An Address

ON

SURGICAL CONVALESCENCE.

DELIVERED BEFORE THE MANCHESTER SURGICAL SOCIETY

BY

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It is especially in war time that the problems of convalescence are most clearly perceived, and it was during a period of the war in which part of my duty was to inspect medically a group of Red Cross convalescent hospitals that the importance of convalescent treatment impressed itself on my mind, and I determined to devote more attention to the follow-up and after-care of surgical patients.

Since that time it has been my practice at the Manchester Royal Infirmary to devote a part of one morning each week to seeing patients who have been discharged from my wards. All patients, on leaving hospital, are given cards and are instructed to attend, and a record is kept of their progress and of the final result of treatment. In many instances one attendance suffices, in others repeated visits are made. For example, after operations for gastric and duodenal ulcers patients attend every three months during the first year, and at intervals of six months during the second year. This practice has been a source of much interest, and many lessons have been learnt.

There is little doubt that surgeons are tempted to concentrate too much on the operations themselves. We live in an age of speed. Operations are becoming more or less standardized and patients are discharged as soon as possible, often to be lost to the surgeon for ever. But the human body is not a mere machine, and the hospital is not comparable to a Ford factory. Surgery is something more than the mechanical side of medicine, and the operation is but one therapeutic measure in the treatment of the patient. As one surgeon has said, "Any operator of experience can perform a gastro-jejunostomy, but it takes a surgeon to know how to remove a tube from an empyema." It may be true that the better the operating the less will be the need for after-treatment, and many of our patients will do well if left alone; but many will be restored to complete health more comfortably and more quickly by proper after-care, and some of them will prove failures from want of it. Operative technique has attained a high stage of perfection, and great improvement has been made in pre-operative preparation and immediate post-operative treatment, but the convalescent stage has not received the attention it deserves. The contemporary literature is extraordinarily scanty. I submit that the whole subject requires more scientific investigation. Our attitude resembles too much that of the ancients, as illustrated in the writings of Plato, who said:

"In all well ordered states every individual has an occupation to which he must attend, and has therefore no leisure to spend in continuously being ill. This we remark in the case of the artisan, but, ludicrously enough, do not apply the same rule to people of the richer sort. When a carpenter is ill he asks the physician for a rough and ready cure, an emetic or a purge, or a cautery or the knife—these are his remedies. And if someone prescribes for him a course of diuretics, and tells him that he must swathe and swaddle his head, and all that sort of thing, he replies at once that he has no time to be ill, and that he sees no good in a life which is spent in nursing his disease to the neglect of his customary employment; and therefore bidding good-bye to this sort of physician, he resumes his ordinary habits, and either gets well and lives and does his business, or, if this fails, he dies, and has no more trouble."

I have recently undertaken an inquiry into the duration of convalescence and the symptoms that arise between the time of leaving hospital and of return to light work or full occupation; 825 letters were sent out to male patients who had been operated on in the Manchester Royal Infirmary for gall stones, duodenal ulcer, chronic appendicitis, inguinal hernia, and haemorrhoids; 630 replies were received, and 130 of these were discarded as the replies were unsatisfactory. Letters were dispatched in batches until 100 satisfactory replies had been received from cases of each operation. The results are shown in the table.

TABLE I.—Average Duration of Convalescence after certain Operations.

Time.	Gall Bladder.	Duodenal Ulcer.	Appendix	Hernia.	Haemorrhoids.
Under 25 days ...	1	1	2	7	26
25 to 50 days ...	12	10	20	24	50
50 to 100 days ...	37	45	41	43	20
Over 100 days ...	40	38	36	22	4
Still doing light work ...	10	6	1	4	—
Total ...	100	100	100	100	100

The occupational classification in Table II is based on the two groups of indoor workers and outdoor workers, light and heavy work in each section forming a separate class. Class A contains those engaged in heavy outdoor work—carters, labourers, colliers, blacksmiths, bricklayers;

TABLE II.—Average Period of Convalescence in Relation to Occupations.

Occupational Class.	Age.	Return to Normal Work.	Return to Light Work.	Period of Light Work.	No. of Cases.
I. Gall Bladder.					
		Days.			
Class A ...	46.4	149.5	28.5	51.2	12
" B ...	46.4	110.3	31.4	33.3	9
" C ...	50	91.5	21.4	14.5	13
" D ...	44.7	110.3	29.2	14.3	53
Average ...	46.9	115.4	—	—	90
9 still doing light work; 1 unable to work ... 10=100					
II. Duodenal Ulcer.					
Class A ...	41.5	143.4	34.4	47.5	26
" B ...	38.4	112	59.9	21.6	9
" C ...	40.1	125.1	44.5	25.2	22
" D ...	38.9	72.3	17	17.9	37
Average ...	39.7	113.2	—	—	91
6 still doing light work ... 6=100					
III. Appendix.					
Class A ...	34.5	119.3	45.5	91	10
" B ...	40.9	106	21.5	15.7	20
" C ...	32.8	105.3	34.5	21.3	30
" D ...	30	85.5	7.8	10.8	39
Average ...	34.5	104	—	—	99
1 still doing light work ... 1=100					
IV. Inguinal Hernia.					
Class A ...	38.3	116.1	24.3	32.2	29
" B ...	29.5	56.8	23.5	12.7	10
" C ...	35.2	88.5	23.8	33.6	29
" D ...	35.1	75.6	16.5	19.5	28
Average ...	34.5	84.2	—	—	96
4 still doing light work ... 4=100					
V. Haemorrhoids.					
Class A ...	43	40.7	8.5	8.4	25
" B ...	43.3	38	3.6	2.8	18
" C ...	38.9	44.2	4.8	14.9	30
" D ...	38.4	40.7	2.9	5.3	27
Average ...	40.9	40.9	—	—	100

Class B, light outdoor work—tram guards, tram drivers, police constables, motor drivers, painters, postmen; Class C, heavy indoor work—fitters, engineers, joiners, stokers; Class D, light indoor work—shop assistants, tradesmen, clerks, professional workers. In each instance the period of convalescence is reckoned from the date of operation, not from the discharge from hospital.

