

Clinical Lecture

ON

AMUSSAT'S OPERATION.

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GENTLEMEN,—I wish to direct your attention to-day to the case in which I last week opened the descending colon in the left lumbar region, and which, though it has not terminated so satisfactorily as we could have wished, affords me an opportunity of bringing some points connected with the operation usually called *Amussat's*, under your observation.

Before proceeding to detail the case in which I have lately operated, I think it well to make a few remarks on the general subject of the operation itself,—the principle on which it is founded,—the anatomy of the parts concerned,—and the cases requiring it.

1. The principle on which Amussat's operation is founded, is very simple. It is to establish an artificial anus without wounding the peritoneum, by opening the posterior third of the descending colon in the left lumbar region, where that portion of the gut has no serous investment. In this respect, Amussat's operation resembles that of puncturing the bladder above the pubes, or behind the prostate, the surgeon opening the viscus in situations where it is not covered by peritoneum. Before Amussat applied this principle to the colon, surgeons had, in cases of intestinal obstruction, been in the habit of following an operation proposed by, and named after, Littré, which consisted in making an incision in the left iliac fossa, through the peritoneum, drawing forward a knuckle of intestine, opening and fixing it to the edges of the wound in the integuments. Such a procedure as this was so fraught with danger from the peritonitis that of necessity ensued, that few had the hardihood to undertake it, but preferred letting their patients die the most horrible of all deaths—that from intestinal obstruction—rather than submit them to so hazardous an operation. Whilst attending the celebrated physician, Broussais, for cancer of the rectum, of which he died, Amussat states that he was led to reflect on the standard resources offered by surgery in such cases, and was led by the inquiries that he had then instituted to the conclusion that the proposal made more than half a century back, by Callisen, of Copenhagen, of opening the left lumbar colon, behind the peritoneum, was a feasible one, and should be adopted. You will observe that in the introduction of this operation, as in so many other improvements in our profession, and in practical science generally, the sole merit did not lie with one originator, but the proposition of one is put in practice by another. Callisen proposed the operation on theoretical grounds, but attempting its performance on the dead subject found the difficulties to be so great that he abandoned it. Amussat here took it up, investigated the matter afresh, put it in practice on the living subject, and thus established it as a most important addition to the means that the surgeon has at his disposal for the relief of otherwise intractable disease.

2. The anatomy of the parts concerned, and the steps of the operation, must next engage our attention. The point of most importance is the relation of the descending colon to the peritoneum in the left lumbar region. In order to study this, you should dissect the body from *behind*. In an ordinary dissection or in a dead-house examination, the body being opened from the front, the colon is drawn forwards, and thus a distinct and somewhat elongated mesocolon will be formed in the left lumbar region. But this mesocolon is in a great measure formed by the traction of the dissector tearing off the reflexions of the peritoneum in the lumbar region, and does not naturally exist, as will be seen on making the dissection from behind, when the posterior third of the descending colon will be found lying closely against the cellulo-adipose layers that line the abdominal wall in this situation. It will be seen to be uncovered by peritoneum, and to have no loose or floating mesocolon; but the serous reflexion will be found to be closely applied to the wall of the abdomen on each side of the gut. It is, however, very important to observe that the extent of gut that is uncovered by peritoneum will vary according as the colon is contracted or distended. When empty and contracted

the peritoneal reflexions come into very close apposition, and nearly overlay the naked portion of gut; but when this is distended they are pushed aside as it were, and a broad expanse of colon will be seen to be uncovered by peritoneum. The facility of exposing the uncovered part of the colon, without wounding the peritoneum, will be in the exact relation of its amount of distention.

