REMARKS

ON

INTESTINAL OBSTRUCTION: WITH SPECIAL
REFERENCE TO DIAGNOSIS.

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III.

9. As regards *growths within the bowel* causing obstruction, I had in my possession a malignant one, about the size of a small orange, which, growing from the walls of the duodenum in a well-known medical man of this city, finally occasioned closure of the bowel and death. Violent and persistent retching was for long a symptom from which he suffered; but the true cause of his symptoms was not discovered till after death, though it was suspected that he had malignant disease of the pylorus. He had for years suffered violent pain at times, which he referred to the exact seat of the growth; but, large as the mass was, its existence had not been clearly made out. Another practitioner, known to many of my audience, also suffered from serious, though not complete, obstruction before death, from what I believed to be a malignant growth in the ascending colon, but its exact nature was not verified by *post mortem* examination.

10. *Paralysis of the bowel after operation* for strangulated hernia, either by the taxis or knife, is by no means uncommon; and constitutes one important source of danger from that affection. The bowel, after being long strangulated, does not recover its function, even though restored to its place in the abdomen. Passive obstruction occurs, and, unless means are used to arouse the dormant action, the patient dies. Quite recently, I had such a case under my charge in the hospital, and I understand that one of my colleagues had another.

11. Cases of obstruction from *malignant disease of the lower portion of the bowel* are so common as hardly to require illustration. On the table are many specimens of this very terrible and fatal disease. Many of those patients who are thought to suffer from cancer are really affected with syphilis. When obstruction is established from such cancers, opening the gut higher up is undoubtedly a legitimate, though a very miserable, procedure. The history, the broken-down look of the patient, the discharge, and the tactile examination, make the diagnosis usually clear. *Syphilitic stricture* is vastly more common in females than in males. A large number of such cases came under my observation during my period of service in the Lock Hospital.

12. The following case of *malignant tumour springing from the anterior parietes of the abdomen*, gave rise to complete and fatal obstruction. I saw the patient with Dr. Taylor of Nelson Street, who had recognised the nature of the ailment. The patient was sixty-six years of age, and had suffered from complete constipation for six weeks before my visit. She had only put herself under medical treatment a short time before I saw her. For several weeks after the outset of her complaint, she was very little alarmed about her condition, as she suffered but little uneasiness and had all her life been of a very costive habit. She had used various strong purgative remedies, and Dr. Taylor had tried enemata freely. Her stomach became very irritable, and would retain nothing, though, when empty, there was no retching. She never suffered from feculent vomiting. When I saw her, she was much exhausted, and complained of pain all over the belly, which was much distended, and was sonorous on percussion, except at a spot as large as the hand on the lower and left side, between the umbilicus and anterior superior spinous process of the ilium, where it was especially tender, and where dulness existed. A hard flat fixed mass could be detected at the place referred to. She had never suffered from rupture; but there was a small soft body in the right femoral ring, which was found to be a thrombus of the vein, but which I was inclined at first to suppose to be connected with the bowel. The distension of the bowel was relieved by puncture; and then the outline of the growth, and its attachment to the abdominal parietes, were very perceptible. She died the day after I first saw her; and it was then found that a cancerous mass, growing from the omentum, had formed adhesions to the parietal peritoneum, and had enclosed a portion of the descending colon in its embrace. Above this spot, the bowel was greatly distended and in part gangrenous. Below the constricted point, the intestine was empty. Extravasation had taken place at various places, and abundant traces of inflammation, both old and somewhat recent, were found.

