Original Articles.

THE RESULTS OF MEDICAL TREATMENT OF PEPTIC ULCER AT THE BOSTON CITY HOSPITAL.

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A REASON for presenting a brief analysis of the cases which have been under medical treatment at the Boston City Hospital is in part found in the special interest at present accorded to the subject, and in part in a desire to supplement the papers by Greenough and Joslin on gastric ulcer at the Massachusetts General Hospital,¹ and by Lund, Joslin and Murphy on the results of operation upon benign diseases of the stomach there and at the Boston City Hospital.²

According to the former, 187 cases of gastric ulcer were admitted to the Massachusetts Hospital between 1888 and 1898, while at the City Hospital only 174 were found who had been under medical treatment since 1876 in spite of the much larger service at the latter institution. By adding 10 others in whom an open peptic ulcer was an accidental autopsy finding, no suspicion of its presence having arisen during life, the total is raised to 184 cases. This marked difference in numbers is to a slight degree accounted for by the probability, since the general index of the latter institution is several years in arrears, that a number of cases were overlooked in the wearisome search through the individual record books, but it may also be another illustration of the recognized but unaccountable peculiarity of geographical distribution of the disease, since one hospital is open to patients who are not residents of Boston, while the other receives but few who live outside the city limits.

The records of the pathological department also show that it is a comparatively rare disease at the City Hospital, as but 29 instances (1.3%) were found among 2,127 autopsies done since 1896, and of these 12 (40%) were located in the duodenum.

At the Massachusetts 157 of the patients were females and 30 were males, while at the City 32 were males and 152 females. Both give a smaller proportion of males than appears to be present elsewhere. Twenty-five (80%) of the 30 males at the City Hospital in whom the age was given, were over thirty, while only 46 (30%) of the 151 females exceeded it, as compared with 63 and 30% respectively at the Massachusetts. Ninety (59%) of the females were between twenty and thirty. The youngest patient was three months, the oldest seventy years, both were females.

A statistical summary of the symptoms presented by the cases would add nothing to our present knowledge of the disease, but it may be recorded that in several instances the most serious accidents, hemorrhage and perforation, occurred without preliminary symptoms which had attracted the attention of the patient. Previous

attacks, typical of ulcer, were noted in 35 cases, sometimes in repeated instances.

The results of treatment were as follows: Discharged well, 42; relieved, 105; not relieved, 9; not treated, 1; dead, 27. Only 13 of the latter could be justly attributed to the disease; the others succumbed to some acute or chronic affection having no connection with it, and should not fairly be classed among the unsuccessful cases. Fifteen of those discharged well or relieved are known to have been readmitted with recurrent trouble, of whom one returned begging for operative relief owing to the severity of her sufferings, and four came back with perforation, one of whom recovered after laparotomy. Combining those who returned with more or less serious symptoms with those discharged not relieved or dead, 37 cases (21%) are found in which medical treatment is known to have failed, at least in the first attempt, a proportion which would have been undoubtedly much increased if the present condition of all the patients were known. Hemorrhage was responsible for 6 deaths (3.3%), 4 occurring in women and 2 in men. The age was not given in one, but among the remaining 5 only 1, a woman of twenty-two, was under thirty-three. Death from perforation occurred in 4 cases (2.2%).

The following statistics are quoted for the purpose of comparison. Of 187 cases reported by Greenough and Joslin, 82% were discharged cured or relieved, 8% dead, and 9% under other headings; 3.7% died of hemorrhage, and 2.7% of perforation. Only 40% remained well for an average period of five years. Bramwell³ gives the mortality among 156 cases in hospital and private practice as 6.2%, 1.2% dying from hemorrhage. Eight cases died from perforation, but as seven when first seen were moribund, the mortality from that cause while under treatment was less than 1%. Eighty-five were subsequently heard from, some after a lapse of several years. Sixty-five were well, 15 were still suffering, one was still under treatment, and four had died, but only one from ulcer. Relapse occurred in 37%.

