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FIVE ULCERS OF THE STOMACH: WITH HYPERTROPHY AND DILATATION FROM A CICATRIX OCCUPYING THE PYLORUS, AND HOUR-GLASS CONTRACTION FROM A CICATRIX IN THE LESSER CURVATURE.

By WILLIAM BRINTON, M.D., Physician to the Hospital.

M. M., an unmarried female servant, aged 23, was admitted an in-patient of the Royal Free Hospital, on October 1st, 1856, in a state of partial exhaustion.

It was very difficult to extract from her any precise and satisfactory account of herself; but, as far as could be ascertained, she had been suffering for about three years from her present symptoms, with occasional remissions of their severity. She complained of pain in the chest (which, on examination, proved to be the epigastrium), somewhat alleviated by slight pressure; and obliging her, in its worst attacks, to assume a prone position. This pain was especially severe about half an hour after meals: and often ended by vomiting, which appeased it for awhile. During the whole three years, she had suffered from a deficiency of the menses, which had for many months amounted to complete amenorrhœa. Occasionally she had pain in the lumbar region; but not in the ordinary situation (interscapular and rachidian) of the dorsal pain generally present in gastric ulcer.

Her lungs and heart, on examination, appeared healthy. Her pulse was about 85, rather feeble. Her skin was cool. Her body was flaccid and emaciated. Her face, thin, worn, and weary-looking, was exactly the physiognomy so often seen in protracted cases of ulcer of the stomach. Bowels constipated.

A careful physical examination of the belly showed that there was a considerable enlargement of the stomach. Scarcely overlapped on the right side by the thin edge of the right lobe of the liver, the outline of the stomach could be traced, on each side, above, to the level of the fifth ribs, and below, to a line considerably lower than the umbilicus. Below this, some small intestine could just be distinguished intervening between the stomach and the pubes. On the right side, the cæcum could be traced upwards into the ascending colon, which passed for some distance alongside the distended stomach, retaining its characteristic sound with perfect distinctness until lost in the gastric sound near the anterior edge of the right hypochondrium.

On inquiry, it appeared that for some time back the vomiting had become less frequent in its occurrence, while the matters rejected were of large quantity (four or five pints at a time), and of a dark greenish-brown colour. No blood had ever been known to be discharged by stool or vomit. Deep pressure in the epigastrium produced decided uneasiness; though the patient persisted in stating that she was accustomed to relieve the pain by moderate pressure (as in the prone posture) on this part of the belly.

The *diagnosis* of the case, as ulcer of the stomach, was thus embarrassed by one or two circumstances, which claimed a careful consideration. With no evidence of hæmorrhage, no rachidian pain, and little tenderness of the epigastrium, the symptoms were at any rate deficient in

that typical distinctness generally met with in ordinary instances of gastric ulcer, especially of such long standing. But while the pain, the tenderness, and the *decubitus*, all pointed to a local or gastric cause of the vomiting, the characters of that vomiting conclusively added, that the stomach was obstructed somewhere in the neighbourhood of the pylorus. And this brought me, practically, almost to an alternative. Was that constriction of the pylorus which probably caused this obstruction the result of scirrhus, or of the contraction caused by the more or less partial cicatrization of an ulcer?

Considering the youth of the patient, the long duration of her malady, the absence of any pyloric tumour, and the equal absence (so far as one could detect) of any hepatic enlargement or pulmonary deposit, I could not hesitate to prefer* the latter alternative, and to interpret the symptoms as due to an ulcer of the pylorus, giving rise to a cicatrix constricting and obstructing the stomach in this situation.

In the serious state of exhaustion in which the patient was admitted, little could be hoped from treatment. She was treated chiefly by opium, with a gentle aperient dose of castor oil; and by a carefully regulated diet, consisting chiefly of milk and ground-rice, or bread, boiled together to a pulp, and allowed to cool. Under this plan, the pain was soon greatly diminished, and the vomiting reduced to

Fig. 1.—E. Ensiform appendix. I. Small intestine. G. Stomach. CO. Colon. CÆ. Cæcum.

* The relative frequency of extreme dilatation in the two disorders may be estimated at five and one per cent. in gastric cancer and ulcer respectively. But the relative frequency of the two diseases probably exactly reverses this proportion, and equalises the above difference. So that the relative numbers afford no conjectural aid to the diagnosis of any given instance.

about once every second or third day. But her exhaustion continued, and gradually deepened into collapse, of which she died, on the ninth day after her admission. Latterly, she had been able to take a little egg-flip without much increase of the sickness. But her comparative repugnance to food rendered it difficult to administer either this or other articles of diet as freely as could have been wished.

