MEDICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS AND POST-ULCER REGIME.1

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It is only within the past few years that surgeons and physicians have begun to agree about the treatment of gastric and duodenal ulcers. Agreement regarding the methods of treatment, whether surgical or medical or both, is still not general. The physician is inclined naturally to be biased by the numerous surgical failures he sees, and the surgeon equally so because he meets so many medical failures. The trouble is that many of the ulcer cases which reach the surgeon have never received adequate medical treatment, followed by a strict post-ulcer regime—the medical failures. Again, many simple ulcer cases are operated on by the surgeon which could readily have been cured by adequate medical treatment, and which would have remained cured by adequate post-ulcer regime. I am purposely laying stress on the word "adequate" with reference to medical treatment and post-ulcer regime, because unless both are adequate one cannot expect satisfactory results. I think most surgeons and physicians now agree that gastric and duodenal ulcers are primarily medical diseases, and should be treated medically. More accurate and earlier diagnosis of these ulcers, with early and thorough medical treatment and a good post-ulcer mode of living, would cure most cases of early ulcer and prevent their recurrence. By early diagnosis and early medical treatment we would prevent the formation of old thickened ulcers which in most cases have to be handed over to the surgeon. The age of an ulcer is always important; so, too, are the questions of duration of symptoms, previous "cures"—surgical or medical or both—the type and length of previous treatment if any, and whether the patient was instructed in, and whether he carried out, any regime to prevent a possible recurrence.

As regards both diagnosis and treatment, R.A.M.C. officers are in a much more advantageous position in many ways than the general practitioner. Radiological and laboratory investigations can be carried out in most stations at home or abroad, and because of expense to the patients, etc., the general practitioner naturally cannot make use of these methods with the same freedom. I am not suggesting that the ordinary cases of dyspepsia seen at the Medical Inspection Rooms, and which readily yield to oil. ricini, bismuth and soda and relative starvation, should be admitted as a routine for such investigations.

It is generally agreed that if a gastric or duodenal ulcer has been

1 A Paper read in February, 1932, to Officers of the Army Medical Services, Aldershot Command.
untreated, or inadequately treated medically for five years, a permanent cure by medical means is improbable. Obviously then, the medical treatment must be early, adequate, and systematic, if "cures" by medical means are to be common.

Before commencing to give details of modern medical treatment of gastric and duodenal ulcers, it is as well to mention the types of ulcer which must, or should be, handed over to the surgeons.

Operation should be advised for:

1. Perforated gastric or duodenal ulcers, and obviously as early as possible.

2. Pyloric obstruction without symptoms of active ulceration.

3. Pyloric obstruction, with symptoms of active ulceration, which is still found to be present after three weeks of medical treatment.

4. Gastric ulcer causing organic hour-glass contraction sufficiently severe to produce six-hour stasis in the proximal segment.

5. Recurrent cases which have not yielded to thorough medical treatment, including removal of all septic foci, and to post-ulcer régime. Frequently this means old and thickened ulcers.

6. Occasionally, for cases of severe recurrent haematemesis, particularly in oldish people with sclerotic vessels which cannot contract.

7. Cases in which pain, tenderness and occult blood in the stools are present after treatment, and where the history, age, etc., make carcinoma ventriculi a possibility.

8. Cases of long duration with no benefit from medical treatment.

9. Relapses within twelve months of adequate medical treatment, but not necessarily if the relapse occurred two to three years after such treatment.

To turn for a moment to statistics on ulcer cases dealt with surgically, and quoting from Taylor's "Practice of Medicine" [2] on the sequelae of gastro-jejunostomy carried out for gastric or duodenal ulcer: "Out of 108 cases operated on at Guy's Hospital between 1910 and 1915, 65 per cent were cured or much improved seven years later, and 35 per cent were unsatisfactory." I should like you to bear in mind the 35 per cent of unsatisfactory cases.

Within the past year or two, Lord Moynihan [3] and other distinguished surgeons have strongly supported the statement that "no case of gastric or duodenal ulcer should be handed over to the surgeon unless it has been proved incurable by medical means."

Recently Lord Moynihan [4] stated that the number of cases of gastric and duodenal ulcer coming under his own care for surgical treatment in which a really adequate medical treatment had been prescribed and honourably observed was very small. He also again pointed out the importance of medical treatment after operation.