Schulz⁴ gives the combined results in 291 cases from the Breslau Clinic and the New Hamburg General Hospital: 89.4% were discharged cured or relieved; 5.1% were unrelieved, and 5.4% died, giving a total of 10.5% of unsuccessful cases. Three per cent had died from peritonitis, general or local, and 2% from hemorrhage. One hundred and fifty-seven were followed from six months after discharge to many years. At the time of inquiry 53.5% were well, 23.5% were suffering from slight symptoms, and 15.4% from severe, 7.6% had died. Seventeen per cent of those who reported themselves as well, or as having but slight symptoms, had had relapses.

Russell⁵ traced the after histories of 47 women who had been treated at the Birmingham Hospital, all but 17 having been followed for four years or more. Two had died, but only one from ulcer; 42.6% were well, but about one third of

them had had relapses. One patient recovered after operation. Forty-four and seven-tenths per cent were still suffering, either from repeated attacks with intervals of freedom, or from continued pain. The condition of 6.4% was doubtful, but they were still dyspeptic.

Wagner⁶ followed 25 cases for varying periods, but only 12 for as long as a year. He found that 18 (72%) remained well after intervals of six to twenty-seven months.

Such statistics are of much greater value in estimating the results of medical treatment than those which deal only with its immediate effect, and point to a gradually increasing proportion of failures the longer the cases are followed, which at the end of five years may rise to even 60%. It is not surprising, therefore, that the surgeon, relying on the safety with which abdominal operations may be done, and encouraged by the results obtained in other diseases, which until recently were the exclusive property of the physician, should attempt to secure the success in this field which has been denied to purely medical means.

He has proposed operation as a direct means of cure, to check hemorrhage, to prevent cancerous transformation, to relieve the effects of perforation, and to overcome the mechanical obstruction due to scar tissue, either inside or outside the stomach, produced by the ulcer. The last two considerations lie unquestionably within the province of the surgeon alone and admit of no discussion, but regarding the others opinion is still divided.

Medicine has little to boast of when only about one half of the cases are well after a period of five years, and while surgery is justly proud of its technical skill, since its immediate results in competent hands are almost indistinguishable with the medical, its true value cannot be fixed until it is known whether it brings a larger percentage of permanent cures.

A search through all the available literature of the past few years furnished no evidence on the post-operative history which can be compared in statistical form with the post-medical, as the surgeons, in most instances, seemed more interested in the technique of the operation and in promptly recording their cases than in supplying the only point which would make operation justifiable, the freedom of the patient from a recurrence of symptoms, insufficient time having elapsed before the cases were published. While success attended some cases for a number of months or even years, reports were found of repeated operations, as many as five on the same patient in a few instances, done by capable surgeons without benefit or even with positive harm, and of relapses which have occurred under conditions apparently the most favorable for cure, while the formation of a new ulcer in the jejunum, near the point of anastomosis, has been recorded in at least 18 cases as a direct consequence of the operation. Some of the causes of failure have been eliminated by improvements in technique, but until the best method

of operating, which is still under discussion, has been determined, and until more complete statistics have accumulated, it is possible to take only a very conservative view.

Investigations regarding the effect of short circuiting on the functions of the stomach have given varying results. In cases of not too long standing dilatation has been reduced and the fistula seems to have acquired valve-like properties, but hypersecretion and hyperacidity have not always diminished. A persistence or recurrence of previous conditions seems to have contributed to failure after operation, as they have done when cases were medically treated, while the recurrence of relapse, even fatal, when the operation was apparently technically perfect as shown by autopsy in some cases, and the formation of new ulcers, *e. g.*, those near the site of anastomosis, in spite of a normal or subnormal acidity, point to the presence of conditions which the surgeon may not be able to reach.