The necropsy was made eighteen hours after death. On laying open the belly by a crucial incision, its contents were seen in the following position. (Fig. 1.)

The stomach (a) descended even lower than the line at which its lower border had been mapped out during the life of the patient. This descent appeared due to flatulent distension produced by the commencement of putrefaction in its contents. Its pyloric end passed behind the ascending colon (co), usurping the ordinary peritoneal attachment of the duodenum to this bowel. Above its lesser curvature were seen a few coils of small intestine (i); and a still smaller quantity of this segment of bowel lay below the greater curvature. The transverse colon was almost vertical, and lay behind the ascending segment, which latter passed up the right side of the belly from the cæcum (cæ).

On removing the large stomach, it was found to have the shape represented by the accompanying outline. (Fig. 2.)

Fig. 2.—c. Cardia. p. Pylorus. d. Duodenum.

Constricted rather to the left of its middle by an inflection of the greater curvature, which reduced its diameter to about one-third of its average extent elsewhere, it was thus divided into two sacs of nearly equal dimensions. And at the pylorus a still more effective narrowing engaged it for about one and a quarter inch, suggesting an almost complete occlusion of its calibre in this situation.

The fluid contents of the stomach about filled the pyloric sac, when this part was lowest. On emptying them out, they amounted to about two and a half pints of a greenish fluid, similar to that which had been vomited during life. Hence, allowing for a moderate distension of the whole organ, its capacity might be estimated at about six or seven pints—an amount which, taken in conjunction with the loss of capacity inflicted on the stomach by the central constriction, evidently implied great dilatation of its walls.

Since the thickness of these walls was somewhat greater than natural, it followed that this dilatation was also associated with much hypertrophy. And on laying open the stomach along its greater curvature, so as better to expose the expected ulcers on its lesser curvature, the retraction of the parietes of the organ speedily rendered this hypertrophy still more unmistakable.

The inner surface of the stomach exhibited five ulcers, which occupied the lesser curvature, in the situations indicated by the annexed diagram. (Fig. 3.)

All of these ulcers had evidently been of large size; but had partially cicatrised, so as to leave open but a small part of the original lesion. Each of them wrinkled the coats of the stomach to a variable extent around its open spot (in no case exceeding the size of a fourpenny-piece) of ulceration. The surrounding tissues were firm and thick.

The mucous membrane had a somewhat mammillated or cirrhotic appearance. The muscular coat was very thick; and near the ulcer, was sparingly intermixed with new fibrous tissue. The peritoneum was unaffected; save that, opposite the ulcer which caused the median constriction of the stomach, the gastro-hepatic omentum was unusually laden with fat.

Fig. 3.—c. Cardia. p. Pylorus. d. Duodenum. s. Sac. o. Obstruction. u, u, u, u, u. Ulcer. f, f, f. Fibrous cicatrices.

On a careful examination of the floor of each of the ulcers, the softish diffuent cicatrix-tissue of which it appeared to be formed, seemed to be alike in all five; except that the second ulcer from the cardia and the neighbouring mucous membrane here and there offered minute adherent coagula. With this exception, the appearances were quite as explicable by the supposition of a partial *post mortem* digestion of the firm and tolerably organised tissue which constituted the floors of the ulcers, as of an active ulcerative process going on up to the period of death.

By washing the ulcerous spots and their neighbourhood with a very gentle stream of cold water, it appeared evident that originally there had been but three ulcers, each of large size. The smallest, near the cardia, seemed to have been an almost circular ulcer, which, subsequently to its partial cicatrization, had contracted pretty regularly, so as to form but a few radiating wrinkles of mucous membrane. The second, in the middle of the stomach, had apparently been a long ellipse, placed transversely to the axis of the organ: and, subsequently to cicatrizing over so large an extent of its surface as to leave only a small spot unhealed at the one extremity of a narrow linear scar, had contracted chiefly in the direction of its previous length, so as to constrict the stomach transversely. The third, which had also been elliptical, had occupied the pylorus in a direction almost parallel to the axis of the stomach; and had passed into both duodenum and stomach, but furthest into the former. Its partial healing had left open three small ulcers; one in the pyloric sac, one on the valve, and one immediately beyond on the duodenum. And its direction to the axis of the stomach was complicated not only by an obliquity, but by a bifurcation of the cicatrix near its duodenal extremity; of which fork one branch soon ended in the

