Complete Gastrectomy

Complete gastrectomy (Moynihan) is a difficult operation technically, and attended by an appreciable immediate mortality. It is indicated in some cases of gross scirrhus carcinoma of the leather-bottle type. It consists of resection of the whole stomach, and end-in-side, or side-to-side, anastomosis of the lower end of the oesophagus with a high loop of jejunum. The latter is brought up through a fenestra in the transverse mesocolon. The two limbs of the jejunum may be anastomosed lower down to short-circuit the bile and pancreatic secretions.

X-Ray Appearances after Complete Gastrectomy

If examined a few weeks after operation the meal will be seen to pass rapidly down through the stoma into the coils of jejunum. Even at this stage there may be evident some dilatation of the jejunal loop close to the stoma.

Butler¹ has described the appearances in a case six months after complete gastrectomy. The feature in it was a considerable dilatation of the jejunum close to the oesophageal stoma. The dilated portion was ballooned into the left dome of the diaphragm, contained a gas bubble, and simulated the fundus of a normal stomach. Doubtless the constant upward pressure of gas in this loop contributed to this effect. Barium remained in this dilated pseudo-fundus for more than five minutes. At the end of an hour all the barium had accumulated in the pelvic coils of the ileum. Transit is therefore rapid, as in the partial gastrectomy cases.

REFERENCE

- ¹ *Brit. Journ. Surg.*, 1927, xv, 38, 316.

THE RELATIVE ADVANTAGES OF BRITISH AND FOREIGN HEALTH RESORTS*

BY

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The British Health Resorts Association broadly classifies health resorts into: (1) spas, (2) resorts at the seaside, and (3) resorts inland. In all cases climate must be considered important from the point of view of health, using the word climate in a wide sense to include not only the air with its temperature, moisture, and movement, but sunlight and more intangible influences which may arise from running water, vegetation, and animal life, and which affect our spirits as well as our bodies.† While inland health resorts rely entirely on these factors, those at the seaside and spas have the sea and natural waters as additional agents for the promotion of health.

In a comparison of British and foreign health resorts it is wise to consider the people who go to them. By far the largest number of visitors are the holiday makers,

who have no thought of health, but who look for a pleasant place with a "change of air" and plenty to do. With these people we are not concerned at all. A second group consists of those who, in the main, are out for a holiday, but who wish to take some medical treatment as well. For instance, the man who overeats all through the year takes a cure during his holiday in order to go through the round once again. These people have money to spare, and may prefer a foreign spa, since the change in their surroundings will be the greater. Nor can there be any objection, since this country receives numerous visitors from America, and America must receive an equivalent in imports and services from the Continent. It was quite different in 1932 when the British Health Resorts Association was founded; that was a time of temporary danger, and English people were asked to stay in their own country. A third group consists of those who visit a health resort purely for the sake of their health.

Health resorts, so far as they contain up-to-date installations, can provide all those general physical methods of treatment that can be obtained in London or in other large centres—for example, douches, steam and paraffin-wax baths, diathermy, etc. All the larger spas, British and foreign, are alike in this respect. In fact, until quite recently, these general methods of treatment were administered more effectively at a spa than in London, although there is no reason why this should have been the case, since all towns nowadays have water and an electricity supply.

Climate

Climate is generally described as "tonic" or "bracing," and on the other hand as "relaxing," or, if this word has unpleasant associations, as "sedative." From the point of view of clear thinking the use of these words might well be discontinued. A "bracing" climate can only mean a climate of marked cooling power. Leonard Hill's observations with his kata-thermometer show that cooling power depends on three factors: temperature, humidity, and the movement of air. Hence a bracing climate must mean one possessing a cool, dry, breezy atmosphere, while a relaxing atmosphere will be hot, moist, and still. British spas, with the possible exception of Bath, belong to the former category, and this is an advantage, because at the end of the cure the patient can go straight back to his ordinary occupation. The same is not the case with a relaxing climate. For instance, a patient of mine described a previous visit of hers to Salso Maggiore as extremely tiring, and she had to go to the mountains in Switzerland before returning to England; this is the "Nach-kur" of the Germans.