Surgical reports show that gastro-enterostomy, *per se*, is not a universal panacea for peptic ulcer, and the wide difference between the mortality rate of general hospitals, where each member of the staff contributes a small number of cases, and that of single surgeons does not encourage an indiscriminate resort to operation. They show further, from the inclusion among them of instances where operation was not only needless, as no lesion was found, but even added to the discomfort of the patient, that careful diagnosis is as essential a preliminary to successful surgical, as to successful medical, treatment of gastric affections, unless it is held that chronic dyspeptic symptoms are a certain indication for the use of the knife, a proposition which these cases are sufficient to refute.

While hemorrhage is reckoned among surgical accidents, the difficulty of locating the bleeding point or of employing any direct method of checking it, and the rarity with which it fails to respond to purely medical means, make it a matter of great practical moment when, if at all, active interference should be resorted to. Surgical statistics thus far show a high mortality rate in operations done for this cause, Rodman giving 37.5% and Robson 60%, but in view of the desperate condition of most of the patients it was, perhaps, as satisfactory as could be expected, yet even where the patient successfully survived operation it has frequently proved ineffectual, either in checking the bleeding or in preventing its recurrence, often with a fatal issue.

Körte reports a case where a bleeding ulcer was tied in which death took place nine days later from cutting through of the ligature and renewal of the bleeding, and a second which died from hemorrhage on the twelfth day after a gastro-enterostomy done to cure an ulcer which had not bled for several months. The bleeding came from an eroded branch of the left coronary artery. The operative result, as shown by autopsy, was all that could be desired. Krönlein, at the Thirty-first Congress of German Surgeons, re-

ported two cases who died of continued bleeding after operation. In a patient of Imredy's⁷ in whom operation was performed for a narrowed pylorus, a severe hemorrhage took place twenty-one months later, either from the old or a new ulcer, and a similar accident in a case reported by Riis⁸ occurred within three months, though the general condition and digestive capacity had improved. Kocher lost two cases, two and twenty-four days after operation, and Kappeler⁹ one, six days after operation. A gastro-enterostomy, either anterior or posterior, was done in these cases. Moullin¹⁰ reports two similar cases and speaks of a third, and concluded that gastro-jejunosomy will not stop hemorrhage. Rydygier¹¹ urges excision of the ulcer owing to the liability of the patient to even fatal hemorrhage after the performance of gastro-enterostomy. Moynihan, in an address before the American Surgical Association, makes the rather conservative statement that in a few cases of hemorrhage, which may be both copious and recurring and threaten the life of the patient, operation may be advised, if so, gastro-enterostomy is the surest means. It is difficult to convince him that any of the surgical procedures (styptics, cautery, ligaturing of a villous patch) has had the smallest effect for good, and in some the bleeding has recurred after the operation and has determined the fatal result. A search for a bleeding point is futile, harmful and, in his judgment, unnecessary. In another place he says that it is difficult to convince himself that surgical interference in some of the successful cases has not been a complication in what would otherwise have been an uneventful recovery, but the last word has not yet been spoken. Some of the German surgeons say that operation is not indicated during or immediately after a hemorrhage.

While the condition of all the ten cases reported by Lund, Joslin and Murphy, in whom an operation for gastric hemorrhage was done at the Boston City and Massachusetts General Hospitals, was desperate and recovery was hardly to be hoped for, the death of seven from subsequent hemorrhage does not furnish encouraging evidence as to the value of surgical intervention in checking it. When the bleeding comes from so large a vessel, as occurred in two of the cases in the Boston City Hospital series, a gastro-enterostomy would have been useless unless the bleeding point had been secured, and in one case, at least, it was so situated that it was not found at autopsy until the stomach was removed from the body. In cases where operation has shown a weeping surface without actual localized points the rest given to the stomach by short circuiting might be of value, but the chances of spontaneous cure under proper medical treatment would seem excellent. It is a different problem when life is threatened by repeated small hemorrhages, which are to be looked upon as a symptom of an ulcer which refuses to heal, and after medical means have failed an appeal to surgical aid seems the only justifiable course.

