I was not able to see her myself, but Dr. T. E. Lloyd of Abergavenny kindly wrote as follows under date March 7th, 1920, five years and ten months after the operation: "Mrs. W. showed me your letter and I promised to write to you on her behalf. She is quite a different person, stout and well, with the exception of occasional attacks of diarrhoea, which I believe are neurotic. She used to be more or less constantly on one's list, but I hardly ever see her professionally now." I can supplement this from my note when I saw her five months after the operation, which says that she had then put on a stone in weight, her friends say she looks quite different, she is better than she has been for years, fat, healthy-looking, with a clear complexion; strong abdominal scar. She herself wrote on August 14th, 1920, saying that previous to the operation she had been under medical treatment for years, that since she has had excellent health and feels quite a new woman, that her people think she is a miracle and that she has got stout, her present weight being nearly 11 st.

What, then, are the end-results in these three cases? In all great improvement, which in the last two might be termed complete success. The qualifying details are: In the first case a ventral hernia with dyspeptic symptoms; in the second, adhesions, fortunately not interfering with pregnancy; in the third, diarrhoea occasionally. It is also to be remembered that a fourth case died after the operation.

There is an operative parietal infection in these and similar cases, which is, I think, too lightly regarded, being not referred to or just mentioned in the recording of operation results. As the aseptic precautions taken by operators are modern, minute, and successful under other circumstances, it is justifiable to regard this infection as coming from within. Gross infection from cut bowel ends should be avoidable, and the only explanations which suggest themselves are either that in toxic people there are micro-organisms in the peritoneal cavity which it can put up with, but the parietes cannot; or, that micro-organisms in the depths of the parietes are stirred into activity by the injury inflicted. Possibly the poorly vitalized parietes cannot deal with the few external micro-organisms which probably always remain in the skin and in its ducts, but this I regard as unlikely. The usual germ in the infection is *B. coli*. It may be that cultivations have been taken from peritoneal cavity or from cut parietes at the commencement of an operation: I do not know that this has been done, but it would be useful. That parietal infection is a

* A paper read to the Cardiff Medical Society, November 9th, 1920.

very real and not infrequent complication, I have not a doubt. It gives the surgeon a troublesome and anxious time after operations. That it has troubled Sir Arbuthnot Lane I recognize by his dressing of sterilized hot boracic fomentations, changed hourly after operation. I read of other operators having the same trouble, for instance, Mr. Waugh in his colopexies for stasis, to which operation I shall refer later. A ventral hernia, as in my first case, is not a satisfactory thing. It causes discomfort, dyspepsia, and inability to carry out fully the normal occupations. It requires a truss belt or a secondary operation with possibly the introduction of a filigree; this cannot be regarded as a satisfactory "end-result."

Internal adhesions may come from peritoneal disturbance, bringing into activity latent infection, or as a spread from parietal infection. Pain, flatulence, constipation, or diarrhoea may result from them; they are obviously undesirable, and are exemplified as possibly, but not actually, affecting pregnancy in my second case. The occasional diarrhoea of my third case Dr. Lloyd charitably regards as neurotic, but I assume it to be due simply to the removal of the colon.

There remains the fact of the death in my fourth case. As a necropsy was not allowed I can only testify to a hasty investigation through the operation wound, showing thin odourless pus in the pelvis and lower abdomen, nothing else. The strength and general condition of this patient (a female), the technique, the operation environment, and the after-treatment were similar to those in the cases which recovered.

There are ways which have been and are being evolved for preventing infection and adhesions. These I need not detail; but, whatever is done, the fact will always remain that the risks of those undesirable sequelae will always be greater in this class of case than in other classes of abdominal operations, the risk being greater the greater the "germ-soaked" condition of the patient. Their importance and frequency in preventing complete success can only be estimated by a careful consideration of all "end-results."

