OF
INFLAMMATION,
CHRONIC DISEASE,
AND PERFORATIVE
ULCERATION OF THE CÆCUM,
AND OF THE
APPENDIX VERMIFORMIS CÆCI,
WITH
SYMPTOMATIC PERITONITIS AND FÆCAL ABSCESS.

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THE diseases of the cæcum and of the appendix vermiformis, which form the subject of this paper, have received no separate consideration in the systematic works on practical medicine; nor have I met with any notice of them except in the medical periodicals, in which detached cases have from time to time, been published.

The diseases in question are, nevertheless, of frequent occurrence, are always dangerous, often fatal, and characterised by a train of symptoms so peculiar and marked as to render the recognition of them certain and not difficult.

So long as sixteen years ago, my attention was at-

tracted to inflammation of the cæcum, by the case of a young lady who had become suddenly ill, with obstinate constipation of the bowels and vomiting, accompanied by febrile movement and local symptoms centered in the right ilio-inguinal region. The complaint was manifestly inflammatory; but the inflammation and febrile movement were developed less quickly than in an ordinary idiopathic inflammation, and it did not yield to treatment nor yet run on to the rapid destruction of life like an inflammation of the idiopathic kind. The case was obstinate, tedious, and dangerous, though eventually it terminated favourably. Reflecting on all these circumstances, and on the organization of the region of the abdomen to which the symptoms were referred, I suspected the cæcum to be the seat of the disease, and that the inflammation arose from the accidental lodgment of some undigested substance, fruit probably, for it was in the autumn season, and the young lady had been eating freely of plums.

Other similar cases occurring from time to time, confirmed my suspicions. I have seen in the whole not less than twenty, of which some having recovered, others having terminated fatally and allowed opportunities of ascertaining by dissection the anatomical characters of the disease, materials have been furnished from which I hope to be able to lay before the Society a connected history of these affections. I am moreover anxious to direct the attention of the Society and of the profession to these cæcum and appendix cases, because they are apt to be confounded

with idiopathic abdominal inflammations, and to be treated as such, much to the injury, if not to the destruction, of the patients.

An idiopathic inflammation of the cæcum from the ordinary general cause, exposure to the vicissitudes of the weather, has not fallen under my notice. The inflammation of which I am about to speak has in every case been symptomatic of some mechanical exciting cause, as the lodgment of undigested food, of fruit-stones, or of concretions, which the structure of cæcum and appendix favours; and hence the peculiar features of the disease.

The peculiarities of this inflammation produced by such mechanical causes are, the marked and fixed local signs; the invasion of them without any obvious cause, while the patient was in health; their gradual development; their obstinacy; the late supervention of the febrile movement, and its less degree in proportion to the local affection and suffering; and the less anxiety depicted in the countenance than is noticed in the idiopathic enteritic inflammation. These are the peculiarities.

In all the examples of inflammation of the cæcum which I have witnessed, the development of the symptoms has been in the following order. The first sign is a sense of uneasiness which soon amounts to an aching pain, deep-seated in the right ilio-inguinal region, arising unexpectedly while the person was in health, and not preceded by rigor or exposure. This pain increases progressively for twelve or twenty-four hours, retains its character, is fixed and con-

stant, never even remitting. Then supervene gradually tenderness, fulness, and tension of the whole ilio-inguinal region; the bowels are constipated and do not reply to medicine, and the patient grows sick and vomits. Some febrile movement now begins to manifest itself, the tongue becomes white and furred, the urine scanty; the appetite is gone, the pulse is frequent tight and sharp with increased volume, but the stroke though sharp is not strong, nor is its impression on the finger decided, it is a pulse of irritation and inflammation combined; the patient lies on the back quite still, slightly inclined to the side affected, and the case presents a serious aspect.

This state of things will persist for several days, the pain remaining of a very severe aching character. The fulness and tension of the part will increase and extend to the other regions of the abdomen, which hitherto had been soft and not tender; and a sign will now be present in an eminent degree characteristic of this inflammation, it is an *exquisite tenderness* of the abdominal parietes covering the cæcum, a tenderness far exceeding that of an enteritis, even of a peritonitis; the patient will scarcely allow a finger to be laid upon the part; when you go to examine it he lays hold of your hand and supplicates you in an earnest manner not to touch it, not to hurt him; he cannot bear the weight of the bed-clothes upon it: the tenderness is as exquisite as in any case of acute rheumatism I ever saw. The constipation continues, but the vomiting does not become frequent and dis-

treising as in enteritis, nor does the face betray so soon the anxious aspect. Taking the case altogether, it is not such an imminent affair of life and death as an enteritis, though in the sequel it may prove equally fatal. Such are the signs of the symptomatic inflammation of the cæcum.