13. Of *volvulus* I will relate one well marked example, as its nature was shown by *post mortem* examination. I saw the patient with the late Dr. David Miller. A boy, aged fourteen, healthy and strong, had been thrown down violently by a companion and trampled on. He was at once seized with violent pain below the umbilicus, and vomiting soon set in. Neither pain nor retching were ever relieved till his death, which took place on the night after the third day. I only visited him once, shortly before his death. I was informed that he had complained much of a desire to go to stool, without any result following the effort. Constipation had been complete from the outset, and he had rejected everything he swallowed. His belly did not swell much, but it could not be touched on account of the diffused pain [present]. It was hard and resonant. At the time of my visit, he was markedly typhoid, sunk, with mottled face, cold, and evidently dying. He had been treated as for peritonitis; and calomel and opium, with poultices and enemata, had been freely employed. Fluid could be easily pumped into his bowel in large quantity. The urine was all along scanty and high coloured, and a catheter had been required. After death, the bowels were found much matted together by lymph, and a distinct sharp twist, which wholly occluded the lesser bowel (the exact part I find I have failed to note), and almost occasioning perforation by its action, was present.

14. Many years ago, Professor Cowan and myself carefully watched a case of what we believed to have been *volvulus*, which lasted for six days, in a man—the porter to the Western Dispensary—aged 26. The seizure was sudden and violent after exertion, and the pain at first confined to a spot. Stercoraceous vomiting set in on the third day, and he was extremely prostrate, when, on the sixth day, the constipation, which had been complete, gave way and he recovered and lived for seven years. For two years after the attack, he suffered much from obstinate constipation. He was treated during the attack by opium and scanty light diet.

15. Dr. McCall Anderson had a case in the Royal Infirmary in August 1874, in which complete constipation had existed for eleven days, accompanied by bilious vomiting and much distension. There was pain in the abdomen, especially in the right iliac region and also in the lumbar region, which was dull on percussion. After death, the small gut was found to be greatly distended, and, at the lower end of the ileum, near the valve, two twists were found in the bowel. The folds of the gut were so adherent at one of these points, that the bowel gave way in trying to undo the twist.

16. Last summer, I saw with Dr. Kirk of Partick a case which appeared to be one either of *volvulus* or internal strangulation; but, as it went right, when almost hopeless, after a large dose of calomel, it is impossible to say what the exact pathological condition was. When I visited the patient (a lad aged 20), he had suffered from complete "stoppage" for ten days. The seizure was sudden after running, and was accompanied with much pain and, very shortly after its onset, by vomiting. The pain was at first located, but soon became diffused. No remedies had been of any use, and the patient appeared to be dying. He was restless, sunk down in the bed, with feverish skin, dry tongue, swelled belly, and was constantly retching. I could discover no explanation of his state by an examination of his belly, and twenty grains of calomel were given, in the faint hope of removing the obstruction. He rejected the first dose, but retained a second, and, within a few hours, his bowels acted freely and he quickly recovered. I saw him lately in perfect health.

17. A patient, aged 45, whom I saw about the same time as the last with Drs. Cassells and Cumming, was probably an example of *bands or adhesions* causing embarrassment to the passage of alimentary matters. For many months before the seizure, on account of which I was asked to visit him, he had suffered at intervals from attacks of prolonged constipation and pain. His bowel had been entirely closed for eight days before my visit, and he was worse in all respects than he had ever been before. The pain was seated below and to the left of the umbilicus, and there was tenderness to the touch and some distension. He had vomited a good deal, but it was never stercoraceous. All the usual means of relieving him had failed. Nothing more than a suspicion of the cause of the obstruction could be got, and we risked twenty grains of calomel in one dose. He rejected one powder and retained another. A copious stool, followed by relief to his symptoms, soon occurred. Several times since, he has had less severe attacks of a similar nature, though in none has his life been in danger.

18. In December 1873, I saw along with Professor Gairdner, in the Royal Infirmary, a man, named Murphy, aged 30, who was suffering from complete constipation of seven days' duration, accompanied by stercoraceous vomiting during the latter part of that period. He came into the hospital only the day before he died. His abdomen was curiously distended, as it was enlarged across the lower portion and

up the ascending colon, but much less so elsewhere. He was too prostrate to allow of any operation being performed, except puncturing the enlarged bowel, and this was repeatedly done. After death, the important point found was that, from a yard below the duodenum to the same distance from the cæcal valve, the bowel was distended and gorged, and, where this ceased, there were several old adhesions by bands between the gut and the parietes, but the channel of the intestine was free. Various loops of bowel which intervened between the adhesions were not obstructed. One band connected the jejunum and parietes. Water flowed freely through the whole length of the bowel, yet the effect of the bands during life had come to be such as entirely to arrest the passage of the contents of the canal. No previous history of the patient could be obtained.