British seaside resorts have a wonderful variety of climate. In the South-West they approximate to the French and Italian Riviera, but as there are usually more clouds in the sky the fall in temperature at night is less marked; the days are not so hot and the nights are not so cold. The resorts in the East and North-West are cool, while those in the South-East may be regarded as intermediate. Full details are given in the handbook of the British Health Resorts Association.

Physiological Effects of Mountain Climate

England possesses no mountain climate, and if such is required patients must go to Switzerland, or further afield to the High Tatra in the Carpathians. It is claimed that clinically the moorland climate in the North is equivalent to a mountain climate. A valuable summary of the physiological effects of a mountain climate (not applicable to any English resort) was communicated by Professor A. Loewy to the International Society of Medical Hydrology at its annual meeting this year in Switzerland. The action of such a climate is due to the reduced

* Read in opening a discussion in the Section of Balneology and Climatology at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

† It is advisable not to be too sceptical in these matters. I need only allude to the recent correspondence in *The Times* on water diving and on the important experiments carried out last year by Dr. Lintott in the Physiological Department of Guy's Hospital. He found that water running beneath the subject produced an increase of tone in the muscles with corresponding rise in the twig or other apparatus used; and that this effect was not abolished by electrical insulation of the body, but that it was necessary for the subject to throw the muscles of the arms and legs voluntarily into tension. Thus the results were not obtained when the subject walked on a smooth surface such as glass, since there was no purchase for the legs. May not these obscure influences have some medical bearing in the future? We read that water diving continued through the afternoon produced a headache!

pressure of oxygen, which appears to stimulate the production of adrenaline, causing a rise of blood sugar, an increase in the formed elements of the blood which are at first pressed out of the spleen; there is an increase of glutathione, the ferment first prepared *in vitro* by Sir Gowland Hopkins; and certain substances appear in the serum, known as haemopoietins, which have the property of hastening the regeneration of blood after haemorrhage. A point of some interest is the rise of serum calcium, which means that the sympathetic becomes less excitable and the thyroid less active. This fact was discovered empirically a number of years ago when an exophthalmic goitre patient, sent from Vienna to the High Tatra, did remarkably well; the mountain climate is now recognized to be of value in this disease, and insured patients are sent to the Tatra. No patient with cardiac insufficiency should be sent to the mountains; but it has long been known that patients with phthisis and surgical tuberculosis do well there. The deficiency of oxygen must clearly be a responsible factor, since among other things this stimulates the production of red cells and counteracts the anaemia.

What is meant by "fresh air" in the treatment of phthisis in this country? "Fresh air" does not mean air with an unusually large amount of oxygen in it, because the percentage of oxygen is much the same in the country as in the town. When animals are placed in oxygen the haemoglobin content of the blood diminishes, and oxygen in no way stops the tuberculous process when the animals have been infected with the disease. The Swiss climate is beneficial because the pressure of oxygen is below normal. "Fresh air" treatment of phthisis in this country must mean treatment by cold, since this has been found to increase the metabolism of the resting subject, and patients who live out of doors all the time have better appetites and eat more food to provide fuel for their increased metabolism. The three general factors in treatment that can be supplied by the tuberculosis sanatoria of this country are fresh air with its increased cooling power, rest, and good food. A fourth factor—diminished oxygen supply—is only present in the mountains. Sunlight is a fifth factor suitable for surgical tuberculosis, but this is not given in phthisis, since it causes haemoptysis from congestion of the lungs—at least, that is the Swiss experience.

Sea Bathing

Michelet, writing in 1861, said that the English doctor Richard Russell (1700-71) had "invented the sea." Russell noticed that the fisherfolk were free from scrofulosis; that the women had white teeth and hard gums, and were free from all putrid coughs and fluxions; and that children who came to the sea weak, wan, and too warmly wrapped up, were sent back to their parents after sea bathing "bare-necked, their hair shaved, and tumours of the neck cured and the countenance healthy." He remarked that the sea had great and varied excellencies, but it might be misapplied by unskilful persons. This pioneer work of Russell's was followed by that of Lettsom, the Quaker physician, who was responsible for the building at Margate of the Royal Sea Bathing Infirmary for the relief of the scrofulous poor of London and all England. The *Gentleman's Magazine* states that "the patients have medical assistance, and a bathing machine has been built for their sole use." The foundation stone was laid by Lettsom in 1792, in the presence of many rejoicing spectators. This early work has now spread round the world.