While cancer shows a special predilection for

the stomach, the importance of the part played by ulcer in its etiology is variously estimated. Kollmar, after a critical review of the literature, found but 14 cases which he considered authentic instances of cancerous degeneration, and calls it a very exceptional circumstance, while Zenker believes that almost all carcinomata are secondary to ulcer. The proportion beginning in that way is reckoned at 3% by Häberlin,¹² Fenwick, Plange and Berthold; 4% by Wollmans; 6% by Rosenheim and Hauser; 9% by Lebert and 14% by Sonicksen. Moynihan considers an estimate of 10% as the limit which an examination of between 60 and 70 cases in Leeds would allow. He has personally seen but one in which there was undoubted microscopic evidence of it. Mayo says that there was a history of ulcer in 60% of their malignant cases, but the malignant degeneration may have developed years after the ulcer had healed. Since operation without excision of the ulcer, or the more extensive procedure proposed by Rodman, cannot eradicate the scar which in such cases as Mayo's is supposed to have served as the starting point, and since the complication is apparently not common, the avoidance of this danger can only exert a secondary influence in determining operation.

The following conclusions, for whose general character our present limited knowledge of the end results of surgical treatment must be the excuse, may be formulated:

(1) That the strongest argument so far presented in favor of the surgical over the medical treatment of peptic ulcer is the failure of the latter.

(2) That the danger to the patient from operation in skilled hands is not greatly increased, the immediate results of both medical and surgical treatment being about the same.

(3) That the future interest to the clinician lies, not in hearing of the prowess of the surgeon, recorded in long series of successful operations, but in learning their end results. Until they are known conservatism seems the proper course, but when medical treatment has failed, as shown by the recurrence of repeated small hemorrhages, or the persistence of other symptoms, a resort to operation is legitimate and justifiable.

(4) That the surgical treatment of hemorrhage is of questionable utility, since in many cases it has continued, or first appeared, after operation, and in some, at least, of the successful ones it is doubtful if operation had any influence for good.

(5) That the interests of the patient will be best served, when doubt arises as to the advisability of operation, if the decision is not left to the physician or surgeon alone. Only by their co-operation will it be possible to avoid either the sacrifice of life from unnecessary delay, or the performance of useless or even harmful operations.

REFERENCES.

- ¹ BOSTON MED. AND SURG. JOURN., 1899, cxli, p. 389.
- ² *Ibid.*, Aug. 4, 1904.
- ³ *Clinical Studies*, i, p. 297.
- ⁴ *Grenzgeb.*, Bd. xi, s. 20.
- ⁵ *Lancet*, Jan. 30, 1904.

- ⁶ Münch. Med. Woch., 1904, 1 and 2.
⁷ Pest. Med. Chir. Presse, 1903, No. 7, et seq.
⁸ Marseil. Med., 1903, xii, p. 341.
⁹ Deut. Zeit. f. Chir., Bd. 49, s. 113.
¹⁰ Brit. Med. Journ., 1903, ii, 984.
¹¹ Deut. Zeit. f. Chir., Bd. lviii, s. 197.
¹² Quoted by Moynihan, Pract. September, 1904.

ANGIO-NEUROTIC EDEMA: REPORT OF A CASE OPERATED UPON DURING AN ABDOMINAL CRISIS.*

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Definition. — Angio-neurotic edema is a disease which is characterized by local edematous swellings, more or less limited in extent, and of transient duration. These swellings appear upon various parts of the body, such as face, hands, arms, legs, genitals, buttocks and throat. In several instances patients have died of edema of the glottis.

Associated with the superficial edema are nearly always seen gastric disturbances, — colic, nausea, vomiting, and sometimes diarrhea.