The region in which the operation is performed is bounded above by the last false rib; below, by the crest of the ilium; behind, by the lumbar spine; and in front, by an imaginary mesial lateral line. In this oblong quadrilateral space, a horizontal incision should be made, commencing two fingers' breadth to the left side of the spinous processes of the lumbar vertebrae, and carried horizontally outwards for about four inches midway between the last rib and the crest of the ilium. After the integumental layers are divided, the anterior edge of the latissimus dorsi and the posterior part of the abdominal muscles are successively divided. The dissection is carried down through these, until the transversalis fascia is reached; the anterior and middle lamellæ of this are opened, and the edge of the quadratus lumborum exposed. The real difficulties of the operation now commence; the surgeon having to dissect carefully through layers of cellulo-adipose tissue which lie in front of the abdominal wall, and which cover in the colon and the contiguous reflexions of peritoneum. If the gut is distended, this tissue will be pushed well aside, and the intestine may easily be reached; but if it be contracted and empty, it will be found to recede somewhat from the surface, to lie at a great depth, and to be almost overlapped by the reflexions of the peritoneum, to avoid wounding which requires the greatest care. It is also covered in by a quantity of loose cellulo-adipose tissue, which, as it rises and falls, with the respiratory movements, presents a considerable resemblance to the peristaltic motions of the small intestine, for which it may be at first mistaken. After having worked his way through this tissue, the colon will be exposed towards the outer angle of the wound. This gut can at once be recognised from any other structure by its greyish-green hue, the longitudinal striæ on its posterior surface, and its thicker feel. When exposed, a needle, carrying a strong whipcord should be passed through it in a vertical direction, and the gut being thus drawn to the surface, may be properly opened and stitched to the edges of the wound.

Commonly the colon will be found lying vertically across the wound in a line corresponding to the outer edge of the quadratus lumborum, and the "directing line" to it may be said to be the line of aponeurotic structure, formed by the puncture of the two lamellæ of the transversalis fascia that constitute the sheath of the quadratus, and which may readily be distinguished by its colour from the muscular structures, across which it lies, as it traverses the incision in a perpendicular direction. Below this, the colon when distended will always be found; but when contracted, it retreats beneath the quadratus, and the anterior edge of this muscle must be divided before it can be exposed.

There is one caution I have to give you about opening the colon. It is that the gut should be well drawn forwards before it is punctured, fully on a level with the skin, in order that its contents may not be extravasated into the loose cellular tissue around it, and, when opened, the edge of the aperture must be stitched to those of the incisions in the skin.

3. The next point that we have to consider is the class of cases in which this operation is required. These are threefold—1st, feculent distension supervening in obstruction of the rectum or sigmoid flexure of the colon, or arising from the pressure of tumours, the blocking up of the gut by cancerous disease, or the gradual closure of a stricture; 2ndly, for congenital absence of the rectum; and 3rdly, for the relief of pain in ulcerated cancer of the rectum. Thus you will observe that the operation may be performed on two different principles—first, for the relief of intestinal obstruction, by affording a vent to the pent-up intestinal contents, where the lower portion of the intestinal tube is blocked up or is congenitally absent; and secondly, on a totally different principle, in cases in which there is no retention of feces, but in which the patient is worn out by the agonizing suffering induced by the passage of the feculent matters over the raw and ulcerated surface of a cancerous rectum. In these cases defecation is a horrible torture, the pain of which is dreaded by the patient, in consequence of which he defers the act as long as possible, and when it does take place the suffering induced is such, that for hours afterwards he will lie in an exhausted state. The constant recurrence of such suffering speedily wears out the strongest frame, and the passage of the feculent matters through the ulcerated rectum stimulates the activity of the cancerous disease, which thus

makes more rapid and extensive ravages than it otherwise would, and thus hastens the fatal termination of the case.

