the intestines, which appeared as if injected, and exsudations of lymph, which connected the convolutions of the intestines to each other by adhesion. The liver and spleen appeared shrunk and flaccid, not indurated; the gall-bladder contained some yellow bile; the urinary-bladder appeared empty and contracted.

ADDITIONAL OBSERVATIONS

By BENJAMIN TRAVERS, Esq. F.R.S.

AND VICE-PRESIDENT OF THE SOCIETY.

The case of an aperture formed in consequence of an ulcer of the mucous coat, in the stomach and intestines, and giving issue to their contents, although not of very frequent occurrence, has been recorded by several anatomists. I have added a case strikingly similar to that related by Dr. Crampton, which occurred under my observation some years ago, and a communication or two from a friend, with a few remarks; not with an idea of affording a practical suggestion in a case which sets all art at defiance, but for the purpose of further illustrating the subject.

CASE I.

Mr. —, aged thirty-five, of a strumous habit, but enjoying generally good health, was seized, whilst dining in company, with an excruciating pain in the abdomen, which he described as unlike any he had ever felt. The principal seat of his pain, which never remitted, was the region of the navel, and it was described as occasionally shooting from this part as from a centre over his whole body, and especially affecting his neck and shoulders. His abdomen was tense and hard; his respiration somewhat agitated; his pulse little, if at all affected. Flatus rose in quantity from his stomach, but he had no disposition to vomit. At midnight, the medicine, which he had taken soon after the attack, had not operated: he was exceedingly restless, unable to bear the slightest pressure of the hand upon the abdomen, and earnestly prayed to be relieved from his intolerable anguish by death. He often called for a spoonful of gruel, which in part returned, as if deglutition was interrupted by a spasm of the œsophagus. At three A.M. the pain was not mitigated; the pulse was quick, small and fluttering. His intellect remained clear and perfect, but his strength was rapidly exhausting; his extremities became cold, and he died in the warm bath at six A.M. about thirteen hours from the attack of pain.

I pass over the formalities of medical treatment: suffice it to say, that all the obvious means of relief were perseveringly employed without any sensible effect.

Inspection of the Body.

The peritoneum was universally inflamed; recent adhesions attached the contiguous folds of the intestines to each other; a large quantity of fluid deeply tinged with bile was contained in the pelvis; and about a finger's breadth below the pylorus appeared a circular foramen, having a peritoneal margin, of the diameter of a writing pen. It proved to be the centre of an irregular superficial ulcer of the mucous coat, including in its extent two-thirds of the ring of the pylorus. There was no other appearance of ulceration in the intestinal canal.

CASE II.

Mr.—, aged about thirty, healthy but of dissipated habits, was seized with pain in the abdomen, while singing a song in a jovial company after dinner; he was carried home, and lived between two and three days in great and increasing suffering. Upon inspection an extravasation of the alimentary matters, mixed with the product of an acute

and extensive inflammation, appeared in the peritoneal cavity, and it was discovered that the former had issued from an opening of the small intestine, which was ulcerated upon its internal surface for some space around the opening. The gentleman to whom I am indebted for these particulars, was present at the examination, but had not attended the unfortunate subject of it, and having no minutes in writing of the case, which occurred several years ago, he could not enter into further detail.

CASE III.

Occurred in the practice of Dr. Farre.

Mills, a hair-dresser, had occasionally for the seven preceding years suffered sudden and very violent attacks of abdominal pain, from which he had always been speedily relieved by a wine glassful of brandy. On the day of the fatal attack, he had endured the pain without interruption, attending to his business, and in the evening went to market to buy fish for his supper. On his return the pain became intolerable, and he took the usual dose of brandy, but did not obtain from it the expected relief; he sat in a bent posture, with a sunk-en countenance expressive of much agony. Now and then he vomited. He dreaded going up stairs, but at length, making a desperate effort, he ran up,

and fell as he entered his room. It was evident that he was inflamed at this time, and the brandy appears to have aggravated the symptoms. He died in thirty-six hours from the commencement of acute pain; every part of the peritoneum was inflamed; a circular aperture of the peritoneum large enough to admit a crow's quill was found at the junction of the duodenum and stomach. It was the centre of an ulcer that had destroyed the villous and muscular coats of the bowel to the extent of half an inch. Coagulable lymph was effused about the pylorus, but not in quantity sufficient to produce an adhesion of the adjoining parts, so as to exclude the aperture from the cavity of the peritoneum. The margin of the aperture was deeply tinged with bile, yet the contents of the peritoneum had only the appearance common to matters effused from inflamed serous membrane. Although the unhappy man had provided himself with food, it did not appear that he had taken any; but it is probable the peritoneal sac had been injected with brandy.

A case of fatal inflammation of the abdomen, complicated with encysted tumor of the ovary, in which an aperture was formed at the centre of an ulcer in the mucous coat of the stomach, is related by Morgagni. The dissector, finding only a little serum in the lower part of the pelvis, doubted whether the opening had not been made in dis-

section. Upon which Morgagni offers the following satisfactory observation.