The question of medical treatment and post-ulcer régime after operative treatment for these ulcers is a very important one, and one which many
surgeons now appreciate. Perhaps "many surgeons" should read "most surgeons," but this I am unable to vouch for. In the past six years I have met more surgical than medical failures, and in the examples which I will give later it is suggested that these surgical failures were due mainly to two factors:

1) Failure to educate the post-operation ulcer patients thoroughly in how to prevent a recurrence.

2) Failure of these patients to carry out the instruction given them on this matter.

Perhaps the surgeons present can tell us of other reasons for such surgical failures, but I feel confident that the two factors mentioned are the most important ones. I consider that all cases of gastric and duodenal ulcer which are operated on should, when convalescent, be handed over to the physician before leaving hospital for a short course of medical treatment and post-ulcer regime instruction. Apart from other reasons, the average patient will pay more attention to a physician, or even to a general duty officer like myself, than to a surgeon when it comes to dealing with diets and drugs!

Before going into details of medical treatment, it is perhaps as well to remember what the objects of the present-day medical treatment are. They are: (1) To reduce the secretion of gastric juice as much as possible, and (2) to neutralize the hydrochloric acid in the stomach day and night. As regards medical treatment, I am more conversant with Hurst's methods than with any other. Hurst's treatment of gastric and duodenal ulcer has undergone several changes in the past ten years.

I will give first the details of his methods as practised in 1922 [5], then modifications of this treatment as published in the British Medical Journal in November, 1928 [6], further modifications shown in Price's "Medicine," 1929 [1], a simpler application of his methods which I have carried out for some years, and finally some remarks on post-ulcer regime.

As time is limited, I will omit details of the routine preliminary and extremely important treatment of teeth, nose and throat infections, obvious chronic appendicitis, chronic cholecystitis, chronic infections of the kidneys, and the ordinary treatment of haematemesis. Of course, it is clear that in many cases the eradication of septic foci cannot be the preliminary treatment.

The drugs employed are as follows:

Sodium Citrate.—This combines with the lime in milk and prevents the rennin of the gastric juice from forming irritating clots. It is also a valuable alkali.

Emulsio Magnesie.—Is an aperient and an alkali. It contains five grains to the dram of oxide of magnesia which has four times the neutralizing power of sodium bicarbonate. It has other advantages over sodium bicarbonate in giving off no CO₂, which is liable to distend the stomach, in having a mild aperient action, and in producing a very much
smaller secondary increase in secretion after the initial neutralization. Hurst considers sodium bicarbonate the most powerful stimulant of gastric juice in existence. On the other hand, "soda bic." has been successfully used by generations of medical practitioners to relieve gastric pain and discomfort, and to quote from Taylor's "Medicine" [2] "CO₂ liberated in the stomach inhibits gastric contractions, and causes eructations which relieve intra-gastric pressure. The reason soda bicarbonate relieves pain is due to the liberation of CO₂ by the acid in the stomach, and not to the fact that it is alkaline."

_Olive Oil._—Inhibits the secretion of gastric juice, and is an unirritating food of high nutritive value in a concentrated form.

_Atropine Sulphate._—Inhibits gastric secretion and lessens spasm.

_Chalk and bismuth carbonate_ are alkalies which slowly neutralize HCl. The former has two and a half times and the latter one-third the neutralizing power of sodium bicarbonate.

_Tribasic magnesium phosphate and tribasic calcium phosphate_ are the alkaline powders given in Hurst's methods of 1928 and 1929—the latter powder if the bowels are too free. He considers that they have the advantage of not giving rise to alkalosis in spite of acting as efficient alkalies in the stomach. They can be used in cases of renal insufficiency when no sodium citrate or magnesia is permissible.

There are two contra-indications to intensive alkaline treatment of ulcer cases—(1) pyloric obstruction, (2) kidney disease.

_Hurst's treatment in 1922_ was shortly as follows [5]:—

At 6 a.m. daily \(\frac{1}{2}\) ounce of bismuth carbonate shaken up in 5 to 10 ounces water was swallowed and the patient made to lie on his right side. The idea of this was to let the powder come in contact with and coat the ulcer; 5 to 7 ounces of "citrated milk" were given hourly from 7 a.m. to 8 p.m. inclusive. "Citrated" means that to each feed 10 grains of sodium citrate dissolved in 2 drachms emulsion magnesii were added. These milk feeds were flavoured with tea, coffee, or cocoa, and in some cases custard, arrowroot, junket or semolina were allowed to replace four of the milk feeds. Cream 2 to 3 ounces was added to some feeds. Immediately before alternate feeds, beginning at 7 a.m., \(\frac{1}{2}\) oz. of olive oil was given, and before the remaining feeds 5 minims tinct. belladonnae. Chalk and bismuth carbonate powders 10 and 30 grains well shaken up in 5 ounces of water were given half an hour after each of these hourly feeds, of which the last feed was at 8 p.m., and again at 9, 9.30 and 10 p.m.

