

Cases of perforation of the stomach from simple ulceration : with deductions therefrom, relative to the character and treatment of that lesion / by Edwards Crisp.

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CASES
OF
PERFORATION OF THE STOMACH
FROM
SIMPLE ULCERATION,
WITH
DEDUCTIONS THEREFROM,
RELATIVE TO THE
Character and Treatment of that Lesion.

BY
EDWARDS CRISP, M.R.C.S., &c.

LONDON:
PRINTED BY H. NICOLE, 46, PRINCES-STREET, SOHO.

1843.

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P R E F A C E.

THE contents of the following pages were published in THE LANCET, August 5, 1843. The Author, being desirous of circulating the paper among his private friends, has had a few copies struck off for their use.

The disease treated of in this pamphlet, the Author thinks is of more frequent occurrence than is generally supposed; and he believes that many young females, who are thought to have died from idiopathic peritonitis, have fallen victims to this disease. The cases inserted in the table (although more numerous than any yet published) will scarcely warrant positive conclusions. The Author, being desirous of prosecuting the subject, will be glad to receive any information connected with it from members of his profession.

Walworth, August, 1843.

CASES
OF
PERFORATION OF THE STOMACH.

SEVERAL treatises upon this disease have been written by continental physicians during the last fifteen years. The subject, however, has been but little attended to in this country ; for, although a large amount of information exists in the medical journals in the form of cases and short essays, but few communications of a comprehensive character are to be met with. Among the few I may mention, particularly, the papers of Messrs. Taylor and Williamson, the former in the "Guy's Hospital Reports" (1829), and the latter in the "Dublin Journal" (1841). The various authors whom I have consulted differ much respecting the nature, cause, &c., of these lesions, and the discrepancies appear to me to arise from the very common error amongst medical writers of drawing conclusions from a few facts. I shall endeavour to avoid this by selecting a large number of cases from which I can deduce my inferences.

Perforations of the stomach arise from three causes, viz, external violence, poison, and from simple or malignant ulceration. The perforation from the action of the gastric juice I believe is invariably a post-mortem occurrence, and therefore is not included. Spontaneous perforations of the stomach have been divided into two classes, viz., those arising from malignant disease, and those produced by simple ulceration. It is my intention in the present paper to notice only the

latter, which are of much more frequent occurrence, and, in a medico-legal point of view, of greater interest. The best pathological description I have met with of this disease is in Baillie's "Morbid Anatomy" (1795. American edition).

"Opportunities occasionally offer themselves of observing ulcers of the stomach. These sometimes resemble common ulcers in any other part of the body, but frequently they have a peculiar appearance; many of them are surrounded with hardly any inflammation, nor have they irregular eroded edges, as ulcers generally have, nor is there any particular diseased alteration in the structure of the stomach in the neighbourhood. They appear very much as if some little time before a part had been cut out from the stomach with a knife, and the edges had healed, so as to present an uniform smooth boundary round the excavation which had been made. These ulcers sometimes destroy only a portion of the coats of the stomach at some one part, and at other times destroy them entirely. When a portion of the coats is destroyed entirely, there is sometimes a thin appearance of the stomach surrounding the hole, which has a smooth surface, and depends on the progress of the ulceration. At other times the stomach is a little thickened surrounding the hole; and at other times it seems to have the common natural structure."

The symptoms produced by these ulcers are often so slight that their presence in the young has seldom been detected, and not until the frightful train of symptoms which follow the perforation does the medical attendant suspect their existence. For a few years, and sometimes only for a few weeks, previous to the fatal termination, the patient suffers from dyspeptic symptoms, occasionally of a severe character, such as violent pain in the region of the stomach, vomiting after eating, flatulency, acid eructations, emaciation,

&c., but more frequently the symptoms are only those attendant upon ordinary cases of stomach derangement, and in some few instances the individual has appeared in perfect health. The symptoms produced by perforation of the stomach* are so peculiar that I can scarcely imagine it possible for a man who has seen one case to fail in his diagnosis.

The lesion occurs generally a short time after a meal, and the patient is often in a tolerable state of health up to the time of the perforation. The symptoms are as follows :—

1st. *Violent and sudden* pain in the region of the stomach, extending soon over the whole abdomen, attended, in most cases, by vomiting.

2nd. The abdominal muscles at first spasmodically contracted and drawn into knots.