A favourable termination cannot be calculated upon till alvine evacuations have been procured, followed by a subsidence of the tenderness, tension, pain and vomiting, all which can seldom be accomplished in less than seven or eight days. It may happen that the bowels cannot be brought to act, that the local signs do not give way, that the vomiting continues, and that the patient's strength declines seriously about the eighth day, especially if much blood has been abstracted; then he seems to sink rather from exhaustion of the powers of life than from the effect of the inflammation, and so he dies. Or, if life is prolonged, there may be discovered about the tenth day a circumscribed emphysematous tumour, presenting in front in the right ilio-inguinal region, or posteriorly in the corresponding ilio-lumbar region, which will prove to be a fæcal abscess making its way to the surface of the body. Ulcerative perforation of the anterior or posterior part of the cæcum will have taken place: if of the anterior part, adhesion will have formed around the perforations, and thus the fæcal abscess will arrive at the circumference of the body without involving the peritoneum in a general inflammation; if of the posterior part, which has no peritoneal tunic, then the peritoneum will escape

altogether, and the abscess tend upwards and backwards to the least resisting part of the lumbar parietes, which is at the outer edge of the quadratus lumborum muscle. This abscess may discharge itself and the patient do well; or nature may be unequal to the task, and the patient sink exhausted.

The *diagnosis* of these cæcum cases is determined with precision by the seat of pain, the exquisite tenderness, and the tension—by the sudden invasion of the symptoms while the person was in health—by the local signs preceding the development of the febrile movement—by the degree of fever being less than in idiopathic inflammation, and by the less marked anxiety of the countenance. If any doubt remain, it will be dissipated by laying the hand upon the part, when the circumscribed fulness and hardness in the region of the cæcum will give assurance of the seat and nature of the affection. A practitioner who witnesses one of these cases for the first time is satisfied it is not a common inflammation of the bowels, although he does not know its exact nature: he says the case is a curious one; he cannot make it out.

The *treatment* will not be difficult to determine, nor will it be often unsuccessful if an accurate judgment is formed of the nature of the disease; but, if the case should be mistaken for an idiopathic inflammation and blood-letting be pursued actively in the expectation of subduing it, the patient will be hurried into danger, perhaps destroyed by the remedy: for the cause of the inflammation being mechanical, the inflammation will persist until the cause is removed. It

will be in vain, therefore, to expect to subdue the inflammation while the cause continues in operation : the abstraction of blood will at all times give a temporary relief, which allures practitioners on to persevere in its use to an unwarrantable and dangerous extent.

The indications in the treatment are, first, to moderate the inflammatory action to a degree consistent with the vitality of the organ affected, and with the life of the patient : secondly, to accomplish this with as little expense to the bodily powers as possible, in order that, should a fæcal abscess form, nature may be able to go through the tedious and difficult process which would be inevitable. Blood then should be drawn with discretion, the quantity should not be large at any time, and a repetition of the blood-letting should not be practised at so short an interval as in enteritis. Leeches are an excellent means of relieving this local affection, but even these should not be used in large numbers nor too frequently. Eight or ten are as many as should be prescribed at one time, and they may be repeated daily at first, then every alternate day, with advantage. After the leeches, a warm oatmeal poultice should be carefully applied, not too thick nor too heavy, or the weight will not be borne. The leechwounds should not be allowed to bleed more than one hour, or the patient may be drained of blood injuriously. The colon should be evacuated by a domestic enema, and aperient medicines be given with a view to dislodge the offending matter : an excellent

form is one drachm of the sulphate of soda in half an ounce of infusion of senna, to which may be added four drops of tincture of opium, to appease the stomach. The stomach, however, is not very apt to reject medicine, because the vomiting is not very urgent nor very frequent. Should the medicine not be retained, then infusion of senna, with tartarized soda, carbonate of soda, and tartaric acid, in a state of effervescence, will be preferable. Should this prove ineffectual, it may be proper, lastly, to resort to the compound extract of colocynth, calomel, and opium, in doses of six grains, two grains and one grain respectively every six hours. It rarely happens that blood is required to be drawn from a vein a second time, the local abstraction by leeches being more likely to relieve the local affection with less sacrifice of strength. A fomentation, dexterously and lightly applied and persevered in, will prove a most valuable auxiliary; the hot-bath should not be proposed, any motion of the body being too painful to admit of its use. About the fifth or sixth day, the bowels may begin to act, and lumpy pieces of undigested matter may or may not be recognized in the dejections, after which the symptoms will gradually subside and the patient recover.

