which produced a somewhat similar result. The treatment sometimes took a few months; Stutterheim himself states that twenty-four visits are usually necessary, but as many as ninety may be required, though I never actually saw a patient more than fourteen times. Even this I considered far too high, and therefore attempted by education of the proprioceptive sense to shorten the treatment and to give the patient more to work on at home. I then found that if one began this way round the average number of visits was four and the time one to two months or less.

In conclusion I wish to emphasize the clinical importance of absence or weakness of voluntary convergence and to point out the fact that it is among the most easily treated of the heterophorias.

Summary

This paper is an analysis of 6,400 case sheets of private patients with reference to the frequency of the type of patient presenting exophoria at reading distance on the Maddox wing test and absence of the power of voluntary convergence. There were 2.6 per cent. of cases, and these are analysed into groups according to age, to refraction, and to type of patient.

The cerebral localization of the centres concerned in convergence is considered and the evolutionary value and meaning of the movement. Treatment and its results are dealt with. The conclusions agree in the main with those of other observers in that it can be shown that the condition is due to a developmental lag (functional, not anatomical), and that neither age nor accompanying error of refraction has any influence on its occurrence. In most individuals educative treatment of the cerebral centres and facilitation of the reflex by exercises have a marked beneficial effect.

RESULTS OF AMBULANT TREATMENT OF PEPTIC ULCERS

BY

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Lack of beds has been a great handicap in the work of voluntary hospitals, yet it has led to one considerable advance in medical treatment. Davies (1936) was obliged to treat sufferers from peptic ulcer as out-patients, and he found that healing was obtained in the great majority. The economic saving to such patients was considerable: the usual previous in-patient treatment, though probably effective in a higher proportion of cases, necessitated a long rest in bed and was a severe financial strain on many patients.

Davies was concerned primarily with the part played by nervous disturbances in the production of peptic ulcer. The hypothesis is an ancient one. Fresh supporting evidence has been supplied in the last few years. Two clinical papers by Davies and Macbeth-Wilson (1937, 1939) attempt to establish the connexion. Recent animal experiments indicate the physical channels through which the mind may affect the stomach. Hoff and Sheehan (1935) found haemorrhagic erosions and gastric ulcers following stimulation of the hypothalamus. Mettler and his co-workers (1936), after ablation of part of the cortex anterior to the pyramidal region, found petechial haemorrhages and later gastric ulcers.

It is possible to ascribe the healing of ulcers under various medical regimes solely to factors which, like rest,

may exert their effects through the mind, and to deny the value of diet and alkalis. A series of controlled experiments on dogs suggests that this is untrue. Stalker and others (1937) showed that a milk diet—as opposed to the ordinary kennel diet—alkalis, and more particularly a combination of both, inhibited the development of ulcers after the giving of cinchophen. It would be inadvisable, therefore, to neglect such factors in the treatment of peptic ulcer.

Treatment in the Present Series

Forty-two patients with uncomplicated chronic gastric or duodenal ulcers have been treated since 1936 at Westminster Hospital along the lines advocated by Davies. The results are not as complete as could have been wished, owing to the outbreak of war; they are, however, satisfactory and clear-cut.

The outline of treatment is as follows. The patients went to work in the ordinary way. They were forbidden red meat, all “spices” and spicy foods, and alcohol; tobacco was restricted to a maximum of ten cigarettes a day. Six meals a day were rigorously enjoined. Alkalis were only taken when the patients experienced any pain. A mixture of magnesium carbonate and bismuth oxy-carbonate was usually employed, in some cases magnesium hydroxide alone. Olive oil was never prescribed. Tincture of belladonna was ordered in about half the cases. Some of the patients were put on bromide and phenobarbitone; otherwise no systematic attempt was made to deal with mental factors: with more attention to this point results might have been better. The patients reported for some time at fortnightly intervals. They were apt to misunderstand or neglect parts of the regime; frequent consultations led to more rapid imposition of the regime and so to earlier symptomatic relief. As soon as this had been achieved they returned monthly. Radiographs were taken every three months, and strict treatment was continued for some time after the disappearance of radiological signs of an ulcer (see below): no set rule was observed in the matter. After this some relaxation was permitted. Veal, lamb, and mutton were readmitted to the diet. Alcohol was allowed in moderation and tobacco up to twenty cigarettes a day. The patients reported at three-monthly intervals. Those cases in which little or no healing was visible at the end of a year were considered failures on this line of treatment.

The original clinical diagnosis was confirmed in all cases by radiographs. “Radiological cure” was considered to have taken place when the crater and all signs of localized tenderness and spasm had completely disappeared.

Results

Of the forty-two patients two abandoned treatment and one had a perforation, for which an operation was performed successfully: no other perforation or haemorrhage occurred in the series. Of the remaining thirty-nine cases twenty-three progressed to “radiological cure,” seven were failures, and in nine the data are incomplete (Table I). The ratio of cures to failures is high. Nearly all cases, whether ultimate successes or failures, lost their pain as soon as the full regime had been established.

