CLINICAL LECTURE ON CASES ILLUSTRATING INFLAMMATION ABOUT THE CÆCUM.

Delivered at University College Hospital.

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GENTLEMEN,—Having recently had a series of cases under my care which illustrate several of the varieties of so-called typhlitis, I propose to-day to pass them under review as a group in the hope that when contrasted they may impress upon our minds some facts in regard to the pathology, symptoms, and treatment of the disease which may have come less prominently before us while the patients were separately treated in the wards. Not so long ago all these varieties would have been grouped together under the single name "typhlitis," and would have been treated in an almost stereotyped manner at the onset with purgatives, poultices, and leeches or blisters. This routine gave way at a later period to the more wholesome one of opium, fomentations, and enemata. But within recent years pathological study in the *post-mortem* room and the observations of the physician at the bedside have been greatly helped by the examination of these conditions *in vivo* by surgeons who have operated on them both in late and early stages. As a consequence we have come to recognise several anatomical varieties of disease starting in the cæcum and its appendages, and also varieties as to causation. Just as the earlier opening of the abdomen by the surgeon soon settled the point that the initial inflammatory lesion of so-called typhlitis was not always seated in the same structure or region, it also revealed the fact that the cause of the inflammation was not always the same. Much still remains obscure, but we may hope for further light before long.

Your interests will be best consulted if I first briefly enumerate the anatomical varieties of inflammation starting in the cæcum and its appendages which I have myself seen recently, and which are now pretty generally recognised. These can be illustrated by the cases in my list which, it so happens, all show points of difference one from the other. We can then glance at some of the views held in regard to the causation of typhlitic disease in passing, and notice whether these fit in with what has been observed in the cases before us. Perhaps the best anatomical classification which we can adopt for the present is as follows:—

1. Simple catarrhal typhlitis.
2. Simple paratyphlitis.
3. Simple perityphlitis.
4. Appendicitis.

But remember please that in giving you this classification I regard it as only provisional.

By *simple catarrhal typhlitis* is now understood an inflammation of the mucous membrane of the cæcum of varying degrees of intensity. That such a pathological condition may exist apart and alone is not difficult to believe when we remember the catarrhal inflammations met with in other special regions of the intestinal tract. Moreover, there are certain facts on record which seem to point either to a greater vulnerability of the cæcum to irritation from within as contrasted with other parts of the intestine, or to its being subjected to greater irritation than other parts. We know, for instance, that if the rectum be blocked by malignant growth, the part of the large bowel most likely to suffer first from stercoral inflammation and ulceration is the cæcum, and that it may be the only part which shows any sign of mischief. And this is often the case, although the whole of the colon is filled with the same feculent material, and is subjected apparently to the same strain from distension. This fact alone is almost enough to prove that the cæcum is either peculiarly vulnerable to stercoral irritation, or that the latter possesses a more distinctly noxious influence in the caput coli than elsewhere.

As to the causation of simple catarrhal typhlitis, we must confess that our knowledge is very deficient, as it is indeed in regard to catarrhal inflammations of other mucous tracts. Were we to take this up as an abstract question, it would lead us too far afield to-day. It is only necessary to remind you that there is a greater tendency every day to regard the production of catarrhal inflammations of mucous surfaces as due in the majority of cases to the direct influence of septic matter upon the epithelial layer of the structure. Of course, the general state of vitality of the individual operates here in producing a greater or less vulnerability to attack from septic organisms or in influencing the power of eliminating septic matter. We may, therefore, expect debilitated individuals to be more liable to catarrhal attacks than others, as indeed is the case. But whether it is the septic matter due to stasis of feces and decomposition thereof in the cæcum which sets up the catarrhal inflammation, or pathogenic organisms coming down from above in altered secretions of the small intestine, or, on the other hand, whether it may not be septic matter in the blood acting upon tissue damaged by the effect of stasis of feces—the caput coli—it is impossible at present to say. Any of these causes might operate singly in a debilitated patient, or together. It is enough, however, for our purpose here to recognise the fact that the inflammation commences in the mucous membrane, and that it can be traced in most cases to irritation operating from within the bowel. This may result in (1) mild catarrh with increased secretion of mucus; (2) in a more severe and deeper inflammation, producing more or less paralysis of the muscular fibres of the bowel; or (3) in actual ulceration, superficial or deep.

By *paratyphlitis* is generally meant an inflammation of the areolar tissue lying behind the cæcum. That this may exist independently of any perforation of the cæcum on its posterior aspect is quite conceivable. Irritant matter, for instance, from an inflamed mucous or submucous tissue may spread along the lymphatic channels into the areolar tissue of the iliac fossa behind the cæcum, and provoke cellulitis in the latter. But doubtless in most cases in which simple paratyphlitis is met with it is the result of actual perforation of some part of the caput cæcum coli on its posterior aspect with consequent extravasation of more or less septic matter.

We need not include under this head those cases in which the vermiform appendix lies practically behind the cæcum and ruptures there; these will come under the heading of appendicitis.