“Although I thought it but little probable, if the stomach had really been cut by the knife accidentally, that this should have happened in that part in particular, which corresponded to the middle of the ulcer, nor did the figure and magnitude of the foramen, which was almost capable of admitting a little finger, seem to be of such a kind, that they could be referred to the point or edge of the knife; yet that I might satisfy both him and myself, I examined with accuracy a second and a third time, the edges of the ulcer, and when I saw them to be not only callous but unequal*, and the more the foramen went towards the outside, to be comprehended in the less circumference, which two circumstances the knife could not certainly have been the cause of, by having cut from without inwards, I judged that the aperture was not to be attributed to the knife, but to disease†.

The presence of effused matters has not always been ascertained to the satisfaction of the examiners of these cases. But although the quantity

* I think it probable from the description of this ulcer and of the disease of other parts, that the examiner had unknowingly detached it from an adjacent surface of adhesion, and that in fact no effusion had taken place.

† Alexander's translation, Letter XXIX. Art. 16.

and quality of effused fluids may vary according to the site and size of the aperture, and the state of the stomach, whether distended or corrugated, at and after the period of its formation, there is so little reason to doubt that effusion is a consequence, direct or indirect, of an undefended opening formed in the centre of an erosion of the mucous coat, that it is much more probable that the extravasation should have been overlooked, or, being blended with the fluid poured out by the inflamed vessels, should have been undistinguishable, than that it should not have occurred.

When upon examination of the acutely inflamed abdomen a preternatural aperture is met with in the stomach or intestines, it would be going strangely out of the way to combat the evidence of our senses, were we to attribute the inflammation to any other cause, than the escape into the abdomen of their proper contents. Death has not unfrequently been known to follow a rupture of the healthy stomach.

A tumbling boy, in performing one of the unnatural contortions of his body, was seized with acute pain in the belly, and in a few hours died in excruciating agony. The stomach was found ruptured in the middle, and a quantity of gin with fragments of apples were extravasated in the peritoneal sac.

“When,” says Morgagni, “there has been an effusion of the contents of the stomach into the belly, I see that either a very speedy death was the consequence, or at least that *frequently* it was not delayed more than a very few days, if we reckon the days of the perforation from the day of the disease becoming very violent, as it happened in an observation, &c. wherein death did not follow till the eighth day, the foramen being in the upper and interior part of the stomach, so that it would have been very difficult for any thing that was drunk to be extravasated into the belly, unless after some time, and in particular motions of the body*.” He subjoins that he uses the qualifying word “frequently,” because he is aware that there are cases which convey a different impression.

The exasperation of the symptoms, I would observe, is no otherwise a sign of the perforation having taken place, than as it is a sign of effusion; so that we must suppose, to take Morgagni’s criterion, that the stomach had discharged more or less of its contents into the belly, eight days before the termination of the inflammation by the patient’s death, a supposition, to say the least of it, in the highest degree improbable.

Numerous and extensive ulcers from dysentery, scrofulous affections of the mucous glands and of

* Loco citato.

the mesenteric, as tubercles running into abscess, &c. are met with in the dissection of morbid bodies, from which the fæculent matters have freely escaped into the abdomen. I have published three cases of this description in my work on Injuries of the Intestines. There is, in these cases, a very marked difference from those before related, in the appearance of the openings. In the first, the orifice is exclusively peritoneal, and has a thin clean border, that is, the peritoneum has been internally denuded by the destruction of a portion of the mucous coat around the aperture; in the latter, the whole substance of the intestine is included in the aperture, and the peritoneal margin is irregular, ragged, and flocculent, as if lacerated, after having been reduced to a mere shred by ulcerative absorption, to the extent of the orifice.

But it is well known that there are other and not less frequent cases of ulcer of the stomach and intestines, in which the consequence of effusion is guarded against by the adhesion of contiguous surfaces. The author just quoted refers to several such cases. I formerly published one on the authority of Mr. Norris, where an ulcer of the colon was stopped by a piece of omentum; and I have since met with similar examples.

In the body of an elderly woman I found an ulcer of the posterior and upper surface of the stomach,

not apparently recent, of the size of a shilling, covered by close adhesion of the peritoneal surface at the root of the diaphragm. This was accidentally discovered, and I had no means of learning the particulars of the case.

In another, a patient of Dr. Farre, in whom, he informed me, intractable symptoms of dyspepsia for many years marked the organic disease, the ulcer was so extensive as to produce the hour-glass contraction of the stomach, and to expose and open the splenic artery, which was the immediate cause of death. Effusion was prevented by the intimate adhesion of the pancreas, which was enlarged and hardened to the ulcerated orifice in the stomach. Dr. Farre has likewise in his collection an ulcer of the stomach covered by a large scrofulous tumor, situated upon its inferior and posterior aspect. The omentum is affected with small tubercles, the result of chronic inflammation. The disease was of two years standing. I should think it most probable, that it began in the peritoneal surface, and that the mucous coat was secondarily affected.