In spite of the good results in these three cases I confess that I am not enamoured of this operation. I cannot enter into the immediate dangers which exist, but the operation is undoubtedly a serious one. Is there anything which can take its place? I accept the toxæmia, its signs and symptoms, and that it is due to a blocking of the "ileal effluent" owing to displacements, kinks and adhesions of caecum and colon, these again resulting from upright posture, habitual constipation, and, I would add, tight clothing in women. The germ invasion with the absorption takes place in the ileum; the colon is the mechanical factor. Symptoms vary in degree and severity according to the amount of the delay and the intensity of the infection, the latter sometimes, but not always, depending upon the former. The surgical "purists," if I may call them so, say that there are only two lines of treatment, paraffin and a truss belt for the slighter cases and those which, for one reason or another, are not operated on; colectomy for the rest.

We are all acquainted with the long list of maladies which it is suggested by Lane may have their origin in stasis. A degree of absorption with its resulting ill effects may be conceived as the unhappy possession of most of us. It may be that a sterile ileum, if ever obtained, will help to confer immortality! The trained and, let us hope, unprejudiced eye of the advanced advocate of the toxic doctrine will diagnose many cases even among children, as "toxic," and will advise, at the least, belt and paraffin for those who have compassed 50 years or more of life's span.

Is there nothing besides the belt and paraffin but complete colectomy? Colectomy has been before the profession for many years, and has been most ably advocated, yet I am convinced that it is not a popular operation amongst surgeons. Go to any of our large hospitals and find out how many complete colectomies for stasis are done in a year. I think that there are very few. The operation is serious, and I question whether it will become less so, at all events in the hands of the general body of the surgical profession, by whom, if its wide applicability is accepted, it should be largely practised. The mortality is not easy to ascertain. Many cases recover and are greatly benefited; some cases die. But there is a third class in which there is

neither death nor recovery, but an almost hopeless discomfort nearly as bad as that which existed before the operation. Clark³ records the "final results" in twelve cases; in six of these it was not satisfactory.

Are there other alternatives? Ileo-colostomy has proved surgically unsatisfactory because of the dead "bag" of colon left. I do not venture to discuss the medical treatment except to remind you of aperients. Nowadays, the cynic says, men look not for light and leading but for laxatives. In the lowest grade of treatment, the patent pill or potion, it is aloes, aloes all the way. Pick up a weekly newspaper in some country district and you will see among the advertisements therein the photograph of a female who beneath it describes, in simple but graphic language, all the symptoms of stasis, and all completely removed by so many boxes of somebody's pills.

Abdominal operations of various kinds are done and toxæmia previously present disappears. We shall be told of all such operations that they have produced their good results by freeing of the ileal effluent, that—for example—merit unexpected has been acquired by the removal of a "controlling appendix." Granted, but is not the lesson to pursue where possible a less dangerous and less drastic method than complete colectomy?

It may apparently not even be necessary to open the abdomen. I quote⁵ the following as to the operation of nephropexy: "I have visited these patients and observed the wonderful change in their appearance after a few days. The complexion becomes clearer and pigmentation around the eyes almost disappears and their friends are astonished at the improvement. . . . I have asked the patients to see me from time to time till they have completely recovered. One cannot get over facts. It is not a question of half a dozen cases but of hundreds."

A recent paper by Mr. G. E. Waugh,⁴ with which I am much more in sympathy, attributes the impairment of mechanical efficiency of the bowel with the resulting manifold evidences of tissue degeneration similar to those for which colectomy is advocated to an ascending colon which has retained and perhaps elongated its primitive mesentery; this developmental survival is present in 20 per cent. of individuals born. The symptoms manifest themselves in early adult life, and the drag affects not only the colon but also the right kidney, the stomach, the duodenum, and the gall bladder. An easy, safe operation—fixation of the ascending colon—cures, and symptoms of stasis disappear. Doubtless, again, especially as the appendix is removed, a freeing of the ileal effluent; but, if Mr. Waugh's contentions are correct, what a much safer way of freeing it than by colectomy! I am attracted by this operation and have carried it out recently in several cases, in all of which there has been immediate improvement.

