BRITISH MEDICAL JOURNAL

LONDON SATURDAY JULY 19 1952

A GASTRIC GOSSIP*

BY

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It has become the custom in the Society for the new President to deliver an address on some subject in which he is particularly interested. I still come under the somewhat maligned heading of "General Surgeon," and in that now officially rather limited sphere my chief interest lies in the stomach. I say "stomach" and not, for instance, "gastric surgery," as I hope to show that consideration of that organ has implications and interests far outside the realm of the mere technician.

Hunter's Concept of the Stomach

John Hunter himself defined the stomach as "a gland with a cavity"—a typically crisp summary of the physiological and mechanical functions of the organ—but he further elaborated this purely material conception by calling it "the central seat of sympathy of the body." Sir Arthur Keith, in a recent annotation on the latest research into the aetiology of peptic ulceration, quoted these two statements, which not only go to show how far ahead, as was so often the case, was Hunter of his time, but how well appreciated many years ago was this emotional or psychological aspect of gastric function. One has only to ponder on the oft-used phrases in connexion with something unpleasant or fearful—"I couldn't stomach it," "My stomach turned over," "I have no stomach for it"—to realize that there is more to the stomach than the mere holding and partial digesting of food. The gap between cortical cells with their multitudinous connexions and the processes of thought still remains to be bridged. The intimate connexions of the stomach with the former have been widely studied and have become a great deal better known of recent years; what of its ephemeral connexions with the latter? Does thought initiate nervous impulses, or vice versa, and if we remove a stomach are we perhaps achieving something more than a mere material ablation? I have little fear that these fantastic ideas will curb the perfervid gastrectomist from performing his allotted task, and successfully at that; but perhaps they will underline the fact that surgery for ills of the stomach is an empirical procedure, a magnificent and worthy castle founded on the sands of lack of knowledge of the aetiology of those same ills.

Owing to the rapid development of scientific and technical methods during the last fifty years we have become the masters of our tools; but we should not allow these tools to become masters of ourselves. Even as the advent of the antibiotics has at one fell swoop

removed 90% of the surgery of inflammation, so would I suggest will the correct appreciation of gastric pathology in due course render unnecessary the exquisitely performed mutilations of the stomach which figure so highly in the lists of almost every operating theatre in the world to-day. I am not decrying the obvious benefits to be derived from gastrectomy, but a world-wide effort should be made to standardize at least its basic principles, to render it relatively as safe a procedure in the hands of the average surgeon (if there is such a person) as is appendicectomy. It would be advantageous for us all, carpenters and leeches alike, if we appreciated the fact that it is but an interim measure until time or circumstances shall provide the real answer.

Thoughts on Peptic Ulceration

Peptic ulceration is the most prevalent of ills to which the modern stomach is liable. This term is itself a misnomer, and there are considerable differences in the clinical and pathological behaviour, and presumably therefore in the aetiology, of gastric and duodenal ulcers. Nevertheless these, separately or combined, form useful lenses through which to peer into the intricacies of stomach function, both normal and abnormal. Donaldson Craig in a thoughtful article some three years ago described peptic ulceration as "the product of disharmony between constitutional and environmental factors." About the same time Rossier paralleled this in calling peptic ulceration "the local manifestation of a systemic disease resulting from the reactions of a patient to an environment that is physiologically or emotionally disturbing." Both these definitions would seem to stress that in this disease it is the patient himself and not his stomach that is primarily at fault. This undoubtedly fits in with the belief that most of us probably have—that there is a certain type of patient more prone to peptic ulceration than his fellows; but if we were asked to define this type more closely could we very easily or very adequately do so? It has been estimated that 10% of the whole population of the United States have at some time in their lives peptic ulcers or the symptomatology thereof, and this country and the European countries (especially perhaps Scandinavia) are rapidly emulating that figure. On the other hand, it is a rare condition in the black races and in Asiatics. Even in those countries where the disease is prevalent there are marked seasonal variations, and a man normally resident in temperate climes—i.e., ulcer-prone countries—by transferring his habitat to tropical regions thereby very considerably reduces the chance of his developing an ulcer.

*Shortened version of a presidential address to the Hunterian Society in 1951.

Economic conditions as such would seem to have little to do with the development of peptic ulceration. The suggestion that peptic ulcers are the prerogative of the well-to-do is a myth long since exploded. There have never been less well-to-do patients in this country than to-day—nor more ulcers. But there is no doubt that ulceration favours a certain age group, and economically it is of vast importance that that age group should be the wage-earning, producing one. If at least 5% of the whole population of this country (a figure produced as long ago as the middle of last century and confirmed in the last few years) have peptic ulceration, and these numbers are concentrated in an age range not much more than a third of the average lifetime, it is obvious that the disease offers an economic problem of the first magnitude.