Or the symptoms may persist, in which case it behoves the medical attendant to watch the intentions of nature, as a tumour may shew itself in the ilio-inguinal or lumbar region, which should be encouraged to the surface by poultices; and the moment an emphysematous condition is distinguished, a free inci-

sion should be made, when a foetid gas with an offensive fluid will be discharged, and the cellular tissue discovered to be gangrenous. The tumour having been laid open, the patient's powers will require to be sustained by broths, arrow-root, weak brandy and water, ammonia, and as soon as possible by the decoction of bark, a form preferable at this time to the quinine, and an opiate in full dose should be given at night to procure rest. With this treatment patients will struggle through a long and most dangerous illness; but, I repeat, if blood has been abstracted copiously under the impression of the inflammation being idiopathic, the powers of life will be unequal to mature the fæcal abscess, should one form, and the patient will fall inevitably a sacrifice to the error.

CASE I.

Inflammation of the Cæcum, from the lodgment of some undigested matter probably.

Charles Neale, a healthy boy, twelve years of age, was seized about a fortnight before Christmas, 1828, on a Sunday morning, with an aching pain in the right ilio-inguinal region, which obliged him to leave the church, and kept him crying all day. The pain increased as the day advanced, did not remit nor recur in paroxysms, but remained fixed and constant. On the morrow he began to be feverish and to vomit. On the third day he was seen by a medical practitioner, who applied leeches to the seat of pain and administered aperients; and on the fourth

day, the symptoms increasing, blood was drawn to fifteen ounces, a large quantity for a boy twelve years of age: strong aperient medicines were continued. On the fifth day more leeches were applied, after which I was called in consultation. I found the boy lying on his back quite still, careful not to move his body lest it should aggravate the pain: the whole abdomen was tumid and tense, more particularly in the right ilio-inguinal region, where was a fixed aching pain, with tenderness so excessive that the slightest touch was reluctantly borne, while over the other regions of the abdomen the tenderness and pain were trifling: he was sick, and vomited from time to time; the tongue was foul and brownish; the pulse frequent and weak; and there had been no action of the bowels since the commencement of the illness, now six days, except from the colon by an enema on the second day. The case was recognized by me at once as an inflammation of the cæcum, excited probably by the accidental lodgment of some undigested matter.

The boy was low and much reduced by the loss of blood and the length of suffering, yet the countenance did not betray anxiety in a degree relative to the other symptoms, which gave hope of a favourable issue. The exhausted state of the patient determined me to advise that all active measures should be laid aside, that no more blood should be drawn, that the strong purgatives should be discontinued, and gentle saline aperients administered in their stead; that the local symptoms

should be soothed by fomentations, and that, relying upon these means, we should for a time wait the result.

On the day following, (the seventh of the disease,) I was gratified to find that he had slept through the night, that the bowels had acted several times, and some hard lumpy matter been discharged; that the tenderness, pain, and tension had diminished, and that thus all obstacle to recovery had been removed. From this period the boy's health was quickly and perfectly re-established.

The above case is illustrative of a fact I have often observed, namely, that obstructions of the bowels which had resisted strong purgatives have eventually yielded to gentle saline aperients. In the case of an elderly lady labouring under an alarming obstruction of the bowels from incarcerated umbilical hernia, which persisted after the hernia had been liberated, strong purgatives not only failed to relieve the obstruction but kept up the vomiting; while the stomach became quiet, and the bowels acted under the use of mild saline aperients.

CASE II.

Inflammation of the Cæcum from the lodgment of a piece of apple.

For this case I am indebted to my friend Mr. Selwyn, of Ledbury. "I have met," he says, "with some very obscure cases connected with inflammation about the cæcum. I was called, on the 22d of February, 1827, to Mr. Frank, a farmer,

whom I found complaining of extreme pain and tenderness in the situation of the cæcum, and on very careful examination, I discovered a hard body which I conceived like something lodged in the blind extremity of that gut. The bowels had been constipated for a week. I treated the case as inflammation; bled him six times in four days, and applied leeches in large quantities. The case terminated in a very satisfactory manner, although at one period, I could not tell which way the balance would go, when the bowels began to act copiously, and he voided what I fancied was the foreign substance, which the nurse had unfortunately thrown away, so that I did not see it, but she and a friend describe it as being a large piece of undigested apple; and on questioning Mr. Fawk, he recollected having swallowed accidentally a piece of a very hard apple a fortnight before."