3rd. The countenance extremely anxious, the patient often expressing a conviction that death is inevitable.

4th. The pulse at first quick and sharp, afterwards small and thready ; indeed, the latter symptoms are those generally attendant upon the last stage of peritoneal inflammation.

5th. The intellect is generally unaffected. Some patients have complained after the administration of medicine, that it has “ passed over the belly.”

The symptoms, of course, vary somewhat in different instances, but the chief characteristics are the *sudden pain, extreme anxiety of countenance*, and the *abdominal spasm*. The following cases have occurred in this neighbourhood during the last few years. The patients were all chlorotic females under twenty-three years of age.

CASE I.

Dec. 26, 1837. Half-past two, p.m. I was called to

* The symptoms attending perforation of the intestine are less severe in the first instance, and death does not generally take place so early as in the former. Perforations of the intestine usually occur after fevers.

A. W., ætat. 20, who, about eleven o'clock, was seized with sudden pain in the region of the stomach extending over the abdomen. She was that morning as well as usual, and ate a hearty breakfast of bread and butter (three or four slices), a round of toast, two cups of coffee, and one of tea. Her mother gave her two drops of essence of peppermint, and afterwards went to a chemist's for a draught to relieve spasm; this she took and vomited immediately; the matter ejected appeared to consist of bread and butter and coffee; her mother then gave her a tablespoonful of brandy, which was also ejected.

I learnt the following particulars from Mrs. W.:—When six years of age she had extensive inflammation of the leg and thigh; this was followed by great debility, which lasted for twelve months. Since that period she has never been confined to her bed, but her health has been in a delicate state. For some months she has complained of pain after eating, followed by vomiting; she also had pain when leaning towards the left side; she had a pallid, chlorotic appearance, but was plump and muscular. For many years, has been in the habit of eating large quantities of black and green tea. About eighteen months since she lived as servant to a gentleman who was in the habit of taking calomel, which he kept in the house; believing that she was bilious she took some of this medicine, unknown to her master, and ptyalism was produced. She has for some years been subject to palpitation of the heart, which was produced by any sudden excitement. Had menstruated regularly; the discharge light coloured, and very small in quantity.

When I first saw her she presented the appearance of a person who had taken poison. The countenance extremely pallid and ghastly; skin warm and dry; the pupils rather contracted; she had had vomiting, but I could not see the ejected matter; the pulse

about 100, small, and rather feeble ; she complained of pain over the whole abdomen, which was rather increased by pressure ; the bowels were relieved this morning early ; the abdomen not distended. I ordered leeches and hot fomentations to the abdomen, gave a scruple of ipecacuanha and part of a sulphate of magnesia mixture every four hours.

Eight, p.m. Much the same as when I last saw her. The powder produced vomiting, but her mother says only watery fluid was ejected. The pain slightly relieved ; bled her to eight ounces (syncope produced). A grain and a half of opium to be taken directly, and repeated every four hours.

27. Nine, a.m. No sleep ; pain not relieved ; the countenance more ghastly than yesterday ; pulse very feeble ; skin cold ; says she thinks she should be better if the bowels were acted upon ; has passed no water since twelve o'clock last night ; bladder not distended ; the abdomen hard, and rather tympanitic ; the blood taken neither cupped or buffed. An aperient mixture, with sulphate of magnesia, to be taken every four hours, and a purgative enema to be administered directly. Died at half past ten, a.m. During the night complained of excessive thirst, and drank a quart of toast and water.

Examination Twenty-eight Hours after Death.—Messrs Waterworth and Beane present. External appearance of the body plump, firm, and muscular. The skin very white, especially on the face ; the abdomen considerably distended ; the parietes covered with about half an inch of fat ; on cutting into the peritoneal sac a large quantity of fetid gas escaped.