It must be a commonplace with those, like myself, who have had a surgical experience of the abdomen extending over many years that various operative measures have seemed to cure patients clinically who, *inter alia*, had signs and symptoms of toxic stasis. As long ago as 1909 I read a paper to the Newport Medical Society⁶ on the treatment of abdominal displacements, and from my then experience I concluded that every case should be treated on its merits. From this conclusion I see no reason to depart. I can recall cases of operations on gall bladder, stomach, and appendix; of fixation of liver, of stomach, of colon; of the freeing of adhesions in various quarters; of other operations. In all there was more or less evidence of stasis, yet in all alleviation or cure resulted. I may relate a recent case as an example:

A young lady, aged 23, had moderate toxæmia, pain, that constipation with spurious diarrhoea which is so common, a dropped transverse colon as shown by a bismuth meal, debility, and loss of flesh. A scar with pain and tenderness represented a mysterious operation said to have been for intussusception when she was 6 years old, when tuberculous disease was found and the abdomen closed hurriedly. I operated, and a long incision revealed adhesions of large and small intestines to one another, and to the old parietal scar; adhesions between intestine and the left uterine appendages; a moderately dropped transverse colon and a diseased appendix; nothing else; no tubercle. The adhesions were divided, the appendix removed, and the transverse colon slung high up transversely to the abdominal wall. I have seen this lady quite recently, and she is wonderfully well, putting on weight, strong and active, bowels acting regularly without aperients. Since operation she has worn a truss belt. It is too early yet (five months) to give the end-result, but so far it seems to be "a cure."

Cases such as this may be taken to justify my contention that there are more surgical ways than one of curing toxic stasis, and that every case should be treated in accordance with the special indications it presents.

Neither, although I have been speaking as a surgeon, am I advocating surgery as the only remedy. Diet, drugs, aperients, paraffin, massage, exercises, posture, abdominal supports, regulation of life, change of climate, spa treatment, removal of toxic foci—all have their place in the treatment of intestinal stasis. In treatment, operative and non-operative, the psychic factor must not be overlooked. The rest and careful after-treatment is of benefit after all abdominal operations. The prevention of stasis and toxic foci should begin in babyhood and continue. The earlier the treatment the better, and then the less severe and the more effective it is. Prevention is indeed our final goal. Man steers his life's perilous course through the physical evils which beset him, and our hope for the future is that for the prevention of these evils we shall all work and strive so that stasis and its manifold ill effects may from being a problem of the present become a memory of the past.

REFERENCES.

¹ Sheen: Colectomy for Intestinal Stasis, BRITISH MEDICAL JOURNAL, December 26th, 1914. ² Surgery, Gynecology, and Obstetrics, 1916, vol. i, p. 533. ³ C. W. Suckling; Twenty Years' Work on Nephroptosis, Monograph, December, 1913. ⁴ G. E. Waugh: The Morbid Consequences of a Mobile Ascending Colon, with a Record of 179 Operations, British Journal of Surgery, 1920, vol. vii, No. 27. ⁵ A. W. Sheen: Some Considerations of the Treatment of Displacements of the Abdominal Organs, Clinical Journal, February 10th, 1909.

A CASE OF DIBOTHRIOCEPHALUS LATUS INFECTION.

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CASES of infection with the broad tapeworm (*Dibothriocephalus latus*) are rarely seen in England. The infection is common in the Baltic provinces of Russia, in Finland, Sweden, Denmark, and Switzerland, and the presence of the parasite in many cases produces a severe form of anaemia, in some ways resembling pernicious anaemia. This is supposed to be produced by the excretion of a toxin. The tapeworm is contracted by eating raw fish in which the plerocercoid stage of the parasite is found.

The following case is interesting for two reasons—first, because there was no anaemia; and secondly, because of the successful expulsion of the worm by treatment. The patient, a Finn, evidently acquired the infection in his native country. He came to England in the course of his vocation, a seaman, and was admitted to the Seamen's Hospital, Greenwich, complaining of pains in the abdomen of an obscure nature. In addition there was a history of his having passed some segments of a worm in his stools. He was transferred to the Hospital for Tropical Diseases, Endsleigh Gardens, for observation and treatment.