(1.) I will not dwell at present on the performance of Amussat's operation in cases of intestinal obstruction; but I may remind you that it is of course only in the *chronic* form of the disease that it is applicable. *Acute* intestinal obstruction almost invariably proceeds from internal strangulation or intussusception of the *small* intestine, and here of course the procedure that we are now discussing can afford no relief; but *chronic* intestinal obstruction is almost invariably—I believe, invariably—dependent on disease implicating the large intestine, and such disease is, in the vast majority of instances, seated below the descending colon, at the upper part of the rectum, or in the sigmoid flexure. When such is the case, the opening of the colon in the left lumbar region will afford the required relief. In these instances, the operation is comparatively easy; the gut is enormously distended, presses forcibly against the posterior abdominal wall, and pushes widely aside the lateral reflexions of peritoneum, so as to leave a large surface uncovered by serous membrane. I was present, many years ago, at the first operation of this kind that M. Amussat performed, and I shall never forget the immense rush of flatus and fæces that took place, and the instantaneous relief that ensued when the gut was punctured, the obstruction having lasted more than forty days. In cases such as these, some surgeons prefer opening the cæcum in the right lumbar region; but as the transverse colon is very rarely, if ever, the seat of the stricture, I cannot see any advantage in departing from the operation as recommended by Amussat.

(2.) In cases of congenital absence of the rectum—not of simple imperforate anus—Amussat's operation has occasionally been attempted, but its performance in such cases is full of difficulty, on account of the narrowness of the part in which the surgeon has to work, the depth of the gut from the surface, its small size, and its occasional malposition. I am not aware that its performance in this malformation has been attended by any permanent benefit, and I should, in preference, feel disposed to do what we have had occasion to practise here several times of late years—viz., the establishment of an artificial anus in its normal situation.

(3.) We will now briefly consider the case in which you saw me operate the other day, and the class to which it belongs. It is related as follows in the case-book by Mr. Jeaffreson:—

CASE.—*Cancerous Disease of the Rectum.*—Stephen C.—, aged forty-five years, was admitted into University College Hospital on Friday, Nov. 14th, 1856. He was by trade a plumber, and lived in Sudbury till twenty-one years of age. He then removed to London, where he followed his trade till he was twenty-nine years of age. He then established himself in business as a maltster at Groton, in Suffolk. He was then single; his life was irregular; “he never was a drinker,” but on being asked whether he went home directly after market, &c., I found that he stopped late, and habitually drank freely. He was a remarkably strong, active man, being in the habit of lifting heavy weights &c. for wagers. I should mention that he says drinking so freely after markets was his ruin. Eight years ago, he returned to London, and got employment as a plumber, which he continued till this illness. He is of about average height, and the body well set, the limbs firmly placed. His complexion is now very pale and sallow, and countenance anxious; his eyes light-brown, and sunken; his hair dry, lank, and brown in colour. All the teeth but two molars on the left side are gone from the upper jaw; in the lower jaw, there is a perfect set of teeth, but the gum is absorbed, leaving the fangs quite clear. He is desponding with regard to his state. His parents were remarkably healthy; his mother died at the age of seventy-four, his father at seventy. On the mother's side, his grandfather died at near seventy, grandmother nearly as old, but exact age not known. The patient has been married four years, but has no children; his wife is only thirty years of age. He says he has had no disease of his genital organs for the last fifteen years, but previously to that he had several gonorrhœas and chancres also; once he had a bubo, which did not burst. For his venereal diseases he took mercury, at six different times at least, not always, he says, to the extent of salivation, but always enough to make the gums sore and the teeth tender. Whilst an apprentice as a plumber, he had colic once. He has had two slight attacks of gout in the great toe of the left foot—once about a year after he returned to London, and was following his business of plumber; the other, *about four years ago*. At this period, he first felt a dull, aching pain across the loins, which has been more or less continuous ever since. *Two years ago*, he lost blood by the rectum, for the first time to his knowledge; “it was then enough to splash