Abdomen.—The peritoneum was covered with a layer of soft yellow lymph ; its cavity contained about three pints of whey-like fluid, with flakes of lymph. There was much lymph on the liver and intestines, but the convolutions of the latter were not adherent. The

peritoneal coat of the stomach and intestines not reddened or congested. On pressing the stomach gently, fluid was seen to issue from a small round aperture with smooth edges, which would admit the passage of a common-sized pea; this opening was situated at the posterior part of the lesser curvature of the stomach, about an inch from the concavity, and midway between the cardia and pylorus; directly opposite this aperture, on the anterior part of the stomach, was another opening about the size of a shilling, with smooth defined edges; the stomach was carefully removed (its contents being preserved), and the interior presented the following appearances:—Mucous lining much corrugated, having a soft, pulpy appearance, but not easily detached; no redness or ecchymosis on any part. The edges of the small opening were thin to the extent of one-sixth of an inch, but the edges of the anterior aperture were perfectly smooth, and had the appearance of having been cut out with a sharp instrument. The fluid on the mucous membrane had not an acid taste. At the greater curvature, about the middle, was a small ulcer with the edges slightly raised; the mucous membrane in other parts appeared thinner than natural. The lining membrane of the œsophagus was of a purplish colour, but there was no abrasion. The inner lining of the intestines covered with a whitish mucus; the contents fluid and resembling that in the cavity of the abdomen, though somewhat darker; no inflammation or congestion in any part. The large intestines healthy; the excrementitious matter of a natural consistence and appearance. The liver very white, but its structure normal. The spleen soft and pulpy.

Nothing remarkable was observed about the uterus and its appendages, except that the Graafian vesicles were more numerous and larger than usual.

The bladder was empty.

Thorax.—The pericardium contained about an ounce

of serum; both ventricles of the heart hypertrophied; no blood in their cavities. The auricles contained dark blood adherent to the sides. The valves and every other part normal. The structure of the lungs healthy.

Brain not examined.

CASE II.

August 19, 1842, I was requested to see Miss R., King's-row, Walworth, ætat. fourteen years and seven months. She is a tall, delicate-looking girl. During the last four or five months she has frequently complained of pain in the abdomen, and the bowels have been rather costive (the menses appeared first seven months ago, but no discharge has taken place since). She is now labouring under violent pain in the abdomen; the bowels have not been relieved for four or five days; the lower part of the abdomen is very tense and prominent; pulse small, quick, and rather wiry. Bled her from the arm to eight or ten ounces; effervescing aperient medicine every four or five hours, with calomel and colocynth; hot fomentations to the abdomen, with gruel enemata. After this treatment had been pursued for about thirty hours the bowels were copiously relieved, and the symptoms immediately improved, and after a few days she was considered convalescent. The abdomen, however, remained much harder than natural, and a tumour could be felt at the lower part. I did not see her alive after this, as her parents removed to Lambeth.

December 16 (four months from the last date), Mrs. R. sent to inform me that her daughter died yesterday morning. I called, and after much persuasion I obtained permission to examine the abdomen. I also learnt the following particulars from the mother. She states that her daughter had improved in health since I last saw her, and remained tolerably well, with the exception of occasional pain in the abdomen, until Wednes-

day evening, about seven o'clock, when, after taking tea, she was seized with violent pain in the abdomen, with frequent vomiting; this was succeeded by great prostration; the abdominal muscles were drawn into knots, and she told her mother that she was "struck with death." At twelve o'clock Mr. Wagstaffe, of Lambeth, was sent for; he tells me that he "found her in the state described by her mother; the pulse very quick and feeble, with anxious countenance, &c." He administered some medicines, but considered the case hopeless. She died at eight o'clock on the following morning, thirteen hours from the commencement of the attack. The intellect remained perfect to the last. The menses did not appear after the time before-mentioned. During the last few weeks she expressed a great desire for red herrings.

I opened the body thirty-two hours after death. Mr. Wagstaffe was unfortunately from home.

External appearances.—The body well formed; length five feet eleven inches.

The abdomen very large and tympanitic. On cutting into this cavity the intestines were seen of a brickdust colour, much distended with flatus, but not adherent. The peritoneal surface was covered with an immense number of small, hard, round, tubercular deposits, varying in size from a pea to a small nut. About an inch below the umbilicus was a hard tumour, about two inches in thickness, eight in length, and three or four in width. This was situated in a transverse direction; the structure appeared to be the same as that of the forementioned deposit, very hard tuberculous matter, with intervening cellular tissue. On removing the intestines, a quantity of dark-coloured fluid was seen in the peritoneal cavity. The serous surface of the stomach was not so red as that of the intestines, and only two or three tubercles were seen upon it. On cutting into that viscus a small opening was seen, about

an inch and a half from the cardiac extremity, at the posterior part. The aperture would admit the end of the little finger; the edges were not thickened, and the mucous lining throughout presented a healthy appearance. The stomach was quite empty. The uterus was of its natural size and appearance. I was not allowed to examine the head and chest.