In this preparation, taken from a patient I saw some years ago, you will see how very tiny a band may occlude the bowel; and, in this other, which I received from the late Dr. Lyon, the same fact is illustrated; and, in this one from the Hunterian Museum, the transverse arch of the colon is adherent to the lower end of the ilium by a very narrow band, which was found "twisted like twined cord" and constricted the bowel, and finally killed the patient.

19. In a patient, aged 62, admitted with strangulated femoral hernia, and on whom I operated in the Royal Infirmary in 1871, a double source of constriction was found: one in the femoral canal, which was relieved by the operation, and another on the opposite side and within the belly (found after death), produced by "appendices epiploicæ", which had wrapped up a coil of small intestine and completely occluded it. The patient was very weak on admission, and no very distinct account was got of her previous condition. We learned, however, that the attack of obstruction had come on slowly and had been complete for about a week. Finding a hernia present, no other source of obstruction was suspected.

This specimen from the Hunterian collection shows "valvula connivens making a circle, and thence occasioning stricture in a portion of jejunum". There are also on the table other preparations of Hunter showing tumours of the duodenum and ileum—"introsusception of the jejunum from an adult"—and the same of the lower end of the ileum and cæcum into the colon, and several cases of stricture of the sigmoid flexure and rectum from various causes.

20. Three years ago, I saw with Dr. John McLaren of Canning Place, a blacksmith, about thirty years of age, suffering from complete obstruction for nine days. When in perfect health, he was suddenly seized, when at laborious work, with violent pain in his right groin. Vomiting soon followed. For several days, he sought no medical aid, but had taken a very liberal amount of strong purgatives. During the first forty-eight hours, he had two very scanty motions, but none afterwards. The pain in his groin never ceased, but it had radiated latterly over his whole abdomen. I saw him the night on which he died. He was then partially collapsed; had stercoraceous vomiting, distended tympanitic belly, and hiccough. His pulse was very rapid and weak, and his extremities cold. Over the appendix vermiformis, there was marked dullness, and a firm mass was found on deep pressure. Pressure so increased his torture, that a careful examination could not be made. Enemata passed freely, but were of no service. His urine was very scanty and frequently passed. He would not allow of any operation, and, in his then condition, I did not press it upon him. He died a few hours afterwards. There was much local inflammation and effusion found in the right iliac region, extending over towards the left side. The appendix was in a state of suppuration and had been perforated. It was turned over a portion of the bowel, and was adherent to the parietes and to the mesentery. The channel of the gut near the valve was occluded and the bowel above very much distended with flatus and thin fluid. Five small bodies, like cherry-stones, were found within the appendix.

21. The late Dr. Steven had a case under his charge in the Royal Infirmary in which the bowel was entirely obstructed by an adhesion it had formed with the uterus. The nature of the obstruction was not recognised during life, and no history was got beyond the fact that she had suffered several months before from some uterine inflammation.

22. Three years ago, I saw with Dr. James McLaren of Newton Terrace (to whom I am indebted for a record of the case) a widow lady, aged 65, who was in the enjoyment of good health up to 1870, when she suffered from polypus of the womb and frequent hæmorrhages. This was set right by operation. In the autumn of 1872, she first began to suffer from difficulty in defæcation in a marked degree. This gradually increased, notwithstanding treatment, and it was found that a large very hard tumour connected with the posterior wall of the uterus was firmly wedged into the pelvis, and so compressed the bowel as to render its action almost impossible, and finally led to complete and perfect obstruction so far as fæces were concerned, but allowed flatus to

pass. She lived for five weeks after the obstruction had become complete, and, towards the end of that period, I visited her. Her abdomen was distended, but not extremely so. It was also tympanitic. She vomited any food she took, but had no retching when she abstained. She was very weak and emaciated, and complained of no pain. The pelvis seemed to be filled by a large fibroid, which, from its pressure, obstructed to some extent the iliac vessels. I cannot recall the circumstances which prevented colotomy from being performed, but it was rejected from some consideration which was thought at the time sufficient. The nature of the obstruction made it a very favourable case for its performance. She died of inanition, the margin of the cornea having begun to ulcerate before death.