The term *perityphlitis* is applied to that condition of localised peritonitis about the caput coli set up by severe catarrhal inflammation within the viscus. Now, unless there be some peculiar conditions surrounding the cæcum, such an affection ought to be exceedingly rare; for peritonitis due to localised enteritis, apart from perforation, is hardly ever seen elsewhere in the intestinal tract. But, as I said before, there are several peculiarities about the cæcum not yet explained, either physiologically or pathologically, and I think we may admit the possibility of a localised peritonitis about it, set up by severe catarrhal colitis within, without offering a satisfactory reason for the serous coat being affected at this part of the colon and not at another.

The term *appendicitis* explains itself. Philologically it may be open to objection, but pathologically and clinically it is very convenient; for if there is one thing clearer than another about the inflammations in this region, it is that many of them have their starting point positively in the vermiform appendix, and in it alone. The term "appendicitis" may therefore be used as fairly as almost any of the commonly-received hybrid terms of medicine or surgery. But when we refer to the appendix, we must remember that we are speaking of an organ whose size and shape vary, and whose anatomical position within the abdomen may differ widely in different individuals. I need hardly remind you that the appendix may float free among the intestinal coils in the iliac fossa, may turn downwards and lie within the true pelvis behind the bladder, or, on the other hand, may be doubled back behind the cæcum and be practically a retro-peritoneal organ. It is plain, then, that an inflammatory focus starting in this structure may primarily occupy at least three different situations within the abdomen. It may lie (1) among the coils of small intestine in the right iliac fossa; (2) in the pelvis in front of the rectum, surrounded also by

small bowel; or (3) behind the cæcum and practically outside the peritoneal cavity.

If I were asked, from observation of the last 15 or 20 cases and reading, to arrange these affections in the order of their frequency, I think that for the present I should place them thus:

1. Simple typhlitis
2. Appendicitis ...
 - (a) Intraperitoneal
 - (1) Iliac
 - (2) Pelvic
 - (b) Retroperitoneal
3. Simple perityphlitis
4. Simple paratyphlitis.

I cannot help thinking, however, that perityphlitis without appendicitis is very rare, and that paratyphlitis apart from participation of the vermiform body is still rarer. Let us now illustrate each of these conditions as far as we can by a typical case.

A patient with simple catarrhal typhlitis would have something of the following history. I have in my mind a private case which I treated not long ago. He or she would probably be of middle age, and have been out of sorts for some time, and perhaps constipated. An attack of griping pain would set in suddenly in the region of the cæcum, probably after exposure to cold or an indigestible meal. Soon after this there would be some distension of the abdomen. Such an attack is often followed by diarrhoea, sometimes by constipation, rarely by vomiting of a bilious character. In the first case the catarrhal irritation about the cæcum appears to lead to increased secretion of mucus from the part affected, with increased peristalsis and the rapid expulsion of liquid faeces. In the second case the irritation appears to produce paralysis of the bowel inflamed with consequent stasis of faeces and accumulation. In the first case the diarrhoea carries off the materies morbi, and the patient is soon well; in the second he is also soon well if he is kept quiet, is given very little food of a purely liquid kind, has hot fomentations externally, with high-reaching enemata, and in some cases saline purges. Such an attack is often soon over, and the patient is left none the worse for it. He may have a little tenderness over his cæcum for a few days, with some sluggishness of the bowels, but usually nothing more. Such would be an average attack of simple catarrhal typhlitis.

For illustrations of varieties of appendicitis we need not go beyond the list of seven or eight cases upon which I have lately operated for the condition. The simplest, and perhaps most instructive, case happens to be one of the last dealt with a few weeks ago, which many of you had the opportunity of watching.

CASE I.—J. P., aged 44, a coachman, with an excellent previous personal and family history, had an attack of influenza during Christmas, 1891. At the termination of this illness he was seized with severe pain in the abdomen with vomiting. The bowels did not act for a day or two, but then returned to their normal condition; the man, however, did not resume his work. Again, on January 30th, 1892, he had a similar attack of acute griping pain in the abdomen; this came on directly after dinner, and he brought up all his food. The next day the pain and vomiting persisted, but the latter was bilious, not stercoraceous, and there was tenderness in the right iliac fossa. His bowels did not act from January 29th to February 1st, when they were relieved by castor oil.

On admission the tongue was moist but thickly coated; pulse regular, 80; abdomen moderately full, soft and free from tenderness. In the right iliac fossa was a hard, smooth, sausage-like mass running parallel to the outer half of Poupart's ligament, and three fingers' breadth internal to the spine of the ilium. It was very hard and fixed but not tender. The abdomen was quite resonant over the tumour, but the note was somewhat damped. Nothing abnormal could be felt from the rectum, and the other abdominal organs were healthy. Under rest, careful dieting, and the use of laxatives, all the symptoms improved, and on February 20th "the abdominal swelling had subsided and now formed a round cord as thick as the index finger." It was harder than before and quite free from pain. On February 22nd and 23rd the patient was up and about the ward. His bowels acted regularly each day; but on the 24th he was seized again with the same pain and tenderness in the right iliac fossa, and the temperature rose to 101.2; there was no vomiting this time however. On the 25th the swelling was very much increased in size, but not very tender. The temperature was 99.8°, and the bowels were moved naturally. There was no obstruction and no vomiting.