It is a fact, established by pathological anatomy, that those parts of the intestinal canal where its dimensions vary and its organization changes, are particularly liable to be affected with chronic disease. The cæcum is one of these parts; and in addition to the acute inflammation which has been described, it is not unfrequently the seat of a subacute chronic inflammation or pathological congestion, which induces thickening of its tissues and contraction of its natural capacity, impairing thus the organization and function of the gut, so as to render the action of the bowels irregular and difficult, and eventually

to determine a complete and fatal obstruction. This diseased condition of the cæcum may exist for several months or even years, accompanied always with alvine difficulty and sympathetic disturbance of the stomach, of the same character exactly as that which attends stricture of any part of the alimentary canal. The sufferings are similar, the health declines, the body wastes away, and patients die worn down by sickness, inanition, and the dreadful spasmodic pains arising from the violent efforts of the bowel to overcome the obstruction. When emaciation has arrived at a considerable degree, the powerful peristaltic action may be felt, even seen, heaving the abdominal parietes in tracts corresponding with the convolutions of the intestines.

CASE III.

Chronic Thickening and Contraction of the Cæcum : Obstruction, more or less, for several months : Sickness, emaciation, death.

Ann Morris, aged 31, was admitted into Guy's Hospital in August, 1830, in a very emaciated state from an illness which had afflicted her many months, and of which the prominent symptoms were an obstinately constipated state of the bowels, together with sickness so frequent that the greater part of her food was cast up again. She complained of pains in the belly like the throes of labour ; and in the right ilio-inguinal region was discoverable a small hard tumour, which I concluded to be the cæcum diseased : the abdomen was tumid and flatulent, and a strong vermicular motion within the belly was observable,

corresponding exactly with the peristaltic action of the intestine; besides which, the distended convolutions of the small intestines could also be accurately traced by the undulating elevations of the abdominal parietes.

Various means, as magnesia, soda, leeches, lime-water, opium, hyosciamus, and clysters were employed by her physician without benefit, and in the course of a fortnight she sunk and died.

On *dissection* the cæcum was found to be thickened and much contracted, the ileon distended with flatus and loaded with fæculent matter, while the colon was empty and contracted. The sigmoid flexure of the colon was stretching over to the right side in contact with and adhering to the cæcum and ileon by fibrine recently effused; a singular circumstance, leading to the belief that nature was endeavouring to effect a communication with some part of the intestine above the obstruction, which would have restored the channel of the bowel, and perhaps have saved the life of the patient, if her powers had not sunk before the completion of the process.

CASE IV.

Disease of the Cæcum, with organized bands stretching across its cavity in different directions, forming a net-work and causing obstruction and death: vast accumulation of fæces above the obstruction, ileus, and sero-enteritis.

The subject of this case was Mary Ann White, a patient of the Public Dispensary, in the year 1830,

twelve years of age, of small stature, her frame of body not exceeding that of a girl eight years old, though in no way deformed, while her face was fully developed. Ill-health, it was said, had impeded her growth for several years.

The history of her complaints, as far as I could ascertain, was, that she had suffered for two or three years from large tumid abdomen with a very irregular and difficult state of the bowels, flatulence, spasmodic pains, loss of appetite, continued emaciation, and frequent attacks of sickness and vomiting. The dejections were generally scanty, soft, and very offensive, characters indicative of obstruction from organic disease. A fortnight preceding her death, she was seized with unusually severe pain in the belly, followed quickly by sickness and vomiting: the abdomen was immensely distended, and very tender all over; and the dejections consisted only of mucus, without any trace of fæculent matter. The vomiting continued till her death, prior to which, for some days, the matter thrown up was distinctly fæculent, constituting the ileus of nosologists.

Sectio-cadaveris, 14 hours after death.—The body was emaciated to the greatest degree: the abdomen enormously distended, and its surface varied by furrows and bulgings, caused by, and corresponding with, the convolutions of the small intestines. The abdomen opened, the small intestines were seen distended excessively, being three or four inches in diameter, of a mottled livid red, and agglutinated together by soft albuminous matter. Tracing the

intestinal canal, the seat of the obstruction was found at the cæcum, to which point the distension of the bowels continued, while beyond it the colon was empty, contracted, and sound.