There is no sex immunity, but the *variations* in sex incidence over the last hundred years offer much of interest, as in fact do the relative *frequencies* of gastric and duodenal ulcers. These tendencies were well brought out by Craig, who showed that, while gastric ulcers were in the last century far more common in young women, they have now, although not increasing numerically to any appreciable extent, entirely changed their age group and to a large extent their sex predilection. Duodenal ulcer, on the other hand, has, as he puts it, retained its original pattern but increased enormously in frequency. It is on this basis that he queries the common aetiology of peptic ulceration—a doubt which incidentally was strongly entertained by that early master of gastric surgery, Berkeley Moynihan.

A Digression into History

Perhaps one may here digress for a few moments into the history of peptic ulceration, and it is relevant to our subject that it is really a very brief history, certainly not more, to any purpose, than a hundred years old. Admittedly Celsus in A.D. 30 made passing mention of a gastric ulcer, but no real notice appears to have been taken of the subject until the middle of last century. The description of a gastric ulcer as distinct from an ulcerating gastric carcinoma was made in 1793 by Matthew Baillie, the nephew of John Hunter. His interest in the matter was obviously not short-lived, as in 1799 he produced a careful drawing of a perforated gastric ulcer made from a specimen in "the museum of Mr. Hunter." Duodenal ulcer was first described somewhat earlier—in 1746—by Hamburger, but was even later in receiving any serious recognition as an entity.

Similarly with the history of gastric surgery. A gastrectomy was first performed about 70 years ago, for carcinoma, by Péan. The patient lived for four days, but then perished of what is described as "inanition." When one realizes that this episode was back in pre-antiseptic and almost pre-anaesthetic days, a metaphorical hat should surely still be raised to the courage and ability of that almost unknown surgeon. His lead was duly followed, but gastrectomy remained the operation for gastric carcinoma only, long after peptic ulcer had come upon the scene. The risks and high mortality of the operation led to the development of countless alternative procedures, culminating in the almost universal popularity of gastro-enterostomy in the 'teens and 'twenties of this century. It may be fairly stated that gastrectomy for peptic ulceration has a history of less than 20 years, and in these hectic days it may be salutary to remember that in November, 1944, the Surgical Section of the Royal Society of Medicine decided that, with certain exceptions, gastro-jejunostomy was still the surgical treatment of choice for duodenal ulcer. But it is now surely no exaggeration to say that hundreds of gastrectomies are performed every day. This rapid burgeoning both of practice and of theory is surely awe-inspiring in its development.

The "Ulcer Prone"

Evidence shows that, at all events to some extent, a certain type of subject may be born with familial or hereditary trends towards joining the "ulcer prone." It has been truly said that we are not only what we are to-day, we are also all that has preceded us. But the final admission to the no longer exclusive society of the ulcerated depends essentially on his reactions to a hectic environment. Can he physically and mentally stand up to the strain? Can he cope with his environment? Can he adjust the tempo of his own life to such an extent that he maintains the speed around him but of his own volition, feeling neither pulled nor pushed? If so, "you are a man, my son"; if not, your lack of integration may well be expressed by the development of a peptic ulcer.

I have so far avoided the rather controversial term "psychosomatic," but surely of all the diseases that might fairly be put under that heading peptic ulceration is an example *par excellence*. Our psychiatric friends—whose interest, definite though it is, has, perhaps for lack of opportunity, been a little dilatory—will tell us that the genuine neurotic or psychotic rarely develops an ulcer. On the other hand, they would probably agree that ulcer patients are as a whole "obsessional." They tend to be hypochondriacs; anxiety is their mentor and irritability their *milieu*. Perhaps it would be kinder just to say they have an unstable autonomic nervous system and hence react more intensely to their environment and to changes in it.

All this has done little to clarify the type of person who is ulcer prone, but it has underlined my own firm belief that peptic ulceration illustrates to the full the oft-forgotten necessity of treating the patient in conjunction with his disease. The bridge between what might be called human medicine and scientific medicine is in dire need of repair.