CASE III.

The following case occurred to Dr. Moore, late of Camberwell:—

A girl, *ætat.* 15, tall and delicate, apparently in the enjoyment of good health, after giving a violent scream, became insensible. She was cold and pallid, the pupils were much dilated, and the pulse scarcely perceptible; there was vomiting of a glairy matter. As the symptoms appeared to be those of compression, and, as the pulse was small and feeble, Dr. M. had given a stimulating and aperient clyster. By this treatment the system was slightly roused, and she was then bled; this blood was perfectly arterial in colour and did not coagulate. Her hand was placed on the region of the stomach, and as this appeared to indicate distress in that viscus a mustard poultice was applied. Dr. Clutterbuck saw the patient in the evening, and again prescribed venesection, which was performed, but without avail, for the next morning she expired. About thirty hours after death a very careful examination of the brain was made, but no traces of disease (with the exception of about a drachm of fluid in the ventricles) were found.

In the stomach, about two inches from the cardiac orifice, there was an ulceration without elevation, penetrating through all the coats, and allowing of the escape of some fluid into the peritoneal cavity. The mucous membrane was red, and was eroded for rather a greater extent than the muscular coat; and the peritoneum,

on which the fluid lay, was slightly rough, but in no other way injured by the contact. The fluid was rather acid, and on being strained through paper left a deposit of a fatty matter. Inquiries were made respecting her health previous to the occurrence of the foregoing symptoms, and from what could be ascertained it appeared that she had been cheerful and in good health, with the exception of a slight loss of appetite. She had menstruated six months previous for the first and only time.

In a recent communication from Dr. Moore, he informs me that "some of the fluid which escaped from the stomach was sent to Mr. Hume, the chemist, to be tested, and he, in reply, said he had no doubt it contained oxalic acid." The father of the girl told Dr. M. "that he had lost one or two daughters in the same way."

CASE IV.

March 26, 1836, I assisted Mr. Hughes, late of Camberwell, in the examination of the body of a girl who was supposed to have died under rather suspicious circumstances. I obtained the following particulars from the mother:—"E. P., Bowyer-lane, Camberwell, ætat. $15\frac{1}{2}$ years, of healthy parents, for the last two months has been subject to occasional vomiting, coming on only after dinner, sometimes directly, and at others half an hour after taking food; never complained of pain in the region of the stomach. Was formerly very lively, but of late her spirits had been rather depressed; she was, however, able to go about her usual employment, that of assisting her mother (who is a laundress), until five o'clock on Thursday, the 24th, when after dinner (she ate eleven oysters, with vinegar and pepper, two slices of bread and butter, and afterwards drank some small beer), she complained of violent pain in the abdomen, and threw herself upon the floor; she vomited three or four times, was carried up stairs, and placed

upon the bed, where she slept till seven, when her mother awoke her. She said she was better, had a small quantity of gin and water, and about as much nitre as would lie on a sixpence, also a dose of medicine which her mother had obtained from a chemist. She slept with her sister, and during the night was getting out of bed several times for cold tea. About four o'clock her sister proposed calling her mother, and also mentioned sending for a medical man, but she said "no, the pain is gone, and I shall go to sleep." At half past six she was found dead; Mr. Hughes was called directly; the limbs were cold and stiff, the head and trunk warm. On Thursday morning, when hanging out the linen, she was observed to put her hand several times to the stomach, but did not complain of pain. Of late she drank large quantities of cold water; the bowels were rather constipated, and she was subject to flatulency. Had not been under the care of a medical man since she was two years of age. About fourteen days before her death her mother took her to a chemist's on account of her not having menstruated; some pills containing sulphate of iron were given.

Mrs. P. is in the habit of using large quantities of bleaching fluid (composed of one pound of oxymuriate of lime to a gallon of water). She is quite sure that her daughter never drank any of this liquid.

Examination Thirty Hours after Death.—The external appearance of the body plump and muscular; the face very pallid and waxy.

Thorax.—The heart healthy; about one ounce of serum in the pericardium. The cavities of the pluræ contained about three-quarters of a pint of serum.

The lungs perfectly healthy, but more gorged with blood than usual.