The cæcum, when removed and examined, proved to be contracted and thickened, its tunics being blended together, and transformed into a dense, opaque, white, unyielding gristly substance; and interiorly were discovered numerous organized bands covered with a smooth shining membrane, stretching across the channel of the gut from side to side, in various directions, forming an irregular coarse network. In this contracted cæcum and net-work, a complete obstruction had been formed by fæculent matter, dry and friable, plugging up the channel in a manner which nothing could have removed. Leading to this part was the ileon, filled with an amazing quantity of soft, yellow, homogeneous fæculent matter, the bowel itself having all its tunics confounded together, and converted into a dense strong tissue, a line in thickness, resembling thick wet parchment: all trace of villous structure, or *valvulæ conniventes*, having disappeared. The colon was healthy. The uterus * not larger than the half of a small filbert.

The nature of the organic changes, just described,

* I have seen many instances in which the development of the sexual organs has been interrupted by organic disease of some viscus. If the individuals have lived, the menstrua have either not appeared, or have been scanty, pale, and irregular. Visceral disease may, therefore, be ranked as one cause of amenorrhœa.

points to the cæcum as the cause of all the complaints, but how disease in it was originally excited, it is impossible to determine.

In chronic obstruction of the bowels from stricture, or other disease, it is not uncommon for attacks of peritoneal inflammation to supervene, excited by the distension, as in the case above described. Several attacks will succeed each other at longer or shorter intervals, marked by the characteristic signs.

And I have noticed that the fæculent matter, however large the quantity, above an obstruction, is invariably soft and homogeneous, a state strongly contrasted with the hard, scibalous state of fæculent matter detained in the bowel by ordinary constipation. It would seem to be a provision of nature to preserve the fæculent matter, above an obstruction, in a soft state favourable to its passage through it, and remarkable it is that immediately any portion of this has passed the obstruction, its liquid parts are absorbed, and it becomes hard and friable as in habitual constipation, changes which, if they took place in the fæculent matter above a stricture, would be productive of total obstruction and death in every case.

CASE V.

Fæcal Abscess in the right Inguinal and Iliac Regions from ulcerative perforation of the cæcum.

Ann Box, aged 14, admitted into Guy's Hospital, on Monday, the 2d of November, under the care of

Mr. Key. She was naturally healthy, and reported that as far back as Christmas last, a period of ten months, she received a kick from her mother-in-law, in the right groin, which left a considerable contusion for the space of a week, and then got well. In May following, she was seized rather suddenly with pain, deep-seated in the right ilio-inguinal region, on which supervened tenderness, obstinate constipation, and vomiting. Her medical attendant, Mr. Hickman, bled her, and having also leeches and blistered the part, she seemed to be getting well, when a swelling took place, which threatened to be an abscess. By the aid of leeches, this subsided very much; yet a tenderness remained, and the patient could feel a small lump inside, which was always so sore that she guarded it with her hand if any one came too near her. In this state things continued for five months, viz., to the end of October, on the 24th day of which, on a Saturday, she was seized in a moment with a violent pain in the region of the sore lump, followed quickly by shivering, vomiting, and purging. Mr. Hickman saw her again, and applied leeches, which gave ease; but the part enlarged gradually, and became red; the sickness continued, shivering recurred frequently, and the bowels having kept open till the 31st, became then obstinate.

On the 1st of November, she was seen by Mr. Key, the swelling had assumed the character of a deep-seated abscess, which he punctured, and there came away a few ounces of thick bloody matter, of a very offensive faecal odour. Next day, she was ad-

mitted into the hospital, and I had an opportunity of examining the part, and witnessing the progress of the case. The puncture was situated mid-way between the pubes and anterior superior spinous process of the ilium; and from it was discharged a great quantity of dark, thick, dirty matter with fætid gas. The right inguinal and iliac regions were full and hard, the hardness and fulness extending upwards and backwards, in the course of the spine of the ilium to the lumbar region, where the skin was red, as if the abscess was pointing in this direction also: the part was so tender that she would not allow any thing to touch it: she felt the belly tight, as if it was going to burst, and hot as if a ball of burning coals was in it. The bowels continued obstinately confined for four days, and then acted, much to the relief of the violent sufferings described.

On the 5th, a second opening was made near the anterior superior spinous process of the ilium, the discharge from which reduced the swelling and inflammation in the lumbar region.