ulcer before mentioned, while another of about equal length merged into the healthy parietes of the duodenum. Where this cicatrix ended, indeed, it was not very easy to specify; a delicate line in the centre of a trifling eminence of somewhat firmer mucous membrane being all that revealed its extremity. This large pyloric ulcer had not given rise to any of the wrinkles or folds like those produced by the two others. But, in addition to the remarkable hypertrophy of the gastric coats already alluded to, it had caused a peculiar condition of the duodenum; which was constricted (without any hypertrophy) for about one inch or more of its length immediately beyond the pylorus, on all aspects save the lower, where it was dilated and hypertrophied, to what was (comparatively) at least an equal degree with the hypertrophy of the neighbouring stomach, in the form of a small pouch. On slitting open this pouch it was seen to be exactly limited at its lower end by the bifurcate portion of the cicatrix already alluded to. And the constriction of the duodenum below it seemed to have been produced exclusively by the contraction of this cicatrix, and its dragging on the tube beyond; just as the dilatation above it was ascribable to the accumulation of gastric contents behind this obstruction.

The relative situation of these ulcers and their cicatrices may be somewhat explained by the accompanying diagram. (Fig. 3.) The difference between the thickness of the walls of the duodenal sac and the adjacent segment of duodenum is no way exaggerated either in amount or abruptness.

The heart was unusually small and flabby. The left pleura exhibited some old adhesions to the subjacent lung. The other organs were healthy.

REMARKS. The comments made upon the various instances of gastric ulcer brought forward by me during the last few months in this JOURNAL may obviate the necessity of my alluding to any but the special features of the case. These may be comprehended under a twofold aspect; those which relate to the absence (or at any rate, the indistinctness) of some of the usual symptoms of ulceration, and those which concern the presence of the symptoms characteristic of dilatation.

As regards the first, it may be pointed out that marked anomalies in the history of a disease like gastric ulcer cannot justifiably be inferred from mere negative evidence like that obtained in the above case. When first seen, the patient was suffering from exhaustion and partial collapse, such as evidently rendered her incapable of searching her memory for the symptoms of by-gone months or years with the accuracy one could have wished; even had her intelligence and truthfulness permitted (which they did not) implicit reliance on her statements.

This point is the more important, from the great interest that attaches to such anomalies, and their direct bearing on the question of diagnosis. The history of the disease is generally a long one. In the succession of its numerous symptoms, not only the time, but the order of their appearance, is liable to vary. And hence, though the present condition of any patient in respect to every one of these symptoms may be ascertained with little difficulty by the physician, their features (or even their occurrence) in the past history are by no means so easy to decide upon. Great tact and patience are often necessary to extract from the sufferer, absorbed in the misery of the present moment, the minute details of the malady as they gradually complicated each other many months before. And in instances like the above, it sometimes seems not only useless, but almost cruel, to press upon an exhausted patient an inquiry which can only be answered satisfactorily by a considerable mental effort.

It is difficult to avoid believing that many of the anomalous cases of gastric ulcer on record are based upon insufficient evidence of this kind. The patient, dying of perforation, has not alluded to previous pain; or, sinking in collapse, has failed to distinguish between mere eructation and vomiting. Convinced as I am by experience that the anomalies of these symptoms of gastric ulcer are both interesting and important, I must still emphatically protest

against the reception of any evidence of this kind. Whenever doubts are to be decided, or obscurities cleared up, nothing is valid, save the skilled observation of the medical practitioner himself. In other words, our conclusions must be based substantially on the clinical evidence which the present time affords us; and the patient's voluntary statements (much more his extorted answers) are chiefly useful so far as they can be confirmed or interpreted by direct observation in other and similar cases. The disease is unfortunately far too common to render such caution more than a temporary delay of our conclusions respecting these anomalies.

So far as I have myself seen, the chief variations in the symptoms of this malady seem explicable in two ways. Firstly, in the pathology of the lesion itself, dictating these anomalies by corresponding variations in the situation, depth, extent, etc., of the ulcer;—variations such as either diminish or increase the pain, hæmorrhage, etc., usually present. Secondly, in the succession of the symptoms, where, by a merging of several stages into one, by a reversal of their order, or (even more frequently) by a temporary delay in the appearance of this or that particular feature, the outward character of the disease is remarkably altered, with little or no modification of its morbid anatomy. In other words, many of the most anomalous cases, which it has hitherto fallen to my lot to see, have been rather akin to a delay of one or two symptoms during a period not greatly exceeding their ordinary intervals of appearance, than to any specific absence of them. So that the acute cases are often anomalous; the chronic generally typical.