Here then was an acute inflammatory attack in the cæcal region, unaccompanied on the one hand by diarrhoea, or, on the other by constipation, but producing a hard, deep-seated swelling. Such a mass, if due to mischief within the caput coli itself, would indicate a very severe inflammation of the latter, for only this could produce such an induration round the

part. And if the caput coli were very severely inflamed we should almost certainly have had either sharp diarrhoea at the outset, or obstinate constipation accompanied probably by severe vomiting. But none of these symptoms were marked, and to my mind the conclusion to be drawn was that the focus of inflammation was outside the cæcum. For an inflammatory mass it certainly was. It appeared almost suddenly, was very tender at first, was accompanied by sudden rise of temperature, which subsided as the swelling and tenderness went down. And if outside the cæcum it could hardly be anything but the vermiform appendix swollen itself and exciting exudation around it.

Then the question arose, Was it intraperitoneal or behind the cæcum? You will remember that there was resonance in front of it, and at first sight it might have been supposed that this was the overlying cæcum. Here, however, the position, shape, and feel of the tumour helped us. It was sharply defined and sausage-shaped, and well within reach of the fingers and below a line drawn from the umbilicus to the anterior iliac spine. Now if it had been behind the cæcum I should have expected a much deeper and more diffused induration from the rapid implication of the retro-cæcal areolar tissue, and considerably higher up overlapping the line referred to. On the other hand, if it were an inflamed intraperitoneal appendix the shape of the organ would be more or less followed by any plastic exudation about it, as was actually the case here. You will remember, then, that at the bedside I expressed the belief that this inflammation had its origin in the vermiform body, and was limited to its immediate neighbourhood. This last point was clear. Each of the seizures produced a perfectly limited tumour; there was no question of general peritonitis. But if limited to the appendix what was the nature of the initial lesion? It is quite plain that this organ is liable to be affected in various ways. Cases are on record in which foreign bodies, such as pins, fish bones, and fruit stones have been impacted in its lumen and have caused perforation and peritonitis. Tuberculous ulcers of the organ are also known. Again, small masses of inspissated mucus and faeces have been found ulcerating through a swollen vermiform appendix. Finally, cases of simple catarrhal swelling and distension of the organ have been recognised of late.

At the bedside I gave you my reasons for regarding this patient as suffering from the latter affection. Had the inflammation been due to impaction of a foreign body or of a faecal concretion, there would almost certainly by this time after his third attack have been an abscess formed round the appendix. Of this there was no evidence. Each successive attack was as rapid in the subsidence of the swelling and fever as it was sudden in the onset of its pain and tenderness. Whatever localised peritonitis was present had not masked the general outline of the vermiform appendix, which would hardly have been the case had there been sloughing or perforation of the latter. Moreover, the tenderness soon subsided after each attack. A tuberculous affection was negatived by the man's history and the acuteness and rapid subsidence of the attacks. It appeared, then, to me that the most reasonable hypothesis (as I mentioned a moment before operating) was that the vermiform appendix had participated in a catarrhal enteritis starting about the cæcum. The effect of this would be to cause great swelling of its mucous membrane. As a consequence of this the proximal part of its lumen being swollen would cause retention of the catarrhal products, and consequently a tumefaction of the whole body of the organ. Such an accumulation of catarrhal products is well known in other parts of the body, as, for instance, in the middle ear when an inflammation has spread up the Eustachian tube and caused swelling and closure of its pharyngeal opening.

I told you, then, before operating that I expected to find a greatly enlarged vermiform appendix, with more or less adhesions around its apex, and more or less muco-purulent secretion within it. At the patient's request, and on this hypothesis, I operated, feeling that it was safer for him to get rid of this diseased organ before it ruptured and poured out its retained secretion. Of course it was conceivable that the inflammation might subside under simpler treatment; but these three attacks had rapidly followed one another on very little provocation, and each was accompanied by great swelling of the vermiform body and fever, and one could not

guarantee the patient against subsequent attacks, with ever-increasing danger of general peritonitis. Further, the man had been nearly three months *hors de combat*, and was anxious to get back to work. These were some of the grounds for operation. Now, what was found?

I made a 3-inch incision, an inch internal to the outer third of Poupart's ligament. On reaching the peritoneal cavity many adhesions of small intestine were found about one spot in the outer part of the iliac fossa. On separating these it was quite evident that they were produced round the swollen and inflamed end of the appendix. The whole organ was much enlarged, but only the distal inch or so was surrounded by adherent small intestine and some white semi-solid exudation. The proximal end was quite smooth on its serous coat, and free from adhesions, though much swollen.