On the 7th, a third opening was made higher up and more posteriorly, through which escaped matter and sloughing muscle and tendon, and sloughs of the same tissues have been drawn out of the first and second openings also. A probe introduced through the first opening, passed more than four inches in the direction of the cæcum. Since the free incisions were made, and the sloughs have come away, the patient has been much easier, and the redness and tumefaction in the lumbar region have disappeared:

and although she is very weak and low, she sleeps tranquilly, her bowels act daily, and the appetite and general health improve. More sloughing tendon two inches long was removed on the 10th. The wounds were now granulating healthily, and from this period all pain ceased, and she regained her strength and health so rapidly as to be able to leave the hospital on the 24th, quite well.

Of the Ulcerative Perforation of the Appendix Vermiformis Cæci, and consequent peritonitis and gangrenous or fæcal abscess.

The appendix vermiformis with which the cæcum is surmounted, is, like the cæcum itself, liable to be the seat of disease, the character of which, however, differs materially, owing to the peculiar conformation and situation of the appendix.

The conformation and situation vary much in different individuals, a fact not noticed by anatomists, but which I have found to influence the phenomena and nature of its diseases very considerably. The conformation of the appendix is generally described as flexuous, and its situation as depending into the pelvis, but by some the situation is not noticed*, further than that the appendix arises from the cæcum and is bound down to it on the right by a fold of peritoneum, the meso-appendix; whereas the appendix is more frequently situated on the outer edge of the psoas magnus on the facia iliaca, snugly curled

* Winslow, Cloquet.

up beneath the cæcum and concealed by it; a fact which I have verified by many dissections, and one of great importance to the pathologist, as will be seen. In the event of a perforative ulceration of the appendix, and a consequent peritonitis or fæcal abscess, the parts involved will differ entirely according to the situation of the appendix. If it should happen to depend into the pelvis, then the pelvic viscera will be implicated; if it should happen to be situated on the iliac fascia and underneath the cæcum, then the belly of the iliacus internus and the neighbouring adipose cellular tissue will be involved, and the course of the abscess be determined accordingly: so important is the relative anatomy of even inconsiderable organs to the physician. In a case to be related where the abscess pointed in the loins, the whole belly of the iliacus internus was in a state of gangrene, as was also the mass of adipose tissue in the lumbar region: the abscess was here making its way to the outer margin of the quadratus lumborum muscle, the part where the parietes offer least resistance to its progress.

The free communication of the appendix with the cæcum by an open mouth, exposes it to the accidental intrusion of small portions of the residuary alimentary matter, or of any other substance which may happen to be passing through the cæcum, and this matter or substance once within the appendix, can only escape by a retrograde course, the appendix being blind or closed at its other extremity. Whether the appendix has the power of expelling any substance from its canal, it is difficult to say; but should the matter or

substance which has accidentally passed into the appendix be large in proportion to the calibre of this gut, it would be impacted and fixed in the canal; would become a source of irritation and of ulceration, perhaps of perforation and all its disastrous consequences. It is far from an uncommon occurrence to meet with small bodies, as raisin-stones, in the appendix, without any mischief having arisen from their presence, because the organic sensibility of its mucous lining, in common with the mucous lining of the intestinal canal, is adapted to the presence of foreign matter. These small bodies may, however, if they remain long, induce ulceration of the mucous membrane, a lesion often found, without producing more inconvenience than is caused by a superficial ulceration of any other part of the alimentary canal; but if a substance larger than the canal of the appendix, as a cherry-stone, or an intestinal concretion, happen to be forced into it and become impacted, then not only does it produce ulceration of the mucous membrane but of all the other tunics until it reaches the peritoneum, which being thus deprived of its means of nutrition, dies, sloughs, then bursts, and a perforation is effected. Now so long as the ulceration is limited to the mucous membrane it is of little consequence, but immediately that the peritoneum is perforated inflammation ensues, for the organic sensibility of the peritoneum will not suffer the presence of any foreign substance. Inflammation therefore is lighted up, and may spread with rapidity over the whole continuous surface of this membrane, constituting an universal peritonitis: or

the inflammation may be limited to the vicinity of the perforation, may be circumscribed and an abscess form: the danger in either case is considerable, indeed the universal peritonitis will prove fatal to a certainty; and so much disturbance both of the constitution and of the functions of the alimentary canal arise from the abscess, as always to endanger, sometimes to destroy life. The abscess may nevertheless come forward, burst, discharge itself and the patient recover; or it may remain circumscribed and stationary, forming a deep-seated painful tumour in the region of the cæcum, which by its proximity to this gut may produce continued obstinate constipation of the large intestines, a sympathetic disturbance of the stomach and of the whole system, and thus gradually wear down and exhaust the unfortunate patient*.

CASE VI.