At 11 p.m. the stomach was completely emptied by a Senorán's evacuator, and at least \(\frac{1}{2}\) grain of atropine sulph. injected subeutaneously. No smoking was allowed during the strict treatment.

This strict treatment was carried out until for three weeks the patient had been free of spontaneous pain, tenderness and occult blood in the stools, and the X-rays showed no evidence of active ulceration. The patient's diet was then gradually increased and the alkaline powders gradually reduced.
Medical Treatment of Gastric and Duodenal Ulcers

The after-treatment consisted of taking these powders for long periods, and of carrying out a post-ulcer regime as regards diet and mode of living.

As one observer said about this particular "Hurst's method," "the results are good as regards healing, but the treatment is a strain on both patient and attendants." Having tried to make patients carry out this strict treatment, I certainly endorse that statement.

In November, 1928, modifications of these methods were published by Hurst [6] in the British Medical Journal in two appendices. Appendix No. 1 dealt with diet and treatment. Appendix No. 2 is similar to the "Instructions how to prevent the recurrence of symptoms" shown in R.A.M.C. Training, 1925—but not identical in its details.

R.A.M.C. Training, 1925. Amendment (Paragraph 914g). Published September 14, 1926.

Instructions How to Prevent the Recurrence of Symptoms.

Avoid alcohol in every form.

Avoid all pips and skins of fruit (whether raw, cooked or in jam, and currants, raisins and lemon peel in cake), nuts and all unripe fruit. For example, an orange may be sucked but not eaten. Currants, raisins and figs are particularly undesirable.

Avoid all raw vegetables, whether taken alone (celery, watercress), or in pickles or salad; green vegetables must be passed through a sieve and mixed with butter. Porridge is only allowed if made with finest oatmeal. Avoid vinegar, lemon juice, sour fruit; pepper, mustard, curry, chutney, excess of salt; new bread; tough meat, salted fish or meat; pork; clear or thick meat soup.

Take plenty of butter, and a tablespoonful of olive oil before each meal. Eat slowly and chew very thoroughly.

Do not smoke excessively. No smoking at all if any indigestion is present.

Have some food in the middle of the morning and on going to bed, and if you wake during the night. (For duodenal ulcer only).

Have your teeth attended to regularly every six months.

Take no drugs in tablet form and no pills.

If you have the slightest return of symptoms, go to bed for a few days, on a milk diet, and do not wait for the symptoms to get serious.

Hurst's Appendix No. 1 was on the lines of the 1922 dietetic and medicinal treatment with the following main differences: Feeds were still given hourly, but from 8 a.m. to 10 p.m. Olive oil was reduced to three times a day. The hypodermic of atropine and the tinct. belladonnae were omitted, and atropine sulphate \( \frac{1}{10} \) grain in water before the 8 a.m. and 3 p.m. feeds and \( \frac{1}{10} \) grain before the 10 p.m. feed were added. Sodium citrate was increased from 10 grains to 15 grains. Chalk and bismuth carbonate
powders were replaced by tribasic magnesium or calcium phosphate, and reduced to three powders per diem, with extra powders during the day or night if any indigestion or heartburn occurred. There was no mention of emptying the stomach at 11 p.m.

From this it is certain that the patients and attendants were having an easier time of it, and one wonders if Hurst's earlier method of very intensive alkaline treatment on Sippy's lines had led to cases of alkalosis.

The latest modifications of Hurst's treatment which I can find are taken from Price's "Practice of Medicine," third edition, 1929. From this it appears that the gastric and duodenal ulcer patients are having slightly more rigorous treatment than that shown in the November, 1928, Appendix. I have made out a dietetic and treatment list on these lines, but Price's book does not make it clear whether these feeds are hourly or two-hourly. From this chart you will see that: olive oil has been increased to four times daily instead of three, atropine is raised to four times daily at least, the sodium citrate is back to the original ten grains, tribasic magnesium or calcium phosphate is increased from three to a minimum of five times daily, and the stomach is again emptied at 11 p.m. by the Senoran's evacuator.