I have already shown some of the many groups who are directly or indirectly interested in our gastric problems, and would add to these the Service chiefs—both medical and otherwise. Napoleon gets the credit of having said that an army marches on its stomach. Perhaps it is the fact that a modern army does so little marching that accounts for the high percentage of stomach breakdowns. In Napoleon's wars dyspeptic troubles find no mention; in the 1914-18 war they were of relatively minor significance; but in this last war the loss of effective man-power due to peptic ulceration caused grave concern. It was responsible for as many discharges from the armed Forces as those due to actual wounds. It was surpassed in numbers only by the psychiatric casualties. If we lump these two together we reach the conclusion that in modern war wastage from the armed Forces is twice as likely to be due to the stomach and its central nervous connexions as to actual missiles of one sort and another. Here again one finds the concept of periods of exceptional stress and strain being reflected in a marked increase in frequency of peptic ulceration, and it would seem sound policy for the future to try in any army intake to sort the sheep from the goats, perhaps by means of a psychiatric sieve, and hence ensure, so far as is possible, that the ulcer-prone are employed to the limits of their limited capabilities in such an environment as will not lead to their complete breakdown and wastage.

I should be leaving a very large gap in the composite picture if I did not draw attention to the general practitioner's part in dealing with this dire disease. From his intimate knowledge of the individual patient, his mode of life and his economic condition, his domestic set-up and his family background, the doctor is in a unique position. He can probably differentiate between the dyspepsias and the ulcer diathesis. He can, from local knowledge and by the institution of a reasonable regime, by judicious symptomatic treatment and by equally judicious use of his own personality, perhaps ward off the development of a chronic peptic ulcer. He can advise both the patient of the real need for further investigation and the specialist to whom

he sends him of the type of patient sent—which may have a direct bearing on future treatment. And he can, after this treatment has been provided, medical or surgical, do much by a well-judged mixture of good medicine and good cheer to ensure that that treatment achieves ultimate success.

Contribution of Physiology

The anatomist and the physiologist have together and separately done much work on the stomach, work that has had far-reaching results in therapy. To take but one or two examples. The discovery of and research into the mode of action of gastrin—the internal secretion of the pyloric antrum responsible for the secondary gastric digestion—have underlined the necessity of removing this part of the stomach, or at least its lining mucosa, if surgery is to produce the required results. Recently it has also been found that gastrin is produced in the proximal part of the duodenum—a characteristic of man known so far to be shared only with the pig. I well remember the controversy started a few years ago by Professor C. A. Pannett concerning partial duodenectomy as a corollary of gastrectomy. His was then a voice crying in the wilderness, but now his thesis has been fully substantiated (by the work on gastrin if by nothing else) and the fatuity of pre-pyloric resection is generally accepted. Again, it has been interesting to watch the decrease in popularity of hyperacidity as an aetiological factor in peptic ulceration. Evidence now suggests that variations in pepsin production are likely to be of far more importance, if only local importance, than those of hydrochloric acid.

Let us consider for a moment the so-called “physiological gastrectomies”—attempts to reduce the hyperactivity of the stomach by partial ablation of either its blood vessels or its nerve supply. The former has never achieved either popularity or success for reasons obvious to anyone who has either done or seen a gastrectomy. The ability of the stomach to bleed after every one of its vessels has been carefully severed from the pylorus or beyond, to an inch or two of the oesophagus on either curvature, has only to be seen to be appreciated. But what of nerve section? This, through the medium of vagotomy (by no means, as it happens, a new operation), has of recent years sprung into the limelight. I do not want to discuss the pros and cons of this procedure, but it points a moral or two. With its increased facilities and its greater safety, surgery has been reaching out into physiological fields as against the mechanical ones of trauma, obstructions to various systems, the removal of foreign bodies, the limitless and generally depressing one of neoplasms, etc. The surgery of the sympathetic nervous system and, more lately, rapid advances in vascular surgery afford examples of this physiological trend. Whither is it leading us? Many of the results have been beneficial, but a careful study of the long-term results in, for instance, the surgery of the sympathetic nervous system should prove salutary. Only time and long experience can really prove the intrinsic value of many such procedures. I would not decry initiative or suggest that experiments should not be made, but we surely must proceed with discretion and with care. It was encouraging to see the conservative attitude with which we in this country received the recent (and admittedly temporary) wild enthusiasm for vagotomy elsewhere. It has, no doubt, a place in our methods for dealing with peptic ulceration, but its indications are limited, and imperfect results and difficulties in technique tend to equal its advantages. So far there is little evidence that vagotomy can replace another physiological operation—gastrectomy. To effect the desired result vagotomy must be complete. The anatomists have shown the difficulties of achieving this whether the approach be thoracic or abdominal. If it is complete it is accompanied by entire loss of gastric *mobility*, often necessitating a secondary gastro-jejunostomy. It has little, though for the comfort of the vagotomist there is now thought to be some, effect on the secretion of gastrin.