about the pan of the watercloset;” and this continued more or less till *eighteen months ago*, when, being confined as to his bowels, he took some aperient medicine, which about nine in the morning began to operate. He went five times to the pan, but he passed nothing but pure blood; in the space of about half an hour, two quarts of blood came away, “feeling warm and silk-like;” it was clotted. The loss of blood caused him to faint twice. He then got to bed, and after remaining quiet about a quarter of an hour, he, at half-past ten A.M., passed a copious, perfectly clear motion, “not firm, but fair.” He now gave up work, from weakness and pain in the loins and limbs. He now also, for the first time, experienced pain in the fundament, at first of a smarting but afterwards of an aching character, not much increased by going to stool. *About seventeen months ago*, he went into Middlesex Hospital, supposing he was suffering from internal hæmorrhoids. He was not examined per rectum, but put upon sulphur baths and electuary, and kept resting on his back. He was discharged relieved. The hæmorrhage did not recur for about a fortnight after his leaving the hospital. *About fifteen months ago*, he went to the Fistula Hospital, City-road, and was under the care of Mr. Salmon, who told him he had a cancer, after examining him per rectum, gave him sulphur and treacle, &c. He gradually got worse, but remained under Mr. Salmon's care four months. *About eleven months ago*, he applied as an out-patient to the Cancer Hospital at Brompton, which afterwards removed to Piccadilly, and was there under the care of Dr. Marsden and Mr. Weeden Cooke. *About nine months ago*, he having become gradually weaker, was unable to walk to the hospital, but his wife continued to fetch medicine for him. He now took to his bed, but got up a little every day till *about three months ago*, when Mr. Stuart and Mr. Canton visited him and examined him per rectum with a large bivalve speculum. *About two months ago* he had difficulty in passing his urine, and Mr. Stuart drew it off with a catheter, and told him, if he had any difficulty again, to ask for the No. 6 instrument. They gave him good nourishment, and aperient medicine, and passed a rectal bougie, at first about every third or fourth day; but the obstruction having gradually increased, he has increased the frequency of its use, and he now passes it daily.

Present condition.—Nov. 17th, 1856.—The patient's appetite and digestion are remarkably good. His bowels required strong saline aperients to make them act. Through life his bowels have been regular, never having had to take medicine to keep them in order. He did not observe the stools to diminish in size till about five months since.

Condition of Rectum.—At the anus protrude two moderate-sized, pale red piles, and a rather abundant, sanious, offensive-smelling discharge comes from around them. On introducing the finger into the rectum, there is considerable pain experienced by the patient; the finger comes in contact with a hard swelling, extending all round the gut, which it involves further than the finger can reach. There is difficulty in passing the urine, which is accompanied with pain and smarting at the end of the penis; this is always more or less constant. The urine comes away with the stools, and then only, so that it is almost impossible to obtain any for examination. He is very weak, and rolls about from the pain, “wishing to have something done to put him entirely out of the way.” His intellect is quite good, and no symptoms referable to the cerebro-spinal centre. Pulse weak, 81. Ordered three ounces of senna confection, to be taken every morning. Diet: chop, two pints of milk, one pint of beef-tea, and one pint of porter.

18th.—The patient had two motions yesterday. Considerable pain this morning; wants something to be done; proposed Amussat's operation for artificial anus. Continue diet and senna confection.

19th.—The bowels were opened twice yesterday, and once this morning; the urine was passed at stool with much straining. His general state is as described above.—Half-past two P.M.: Having been put under the influence of chloroform, Mr. Erichsen made an incision about four inches long, extending from within an inch and a half of the lumbar spines outwards nearly to the left lateral median line. It was parallel to and between the crest of the ilium and the last rib, but somewhat nearer to the rib. Having divided the skin and the celluloadipose tissue, and the anterior border of the latissimus dorsi muscle, he divided the external and internal oblique and transversalis muscles on the director, also a portion of the quadratus lumborum. He then dissected through a considerable quantity of celluloadipose tissue, which existed between the abdominal walls and the intestine, and with difficulty found the colon, which he pierced with a needle armed with fine whipcord, and