This strict treatment is continued for three weeks until the patient has had no spontaneous pain, no trace of tenderness, no occult blood in the stools and the X-rays no longer show the presence of an ulcer crater. After this the diet is rapidly raised.

Hurst considers that minced meat should be avoided, as the patient should be taught the importance of chewing his food so thoroughly that it is fluid in consistence by the time he swallows it. This has the further advantage that the food is mixed with a sufficient quantity of alkaline saliva.

He states regarding "post-ulcer regime": "He should remain strictly on this regime until he has been free of symptoms for two years, and then should follow it in a modified form for the rest of his life"; and again, "After any operation for gastric or duodenal ulcer, the patient should follow out exactly the same after-treatment as he does after medical treatment, or various ill effects, the most serious of which is the production of a gastro-jejunal or jejunal ulcer, may ensue."

For the past six years I have treated cases of gastric and duodenal ulcer on Hurst's lines, and since 1928 have followed, with a few modifications, more or less the 1928 treatment shown in the British Medical Journal. An example of this is shown in the table on page 422, and the following are some of the details.

I treat hæmatemesis, if present, with a liberal use of morphia, the routine administration of hemoplastin, rectal salines with glucose, ice to suck, etc. If no hæmatemes is present, I commence with two-hourly "citrated" feeds of milk alternating with Benger's Food from 6 a.m. to 10 p.m. inclusive, i.e., two-hourly and not hourly feeds. These feeds are
## Treatment on Hurst’s Lines for a Gastric or Duodenal Ulcer Case


<table>
<thead>
<tr>
<th>Time</th>
<th>Size of feed in oz.</th>
<th>Feeds to be warm or cold; not hot or feed</th>
<th>Olive oil One tablespoonful</th>
<th>Sodium citrate Magnesia Two teaspoonfuls</th>
<th>Mist. atropine One teaspoonful</th>
<th>Alkaline powders One powder on waking</th>
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<tr>
<td>8 a.m</td>
<td>7</td>
<td>Milk 5 oz.; cream 2 oz.; 1 lightly poached egg; 2 Ovaltine rusks with butter and jelly</td>
<td>—</td>
<td>Before 8 a.m. feed</td>
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<tr>
<td>10 a.m</td>
<td>7</td>
<td>Benger’s food ___ ___ Before 10 a.m. feed</td>
<td>In feed</td>
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<td>12 noon</td>
<td>10</td>
<td>Egg and milk, 5 oz.; potato purée, 5 oz.</td>
<td>Before noon feed</td>
<td>In egg and milk feed, not in purée</td>
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<tr>
<td>2 p.m</td>
<td>7</td>
<td>Junket—with jelly if desired; 2 cream cracker biscuits with butter</td>
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<tr>
<td>4 p.m</td>
<td>7</td>
<td>Milk; 2 Ovaltine rusks with butter</td>
<td>Before 4 p.m. feed</td>
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<tr>
<td>6 p.m</td>
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<td>Arrowroot or semolina with jelly if desired</td>
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<tr>
<td>8 p.m</td>
<td>7</td>
<td>Benger’s food; 2 cream cracker biscuits and butter</td>
<td>Before 8 p.m. feed</td>
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<tr>
<td>10 p.m</td>
<td>7</td>
<td>Milk ___ ___ ___ Stomach emptied by Senoran’s evacuator if instructed</td>
<td>In feed</td>
<td>2 teaspoonfuls after alkaline powder</td>
<td>1 powder after stomach is emptied</td>
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<tr>
<td>11 p.m</td>
<td>No feed</td>
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Note.—Additional atropine may be given if the patient can take it without unpleasant symptoms. Extra powders should be given if patient feels any acidity.

A Simpler Modification which has been found satisfactory in many ulcer cases.