There is a strongly marked hereditary tendency. Several instances of this have been reported, the most remarkable of which is that of Osler who traced the disease to five successive generations of the same family. The disease begins in early childhood and recurs only at rare intervals during the first few years. As the patient grows older the recurrences grow more frequent until attacks are suffered nearly every week. In brief, the above is a rough picture of the disease as described by Osler and other writers.

Etiology. — It is closely allied with several other neurotic disturbances, such as urticaria, purpura, erythema, etc. In fact, in certain patients, the neurosis seems to show itself under various manifestations which are classed as separate diseases, as they appear, according to the symptoms complex.¹

Angio-neurotic edema is the term which applies in those cases where edema is present. This edema is of sudden onset and usually shows a constant tendency to attack special parts of the body. In some individuals it is characteristic of the disease to start in the fingers, and in others in an eyelid, etc.

The precipitating causes of an attack may include any temporary disturbance of the organism, as indiscretions in diet, exposure to cold, or exertion. It has been shown, however, that the disease has a proclivity to return at definite intervals of less and less duration, whether or not excited by outside influences. Matas has reported a well-known case in which this periodic occurrence was of such regularity that it simulated malaria.

Pathology. — The pathology of the disease is apparently simple. There is supposed to be a sudden great increase in the permeability of the vessels allowing serum to exude into the tissues. There has been but one thorough study of the

visceral lesions, which was made by R. S. Morris.² In one of his cases the stomach tube, which was used to relieve intractable vomiting, brought up a good-sized piece of the stomach mucosa. Microscopical section of this tissue showed a marked infiltration of all parts of the mucous membrane with edema. There are three previous cases with severe abdominal disturbance in which laparotomies have been performed in angio-neurotic edema, — by Sutherland, Burrows and MacRae, respectively. In the first two, limited areas were discovered in the small intestine which were the seat of moderate-sized extravasations of blood and edema.

Symptoms. — The symptoms may be divided into two general types: the superficial skin manifestations and the various visceral disturbances. The earliest attacks are mild and are limited to swelling of the skin in various regions. A typical attack may begin with itching and redness at the point where the swelling is about to appear. A finger will then suddenly begin to swell until it is so surrounded by splint-like support of edema that it is impossible to flex the joints. The edema may last for a few hours and then subside, or it may extend to the forearm and reach even to the elbow. At its height the swelling is firm and elastic to the touch, and only when it begins to subside can pitting be obtained upon pressure.

For the first few years the manifestations are limited to the skin, when gradually abdominal symptoms become prominent. The abdominal symptoms may be due either to gastric or to intestinal lesions, or to both. Colic, vomiting, diarrhea and occasional passage of blood are the usual symptoms. The pain ordinarily begins in the epigastrium and spreads over the abdomen. It is a generalized pain and does not radiate to the shoulder blade or other diagnostic localities. At first the painful attacks may show themselves once a month and disappear after a few hours and without further disturbances, but later in the disease, nausea and vomiting supervene in each attack. The pain is probably due to interference with the functions of the stomach and intestines by the edematous deposit.

Beside the two broad classes of symptoms just mentioned, there are various deviations from the common type, when more vital organs become affected by the edema. The brain, kidneys, heart may each undergo such an exudation with the serious resulting symptoms which accompany the derangement of vital organs.

The idea of this report, however, is not a comprehensive study of angio-neurotic edema, but to describe a case which was operated upon during an abdominal crisis.

REPORT OF CASE.

M. O., age twenty-six; single; factory girl. She had been in the Massachusetts General Hospital four times, twice in the surgical and twice in the medical services.

The first symptoms which brought her in were strongly suggestive of gallstones, but her subsequent story shows that undoubtedly the condition was an abdominal crisis in angio-neurotic edema.

² Am. Jour. of Med. Sciences, November, 1904.

* Reported at the Clinical Meeting, Massachusetts General Hospital, Dec. 2, 1904.

¹ Osler, Am. Jour. Med. Sciences, 1904, vol. 127, p. 1.