H. K., a seaman, aged 18, born in Finland, was admitted to hospital with a complaint of abdominal pains. As the patient could not speak English, little history was obtainable from him.

Examination.—Healthy looking boy, no sign of anaemia present; well nourished, no emaciation. Cheeks a good colour; conjunctiva, no anaemia; teeth good. Systems: Heart and lungs perfectly normal, no sign of any disease. Abdomen, nothing palpable, no pain on deep pressure. Liver and spleen not enlarged. Urine: No albumin, blood, or sugar. Faeces: Many ova of *Dibothriocephalus latus* present; no segments passed while under observation.

Blood count:

Red corpuscles	5,100,000
White corpuscles	8,600
Haemoglobin	90 per cent.
Differential count:	
Polymorphonuclears	55 per cent.
Large mononuclears	5 "
Lymphocytes	34 "
Eosinophiles	2 "
Transitional	3 "
Mast cells	1 "

Treatment.

After being kept under observation for some time, during which he appeared normal in every way, eating and sleeping well, the following treatment was adopted.

After a very thorough starvation for two days, and a saline purge on the evening of the second day, liquid extract of filix mas was administered on the third morning as follows: A capsule of 20 minims at 8 a.m., a second of the same dose at 8.30 a.m., and a third at 9 a.m.—that is, 60 minims in all. A saline purge (magnesium sulphate) was administered at 12 noon. Apart from a slight tendency to sickness there was no trouble with the drug. At 4.30 p.m. the whole worm was passed, including the head. There was no sign of any second worm, this being confirmed by the disappearance of ova in the stools on subsequent days.

It is quite possible that the patient had only had the worm for a short time, and if this were so, it might account for the absence of anaemia. The worm, on the other hand, was a very large one and fully developed in every way. Another interesting feature in the blood examination was the absence of eosinophilia. The question of blood destruction, in helminthic infections generally, is a very interesting one, and more work might profitably be done upon it. The ordinary tapeworms, *T. saginata* and *T. solium*, do not appear to upset the blood picture in any way, and even with the *D. latus* a personal susceptibility may be required before the severe types of anaemia described appear. The lad was discharged from the hospital cured.

THE ECONOMIC ASPECT IN EYE INJURIES:

A PLEA FOR EARLY TREATMENT.*

BY

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THIS paper is based on an analysis of the total accident claims made on the North Staffordshire coal and iron owners during the past two years. Cases in which incapacity lasted less than four weeks have not been included, nor have several cases of injury to the eye followed by the onset of miner's nystagmus, either immediately or within four weeks. Cases arising in previous years and settled during this period have also not been included.

TABLE I.

	Total.	Mines.	Iron and Steel.
No. of workmen... ..	45,000	35,000	10,000
No. of admitted claims (all accidents)	3,283	2,761	522
No. of cases of injury to the eye...	163*	126	37
Total cost... ..	£8,286		

* This figure (5 per cent.) agrees closely with those given by Collis in his paper on "Eye Diseases caused by Occupation," *Ophthalmoscope*, vol. xiii, p. 492.

The 163 cases may be divided into four groups:

1. Cases returning to work.
2. Cases of serious injury necessitating immediate expert treatment at the infirmary.
3. Cases in which a comparatively trivial injury is followed by nystagmus.
4. Cases in which a slight injury, either through neglect by the patient or lack of expert treatment, is followed by serious and permanent injury to the eye. Five of these cases developed a severe attack of nystagmus.

Even in the first group lack of proper treatment delays the return to work:

F. W. Blow in eye January 3rd. On January 16th there were still two pieces of coal embedded in the cornea. Played six weeks.

J. B. Blow in eye June 3rd. Foreign body in cornea on June 18th. Played five weeks.

J. H. Struck by iron stone January 31st. On February 4th there was marked injection of eye with a foreign body in the cornea. Played five weeks.

* Read before the Staffordshire Branch of the British Medical Association on November 25th, 1920.