In another almost parallel case which I saw with Dr. Lyon, no persuasion could prevail on the patient's friends to allow an operation, and she, too, died unrelieved.

23. *Cæcal abscess* causing obstruction is illustrated in these two morbid specimens. One of these cases was attended by me along with Dr. Miller of Castle Street. The case was a very curious one. She was a strong healthy married woman of 37. Two years before her death, she had observed a certain degree of swelling on the right side of her abdomen; but, as it caused her no pain or annoyance, she took no heed. Her alvine and other functions had been quite regular up to five weeks before her fatal illness. About that time, she began to suffer pain in her abdomen, and that chiefly in the right groin and lumbar region. She became very costive, and used a variety of purgatives. She sought no medical advice for two weeks, and was able to go about and do her household work. Her bowels remaining inactive, notwithstanding all the medicine she took, she placed herself under the care of Dr. William Miller, and I visited her with him shortly afterwards. When I first saw her, her expression was by no means bad, and she was able to take concentrated food in small quantities. She had occasional vomiting, but only of food up to within three days of her death, when it became stercoraceous. The abdomen generally was never much distended; but, all up the right side from the brim of the pelvis to the false ribs, and across the abdomen to within a short distance of the middle line, there was a marked fulness, which was firm and obscurely fluctuant, or rather highly elastic, to the hand, dull on percussion, and did not alter its place by position. The dullness extended to the right lumbar region, and pressure over it, if made steadily, occasioned very little pain. The rest of the abdomen was resonant. The bowels were closed except to flatus. The uterus was retroflexed. The pulse was of fair strength, and she had no complaint of thirst. She had not suffered from shivering or violent pain at any time. There was no swelling of the leg nor pain down it. Enemata passed freely and returned almost unchanged. Opium was given and poultices applied, and her food was carefully regulated. From this time up to her death, she had repeated evacuations—suddenly and, at one period, six times in close succession—of small quantities of thin pea-soup-like feculent fluid, which always gave a delusive hope that the obstacle was about to be removed. After these evacuations, the tumour appeared softer, and we thought a shade smaller. We believed we had to do with perityphilitis, but the symptoms did not altogether conform to that idea, and we were in doubt whether it was not rather a soft cancerous tumour. After death, the contents of the abdomen were found firmly matted together by old (not recent) effusion, and many bands crossed the bowel, which, however, was pervious throughout. Below the ascending colon, the gut was almost completely empty, while that part was (as you may see in the preparation) pressed so firmly against the posterior wall of the cavity by an enormous tumour, which filled the whole right side of the abdomen and pelvis, that, though its canal was open, nothing from above could pass through it till the tumour was pressed aside, which it could be. The tumour was found to be (as is here seen) a very thick leathery cyst attached below to the right ovary and above to the kidney and liver, while it was so firmly adherent to all the surrounding parts, that it could not be detached without tearing them. It had evidently been formed in the connective tissue which surrounds the caput cæcum, and was beneath the peritoneum. It was lined by a smooth fully organised membrane, and contained the pea-soup-like fluid which had escaped by the anus, together with pus and masses of lymph. A communication existed between its cavity and the ascending colon. The aperture admitted the point of the little finger, and was round and slightly ragged. It appeared to be of some standing. How this communication had formed could only be a matter of conjecture. Doubtless, the fluid from the cyst at times escaped (probably during certain postures) into the bowel and was so expelled, and it seems reasonable to suppose that the communication was established when the evacuations first appeared; viz., about a fortnight before her death. An operation here would not have been successful; but what chiefly

caused such an idea not to be dwelt on, was the fear that malignant disease was present. It was remarkable how little disturbance there was to the general health while this great collection was forming, and how it continued to augment the strength of its walls and fill the abdomen, and not come in the least to work towards the surface. The history of this other, somewhat similar tumour, I have not got.