<table>
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<th>Time</th>
<th>Size of feed in oz.</th>
<th>Feeds to be warm or cold; not hot or feed</th>
<th>Olive oil One tablespoonful</th>
<th>Sodium citrate Magnesia One teaspoonful</th>
<th>Mist. atropine One teaspoonful</th>
<th>Alkaline powders To be given well shaken up in 5 oz. of water</th>
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<td>8 a.m</td>
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<td>In feed</td>
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<td>10 a.m</td>
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<td>In feed</td>
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<td>12 noon</td>
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<td>In egg and milk feed, not in purée</td>
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<td>2 p.m</td>
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<td>4 p.m</td>
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Note.—First feed at 6 a.m. (milk) and not 8 a.m. An extra “citrated” milk feed at night if patient awake, followed by an alkaline powder.
flavoured with tea, coffee, cocoa, or Ovaltine, and cream is added to a proportion of them. The mouth is washed out after each feed and the tongue scraped with a spatula night and morning. Atropine sulphate and olive oil are given three times a day before feeds, but I seldom start giving olive oil until after about three weeks treatment, and about the time the atropine has been reduced to the double dose before the last feed. One frequently finds even when commencing with two drachms of olive oil or less, that it nauseates the patient in a very short time. I do not care to give it too early in haematemesis cases, because of the danger of retching. This dislike to olive oil does not hold good when dealing with the Latin races, who are accustomed to large quantities of oil in their food. The reason I frequently reduce the atropine to the double dose at night only, after about three weeks treatment, is mainly because so many patients complain of a dry mouth when taking it. As regards the alkaline powders, I have always kept to the original chalk and bismuth powders, giving them as a minimum after the 2 p.m. and 6 p.m. feeds, and a double powder after the last feed at 10 p.m.

As regards diet, I usually add egg flips (i.e., egg and milk beaten up), potato purée, and semolina in the second or third week after the patient is free from pain, etc., the additions depending on the severity of the case. The potato purée requires constant supervision to see that it is correctly made. In fact, the whole treatment has to be closely supervised. Avoidance of constipation is important.

When the patient has been three weeks clear of epigastric pain, tenderness, and occult blood in the stools, malted rusks and butter, lightly boiled or poached eggs, steamed white fish, stewed apples, orange juice, etc., are added to the diet. I gradually get the patient on to four main meals per diem, with "citrated" milky feeds in between so as to keep him on two or two and a half-hourly feeds. Nearly all patients should be kept strictly in bed for the first three weeks, but some can be allowed up gradually after this time. When patients are marked "up," they are weighed weekly, and if necessary their red cell count and general blood picture are investigated. Before patients are fit to leave hospital—a very variable period—I try to educate them in their post-ulcer régime. Instructions similar to those on p. 424 are given and explained to them. They are asked to study the instructions, and to make out a diet for themselves from their hospital experience and with the help of this list. I go over the proposed diet with them with a large blue pencil, explaining "indigestible residue," etc., and amplifying the list of instructions. It is truly amazing what gross dietetic indiscretions educated people will put down in their proposed menus. When these ulcer patients have recovered, they are discharged from hospital equipped with the list of instructions on post-ulcer régime, and where possible I arrange to see them periodically. It is difficult, and sometimes impossible, for patients to carry out the régime properly. The reasons for this are generally inability on the part of an unmarried soldier
to diet satisfactorily—particularly in training periods, lack of appreciation of the necessity of post-ulcer regime when the individual feels fit and is free from gastric symptoms, and the expense of buying suitable food.

POST-ULCER REGIME—TO BE FOLLOWED PERMANENTLY.

THINGS NOT PERMITTED.

烟—除在最严格的限制下，不得在饭后吸烟。无消化不良时，不得吸烟。

酒精。

Soda water or any effervescing drink.

Coffee and tea—Except as allowed in opposite column.

Lime juice or lemon juice. Ice cream.

Meat Soups—Thick or clear, or meat extracts.

Currants, raisins, figs, nuts, unripe fruit.

Pips and skins of fruit.

Cakes, puddings—With currants, raisins or peel in them.

Jam or marmalade—With pips, skins of fruit or peel in them.

Oranges—Unless sucked (i.e., juice only permitted).

Raw vegetables—i.e., celery, salads, watercress, pickles, etc.

Green vegetables—Unless passed through a sieve, mixed with butter, and served as purées. Spinach should be avoided.

Porridge—Unless made with the finest oatmeal and very well cooked.

Condiments—Pepper, mustard, much salt, chutney, curry, vinegar, etc.

Made-up dishes and sausages.

Pork, salted fish, high game, salted meat.

Tough meat, new bread, pancakes, pastry, and new potatoes.

N.B.—It is very important to avoid physical fatigue, chills, and all forms of “worry.”