Abdomen.—The peritoneal surface of the small intestines of a brickdust colour, with a slight deposit of lymph and agglutination of some of the folds of the ileum;

a large quantity of a yellowish fluid in the cavity of the abdomen; this was seen to issue from an aperture, about the size of a sixpence, in the small curvature of the stomach, about an inch and a half from the cardiac orifice; a portion of the under part of the peritoneal surface, about an inch in diameter, strongly adherent to the transverse arch of the colon; on separating this an opening was found in the stomach as large as half a crown, the mucous membrane around slightly puckered. On cutting into the stomach the mucous membrane was found softer than natural, and in many places ecchymosed. Around the first-mentioned aperture the coats were considerably thickened, the sides of the opening smooth, and appearing as if cut with a sharp instrument. The inner lining of the œsophagus rather red, and easily removed with the finger-nail. The mucous lining of the intestines healthy, perhaps rather softer than natural. The liver very white, its structure apparently healthy, as were all the other viscera. The brain not examined.

An inquest was held on the body, and the jury adjourned the inquiry for the purpose of having the contents of the stomach examined. This was done by Mr. Phillips, lecturer on chemistry at St. Thomas's Hospital, who reported that he found a small quantity of oxalic acid in the fluid. The verdict of the jury, however, was—"Died by the visitation of God."

CASE V.

The following case occurred some years since to Mr. Bristowe, of Camberwell:—

A delicate chlorotic girl, about sixteen years of age, had been under Mr. B.'s care for dyspepsia and occasional pain of the side. She was suddenly seized with violent pain in the region of the stomach, extending over the abdomen, which soon became tympanitic, and she died about twenty hours from the commencement of the attack.

On a post-mortem examination a round aperture was found in the smaller curvature of the stomach. The peritoneal covering was also inflamed.

It is not my intention on the present occasion to allude particularly to this subject in a medico-legal point of view, although two of the cases in this respect are of great interest.

The contents of the stomachs were examined by good chemists, and oxalic acid was found in both. The history of the symptoms, however, and the knowledge that there is no well-authenticated case on record of this poison having produced perforation of the stomach *during life*, are sufficient, I think, to decide the question. The instances of perforation from poisoning are very rare.

The mineral acids (more especially the sulphuric) sometimes produce this lesion. Arsenic, bichloride of mercury, the alkalies, &c., are also said to occasion it.

I can scarcely suppose, in the present state of our knowledge, that perforation from poison can be mistaken for that arising from chronic ulceration. Many cases of this kind are on record, but the great advancement of pathological anatomy, as well as the improvements in chemical science, will, I think, prevent such mistakes in future.

I have constructed the following table by selecting cases from the English journals and adding those which have occurred in this neighbourhood. I have inserted those cases only which appear to come under the head of simple ulceration, and rejected those which I think have arisen from malignant disease. Many of the cases unfortunately are but imperfectly recorded. The menstrual function in the majority is not mentioned, and the morbid appearances are often badly described. These circumstances must, at present, in some measure detract from the value of statistical deductions.