drew forward. He then opened it with a pair of scissors, and Mr. H. Thompson, on passing his finger into it came to faecal matter, some of which was adherent to it when he withdrew it. The edges of the gut and external wound were brought together by means of sutures, two above and two below. The rest of the external wound was closed with two more sutures. The whole was covered with wet lint, and the patient put to bed on his left side.—Five minutes past three P.M.: As he was recovering his consciousness from the effects of the chloroform, his pulse was 72, moderate.—Half-past three: He is complaining of much pain. Ordered one drachm of opium mixture to be taken immediately. Mr. Stuart informed us that he has been accustomed to take very large quantities of opium.—Quarter to four: The patient is very querulous, whining loudly, and declares he is in the greatest agony, and complains of a sensation of constriction round the body, as if he were tied to the bed, and repeatedly asked to have it removed. Ordered hydrochlorate of morphia, one grain, to be taken immediately.—Quarter-past four: Pulse 66; becoming less noisy with his pain.—Five minutes to five: Pulse 72.—Quarter to six: Repeat hydrochlorate of morphia mixture.—Eight: Pulse 72, same quality as before operation. He complains of considerable pain over the abdomen, but there is no tenderness on pressure. Apply hot fomentations. Ordered two drachms of opium mixture immediately.—Ordered two grains of hydrochlorate of morphia immediately.—Twenty minutes to eleven: The pulse 72; pain in the abdomen is less than when the fomentations were ordered. He lies diagonally on his right side and back; this he finds the most comfortable position; he is quieter and more composed. Neither fæces nor flatas, the patient states, have passed through the artificial anus.

20th.—Nine A.M.: Slept for nearly two hours during the night, the grain of morphia having been repeated at three A.M. and at seven A.M. He feels rather more comfortable this morning; has had less pain in the rectum since the operation. Nothing has escaped from either the wound or the gut, both of which look healthy. He lies diagonally, as described last night. He complains of pain in the left iliac fossa. Pulse 90. A warm poultice was applied over the wound, and also to the left iliac fossa.—Half-past two P.M.: He has been put on to a spring bed, and looks and expresses himself as being more comfortable. He is now lying on his back. Pulse 104, intermitting regularly every fourth beat. The morphia was repeated at ten A.M. and at one P.M. He refuses to take any nourishment, either solid or liquid, but seems tolerably cheerful; "thinks he shall be able to eat an egg to-morrow." He sank, however, exhausted in the course of the night.

Post-mortem Examination, fifteen hours after death.—(Nov. 21st.)—Being placed on his face, the left lumbar region was dissected into the abdomen. We found the descending colon opened, and its edges connected with those of the external wound. It was much contracted, being considerably smaller than the small intestine which projected on either side, and was of the usual yellow or buff tint, while that of the colon was greenish. The body being placed on its back, the thorax and abdomen were opened. The lungs were healthy, but the bronchial glands somewhat enlarged. The heart was pale and flabby, the valves healthy; under the microscope, it was questionable whether it had undergone any fatty degeneration. The small intestines presented on their surface a small quantity of lymph, and some slight capillary injection. They were somewhat enlarged and distended, but contained very little faecal matter. The mesenteric glands were enlarged to a moderate amount. The lumbar glands were not enlarged. The large intestine was healthy, but presented an opening about eighteen inches above the sigmoid flexure. Scybala were found in considerable quantity below the opening; some also existed above. The opening was through the portion of colon uncovered by peritoneum. The rectum, for the distance of four inches above the anal opening, was involved in its whole circumference with ulcerating nodular masses of scirrhous tubercle: the whole was of a pale yellow colour. Close about the cancerously diseased portion of the gut, there was a large quantity of arborescent and capillary congestion, which was quite black; the congestion extended upwards for nearly seven inches, gradually becoming less marked. The tissue of the rectum between the cancerous masses was much softer than normal. (The preparation is put in the College museum.) The right kidney had undergone fatty degeneration to a considerable extent, having a greasy feel and yellowish tint, and presenting masses of apparently pure yellow tint, the line marking the separation between the tubular and cortical substance being almost obliterated. The left kidney presented the same characters, only in a less degree. The spleen was slightly enlarged, and of a light colour. The liver was pale, rather soft