I now divided the base of the appendix between two silk ligatures, which almost cut clean through the oedematous walls of the organ while being tied; then, securing its mesentery with a single fine ligature of silk, I cut the whole organ bodily away. As it was impossible to stitch the cut edges of the swollen serous coat of the stump over the protruding mucosa, I simply drew the latter out and cut it short. The stump was then cleansed, and the abdominal wound closed with deep and superficial sutures without any drainage. The result has been that the man has not had any pain or a single bad symptom since, and the wound has closed perfectly by first intention. He is now getting up quite well.

The second variety of appendicitis, in which a faecal concretion causes sloughing and perforation, with general peritonitis, is illustrated by the following case:

CASE II.—F. R., aged 16, admitted into University College Hospital on May 20th, 1891, was perfectly well until the morning of May 16th, his bowels having acted freely until the day before. He had had no previous illness like the present. At 2 A.M. on May 16th the patient woke up with violent pain in the lower part of the abdomen on the right side. This has persisted since and has spread over the whole abdomen. The latter soon began to swell, and, though tender everywhere, has been chiefly so below on the right side. The bowels have not been open since the 15th, and no flatus has been passed. On the 16th vomiting set in, and has lasted ever since; ejecta fetid. Before admission he was very carefully treated by his medical man—Mr. Sworn, of Highbury—with opium pills, hot fomentations, and enemata, which brought away a small quantity of faeces. On admission, on May 20th, patient was drowsy, and did not complain of pain except when the abdomen was handled. Pulse 78, full and not compressible; abdomen uniformly distended. Between the umbilicus and Poupart's ligament, on the right side, a swelling the size of the palm of the hand was made out by palpation. This was very tender, but did not fluctuate. The flanks were resonant and less tender; the umbilicus was prominent and very painful to the touch. Operation three hours and a half after admission: I first made a 2-inch incision in the right linea semilunaris over the induration, and exposed the peritoneum. Then, cautiously dividing this, I found it adherent to a coil of small bowel by recent lymph. Pushing this coil inward, an adhesion to another coil gave way, and 6 or 8 ounces of very fetid pus escaped. The wound was now prolonged downwards, to give freer escape to the pus, and, with the finger, I felt what I supposed to be the appendix and drew it out. This turned out to be a strand of omentum, and was cut off. The appendix could now be felt and seen, and a firm concretion the size of a pea was removed from it, it was swollen and sloughy. No attempt was made to remove it, as I was anxious to avoid delay. The upper and lower angles of the wound were now sewn up, and a large, deep-reaching, flanged drain tube was inserted in the middle. The patient suffered very little from the effects of the operation. He was fed by peptonised suppositories every sixth hour, and in the intervals had enemata of 4 ounces of hot water between 100° and 105° every six hours. He had opium pills at first and subsequently opium and belladonna. The bowels acted naturally on the 26th and 27th, and then feeding by the mouth was begun. The wound gradually closed, and he left hospital on July 10th. He came to my house in November, 1891, looking and feeling quite well.

In this case not only was there a localised suppurative peritonitis set up by perforation of the vermiform appendix, with escape of faeculent material, but this inflammation had spread to a certain extent over the general peritoneum. Fortunately the operation was not too late, as was the case in my next experience.

CASE III.—E. R., aged 17, was admitted into University College Hospital on December 28th, 1891. He had been quite healthy up to December 2nd, the bowels having acted regularly. On this date he was seized in the early morning with abdominal pain, but went to work as usual. The pain increased during the day, and he had to leave off early, vomiting on his way home, when he took castor oil. On December 3rd the bowels were open several times, but his pain got worse mostly in the lower half of the abdomen, but not on one side more than the other. Pain and green vomiting lasted for more than a week. On December 13th an enema produced six motions with much relief of pain. On the 16th he took solid food, which brought on pain and vomiting again after the three days of respite. This time the ejecta were brown and fetid. In this state he remained up to the 27th, but passed flatus *per anum*. At the outset of the attack there was fever to 101°, but later the temperature was subnormal. On admission, December 28th, there was much abdominal distension and the intestinal coils made visible markings on the abdominal walls. The umbilicus bulged, and there was tenderness here and there. Percussion note resonant everywhere except in the right iliac region, where it was damped. From the rectum a large swelling could be felt pressing upon its anterior wall so as almost to occlude its lumen. This swelling felt fleshy and could be indented with the finger, but could not be made to fluctuate by bimanual palpation. The patient was very thin and weak, and had an anxious look, with dark circles round the eyes. The tongue was moist and furred slightly, teeth and lips dry, with sordes upon them. Regarding this case as one of pelvic appendicitis of the per-

forative kind, accompanied by local and some general peritonitis, I operated exactly as in the last case. On opening the abdomen, about 2 ounces of fetid pus escaped from a space among the intestines, into which I could pass my finger inwards, and downwards into the pelvis; but no connection could be felt between the mass in the pelvis and the abscess. The wound was partially closed by stitches, and drained with a large tube passed deeply among the coils of intestine. It was dressed with sal alembroth gauze. The patient was relieved by the operation, and improved for about a week. He then got weaker and weaker, and died of marasmus on the eleventh day. The necropsy revealed the remains of an abscess in the pelvis round a sloughing appendix. This had been adequately drained. There was also general peritonitis undergoing repair, evidently of some weeks' standing, the adhesions being firmly organised. The mass felt in the rectum was formed of loops of small intestine loaded with retained contents.