24. A middle-aged thin weak woman came under my charge in the hospital in 1872, with a deep fluctuant tumour over the caput cæcum. She had suffered pain in the part for some months, and had not been laid up till a few days before her admission, when the size of the swelling, the pain, and a feeling as if it would burst, caused her for the first time to keep her bed. She could bear no pressure over the swelling, and she kept her thigh bent on the pelvis to relieve it. There was some pain down the front and inner side of the thigh, but no swelling of the limb. Her bowels were very sluggish, but never wholly closed. Pus was clearly recognised and its evacuation determined on; but I had to leave town for a day, and the operation was delayed. The nurse had given her, at her own request, a dose of castor-oil, and, when she got up to stool during the night, she passed, without effort or pain, about a quart of ill-smelling pus and a little blood. The swelling at once disappeared and the normal action of the bowel was restored. Pus continued to come with each motion during all her residence in the house; but, as the swelling did not reappear, and the pain and discomfort had ceased, she insisted on going home.

25. A female past middle age sought advice at the dispensary of the Royal Infirmary during my service there, on account of a fistulous orifice in her right groin, from which pus escaped freely. She said it had resulted from the bursting of a large abscess which had formed (she believed following a kick) within her belly, deep in the right iliac fossa a year before, and which for sixteen days had caused her much suffering, and, as she alleged, entire constipation for nearly a week of that time. She stated that feces had at first come away through the fistula, but that for several months she had not observed any mixed with the discharge. Her bowels, which had been regular before the illness, had given her much annoyance since from their tendency to costiveness.

26. This preparation was taken from a poor fellow who was in the Western Infirmary lately, suffering from a vesico-intestinal fistula, resulting, as you see, from *gelatiniform cancer of the sigmoid flexure*. For many days before his death, complete obstruction was present and materially contributed to the rapid termination of his life. His case is worth recording. His age was 44. He was a butler by occupation, and there was no family tendency, so far as is known, to cancer. Twenty-one months before he came under my observation, he began to suffer from frequent micturition followed by pain all along the urethra. Blood early appeared in his urine. He was then treated for "gravel". Pain came on in the hypogastric region and deep in his perineum, and he suffered greatly. The right testis swelled. A few weeks after the outset of his complaint, he was pressing at stool, when suddenly "a twist" seemed to occur low in his belly and feces came through his penis. In a fortnight, this ceased to occur; but flatus, accompanied by much pain, continued to pass by the urethra. He slowly recovered, and the rectum and urethra resumed their respective functions. For four months, he remained well, and then, after exertion, retention of urine set in, and, as he was straining to relieve himself, a lump appeared below his penis, near its "root". This became very painful, and, during a sudden effort, he ejected a damson-stone, and the stream of urine was re-established, but accompanied by feces. He was now confined to bed for six weeks and put on very restricted diet, and that was chiefly administered by the rectum. When he came under my care in February 1876, he was pale, weak, and cachectic. The urine was almost wholly flowing by the rectum (this had only begun about two months before), and most of the feces (which, however, were scanty) came by the urethra, and their passage occasioned much uneasiness. The whole urethra was much inflamed, and a profuse purulent discharge was present. His abdomen was somewhat full and pressure over the sigmoid flexure caused pain. There was a decided swelling filling the iliac fossa, and giving to the hand a soft doughy sensation. There was dulness markedly elicited by percussion all along the colon from side to side, and at no part was the abdomen resonant. Only a limited quantity of water could be introduced into the bowel, and its presence caused much discomfort. Nothing could be done for him, except to relieve his pain, as he was very weak and emaciated. Complete absence of alvine evacuation and a great decrease of the urine existed for eight days before death. The bowels were very remarkably soldered together by old firm lymph, which hardly allowed them to be separated. There was no trace of recent inflammation. In the left iliac region, there was a mass of soft