Authorities.	Age.	Sex.	Previous State of Health, &c.	Uterine Function.	Form and Situation of Ulcer.	Duration, Hours.	Medical Attendant.
Lancet, vol. iii.		M	Not mentioned.	..	Above the pylorus; size of a shilling.	16	M. Mirarmedu.
Ditto, 1828.....	22	F	Dyspeptic for some months.	Menses suppressed.	Circular aperture near the pylorus. On the external surface of the stomach a hard fibrous tubular excrescence, through which the perforation passed.	<i>few hours.</i>	Dr. Ebermayer.
Ditto, 1832	28	F	Good, until a few days before the attack.	Not mentioned.	Small and circular, near the cardia	..	Mr. Fearn.
Ditto, 1837.....	21	F	Pain in the left side, pyrosis, &c., for eighteen months.	Not mentioned.	Irregularly circular, near cardia.	30	Mr. Parkin.
Ditto, 1838.....	young	F	Good.	Ditto.	Punch-like aperture; anterior part of the stomach.	36	Mr. Millar.
Ditto, 1838.....	ditto	F	Dyspeptic symptoms.	Ditto.	Ditto.	19	Ditto.
Ditto, 1838.....	18	F	Had complained of stitches in the side during the day.	Menstruated only once, two years before.	Two opposite apertures; the head of the pancreas through the larger	about 20	Mr. Cripps.
Ditto, 1840.....	young	F	Pallid complexion, subject to gastrodynia, &c.	Not mentioned.	Two apertures in the smaller curvature, opposite each other.	36	Mr. May.
Ditto, 1842.....	18	F	Good.	Had menstruated a month before.	Small, in the left curvature.	35	Dr. J. B. Thompson.
Ditto, 1842.....	26	F	Occasional pain in the stomach and hypochondria; pale complexion.	Not mentioned.	Small, situated on the ant. surface at the union of the cardiac and pyloric portions.	13	Mr. Whiteley.
Ditto, 1843.....	17	F	Pain in the side, complexion waxy and exsanguine.	Irregular.	Small, near the cardia.	20	Mr. Bowden.
Ditto, 1838.....	young	F	Chlorotic.	Ditto.	Two perforat. opposite each other.	<i>few hours</i>	Mr. Pilcher.
Abercrombie on Diseases of the Stomach	18	F	Variable appetite and occasional pain in the stomach for six months.	Not mentioned.	Near the cardia.	29	Mr. M'Culloch.
Ditto	60	M	Pyrosis, vomiting, &c.; had every appearance of ex-	..	Near the pylorus.	30	

Source	Age	Sex	Chief Complaints	History	Examination	Diagnosis	Prognosis	Remarks
Med. Gazette, vol. iii.	26	M	Never heard to complain of pain in the stomach.	Not stated.	Not stated.	Not stated.	Not stated.	Dr. Kellie.
Ditto, vol. xi.	60	M	Complained occasionally of dyspeptic symptoms.	Not stated.	Not stated.	Not stated.	Not stated.	Mr. Leonard.
Ditto, vol. xviii.	15	F	Not stated.	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Mr. Hurd.
Ditto, vol. xxviii.	young	F	Occasional pain in the side, but the health tolerably good.	Ditto.	Ditto.	Ditto.	Ditto.	Dr. Male.
Ditto, vol. xxi.	22	F	Chlorotic appearance.	Ditto.	Ditto.	Ditto.	Ditto.	Dr. Badham.
Ditto, vol. xxx.	18	F	Healthy-looking.	..	..	..	..	Mr. Whitehouse.
Ditto, vol. xxix.	17	F	Pain in the stomach for five or six years.	Never menstruated.	Never menstruated.	Never menstruated.	Never menstruated.	Mr. Bainbridge.
Ditto, vol. xxx.	60	F	Vague symptoms of dyspepsia.	..	..	..	..	Mr. Moyle.
Ditto, 1839.	young	F	In perfect health, robust, and muscular.	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Mr. Bainbridge.
Medico-Chirurg. Review, 1828.	22	F	Tolerably good, but she suffered from occasional pain in the stomach.	Ditto.	Ditto.	Ditto.	Ditto.	St. Bartholomew's Hospital.
Ditto, 1831.	50	F	After an attack of fever.	..	..	..	..	Dr. Bland.
Ditto.	23	M	Dyspeptic from his childhood.	..	..	..	..	Dr. Crampton.
Dublin Journ. vol. xv.	young	F	Extensive burn seven days before. Previous to this the health good.	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Mr. Syme.
Edin. Med. and Surg. Journ., vol. xix.	18	F	Dyspeptic. Pain in the stomach on exertion a few months before death.	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Dr. Hutton.
							About 16	Mr. Workman.