In this case I only saw the patient in the fourth week of his illness, and although the opening of the abscess round the perforated appendix was followed by improvement for a week or so, the lad was too far gone to be saved. I regard the case as one of catarrhal appendicitis at its outset followed by perforation of the appendix and general peritonitis. It was like Case I, but more aggravated, and showed the course Case I might have run if it had not been operated on in time. Another case on which I operated about the same time as the last in private may be mentioned here as illustrating the same form of perforative appendicitis followed by intraperitoneal abscess; but in this case the latter, lying among the intestines, was well limited by plastic exudation, and became very chronic. It lasted for some months, and finally began to point above Poupart's ligament.

CASE IV.—Mrs. R., aged 65, had repeated attacks of "typhlitis" for the last year or two. In October, 1891, she caught a "chill" in Yorkshire, and following on this had thrombosis of the veins of the right lower limb. For some weeks before I saw her she had been developing a swelling in the right caecal region, with pain and fever; the bowels, however, had been regular throughout. When I was asked to see her on November 16th, 1891, by Dr. Skipper of Tollington Park, I found a large prominent swelling over the caecum, with slight discoloration of the skin. This swelling was quite tympanitic everywhere, and contained gas. There was very little oedema of the skin. Thinking at first that the collection of pus might be behind the caecum, pushing it forward, I made an incision on its outer aspect, and worked down cautiously into the iliac fossa behind the latter. Finding nothing abnormal there, I dissected forwards towards the peritoneal cavity, and at once opened a large very fetid abscess the size of an orange. This could be felt with the fingers to be bounded on all sides by intestines, and lay in front of the caecum; it contained gas as well as fetid pus. Having flushed it out thoroughly with hot water and filled it with iodoform emulsion, I closed the wound, leaving in a large drain tube. Recovery was uninterrupted.

The next three cases illustrate very well indeed the variety of appendicitis in which the organ lies behind the caecum, and, when inflamed and ruptured, gives rise to a retrocaecal abscess. Two of the cases have left the hospital quite well after operation; the third, operated on a week ago, is doing as well as could be wished (*vide footnote*). Two were very chronic to begin with, and ultimately had acute exacerbations; one was acute from the very onset.

CASE V.—H. M., aged 65, a charwoman, first noticed a lump in the caecal region six months ago, varying in size from day to day, and painless even on pressure. This lump almost disappeared after some aperient pills had been taken. Four months ago swelling and pain commenced all over the right side, and some swelling appeared in the thigh. The pain was paroxysmal, but not affected by taking food or the passage of flatus.

On admission on March 6th, 1891, the patient was anæmic; there was great pain in the tumour and down the right thigh, much increased by coughing or any intra-abdominal pressure. On the right side, above the anterior half of the iliac crest, was a swelling reaching to within an inch of the middle line, upwards to the level of the umbilicus and downwards to a line joining the anterior iliac spines. The abdominal wall was not adherent to this swelling (though the skin was oedematous), and gurgling could be felt over it. Anteriorly the percussion note was not quite dull, posteriorly in the flank it was so, and here resistance was greater. The hands could be felt to meet in the loin above the tumour. On the upper and anterior part of the thigh the skin was oedematous and very tender; the adductor longus muscle was constantly in action. Patient lay on the right side with thigh and knee flexed for ease. The temperature was 102°, 102.4°, and 103° on three days. On March 7th I aspirated the swelling, and drew off 4 ounces of fetid pus. On March 10th I made a 2-inch incision half an inch above, and parallel to the anterior part of the iliac crest. This was carefully deepened through oedematous tissue, and 2 or 3 ounces of most fetid pus were evacuated from the iliac fossa. On introducing my finger I found that the abscess was bounded by the bowels anteriorly. The cavity was cautiously washed out with hot water and drained with a large tube. The next day the dressing of sal. wool, which was soaked with faeculent pus, was changed for boracic fomentations, which were continued during convalescence. In spite of bad bronchitis and phlebitis of the veins of the left thigh, the latter was steady and uninterrupted, and the patient left hospital on May 18th with only a small sinus discharging sweet pus.

Here I did not actually feel or see the sloughing vermiform appendix, as was the case in the next case, but the history and course of the case left no doubt as to its nature, as well as the fact that a few days after the operation some of the usual faecal concretions were found in the pus from the wound.