The most complete study of the effect of sea bathing on children has been made by Haerberlin, and he himself addressed this Section a year or so ago. He, with Krauel,

studied the reaction of the rectal and skin temperatures to sea bathing and air baths. They found that the chest measurements and vital capacity increased much more quickly during the summer while at Wyk than during the rest of the year at home. There was an increase in the haemoglobin content of the blood, which fell during the rest of the year, and in the case of one boy observations were carried out through six successive years. There was a marked increase of weight, which took six weeks before it became constant. This work is an impressive performance, and it has only been possible to quote a few of the most striking results. On the face of it, it would seem that the seaside might vie with the mountains as a blood-regenerating agent. It would be most desirable that some enthusiastic observer should repeat similar measurements at an inland station, so that the merits of these two types of health resorts could be compared. A boy scout or girl guide camp would provide healthy subjects for study, especially if the camp went alternate years to the seaside and inland.

Our seaside health resorts are not charitable institutions, nor are they health stations conducted by the Ministry of Health with the taxpayers' money. They are largely run for the benefit of the ratepayers and the hotel proprietors, and the medical aspects of sea bathing often have to take second place to popular baths, sun bathing, sports, and carnivals, which will attract visitors in their thousands. But medical baths have been instituted recently at Hastings, and are available at other places. It is important that any municipality which intends to introduce such baths should put the plans before a medical advisory committee, and that the baths when instituted should be under some kind of medical supervision, and not left to the sole control of a bath master who has had a little technical training.

Spa Waters

Successful attempts have been made to demonstrate the specific biological action of certain natural waters and baths. Reference may be made to the late Professor Billard's observations on Vichy water, which have been described by Monod and Ferreyrolles, and to Baudisch's work on the ageing of waters carried out at the Saratoga Springs. Harpuder at Wiesbaden has recently shown that mineral-water baths containing 0.6 per cent. sodium chloride taken at an indifferent temperature produce biological effects that were not observed in controls, or when baths of tap-water were taken at the same temperature.

Natural Waters in England

In this country reference may be made to the well-known experiments of David Brown and Woodmansey on the Harrogate sulphur water, and those of Bain on a patient with a biliary fistula. Buxton water has been shown to produce a diuresis. The daily output of urine from a number of subjects was measured first of all on a controlled diet, then with the addition of a pint of tap-water, and finally the tap-water was replaced by Buxton water. I should feel happier in my own mind if these experiments could be repeated in a different order, with the Buxton water period before the tap-water, to make quite certain that the diuresis attributed to the Buxton water was not the result of the previous water-logging of the individuals.

Our lamented colleague Michael Foster published shortly before his death an excellent handbook on British and foreign spas.

It may be taken for granted that the use of natural waters will be promoted in proportion as research work of value is carried out in the locality; in fact, it is only necessary to attend the meetings of the International

Society of Medical Hydrology in order to realize that advance is being made over a wide front, and that in research this country is by no means behind. But this applies chiefly to the larger and more important spas. One of the difficulties is that in the smaller ones it is often not generally realized that the waters have valuable properties. For instance, it has been pointed out that the Pittville Spring in Cheltenham has practically the same composition as some of the Vichy springs. It would be expected that in a country like England, where all but a few geological formations are well represented, a great variety of waters would be encountered. There are, no doubt, more in existence than are used; but it must be admitted that this country is rather poorly supplied with thermal waters, Bath and Buxton being brilliant exceptions, and there is no water containing carbon dioxide.

Turning to the subject of muds, or peloids, as they are called in the new classification, there is plenty of peat and alluvial mud available, but there is no hot volcanic mud such as is found on the Continent. Another difficulty that the British spas have to contend with is that they are mostly residential towns, and the interests of the residents and of the medical men and hotel proprietors tend to be opposed. To have an up-to-date hydrological institution with medical baths it is necessary to spend money and so to increase the rates. This appeals to one section, but is not unnaturally opposed by the other.