The effect of pressure in the above instance perhaps somewhat illustrates these cautions with respect to our unqualified acceptance of a patient's statements. Confident as she was at first that pressure did not pain, but relieve her, she soon confessed that a moderate degree of it really gave rise to considerable pain.

The aid to diagnosis afforded by the patient's peculiar physiognomy—by the characteristic expression of her face—I can scarcely venture to estimate. But it was doubtless considerable.

The evidence of dilatation had a two-fold import: reacting (so to speak) on the general character of the case, as well as fixing its details.

As regards the detection of this state, nothing can be more easy. A moderate degree of that delicacy of percussion and manipulation which is now habitually brought to bear on diseases of the thoracic cavity, often throws just as useful, if not as distinct, a light on the diseases of the belly. It is scarcely too much to say that a physician has no more right to overlook or mistake a distended stomach, than a surgeon a fractured limb. With other parts of the canal, it is often less easy to decide the degree or site of the distension. For greater clinical accuracy, it is often advisable to map out the viscera upon the abdomen, inch by inch, with pen and ink, so as to sum up in one glance all the information afforded us by such physical examination.

The peculiar straight or almost incurved outline of the left side or great curvature of the stomach was thus noticed during life. But, strange as it was to find this in conjunction with great distension of the cardiac sac above, and of the pyloric sac below, I dared not refine upon the diagnosis sufficiently to predict a median constriction as well as a pyloric obstruction. Tight lacing often drags the two parts of the stomach asunder in a very similar manner; and I could not see any definite reason why both the cardiac and pyloric sacs of an obstructed stomach might not dilate without the middle of the organ evincing precisely equal dilatation. Indeed, any anomaly in the shape of the less accessible parts of the liver, or any similar displacement of this organ, might (I thought) disguise or efface that regularity of curve which we should generally expect to unite the lower or left border of these two distended pouches.

The alternative already alluded to between cancer and cicatrised ulcer may seem too broadly stated. But though I am aware that cases have occurred in which an enormous and fatal dilatation of the stomach has occurred without any pyloric obstruction, yet not only the rarity of these

cases, but their more acute course, and their very different symptoms, would generally afford a distinction. They are, in fact, rather a gastric tympanitis, than a true obstruction of the stomach; a diseased relaxation of the walls of the organ, rather than a mere occlusion of its terminal orifice.

But the symptoms pointed to—(1) active ulceration, and (2) a cicatrised ulcer. Did they therefore indicate the coincidence of at least one ulcer with one cicatrix, or the imperfect cicatrisation of a single ulcer? To this question, again, I could find not even any conjectural answer during life; save that the presence of two or more ulcers, or the coincidence of ulcer and cicatrix, is by no means uncommon, while the obstruction of the stomach by the contraction of a still unclosed ulcer is extremely rare. But the rarity of dilatation itself deprives this fact of all claims to specific or diagnostic value.

Lastly, it is almost impossible to decide, even by the aid of the necropsy, whether these ulcers were really cicatrising at the time of death. Comparing the symptoms of the patient at her admission with her subsequent amendment, it is difficult to avoid suspecting that for some time at least this process was taking place. But while it is my impression that the patient ultimately sank rather from the long inanition brought on by the number and duration of the lesions and the protracted vomiting which had preceded her admission, than from any extension of the ulcerative process during her stay in the hospital, I may confess that the appearances are equally reconcilable with the view of a recurrence of ulceration in the partially cicatrised ulcers. In any case, it is probable that a destructive process of some kind (absorption, ulceration, or dissolution) had attacked the feebly organised lymph last deposited in these cicatrices during the few hours that immediately preceded death.

Brook Street, Grosvenor Square, November 6th, 1856.

Hospital Gleanings.

FEBRICULA AND TYPHOID FEVER, THEIR DIAGNOSIS:
USEFULNESS OF SEGREGATION OF FEVER CASES:
DIAGNOSIS OF TYPHOID FROM PYÆMIA,
MENINGITIS, ETC.