CASE VI.—R. L., aged 29, admitted January 16th, 1892, complaining of pain in the right side of the abdomen and cough. The patient, generally a strong woman, had been out of health for two months previous to January 3rd, when she complained of cold and shivering. On January 6th she vomited some food, and at this moment she says she hurt her right iliac fossa and has had catching pain in it ever since, gradually increasing and compelling her to keep her bed. The bowels were confined from January 3rd to the 7th, but were then relieved by pills. On admission on January 3rd the patient looked ill; temperature 101.8°, pulse 92; some fullness distinctly visible in right hypochondrium, iliac, and inguinal region, but no general distension of abdomen, redness, or oedema. Marked tenderness and a distinct tumour was felt from the right ribs to Poupart's ligament. The tumour anteriorly had a rounded border about 2 inches outside the middle line. It reached back to the loin, and the hand did not sink between it and the ribs above and Poupart's ligament below. It fluctuated indistinctly; over it the deep percussion note was damped; the abdominal cavity contained no fluid. There was no frequency of micturition.

Regarding the case as one of retroperitoneal appendicitis, I operated on January 16th as follows: A 3-inch incision was made 1 inch internal and parallel to Poupart's ligament, beginning just above the iliac spine. The peritoneum was then raised from the iliac fossa with the finger, and a sausage-shaped tumour was found lying behind the cæcum. This I incised, evacuating a small amount of pus. Searching further behind the cæcum, I found a cavity containing about 2 ounces of very fetid pus. A counter-opening was then made above the crest of the ilium, and the whole cavity was flushed out with boiled water. A drainage tube was now passed from one opening to the other, and most of the anterior wound was stitched up. After this the temperature fell and all the bad symptoms disappeared. The wounds, after discharging very foul pus for some days, cleaned up and soon healed. The patient had a natural motion on the eighth day after the operation, and left the hospital quite well on March 1st, 1892.

In this case I both saw and felt the diseased vermiform appendix lying behind the cæcum, and incised it. But the abscess extended to a considerable distance around it and required a counter-opening.

In the next case a somewhat acute condition was grafted upon a very chronic trouble about the cæcum, and led to a state of things which suggested at first an inflammatory condition in or about the kidney. There can be little doubt that many cases of typhlitic inflammation are mistaken for perinephral abscess, and this case illustrates how easily this mistake may arise.

CASE VII.—L. A., aged 46, enjoyed good health until two years ago. She was then seized with pain in the right side, accompanied by fever (102°). Dr. C. Gage Brown, who treated her, then discovered a tumour in the right flank the size of a fetal head. She was kept quiet for a little time, and then sent to the country. On December 5th, 1891, I was asked to see her with Dr. Gage Brown, who stated that the tumour was practically *in situ quo*. The patient had, however, been at her work for the last year, and only sent for him on account of an attack of pain like the first in the seat of the tumour. This time there was fever, but not so much as before. There were positively no urinary symptoms at any time, and the bowels were never confined. When I saw her on December 5th she was lying in bed looking rather sallow. There was pain and tenderness in the right flank, and a tumour the size of a fetal head. This reached from an inch external to the umbilicus to the loin into the iliac fossa below and into the renal region above. It was very hard and tender, and immovable, and did not shift its place with the descent of the diaphragm. The percussion note over the mass in front was clear, behind it was dull: there was no heat over it. The position of the mass with its rounded border suggested to me an inflammatory renal tumour, and I advised rest, as after the former attack, and if this did not give relief the part should be operated on.

At the beginning of March, 1892, I heard that the patient was suffering much, and was anxious for operation. She was accordingly admitted to hospital on March 9th. The temperature was then 102°, pulse 104, and the patient looked ill. The tumour had not altered, but there was now an abscess above and behind the crest of the right ilium; this was quite resonant, and gas could be felt to gurgle in it on pressure. The tumour itself appeared solid and non-fluctuating, and pressure on it did not affect the abscess behind.

Regarding the case now as probably one of retrocaecal suppuration due to appendicitis, I incised the abscess behind, and evacuated some ounces of very fetid pus and gas. I then passed in my finger, and after some search found that the abscess on the crest communicated with another in the iliac fossa by a narrow track just above the bone. Dilating this with the finger, I could feel with the latter a large cavity with rigid walls in the iliac fossa behind the bowels. This contained horribly offensive pus, and was scraped and flushed out with a flushing gouge and hot water, which brought away a good deal of shreddy matter and some granulation tissue. I then filled both cavities with iodoform emulsion, inserted a large drain tube, and dressed with sal alembroth gauze. The result here has been uninterrupted recovery, the tumour disappearing as the drainage went on, and the temperature soon falling to normal.¹

I should like very much to draw your attention at some length to two other cases recently under my care, which illustrate, as I believe, some of the rarer effects of chronic abscesses the result of suppuration about the cæcum, but time does not permit. I shall only say that they show, as other cases which

¹ After the above was written this patient, Case VII., went home looking very well, but has since died, some three months after operation, of epithelioma of the ileo-cæcal valve. The growth, which was very small, was found at the necropsy to have been the cause of the peri-cæcal abscess operated on.