Sloughing of the extremity of the Appendix Vermiformis Cæci. Circumscribed abscess. Death.

Walking one afternoon with a medical friend, he requested me to call and see a case of a very obscure nature under the care of himself and an hospital physician, which he feared was going on to a fatal termination. The patient, a baronet's coachman, fifty-seven years of age, had become affected three weeks previously with febrile movement, succeeded by vomiting, and by constipation, which re-

* Since writing the above a case has come under my care in which a similar tumour burst into the bowel, discharged itself through this channel, and the patient recovered perfectly.

quired the use of the strongest cathartics to procure dejections. In the course of the second week he complained of pain in the ilio-inguinal region, for which leeches and a blister had been applied; and about this period there occurred also retention of urine. When I examined him, he was lying on his back in bed, much exhausted, with the tongue beginning to get brown and dry, and the pulse frequent and weak. He vomited frequently, and the bowels were so obstinate that no aperient but croton oil would act upon them. He still laboured under retention of urine, the belly was full and tense, and in examining the region of the cæcum, to which he referred as the seat of pain, I discovered immediately a circumscribed, hard, deep-seated tumour, the size of a small orange, and gave it as my opinion that the disease was situated in the cæcum or appendix. After this he survived not more than eight days, the vomiting, obstinate constipation, pain, and retention of urine having continued to the last.

Sectio cadaveris.—The right inferior portion of the omentum was adherent to the cæcum by fibrine, tender and recently effused: the omentum being carefully detached, there came into view a bag of matter or circumscribed abscess, which was found to be situated between the cæcum and iliacus internus muscle. The whole of the cæcum, as well as part of the colon, and of the cæcal extremity of the ileon were removed and carefully examined, when it was seen that the channel of the bowel was perfect, though the cæcum was contracted, but the appendix was

only one inch long, and terminated openly in the abscess, its blind extremity having sloughed away. It is therefore more than probable that some small substance had become impacted in the appendix and caused an ulcerative perforation and destruction of its blind extremity, followed by a circumscribed inflammation and abscess, of which the precise locality was determined by the situation of the appendix underneath the cæcum, on the outside of the psoas, and upon the iliacus internus muscles.

The immediate contiguity of this abscess to the cæcum was evidently the cause of the obstinate state of the bowels, and of the irritability of the stomach which exhausted and destroyed the patient.

CASE VII.

Ulcerative perforation of the Appendix Vermiformis, from an intestinal concretion. Consequent peritonitis and death.

The subject of this case was a boy twelve years old, under the care of Mr. Wray, from whom I had the following particulars:—The boy was attacked with a deep-seated fixed pain in the right ilio-inguinal region, followed in a short time by febrile movement, vomiting, and a tender and tense state of the whole abdomen, symptoms characteristic of a severe and sudden peritonitis. The inflammation admitted of no relief, its course was exceedingly rapid, and carried off the boy in two or three days. The bowels were readily acted upon by medicine from the commencement of the illness.

Sectio cadaveris.—Layers of recently effused

fibrine were spread over the different parts of the intestines; the peritoneal tunic of which, as also of the abdominal parietes, were very vascular. The appendix vermiformis was found perforated about three quarters of an inch from the cæcum, by an ulcer having an irregular sloughing edge, in which perforation was lodged a concretion about the size of a cherry-stone. The appendix being slit open, another ulcer was discovered in the mucous lining which was vascular, soft and swollen, and the mouths of its mucous follicles were very distinct. In the interior of the cæcum was a portion of its mucous membrane the size of half-a-crown, pulpy and brownish gray; and in the ileum, about half an inch from the valve, was a thickened spongy portion of mucous membrane thickly studded with muciparous follicles, the ducts of which were evident; and the mesenteric glands in the vicinity of the cæcum were enlarged and vascular.

CASE VIII.

Fæcal Abscess in the Right Iliac region. Sloughing of the blind extremity of the appendix vermiformis cæci. Gangrene of the iliacus internus, and of the outer fibres of the psoas magnus muscles and of the sub-peritoneal adipose cellular tissue in the right lumbar region.

Mary Ann Hodges, aged 19, of good frame and stature, was admitted into Guy's Hospital the 10th of January 1828, under the care of the senior physician. Four days previously she was attacked with

severe pain in the right inguinal region, for which she had been bled three times, and leeched and blistered. On admission, being the fifth day of her illness, she complained of great pain and exquisite tenderness in the region of the cæcum, extending upwards to the right hypochondrium: she was vomiting a yellow bilious fluid; the pulse was frequent and small; the skin hot and dry; thirst great; and she lay on the back, inclined to the right side, with the legs drawn up, any change from which position aggravated the pain, and gave it a dragging character.