TABLE I.—Outline of Results

Successes	Failures	Data Incomplete	Total
23	7	9	39

Of the nine in whom the data are incomplete six showed definite radiological improvement. In several of the

successful cases recovery was obtained after one or two radiographs had shown little or no improvement; in none of the failures had improvement been seen followed by relapse (though such can occur). It is more likely, therefore, that some of the remaining three of these nine cases will be cured than that any of the other six will relapse. Three, then, is probably the maximum of failures to be expected from this group. This brings the number of cures in the thirty-nine cases to a probable minimum of twenty-nine and of failures to a probable maximum of ten. The cures constitute approximately 75 per cent. of the total number of cases.

Table II shows the length of time from start of treatment to "radiological cure." It can be seen that the

TABLE II.—Time taken to "Radiological Cure"

	End of 3 Months	End of 6 Months	End of 9 Months	End of 1 Year
Cases	2	10	8	3

bulk of recoveries occurred at the end of six to nine months of treatment. Three of these twenty-three have since recurred (or possibly relapsed; see below) after three, nine, and sixteen months; in each case the trouble responded readily to treatment.

Table III shows the length of time over which the failures were followed. This table, taken in conjunction with Table II, suggests that few cures were to be expected after one year.

TABLE III.—Length of Observation of Failures

	Over 1 Year	Over 18 Months	Over 2 Years
Cases	2	4	1

Discussion

The gastroscope has shown that the disappearance of radiological signs of an ulcer indicates considerable but not necessarily complete healing. The same applies to negative occult blood findings. Absolute proof of complete healing is furnished only by gastroscopy. It is essential in the handling of ulcer cases that treatment should be prolonged until healing is complete. Ideally, therefore, treatment should be controlled by the gastroscope. This is not always practicable; when it is not, the strict regime should be continued for some time after "radiological cure." The proper interval needs to be determined by gastroscopic observation; three months might be taken as a working rule. It is likely that the majority of cases treated in this manner and showing definite improvement would progress to complete healing.

The rival claims of medicine and surgery in the treatment of peptic ulcers have been debated for long. One thing is certain—that adequate medical treatment can produce excellent results. Even the simple treatment outlined in this paper leads to healing of an ulcer in most cases. The rigorous bed treatment described by Hurst (1937) will probably very often succeed where the other has failed. Medical treatment unfortunately does not remove the liability to recurrence. However, Hurst finds that on an adequate post-ulcer regime recurrence is infrequent and readily responds to treatment.

Some authorities have held that reappearance of symptoms after apparent cure of an ulcer has been due to relapse of an incompletely healed ulcer rather than to the development of a new one. Such a belief was consistent with the "focal sepsis" and other hypotheses as

to the origin of peptic ulcers. Nowadays the majority probably believe that recurrence is common: it is to be expected on the "neurogenic" hypothesis. The evidence in favour of recurrence has been strong, but unfortunately indirect. Direct proof has recently been provided through gastroscopic observation (Schindler and co-workers, 1938).

The need for a post-ulcer regime is a weakness of medical treatment. Such a regime is an impossibility for some on account of the nature of their work or because of their temperament. For most it is more or less of an imposition. The alternative is gastrectomy. The late results of gastro-enterostomy in chronic uncomplicated peptic ulcer have been bad and have thrown discredit on surgical methods of treatment. This is a pity, as the late results of gastrectomy are good. The danger of recurrence and the liability to dyspepsia have largely been removed. Iron is often needed, as are dietetic restrictions of some sort, but, generally speaking, these impositions are not as onerous as those of the medical post-ulcer regime. The main objection to gastrectomy is its mortality. An operation with such a mortality rate is not lightly to be urged on the common sufferers from peptic ulcers—people in the prime of life whose death profoundly affects others besides themselves. Against this risk should be set that from haemorrhage and perforation while under medical treatment. It is important that the relative magnitude of these risks should be known, as these may have an important bearing on the choice between surgical and medical treatment.

Unfortunately the statistics on this, and for that matter other, points contain many fallacies. Some of the patients dying from haematemesis have never been under medical treatment. Many of the statistics are collected over a period of five or ten years only, but since the liability to peptic ulcer is conterminous with life statistics collected over short periods are of limited value. Other figures are extracted from the work of several people, not necessarily all specialists in this field; it is doubtful if such figures are much of a guide to treatment. Apart from all this the statistics are relatively crude. For example, the mortality from perforation and haemorrhage under medical treatment may be very different in those cases which respond readily from that in the cases which are resistant. The statistics give no indication of this.

Peptic ulcer clinics have been established in several hospitals. Their constitution tends to ensure adequacy of treatment, critical analysis of results, and freshness of attack upon the many problems of this disease. Good follow-up departments should make possible the collection of satisfactory statistics. More of such clinics might be established with advantage.

Summary

Forty-two cases of peptic ulcers have been submitted to ambulant treatment. The proportion of cures has been high.

The treatment of peptic ulcers is discussed, and it is concluded that valuable results may be expected from the work of peptic ulcer clinics.

I am indebted to the honorary physicians of the hospital for kindly allowing me access to their cases and for permission to publish this paper.

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