I might quote from other clinical records, that these abscesses are capable of the strangest freaks as regards the direction in which they spread. Some have been known to travel upwards between the liver and the diaphragm, and to burst into the pleura or lung. Others, like one of my own, may burst through the rectus muscle in the middle line and point above the pubes. Others, again, like one still in one of my beds, open on the skin in the groin.

It is plain, then, that there are many varieties of disease starting about the cæcum. Even this limited group of nine cases show this. It is pleasant to record, however, that with one exception (which had run on into a desperate condition before I saw him) they have been alike in their results. Eight out of the nine have recovered after operation, one was not operated on, having opened spontaneously before I saw him.

Since this lecture was delivered, six fresh cases of suppurative disease about the cæcum have been under my care. The first was ill-defined as to symptoms, but appeared to be of the iliac variety. The second, which I watched from its very onset, was of the retro-cæcal variety. It was operated on by a surgical friend, with complete success, during my absence from town operating on a third case. This latter was a pelvic appendicitis, and made an excellent recovery after operation. The fourth was retro-cæcal, and I had to dissect very deeply to reach the collection, which I did by working round outside the peritoneum. Recovery followed rapidly. The fifth case was one of deep pelvic appendicitis. I reached the collection with some difficulty, and drained it. But it was very septic, and infected the wound in the abdominal wall, causing sloughing to a large extent. The patient died at the end of a week from absorption of filth from the abscess. There was no general peritonitis or other disease, and no symptoms except those of profound sapremia. The last case was one in which the abscess developed inside the iliac spine and on opening it there rapid recovery followed. Other cases in which the condition has been treated without operation have not been included.

The fourteen cases included in these two lists occurred within the last twenty months, a fact which, taken with others, suggests a connection of the disease with the intestinal form of the influenza with which we became familiar during the same period. Anatomically they arrange themselves thus: Five were due to pelvic appendicitis; four apparently to iliac appendicitis; and five to retro-cæcal appendicitis. The ages were respectively 44, 16, 17, 65, 65, 29, 46, 45, 30, 59, 14, 22, 49, and 14.

The results were as follows: All recovered except Cases III and XIII, both very bad examples of the intrapelvic form of appendicitis, and the first obviously operated on too late. The last case must have been terribly septic, to judge of the effect of the pus upon the soft parts immediately around the drainage tube. It is very remarkable that with this condition the general peritoneum was not in the least infected at the end of a week, although at the operation healthy coils of intestine, in no way adherent, had to be pushed aside in order to reach the sloughing appendix, and the pus around the latter had to be cleared out without infecting these healthy coils. I have seen the same sloughing of the skin around the drain tube in another case which was very septic, but the patient recovered well.

From this group we learn, I think, that the initial intra-abdominal induration will lie in the retro-cæcal variety of appendicitis on or above a line uniting the umbilicus and the anterior iliac spine; in the iliac and pelvic varieties between this line and another uniting the umbilicus and the middle of Poupart's ligament; but in the pelvic form the swelling can always be felt from the rectum or vagina.

The incisions employed to reach the pus in these and other cases were various, and the experience gained leads me to think that each case must require its own incision. I have operated in former cases in the median line, but feel now that this is rarely if ever suitable for appendicitis. For the retro-cæcal form I should generally prefer an oblique incision close to the anterior iliac spine with two-thirds above the line uniting the iliac spine and the umbilicus. This incision enables us to work down to the pus without opening the peritoneum by pushing the latter forwards. For the iliac

and pelvic varieties, if there is a choice, I should prefer an incision as nearly as possible like that for ligature of the external iliac artery.

TEN YEARS' EXPERIENCE OF CATARACT OPERATIONS.¹

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It is now almost exactly ten years since I cut my first cataract. Our methods have during these few years changed enormously, both as regards the treatment of senile and soft cataract. The results are, I think, much better now than they formerly were, and this I believe to be wholly due to the greater aseptic precautions which are now observed, to some extent at least, by all ophthalmic surgeons. We can remember a time, and that not so long ago, when the total failures from operation was very heavy. The chief causes of disaster were suppurative keratitis, cyclitis, or irido-choroiditis, ending in atrophy of the eyeball and severe plastic iritis. When an event of that kind occurred it was the custom to attribute it to some special condition either in the eye itself or in the patient. Thus I have known a failure from suppuration attributed to the fact that the patient had albuminuria; a failure from severe choroiditis, or rather cyclitis, to the fact that the patient had a fluid vitreous—and so on.

That such accidents will happen to the end of time, I think, is probable; but that they should happen in any large proportion of cases where reasonable care is taken is, I think, impossible. To my mind these occurrences do not depend on any such circumstances as a fluid vitreous, much less on the size and position of the wound, nor on the kind of bandage that is used, although I have heard all these conditions blamed for suppurative keratitis. These accidents I believe to be due to nothing else than to something in the environment of the patient, and there can be little doubt that they are preventable.