What, it seems natural to enquire, are the circumstances which determine this important difference of result? In one case nature appears to be taken by surprise; in another to be prepared against the event, and thus to be enabled to ward off the fatal blow. In the strumous and dysenteric sub-

jects in whom the vital powers are reduced by a lingering constitutional disease, and the disease affecting a continuous texture, is of such extent, as must render every attempt at preservation abortive, we cannot be surprised that no trace of a repairing power should be discoverable. I have never seen a solitary ulcer of this description, nor the mucous texture healthy within a considerable space. These appear to be lacerations of the tunics previously disorganized by ulceration, so far as I have had opportunity of examining them. Indeed the existence of six or a dozen apertures emitting the contents of the bowel at the same time, and situated distinct of each other, could not be explained but as so many mechanical læsions of an impaired texture.

The cases just described of small peritoneal aperture, with extensive ulceration of the mucous coat, are also probably ruptures. 1. They occurred soon after taking food or drink. 2. The orifice, drawn into a circular form by the elasticity of the peritoneum, is in the centre of the denuded membrane. 3. A border of peritoneum is left smooth, and of its ordinary density of texture. 4. The peritoneum is not disposed to ulceration as the mucous coat; which is especially prone to this mode of inflammatory action; and if ulceration were destroying the peritoneum, I apprehend, according to that law of pathology, which determines the adhesive thickening and barricading of parts exteriorly as the pro-

cess of ulceration undermines them and advances to the surface, this defensive action would be set up. When previous disease exists, it is well known that the preservative power is less readily excited than where the general health is good. But the health of the unhappy persons, the subjects of these cases, was not obviously impaired, and I imagine, therefore, that a mechanical læsion or some other local circumstance must influence the event.

I have a case of recent occurrence to lay before the Society, which seems to me to prove that it is influenced not by constitutional, but by local causes; that it is the size and destructiveness of the ulcer of the mucous coat which excites the adhesive inflammation of the peritoneum. I have never seen a small ulcer stopped, but repeatedly a large one. The covering in, it is clear, must depend on the excitement of the adhesive inflammation upon the peritoneal surface, before the peritoneum has given way, and this I imagine will not be set up unless a larger portion of the peritoneum is divested of its mucous coat by ulceration, than happened in these cases. In the fatal cases, a very small portion only of the peritoneum is denuded, although a superficial ulceration is visible to a considerable extent upon the interior tunic. In the ulcers which have been healed, the mucous coat was probably destroyed by a uniformly progressive ulceration, corresponding to the whole extent of the aperture comprehended by the adhesion. 2. The

situation of an ulcer may be supposed to have some influence. These adhesions are commonly formed where the stomach rests, and is supported on fixed parts. They have generally been formed upon the liver and pancreas. The readiness however with which adhesions take place between the loose but contiguous folds of the intestine and omentum, and between surfaces whose reciprocal motions are more extensive, as the pleuræ of the lungs and ribs, does not allow much weight to this argument.

CASE.

An aged woman was brought into Saint Thomas's Hospital, about the middle of the day, with symptoms of strangulated hernia. The practitioner who had directed her admission, had been called to visit her in the morning of the same day. He found her complaining of excessive pain, and vomiting continually. Her abdomen was tumefied and tense; her pulse small and very feeble, and her extremities cold. A small femoral hernia was found in the right groin, which with little difficulty was returned. The pain and other symptoms continued in spite of the measures adopted for her relief, and early the next day she died.

On opening the body a large quantity of fæculent matter was found in the abdomen; the perito-

neum was universally inflamed, and the folds of the intestines glued together. The fæculent matter which had been thrown into the stomach by the antiperistaltic action of the intestines had escaped by an aperture of the size of a pea, situated upon its anterior aspect, near the pyloric extremity of that viscus; and upon its posterior surface near the large curvature, was discovered an ulcer of the size of a shilling, with a raised and thickened margin firmly fastened by adhesion to the anterior surface of the pancreas. The mucous coat of the stomach was highly vascular, and points of extravasation were here and there distinctly visible.

This then is an example, in one and the same subject, of the presence and default of the *provision*, as we not very philosophically term it, of nature, or in other words, a proof of the preserving inflammation being excited by the magnitude of the existing injury, and not of that which is threatened.

I shall only add, for the information of gentlemen, whose painful lot it may be to witness cases of the hopeless nature of that detailed in the paper which has called forth these observations, that the chief diagnostic signs appear to be the following.

1. Sudden, most acute, and unremitting pain, radiating from the scrobiculus cordis or the navel, to the circumference of the trunk, and even to the limbs. I may add a peculiar pain, though I know

not how to describe the peculiarity. Its intensity, like that of parturition, absorbs the whole mind of the patient, who, within an hour from the enjoyment of perfect health, expresses his serious and decided conviction, that if the pain be not speedily alleviated, he must die.

2. Coeval with the attack of pain, remarkable rigidity and hardness of the belly, from a fixed and spastic contraction of the abdominal muscles.

3. A natural pulse for some hours, until the symptoms are merged in those of acute peritonitis, and its fatal termination in the adhesive stage.