jelly-like cancer, which involved the sigmoid flexure and the bladder in one lump. On separating this (as is shown in the preparation before you), the bowel was found to open freely into the upper part of the bladder, and within that viscus, masses of feces, and colloid cancer were mingled together. The continuity of the gut was wholly severed, though the open ends of both upper and lower portions communicated with the bladder. The rectum was empty. The whole contents of the intestine appeared to be discharged into the bladder, and, when the patient lay on his back (as he usually did), the urine flowed away by the lower portion of the bowel, which opened from the bladder. The walls of the bladder were extensively invaded by the cancer. In the ascending and transverse colons, there were many old hard masses of feces, by which considerable distension had been produced.

27. I shall refer only to one further cause of obstruction, and that because it is a very unusual one. I had this session in my clinical ward a man, aged 62, who was suffering from violent constipation, retention of urine, and severe oedema of the right leg. These symptoms were due to an enormously enlarged prostate gland—the largest I ever encountered. It was stony hard, and seemed to fill the hollow of the sacrum. This had formed slowly during several months, according to his account. He required a very long catheter, and it was only by the use of a strong enema-pipe and a long tube that his bowels could be relieved. By attention to his bladder and bowels, he improved in every way during his residence in the hospital, and returned home to Ayrshire, with instructions to continue the same treatment. I have since learned that, a few weeks after reaching home, his bowels became entirely obstructed, and that he died in consequence.

I shall not further multiply examples of the affection considered in this paper, but pre-ent the foregoing as illustrating several of the sources from which obstruction of the bowel may arise.

REPLY TO DR. C. J. B. WILLIAMS'S REMARKS ON THE MECHANISM OF THE SOUNDS OF THE HEART.

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IN a communication to the JOURNAL of September 30th, Dr. C. J. B. Williams has undertaken to refute my explanation of the causes of the sounds of the heart; and, with regard to his own researches, he says: "I reassert that those observations, made in February 1835, supplied the first complete knowledge of the sounds of the heart, which has given to the profession the means of distinguishing the physical signs in health and in disease." Dr. Williams's researches have undoubtedly been of great value to pathology. His theory of the sounds of the heart stands in the same relation to pathology that certain astronomical theories stand in to the science of astronomy. Although a given theory may not itself be true, certain deductions founded upon it may be true. But, even in the abstract, accurate knowledge is always desirable. Moreover, I have shown that the theory of Dr. Williams does not explain some leading pathological facts, which my theory explains.

Dr. Williams's paper consists of two parts: an attack upon my position and a defence of his own. As the attack comes first, it shall be met in the same order.

A single paragraph from my thesis, *On the Sounds caused by the Circulation of the Blood* (London, 1861), will place before the reader what is essential to be borne in mind in order to understand the controversy. It is this:

"All sounds formed in connection with the circulation are produced by and in the blood itself, and their mechanism is virtually the same. If this statement be true, it would be found, in practice, that a sound of one species would be liable to be changed into a sound of another species. And this is the case; for the normal first sound of the heart is, under certain pathological conditions, converted into a murmur; and, on the other hand, a murmur thus produced may again give place to the natural sound. In short, all the sounds may be regarded as modifications of a typical sound, because, under varying circumstances, they are convertible into each other."

"I would object," writes Dr. Williams, "that of all bodies, liquids are the least adapted to produce sound; in contact with air, they become sonorous, and all sorts of noises, rushing, splashing, etc., result, from the trickling of a brook to the roar of the sea or of a cataract; and, in collision with solids, they cause the noises of wave dash and rainfall, also musical and other murmurs in the circulation, and the loud notes of the siren and other water-instruments. But, without