My first operation was performed on a most unsuitable patient, a woman somewhat advanced in years, who suffered from melancholia in one of its milder forms. To the best of my ability I cleansed both myself and my instruments and the patient's eye, using for the instruments carbolic acid, and for the patient boracic acid. There was no cocaine then, but the patient did not require any anæsthetic, for she was perfectly steady. Even at that time I had, from seeing the work of many Continental surgeons, determined to do without preliminary iridectomy, a proceeding which, so far as this town was concerned, was the universal rule, but which I found to be almost unknown in the hands of such operators as Meyer and Snellen. I was all the more anxious to perform only one operation on the patient on account of her mental condition. I am almost ashamed now to say that I made a downward section—that is, one in the lower portion of the cornea; that, also, was the prevailing operation here at that time, and seemed to me, even in my student days, to be a much inferior operation to the upward section, as performed by almost all surgeons. By the downward section an unsightly coloboma is formed which cannot give the same good optical result as a coloboma completely hidden by the superior eyelid. So far as I am aware, however, that was the only case in which I made a downward incision in a private patient. The patient did well, and my result was Snellen's $\frac{3}{8}$ and J. 1. I wish that all my results were as good as that, although I think a good number of them are. I have here mentioned two details in which my operation, as now performed, differs from my earlier ones—I rarely make a downward section, and I rarely make a preliminary iridectomy.

OBJECTIONS TO THE DOWNWARD SECTION.

There are a very few cases in which I think a downward section is the only possible operation, but I am distinctly of opinion that under ordinary circumstances it is unjustifiable. Unquestionably we all admit that if there is any corneal

opacity at the upper portion of the cornea, covering to a greater or less extent the pupil, that it is the only available operation. Again, it may be advisable when the patient has very sunken eyes and very low eyebrows, although even in these circumstances I should not use it. It has been advanced on behalf of the downward incision that the operation may easily be done without a lid speculum. While not denying that this is so, yet I should never think of operating without one, for with a good Carter's speculum inserted and carefully manipulated by a good assistant, it is impossible for the patient to strain. Again, the allegation that the removal of a speculum when there is escaping vitreous is difficult, and promotes the escape of a greater quantity than would otherwise escape, is not true; or, if true in some cases, it is an idiosyncrasy of the surgeon. If properly used, a speculum prevents spasm of the patient's eyelids, and prevents the expulsion of vitreous.

That a downward section is not so good an operation as the other any one may prove to himself by simply looking at the pupils of his next neighbour when fixing a distant point. On doing so it will be observed that the eyelid in most persons covers, to a great extent, an upward coloboma, thereby not only hiding a thing which is unsightly, but also, by taking part in the formation of the pupil, helping optically by the completion of the pupillary diaphragm. As far as the safety of the eye is concerned, there is not a whit of difference between the two incisions.

OBJECTIONS TO PRELIMINARY IRIDECTOMY.

There are three objections which I have always been in the habit of advancing to students as to the impropriety of a preliminary iridectomy: (a) Two incisions must of necessity give us more corneal astigmatism than one; (b) by a preliminary iridectomy we twice run the risk of infection of the wound; (c) a patient dreads an operation, and there is nothing to be gained in submitting a patient to two operations where one is sufficient and equally good. Moreover, the operation, without preliminary iridectomy or, as it is called, the combined extraction, is an immense saving of time. With a preliminary iridectomy the patient first undergoes an operation, is kept in bed for a certain period, then is allowed to go about as blind as ever for a period of six weeks with the prospect of another operation in the near future. Finally the extraction is made, and then there is another period of confinement to bed. The patient is lucky who is allowed to escape here, for not infrequently there are operations for secondary cataract. After combined extraction a patient may be able to leave with the operation finished, except in cases of subsequent secondary cataract, in ten days, and certainly should be out of the hospital in a fortnight, with the treatment finished so far as operative procedure is concerned.

Quite recently Landolt has given to the world a most valuable contribution on the subject of cataract extraction. In that paper he very strongly advocates the preliminary iridectomy, and that chiefly because it promotes maturity, because it lessens the traumatism at the time of extraction, and because it is easier to rupture the capsule. Far be it from me to say anything contrary to such an authoritative opinion without good ground, for unquestionably Landolt is one of the greatest practical authorities of Europe at this time. But, no matter how great an authority may be, every man is bound to think matters out for himself, and for the reasons above stated I am convinced that in the large majority of cases preliminary iridectomy is a mistake—a needless infliction to the patient. In a few isolated cases I still employ it, as will be shown when I come to speak of maturation. Further, if it comes to be a case of quoting authorities, then we shall find the balance of number, and possibly even of weight, opposed to it.

In one point I am inclined seriously to disagree with the opinions expressed in the paper just mentioned. I do not think that a preliminary iridectomy is such a harmless operation as Landolt believes. Again and again in other men's work I have seen a preliminary iridectomy followed by a considerable amount of iritis, and more than once by suppuration of the cornea. No doubt such operations have been faulty and septic; but this only proves one of my propositions—that there is no good in running the double risk of corneal infection if once is sufficient.

¹ Abstract of paper read at Glasgow Southern Medical Society.