Post-Graduate Teaching in Hydrology

Perhaps the main difficulty in the more widespread use of our natural resources at the seaside and inland lies in the lack of knowledge on the part of the average medical man in the locality as to what is possible with these newer methods of treatment and how to apply them. It should be the object of the Section in future years to remedy this deficiency. It would clearly be wrong to try and insert any teaching or examination on the special subject of medical hydrology into the undergraduate's medical curriculum. Already the latter is too full, and with the advance of general medical knowledge it is likely to become still more so. The best way would be to institute post-graduate teaching in this subject with a diploma at the end of the course. Many of the more specialized branches of medicine—for example, radiology—are served in this manner. Now would be a suitable time to introduce such a scheme, since the University of London, with the assistance of the Government and the London County Council, is about to open a new post-graduate college. These authorities should be urged to add a voluntary course of instruction in climatology and medical hydrology to the curriculum.

The Year Book of the Royal Society of Tropical Medicine and Hygiene contains the twenty-seventh annual report of the council, in which it is mentioned that the forthcoming volume of the *Transactions* will be seventy pages larger than its predecessor. An affiliation has been arranged with the Fellowship of Medicine whereby Fellows of the society are enabled to claim a useful reduction of fees for any of the Fellowship's post-graduate lectures and demonstrations. It is expected that this will prove useful to any Fellows of the society who are home from abroad on leave, and to any others who are visitors to London and desirous of bringing up to date their knowledge of some branch of medicine or surgery. The debt on Manson House is being decreased slowly. The Year Book also contains lists of Fellows alphabetically and geographically arranged, the accounts for the year, lists of papers and short communications published in the *Transactions*, and a directory of officers of the society, including local secretaries throughout the world.

MEDIASTINAL AND APICAL EMPYEMA

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(With Special Plate)

The combination of two encysted purulent effusions within one pleural sac is sufficiently rare to be worthy of record. In the case now to be reported two loculated empyemata occurred in the right chest, one in the right posterior sub-apical region, the other between the right side of the pericardium and the pericardial aspect of the right lung. The condition gave rise to considerable difficulty in diagnosis, even after an x-ray examination of the chest. The course of the case, which was stormy, is detailed below, but the patient eventually made a complete recovery. A series of antero-posterior radiograms illustrates the progress of the condition.

Case Report

H. D., male, aged 45. The patient had been vaguely unwell for some two or three weeks, but able to continue work. His present illness commenced suddenly, and appeared to be a typical right-sided lobar pneumonia with physical signs in the right chest; the temperature fell by lysis on the seventh and eighth days. Further elevations of temperature were then observed by his doctor, and he was first seen by one of us (S. J. H.) on the eighth day. The patient was ill and toxic. He had a temperature of 102° F. and a pulse rate of 120; there was dullness under the right scapula extending upwards towards the apex, while anteriorly dullness extended from the sternum outwards to the right for some 3½ inches. The chest was explored posteriorly, and green pneumococcal pus was removed. A radiogram (Fig. 1 on Plate) showed two shadows in the right chest: the first, a subapical shadow, was considered to be a loculated empyema, but there was some doubt as to the nature of a second semicircular shadow extending outwards from the right mediastinum. The density of the second shadow was slightly greater than that of the apical collection; the three facts, that there was no cardiac displacement, that the shadow was not in contact with the diaphragm, and that there was no corresponding convexity of the left side of the pericardium, suggested that the shadow was that of a mediastinal collection of pus.

The subapical empyema was drained by the open method at the lowest point by resecting two inches of the fifth rib at the inner border of the scapula (L. N. P.). Only about 3 oz. of pus were evacuated, but a further quantity drained in the succeeding twenty-four hours. A tube was inserted. It was decided not to operate upon the mediastinal empyema at this stage, but to await events: the condition of the patient did not at once warrant a further operation, especially as the procedure might not prove to be very simple.

The patient continued with a leucocytosis of 18,000 to 20,000, and a temperature above 100°. On the seventh day after operation his temperature was 101°, and he was very restless. Quite suddenly the cough became more productive and purulent; during the next night the patient expectorated at least ¾ pint of non-fetid yellow pus, and during the following day a rather smaller quantity, about ¼ pint being expectorated in a sudden paroxysm. A second radiogram was now taken (Fig. 2). The apical collection was shown to be draining satisfactorily, and the semicircular mediastinal shadow was considerably smaller and less dense. The zone of aerated lung between the two loculi was broader. These appearances confirmed us in our opinion that the mediastinal shadow was pus and not growth.