Authorities.	Age.	Sex.	Previous State of Health, &c.	Uterine Function.	Form and Situation of Ulcer.	Duration. Hours.	Medical Attendant.
Ditto, vol. xxvi.	23	M	Dyspeptic for many years, had suffered great pain.	..	Close to the pylorus.	27	Mr. Sym.
Ditto, vol. xxxvi.	18	F	Chlorotic appearance.	Menses suppressed.	Near the cardia.	12	M. Duparcque.
Ditto .....	..	M	Health bad.	..	Near the pylorus.	..	Dr. Craigie.
Ditto	51	M	Ditto.	..	Close to the pylorus.	24	Ditto.
Provincial Med. and Surg. Journ., vol. iii.	22	F	Rather dyspeptic; ate large quantities of chalk.	Not mentioned.	Near the cardia.	24	Dr. Favell.
Ditto	20	F	Stout and healthy.	Ditto.	Near the cardia.	24	Ditto.
London Medical and Surgical Journal ...	16	F	Not mentioned.	Ditto.	Not stated.	..	Mr. Leeson.
Medical and Physical Journal, vol. lvii. ..	26	F	Indisposed for some time; ate large quantities of salt and vinegar. Mar- ried, but separated from her husband.	Ditto.	Small, near the lesser curvature.	30	Mr. Hunter.
Ditto, vol. lxiii.	21	M	Voracious eater.	..	Near the pylorus.	28	Dr. Pierce.
Ditto, vol. lxiv.	36	M	Ill twelve months; pain in the side and vomiting,	..	Middle of the lesser curvature; another ulcer opposite.	27	Dr. Rawson.
Ditto, 1811	25	F	Dyspepsia, pain, and occa- sional vomiting.	Irregular.	Middle of the lesser curvature.	About 13	Mr. White.
London Medical Repo- sitary, 1829	19	M	Health tolerably good Vo- racious eater.	..	Close to the pylorus; edges smooth and not thickened.	About 34	Dr. Pierce.
Medico-Chir. Transac- tions, vol. viii.	29	F	Sallow complexion, spare habit; occasional pain in the stomach.	Not mentioned.	Small curvature between the car- dia and pylorus.	12	Dr. Crampton.
Ditto	35	M	Generally good.	..	A finger's breadth below the py- lorus.	13	Mr. Travers.
Ditto, vol. xiii.	40	F	Dyspepsia, with frequent uneasiness in the sto- mach. Unmarried.	Ditto.	Anterior part of the cardiac extre- mity.	About 70	Dr. Elliotson.

...sitory.....	young	F	..	Ditto.	Two round holes in the middle and anterior part of the greater curvature.	7	Dr. Gastallier.
Private	15	F	See case.	Chlorotic.	Two inches from the cardia.	About 20	Dr. Moore.
Ditto	15	F	Ditto.	Ditto.	One inch and a half from the cardia.	16	Mr. Hughes.
Ditto	16	F	Ditto.	Ditto.	Between the cardia and pylorus.	20	Mr. Bristowe.
Ditto	20	F	Ditto.	Ditto.	Two apertures, opposite each other.	23	Mr. Crisp.
Ditto	15	F	Ditto.	Ditto.	One inch and a half from the cardia.	13	Mr. Crisp.

Deductions.

Cases 51—Females..... 39

Males..... 12

The ages of the females were as follows :—

Between 15 and 20 21

20 and 25 10

25 and 30 5

40 1

50 1

60 1

Previous State of Health.—The greater number suffered from dyspeptic symptoms prior to the attack; the most frequent of which were occasional pain in the region of the stomach and left side, pyrosis, and flatulence. Vomiting was not a constant symptom. although it occurred in many instances. The menses were irregular in 13: in 25 this function is not men-

tioned; in one only the patient menstruated a month before the attack.

Most (if not all) of the females were unmarried.

Duration of the attack, from twelve to thirty hours. In one instance (Dr. Elliotson's patient), life was prolonged for seventy hours.

Morbid Appearances.—The apertures in the majority of the cases were situated in the smaller curvature, more frequently midway between the pyloric and cardiac openings, but in many instances near the cardia. In one case only was the perforation close to the pylorus, and in this instance it will be seen that a "fibrous tubular excrescence existed externally." In nine examples two ulcers were present, opposite to each other; so that when the stomach was in a state of collapse the diseased parts were in contact.

*Males.**—Of these only one was under 20 years of age. The aperture in nine was close to the pylorus; in three midway between the openings. Five of the examples were of a doubtful character, the parts around the opening being hard and callous.

* I believe examples of simple ulceration in the cardiac extremity of the stomach in the male are very rare. The case of the celebrated chemist, Beclard, is, however, often quoted as an instance of this kind. The ulcer in his case is supposed to have cicatrised.

From the above deductions it is evident that women are more subject to this disease than men. A *novel* and interesting fact is also elicited, viz., that the aperture in the former is situated *in the left half of the stomach*, whilst in *the male it is generally near the pylorus*. I confess I am at a loss to explain this. Sæmmering and Lefevre believe that the stomachs of females are contracted in the centre, and hence would be more liable to give way at the cardiac half during a state of distention. This explanation appears to be far from satisfactory; indeed it is very doubtful whether the stomach of the female is contracted in the manner described.