THE treatment of continued fever, as founded on a knowledge of its different varieties, begins to fill a very prominent place in the clinical studies to which the pupil's attention is now directed in hospitals. There has been a great deal of fever recently in the medical wards of Guy's, St. Bartholomew's, St. Thomas's Hospitals, etc., under the care of Dr. ADDISON, Dr. BURROWS, and Dr. PEACOCK. Except in the case of scarlet fever and typhus, very little injury appears to arise from the modern method of segregation, or scattering fever patients through the well ventilated medical wards of these magnificent institutions. It may be observed sometimes, however, that debilitated surgical patients take on a typhoid condition, or contract bad erysipelas—a misfortune to be avoided, if possible, and only counterbalanced by the fact of the fresh air afforded to fever patients when thinly scattered through the wards of general hospitals; fresh air being quite as necessary as Dr. Herbert Barker would make it.

Erysipelas, indeed, Dr. Parkes and others would place amongst the exanthemata, and not very far off from Dr. Jenner's typhoid with rose spots. Relapsing fever is now very rare, or not known, in London.

A case of very slight typhoid, as it was termed when the patient was first admitted into University College Hospital, on the 5th of the present month, but which Dr. Parkes afterwards called, on an amended diagnosis, febricula, will serve to bring, in a condensed form, some of the most recent views on typhus and typhoid, as now recognised in the hospitals, under the reader's attention.

M. C., aged 18, was admitted on the 5th of November into University College Hospital, with violent shiverings, giddiness of head, heat of skin, loss of appetite. The temperature was 101° Fahr., two degrees above the normal point; the pulse was 96, and resistant; the tongue coated in the centre; the lips dry and sticky; the urine very scanty and high coloured. The young man had been a week ill, he stated, and was getting worse. His headache was very severe; he exhibited excessive hebetude, with vertigo; no delirium, however, or spots before the eyes; nor photophobia; no deafness; no spots or sudamina on the skin: in fact, many of the symptoms of typhoid were absent. He was ordered a mixture with liquor ammoniæ acetatis; but, as the lungs were only slightly congested, no more active treatment was followed. The diagnosis of typhoid was made, and placed on his card over his bed, as the disease was more likely to end in this form of fever than in any other.

Nov. 6th. This was the ninth day of the disease; still there were no spots; the symptoms were the same. The medicine was continued.

Nov. 9th. The headache was better; the pulse was falling; bowels confined, not relaxed, as is usual in typhoid; no spots.

Nov. 10th. He was improving.

Nov. 11th. This was the fourteenth day of the disease; but he was manifestly over the fever. Pulse 72.

Nov. 12th. He was convalescent.

What the fever might have terminated in, if he had remained in his own lodgings, it is not easy to say; but under care in hospital it had been cut short.

On the eighth day, Dr. Parkes, as he did not very well see what the disease was, showed his class what it was *not*. It could not have been a case of pneumonia, as quick respiration is very pathognomic of the latter disease. It might have been meningitis with tubercle; but the headache of meningitis is very acute, with photophobia, quick pulse, and intense heat of skin. Dr. Parkes cited another case also in his practice where it was impossible to diagnose typhoid from meningitis; and he recommended caution in giving an opinion in these cases before the disease had become well pronounced. Indeed, before the sixth or seventh day, it is very difficult to give a name to any of the special varieties of continued fever; and here he had been in error. Pyæmia is sometimes excessively like typhoid fever, according to Dr. Parkes; and injuries of deep organs, such as the internal ear or urethra, may give rise to the former, while the physician is asked or called on to treat typhoid. A very marked case of this kind occurred recently in St. Bartholomew's Hospital, where what was considered for several days a fever in the medical wards was transmitted to the surgical wards as fever of a surgical character connected with toxæmia, and was cured by relieving the bladder.

TYPHOID ASSUMING THE FORM OF OBSTINATE DIARRHŒA.

The following is a case of genuine and well marked typhoid, one of a numerous class in the hospital books. Dr. PARKES introduced it to the notice of his class with the observation that many deaths in the year, registered as diarrhœa, should more correctly be named typhoid, the death having been caused by typhoid ulcers of the small intestine: in other words, hyperæmia in and around "Peyer's patches", with or without those too familiar ulcerations now seen so often in the dead-house; ulceration and inflammation being the rule in typhoid fever, but the exception in typhus.

J. T., aged 21, a young woman born of phthisical parents, very poor, and exposed much to the weather, was admitted with profuse diarrhœa, excessive weakness, loss of appetite, and thirst, followed on the sixth day by great pain and tenderness of the abdomen. When she was first seen in hospital, there were the characteristic red or rose spots of typhoid, joined to the preceding indications of the malady; hot and dry skin; the thermometer marking 105° Fahr.; flushed face; frontal headache, and other nervous symp-