I think it is very important that all such patients—whether senior officers or young soldiers ear-marked for Medical Boards—should be thoroughly educated in how to avoid a recurrence. Many may consider it
a waste of time to instruct men who have little or no chance of being able to carry out their post-ulcer regime properly, but I feel it is the only fair thing to do. After all, medical officers in sanatoria always instruct phthisical patients in "post-sanatorium regime," although they know full well that many of these patients cannot hope to carry out these instructions when they return to their homes. Although I am open-minded about the Hurst method of treatment, I feel sure that close attention to a strict post-ulcer regime is a necessity, and agree with those observers who consider that it should be carried out permanently.

My reasons for giving the list of instructions from "R.A.M.C. Training," and a somewhat amplified version of this list which I made out and use in preference, are that I have found patients who consider the former difficult to read, to understand, or to memorize, and most prefer to see their "Do's" and "Don'ts" in columnar form. Apart from that, I consider the columnar list has the more appropriate heading, and it contains more advice.

The following are some typical examples of ulcer recurrences of the types we have all met:

Patient "A."—Operated on for gastric ulcer twice (emergency suturing followed later by a gastro-enterostomy). Was told on his discharge from hospital he could now eat anything; received no post-operative medical treatment, and no instructions on how to prevent a recurrence. He is naturally disappointed when he has a recurrence, and it is found that he has an ulcer at his gastro-enterostomy opening.

Patient "B."—History of duodenal ulcer off and on for ten years. Has been "cured" by medical treatment also "off and on" during this period. Was given vague instructions how to prevent a recurrence and has followed them spasmodically. Present condition unsatisfactory.

Patient "C."—Senior naval officer. Old-standing gastric ulcer case. Operated on twice. Rarely free for any length of time from dyspepsia. Improved greatly on strict Hurst's treatment and post-ulcer regime, but not really fit three months after. Is good about diet and most of his post-ulcer regime, but will not or cannot stop smoking heavily, and is inclined to rush his meals. A great worker, who takes life very seriously and worries too much.

Patient "D."—Naval officer with a recurrence of a duodenal ulcer. Had previously been treated on Hurst's lines and semi-educated in post-ulcer regime. Is good about his regime in spasms, but is "a bit of a lad" at times, and finds dieting, etc., very difficult on board ship.

Patient "E."— Corporal, R.A.M.C. Three years history of dyspepsia and then had a gastro-enterostomy performed for a gastric ulcer. Free of all symptoms for eighteen months after operation, but made no attempt to carry out a post-ulcer regime of which he knew next to nothing. Result, that three years after operation is admitted to hospital with a very severe hæmatemesis.
Patient "F."—A warrant officer in the Gunners, of quite average intelligence, had gastric symptoms for three months, followed by a perforated gastric ulcer which was sutured. Later a posterior gastro-enterostomy was carried out, and patient treated medically after this operation. Prior to his discharge from hospital he was given a list of instructions on how to prevent a recurrence. He carried out this regime carefully for some months and then lost his instructions. After this he gradually became less strict about his diet, and eventually had a recurrence of the old symptoms. He was admitted to hospital, and on investigation I found that for four months prior to this admission his diet had contained the following: Fried bacon and tomatoes, fried egg and bacon, roast mutton, roast lamb, roast rabbit, fried mutton cutlet, spinach, runner beans, turnips, salads whenever obtainable, tinned fruit, cold ham, and about six cups of tea per diem. As regards fruit, his list was as follows: The juice of oranges, bananas, apples, grapes, rhubarb, plums and strawberries. Add to this fifteen cigarettes per diem and a bottle of stout. For the relief of epigastric pain he usually took brandy in coffee. He did not do himself too badly for a married man with four children, but then I had him as a patient before the Snowden Budget!

Prior to getting him to write down the details of his diet for the previous few months, he informed me that he had been very careful about diet since his operation, although not quite so strict latterly. His ideas about post-ulcer regime were, to say the least, somewhat vague, and you will not be surprised when I tell you that his recurrence was an ulcer at the site of his gastro-enterostomy opening, associated with pain and tenderness in the epigastrium, and the presence of occult blood in the stools.

To sum up:—

1. It is imperative to remove all accessible sources of infection.
2. Gastric and duodenal ulcers are primarily medical diseases.
3. Large quantities of alkalies and very careful dieting are required for long periods in their treatment.
4. The diet should never be increased if any epigastric pain, tenderness, or resistance are present, but rather decreased.
5. A good post-ulcer regime is necessary for all cases whether treated surgically, medically, or both.
6. Ulcer patients require thorough training in this regime before leaving hospital.
7. The post-ulcer regime should be permanent and strict, because of human nature, frailty and forgetfulness.

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