Some years since, when I exhibited two perforated stomachs at the London Medical Society, I expressed my belief that a chlorotic condition of system was the chief *predisposing* cause of these perforations; this opinion has been confirmed by subsequent inquiry. The five cases that occurred in this neighbourhood were all chlorotic females, and although the menstrual function is seldom mentioned in the cases recorded in the table, I am induced to believe from the waxy, pallid state of face, &c., that the great majority laboured under uterine disturbance. I know it will be urged that chlorosis* is often the effect of disorder of the digestive organs, and I admit the difficulty of ascertaining the primary derangement; but the following facts, I think, tend to confirm my opinion, viz., that menstrual irregularity is the primary affection. I believe perforation of the stomach from simple ulceration rarely, if ever, occurs in the female *before the age of puberty*, and seldom *after the cessation of the menses*; that the disease is of rare occurrence in the *married* female; that menstrual ulcers seldom heal until the uterine function is restored.

* The desire, in these cases, for substances of an indigestible character, probably indicates an unhealthy condition of the gastric secretion, and although this fluid is supposed to have no effect upon the living tissue, it is probable that it may, when so depraved, favour the progress of ulceration.

The following case, which occurred to me a short time since, is a good illustration of this :—

Mrs. A., a widow, ætat. 30, consulted me for an indolent ulcer on the leg, about the size of a shilling; she had not menstruated for six months, but her health was tolerably good; *she had not a dyspeptic symptom.* I tried various local applications without benefit; I then gave the compound iron mixture, &c. The ulcer quickly healed after the first appearance of the menses.

The diagnosis must, in many instances, be extremely difficult; for the symptoms attending ordinary cases of dyspepsia so nearly resemble those accompanied by ulceration, that it is almost impossible to discriminate. When there is violent pain in the epigastric region after eating, flatulence, pyrosis, and pain in the left side, especially when accompanied by a chlorotic condition of system, the presence of ulceration may be suspected.

The chief object in the treatment of these cases appears to me to be the restoration of the general health. The patient is often in an anæmic condition, the blood being deteriorated in quality; the menses suppressed, or, if present, scanty, and almost colourless. After attending to the state of the liver and bowels, some of the various preparations of iron may be administered; probably the sulphate and carbonate will be found most serviceable; Griffiths's mixture is also likely to benefit.

Sir A. Cooper, in speaking of the menstrual ulcer, which appears to me to bear some resemblance to the foregoing, says, "These ulcers are of very common occurrence;" he recommends the compound iron mixture, with Plummer's pill, and believes that these medicines will generally succeed in restoring the secretions. In addition to the above, the following may be tried:—Counter-irritation over the region of the stomach with tartarised antimony or croton oil; sponging the skin with tepid or cold water, and afterwards rubbing

with a rough towel; horse exercise, when it can be procured; warm clothing; change of air; and mental quietude. The diet should be plain and simple, composed, in the first instance, of light farinaceous food, and afterwards of substances of a more nutritious quality.

Should the above mode of treatment not succeed in restoring the menstrual secretion, mustard poultices may be placed on the mammæ, or electric shocks applied to the loins, as recommended by Dr. G. Bird, in the "Guy's Hospital Reports." When the disease appears to be unconnected with uterine irregularity, light bitters may be substituted for the preparations of iron; prussic acid and morphia will be found serviceable when much pain is present.

After the perforation has taken place I apprehend the case must be considered hopeless. Occasionally the aperture is filled up by adhesion of the stomach to some of the surrounding viscera, and in these instances the contents of the stomach do not escape into the peritoneum. Dr. Stokes, of Dublin, in cases of perforation of the intestine, has given opium in large doses, and in many examples life has been prolonged by this mode of treatment. In Dr. Elliotson's case large doses of opium were given, and the patient *lived seventy hours*. Bleeding, followed by large doses of opium, I believe most likely to prolong life, but no mode of treatment, I fear, can be of ultimate benefit.

I have endeavoured, in this imperfect sketch, to condense my observations as much as possible, feeling that I have occupied a greater space than is usually allotted to communications of this description. If I succeed in directing the attention of the profession to a subject which yet requires much investigation, my object will be fully answered.

July, 1843.