Roles of Physician and Surgeon

And so we come to the important roles of the physician and the surgeon in dealing with the ills of our stomach. They can, and do, expect help from many other workers, but it is to one or the other, or to both, that the vast majority of ulcer cases come for treatment. It is a happy sign of the times that the close co-operation between the two has in recent years grown through mutual interest, understanding, and trust.

I was brought up, and suspect that most of to-day's medical students are also, on the dictum that the surgical treatment of peptic ulceration came into action only when medical treatment had failed to produce results or when dire complications had intervened. But this attitude is in serious need of revision.

Just as the prevalent gastric ulcers in young women of 50 years ago have apparently disappeared, so may in time the more than prevalent duodenal ulcers in the young men of to-day. Perhaps the day is very near when some cortisone-like substance will answer all the questions. But in the meantime what does medical treatment imply? Whatever the regime, it must be thorough, prolonged, systematic, supervised, and subject to discipline if it is to succeed. The first essential is rest—the avoidance of mental strain and physical fatigue. There must be abstinence from many of the few remaining pleasures of our humdrum lives in the shape of good food, good wine, and nicotine. And the medical regime usually entails the ingestion of drugs and medicines—the antacids, the antispasmodics, and vitamins.

Is there any wonder, then, that given time 85% of patients so treated will relapse? Not, surely, because the methods are not good, but simply because they are not practical politics. There are not enough hospital beds, not enough medical attendants or auxiliaries, not enough money, not enough time to cope medically and adequately with the problem as it is to-day.

This would, so far, seem high-power surgical propaganda; but let us apply the acid test to ourselves. Would we, with our specialized knowledge, not say this to ourselves? : “I have an ulcer. I really cannot afford either the time or the money to indulge in long-term medical treatment, in which I know the chances of success are small. I will forthwith have an operation—probably a major one.”

While by no means advocating that surgery should be the primary treatment of ulcer, I do suggest that present-day conditions weight the balance in that direction. This naturally presumes (a) that surgery is both relatively and reasonably safe, and (b) that it will produce the required results—on which I shall have more to say. If these two postulates can be satisfied, then we should press for the drastic curtailment of that so often long-drawn-out period of medical treatment which to-day it is almost impossible to institute properly and during which the patient is transformed from a relatively hopeful dyspeptic to an equally hopeless wreck, a burden to himself and those round him and economic wastage. And it is fair to point out his ulcer is itself being transformed surgically from a straightforward technical exercise to what *can* be almost a herculean feat.

This swing towards surgical therapy has accelerated during the last 10 or 15 years, and my own opinion is that it has received more support from physicians than from surgeons. This is undoubtedly so in the case of the gastric ulcer—the more dangerous and fatal of the two. This tendency is independent of the much-debated possibility of metamorphosis from gastric ulcer to gastric carcinoma. In respect of the gastric ulcer there is a consensus that if it is seen *de novo* it should be given an initial chance (of months rather than, as previously, of years) of responding quickly and adequately to the best a medical regime can offer. If this trial fails, completely or in part, surgery should be advocated, and this should apply forthwith to

the ulcer seen for the first time with a long recurrent history—particularly if its position in the stomach is then on the more distal lesser curvature.

The Duodenal Ulcer

But what of the duodenal ulcer?—variously estimated as three times more common than gastric ulcer in London, five times more common in the country as a whole, seven times more common in the Army, and ten times more common in America. There is here, if anything, a slight swing of the therapy pendulum to the medical side, and this from a logical point of view I find hard to understand. Admitted that it is not such a fatal disease, that the bogey of carcinoma is absent, and that probably, at all events in the earlier stages, the periods of natural remission of symptoms are longer—even so, most duodenal ulcers eventually follow a similar pathological course to that of gastric ulcers, including one feature not common to gastric ulcer—obstruction. A young patient with duodenal ulcer, with a relatively short history and mild symptoms, particularly if his ulcer is uncomplicated and he himself a neurotic, is going to call for medical measures. But I can see no reason for varying the course previously mentioned for gastric ulcer should the response not be both definite and rapid. To let a duodenal ulcer, simply because it is unlikely to be fatal, become intractable and complicated is to let it be intolerable to the patient and a reflection on his medical attendants. When surgery becomes a necessity in such a case the technical and mechanical difficulties are often far greater than those of the largest gastric ulcer. It is a question, as so often is the case in medicine, of being forewarned and forearmed.