Twenty leeches to the seat of pain; one grain of calomel and one of opium, every four hours; a castor oil injection. Some slight relief followed the use of the leeches, and the bowels acted several times. Next day, the sixth, twenty more leeches. On the seventh day the pain was unabated, and tenderness continued excessive—tongue glazed at tip—some sordes on the teeth—pulse 112. She was now bled to ten ounces, and ordered to take calomel two grains, opium one grain, tartarized antimony half a grain, every four hours. The pain not having been relieved by the blood-letting, and the pulse having improved, it was repeated in two hours to twenty ounces, after which the pulse became very soft. The night was restless, and on the eighth day the symptoms were not mitigated, and the tenderness and fulness were extending to the left side of the abdomen: she was sick from the antimony. On the ninth day the bowels still acted, but instead of amendment, hiccough came on, and a greater fulness and hardness in the

iliac region was manifest. Blood was again drawn to ten ounces, and the opium and calomel continued. On the tenth day the features were sunk, and the face exsanguine, and now was discovered an obscure fluctuation in the right inguinal and iliac regions, which having become more distinct on the tenth day, an incision of two inches was made through the parietes of the abdomen in the ilio-lumbar region a little above the spine of the ilium, and dissection continued down to the peritoneum, which was near two inches from the surface: a quantity of highly foetid gas and thin foetid pus escaped through the opening, and the finger introduced passed into a boggy cavity. The operation was followed by relief to the local sufferings, but the powers of life were exhausted, and death ensued on the following morning.

Sectio cadaveris, five hours after death.—The viscera which came into view on the parietes of the abdomen being partially reflected were healthy, but exsanguinous. The parietes of the right side being reflected further, the right inferior portion of the omentum was seen agglutinated to the peritoneum and cæcum; and the agglutinated omentum being detached, discovered a shut cavity filled with offensive dark thick fluid, not of uniform consistence or colour, some portions being of a dingy yellow fæculent character. This fluid, amounting to half a pint, being sponged away, exposed the extent and situation of the cavity, which was in the peritoneum of the right iliac and lumbar regions, walled in by the adhesions of the

omentum, peritoneum, cæcum, colon, and right lobe of the liver. The peritoneum forming the posterior boundary of the cavity was puffed up and black, and being cut through shewed the whole of the loose adipose cellular tissue of the lumbar region in a state of gangrene, the gangrene extending to the same tissue behind the kidney, as also behind the cæcum and ascending colon, and contained some putrid fluid and gas which had puffed up the peritoneum, as seen before it was cut through. The outer portion of the psoas magnus, and the greater part of the iliacus internus was gangrenous also. The colon and cæcum were healthy, but the blind extremity of the appendix vermiformis had sloughed away, the remaining part being pervious and opening into the cavity of the abscess, and containing thin, yellow, fæculent matter, such as was found in the contents of the abscess. The same kind of matter was also in the cæcum. The kidneys normal, as also the viscera of the pelvis. The liver sound, except the margin of the right lobe, which was adherent to the peritoneum.

The muscles of the abdomen in the right iliac and lumbar regions were separated from each other to the extent of a quarter of an inch by soft albuminous matter recently effused, which caused a preternatural thickness of the abdominal parietes, and with the abscess beneath produced the fulness, hardness, and indistinct fluctuations during life. It was through these thickened parietes the incision was made, which had penetrated into the gangrenous mass of adipose

cellular tissue and reached the peritoneum, but had not perforated through it into the abscess.

From the evidence afforded by this dissection, it must be concluded that the sloughing of the appendix, from some cause, had allowed of the escape of the yellow fæculent matter of the cæcum into the peritoneum, which had excited a circumscribed inflammation, walling in the effused matter, and thus producing fæcal abscess; that this abscess caused the gangrene of the psoas and iliacus internus muscles, and of the adipose cellular tissue, and death of the lumbar peritoneum, which from the dense character of its organization had not sloughed or burst. The abscess was making its way to the surface of the body in the ilio-lumbar region, where by the aid of the incision it would have discharged itself as well as all the sloughing tissues, and the patient might have recovered if the powers of life had been equal to the process; but these had been exhausted by the repeated abstractions of blood.

The practical inference, therefore, is, that had the case been understood, and the powers of the patient been husbanded, instead of exhausted by a treatment adapted only to an idiopathic abdominal inflammation, her life might probably have been preserved.