and flabby, and presented several yellowish masses (varying in size from that of a large pin's head to that of a small bean) scattered through its substance, which, on section, grated beneath the knife, and appeared to be cysts, with thick, hard walls, containing a creamy material, which, under the microscope, presented no compound nucleated cells, but a large number of fibro-plastic cells with strongly-marked nuclei, closely resembling prismatic epithelium; fat, in the form of both globules and granules; cells filled with granular matter. The gall-bladder contained about ten drachms of thin, dark, dull-yellow bile, in which was found a mass of black colour, gritty to the feel, and mulberry-like on the surface. It was composed of granular matter and rhomboidal plates of cholesterine.

I wish particularly to point out to you, gentlemen, that the operation in this case was performed with a different object to that for which it was originally brought before the profession. It was done not for the purpose of rescuing the patient from impending death resulting from intestinal obstruction, but in order to prolong existence by removing a source of constant suffering and irritation; and although we did not succeed in our object, the operation is a proper one in such cases, and has been performed with the happiest results by M. Amussat, by my friend Dr. Pennell of Rio Janeiro, and others, under similar circumstances, the patient surviving for years in a state of considerable comfort. The artificial anus itself is much less annoying than would at first appear, as it is readily kept closed by means of a truss, the pad of which is applied over it.

In the performance of the operation itself there was no difficulty, until the anterior layer of the fascia transversalis was exposed. On opening this, layers of cellulo-adipose tissue presented themselves, and on successively incising these, a large quantity of loose fat was exposed, which, rising and falling with the respiratory movements, offered a somewhat embarrassing obstacle to the search for the intestine, which was completely contracted and empty. In carefully working our way through this mass of fat, partly by dissection, partly by tearing it asunder, the gut was exposed, and could be distinctly recognised by its greenish-grey colour and firmer feel, showing out in very evident contrast with the yellowish-buff colour of the contiguous tissues.

With regard to the cause of death in our case, I can only account for it by its being the effect of exhaustion, resulting from a prolonged operation, in a person labouring under extensive organic disease, and suffering from what at the time we were not aware of—viz., advanced granular degeneration of the kidneys—a complication which I believe to be almost inevitably fatal in all cases in which the abdominal or pelvic organs are subjected to operative interference. It is this state of the kidneys that is so common a cause of death after operations for hernia, stone, or urethral stricture, leaving a low peritonitis and diffuse inflammation of the cellular planes. I believe, also, that it is a condition in which chloroform acts very unfavourably, disposing the patient to continued nausea, depression, and exhaustion, from which he does not rally, but sinks in a few hours or days without complete reaction having come on.

HEALTH OF LONDON DURING THE WEEK ENDING SATURDAY, JANUARY 10.—In the week that ended on Saturday the deaths of 1135 persons—viz., 577 males and 558 females, were registered. The average number of deaths in the ten weeks corresponding with last week of the years 1847–56 was 1251; but as the deaths of last week occurred in an increased population, the average must be raised proportionally to the increase for the purpose of comparison, and in this case it will become 1376. The number of deaths recorded last week is less by 241 than would have been returned if the average rate of mortality had prevailed. The deaths caused by diseases of the organs of respiration are not so numerous as they were about the end of November; 270 are referred to this class in the table for last week, the corrected average for corresponding weeks being 333. Bronchitis was fatal in 140 cases, pneumonia in 87. The former disease began to be in excess of the latter in November; and this excess is always maintained during the winter months, although bronchitis attacks principally persons more or less advanced in life, and is therefore restricted in its operations to a narrower field. Phthisis was fatal last week in 120 cases, nearly half of which occurred to persons between the ages of 20 and 40 years. By the average rate of mortality from this disease, the number would have been 153. Hooping-cough was the most fatal last week of the diseases in the zymotic class, and carried off 55 children. Forty-nine persons died of typhus and common fever, 36 of scarlatina, 30 of measles, 4 of small-pox, 11 of croup.