Having mentioned obstruction as an ultimate outcome of duodenal ulceration, I might briefly consider, and perhaps slightly lament the passing of, the operation of gastro-jejunostomy. Twenty years ago it was the accepted surgical treatment of peptic ulceration. Many thousands of patients have obtained permanent relief from it. But many series of figures in other countries have shown that on this scale it will have a 25% failure rate—obviously too high to balance its slightly (now only very slightly) lower mortality rate than procedures which have succeeded it. It looked as though vagotomy might give it renewed popularity. But there is still a small group of patients with duodenal ulcer who, if carefully selected, will benefit as much from gastro-jejunostomy as they would from gastrectomy.

Assessment of Surgery

And now, what of the results of surgery? The mortality from gastrectomy should now be less than 2%. For this we have to thank the advances in anaesthesia in the last 10 years, the greater appreciation of the need for adequate pre- and post-operative treatment (particularly in respect of hydration and blood chemistry), and the wider application of the antibiotics and sulphonamides. It may be asked whether 2% is still not too big a risk. As the overall morbidity rate of peptic ulceration is very little less, and would appear to be rising, I should say it is not. If, as I have advocated, (a) an effort is made to bring ulcers earlier in their course to surgery, and (b) so far as is possible a standardized and simplified operation is evolved, then the operation should become still safer.

The question of the assessment of results is a very difficult one. Any firm and scientific basis is almost impossible to find. Both physical and psychological factors have to be evaluated and integrated. One of the most satisfactory results of a good gastrectomy is not so much the actual disappearance of pain as the mental reaction of the whole patient's make-up to this absence.

And so to be successful we must get rid not only of the patient's ulcer but also of his fear of the ulcer. Failure in either of these two respects accounts for the two great groups of post-gastrectomy complications—the recurrent ulcer, and that series of mechanical, nutritional, and meta-

bolic disturbances nowadays included under the term "the dumping syndrome." In assessing results, therefore, we must discover not only that a patient has lost his pain but that his weight is improving, that he is not anaemic, that he can take a reasonable-sized meal at reasonable intervals and enjoy it, that he has no untoward and unpleasant post-prandial symptoms, and that he is in himself happy and contented. This admittedly is a very empirical basis for assessment of success, or lack of it. I hope I am not being unduly optimistic in suggesting that 95% of patients who have a gastrectomy are satisfied—very roughly, 75% completely so, and 20% sufficiently so (despite some minor residual symptoms) to be glad they had had the operation. It is the remaining 5%, of course, who should really interest us as surgeons—as doctors. Why is every one in twenty a failure? There are probably three main causes for this: one due to the surgeon, faulty technique; one to the patient, that peculiarly labile psychological make-up common in the ulcer patient; and one due to neither, intercurrent disease.

Whether these defects, except for the first, can be corrected lies in the future; and by then we may have ceased carrying out a major operation, however safe and however successful, for a condition the aetiology of which is still wrapped in mystery.

THE VARIABILITY OF ENDOCRINE DYSFUNCTION IN POST-PARTUM HYPOPITUITARISM

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It is largely due to the work of Sheehan (1937, 1939, 1940) that the clinical picture of post-partum hypopituitarism (Simmonds's disease) is becoming more widely recognized. Six such cases have been investigated over a period of six months, and an attempt has been made to determine the value of certain investigatory procedures which have been introduced in recent years. Cook *et al.* (1951) have described seven severe cases of post-partum hypopituitarism seen during the 15-year period 1935 to 1950. Six of these had been diagnosed during the last two years. As they point out, this indicates an increased awareness of the condition rather than a greater incidence, since the liability to post-partum pituitary necrosis should have fallen with better ante-partum and natal care.

In 1942 Escamilla and Lissner laid down "four cardinal characteristics" before they would accept the diagnosis of Simmonds's disease. These were (1) loss of weight, (2) loss of sexual function, (3) asthenia, and (4) a basal metabolic rate below -20%. However, Sheehan (1948) has shown that loss of weight is unusual in hypopituitarism, and when present may be due to some complicating factor. By definition, Escamilla and Lissner (1942) were restricting their material without knowing what the real clinical picture should be, for it is only on a pathological basis that this can be decided.

The one essential criterion for the diagnosis of hypopituitarism is evidence of destruction of the anterior pituitary (Simmonds, 1914; Sheehan, 1948). In the case of post-partum hypopituitarism one must have a definite history of haemorrhage and collapse at the time of delivery followed by failure of lactation and amenorrhoea. Further symptoms develop which have