TABLE III.—Results of Operations as Manifested by Percentage Return to Work.

Disease.	Average Age.	Returning Direct to Full Work.	Returning via Light Work.	Still Doing Light Work.	Complain- ing of Symptoms
		Per cent.	Per cent.	Per cent.	Per cent.
Gall bladder ...	46.9	62	28	10	21
Duodenal ulcer ...	39.7	61	33	6	28
Chronic appendix ...	34.5	73	26	1	37
Inguinal hernia ...	34.5	58	38	4	20
Haemorrhoids ...	40.9	82	18	—	13

Symptoms noted after certain Operations.

Gall Bladder.—After symptoms complained of in the gall-bladder cases were: recurrence of original symptoms, one case; flatulent dyspepsia, three cases; biliousness and pain in gall-bladder area, one case; cramp-like or colicky abdominal pains with occasional diarrhoea; pain and neuralgia in the scar; pain and heavy feeling in the scar on exertion; weakness and bulging of the abdominal wall in the region of the scar; and general debility.

Gastro-jejunostomy.—The symptoms complained of after gastro-jejunostomy for duodenal ulcer were: dyspepsia, five cases; vomiting, three cases; biliousness, one case; flatulence, four cases; symptoms as before operation, one case; abdominal distension, one case; pains in region of scar, one case; pain in the back, one case.

Chronic Appendicitis.—After operation for chronic appendicitis patients complained of pains in abdomen, eight cases; vomiting, four cases; flatulence, two cases; biliousness, one case; severe constipation, three cases; looseness of bowels, one case; pain, neuralgia, or stiffness in the region of the scar, six cases; sleeplessness and nervousness, one case; pains similar to those before operation, one case.

Radical Cure.—After radical cure of inguinal hernia the symptoms arising were pain, eitheraching or neuralgic, in the region of the scar, a feeling of weakness or dragging in the same area, stiffness in the surrounding muscle, and backache.

Haemorrhoids.—After the operations for haemorrhoids symptoms included impaired control of the bowel, two cases; loose swollen skin around the anus, two cases; irritation or itching at the anus, six cases; feeling of fullness in the anal region, one case; rectal discharge, one case; rectal bleeding, one case; severe constipation, one case; and pain in sacral area, two cases.

E. W. Bridgman has published statistics on the duration of normal convalescence based on his experience at the convalescent section of a group of base hospitals during the war. In the camps graduated exercise under military discipline was carried out, whilst relaxation, both mental and physical, was carefully provided for. A follow-up system was instituted, and it was ascertained that recovery was complete in more than 97 per cent. of cases. To compare the duration of hospitalization of patients passing through the camp with those discharged directly to duty a group of records was obtained from the hospital centre of the period before the opening of the convalescent camp. No follow-up system had been instituted for these patients, but Bridgman states that he had seen some of those discharged return to the hospital for relapse, weakness, painful wounds, or inability to keep up, and, after long intervals, some returned with functional mental disorders. The following table shows the average stay in hospital and camp under the two systems.

TABLE IV.—Experience of Convalescent Camps.

Diagnosis.	No. of Cases.	Average Stay in Hospital of Patients not going to Camp.	No. of Cases.	Average Total Stay in Hospital and Camp.
		Days.		Days.
Haemorrhoidectomy ...	21	20	25	45
Herniotomy ...	31	24	41	50
Hydrocelectomy ...	6	22	7	54
Tonsillectomy ...	10	20	8	37

He concludes that the average herniotomy needs several weeks of care before the patient is normal again, instead

of the three and a half that are commonly allowed, and he emphasizes the importance of graduated exercises and military discipline under real medical supervision in favouring and hastening convalescence. He states that the doctors and ward masters soon became adept in handling the occasional malingerer.

CONCLUSIONS.

I think my investigation shows that the transition stage between serious injury, illness or operation, and normal health is undoubtedly an episode of very great significance and economic importance. Convalescence is not an automatic process, but a definite state of illness in which arise minor ills and complications and deviations from the normal, and some of these may become fixed and serious. I doubt if operating surgeons sufficiently appreciate the shock and the prolonged effects of extensive operations. Moreover, the illness involves a change of habits and environment, and the patients suffer from the effects of enforced rest with its accompanying lack of exercise and deficient elimination. After the more serious cases convalescence is often as much a state of mind as of body. The wounds heal, but the patients are not themselves. All the organs are below the normal and nervous energy is diminished. They react excessively to any form of mental or physical stimulus. They tend to become introspective, and with this there may arise a state of nervous irritability leading at times to hysteria and neurasthenia. Patients often suffer from various slight ailments such as dyspepsia, constipation, and the neuralgias, and occasionally the most prominent feature is sleeplessness. Our aim must be to get the patient to resume his ordinary habits as quickly as is consistent with safety. Some are in danger of relapse in their desire to go too quickly, and must be restrained from doing too much. Others require constant encouragement to enable them to make the progress desired.

Few patients have a clear idea of what their conduct should be after leaving hospital or nursing home. They are very largely influenced by groundless fears and by the advice of ignorant or too solicitous friends. The family physician, when consulted, is not always a reliable guide, from lack of knowledge of the individual case or unfamiliarity with the surgical aspects of the particular condition. It would be of immense help if all medical practitioners could follow up their patients to hospital, be present at any operation performed, and visit them occasionally afterwards. Opportunities for discussion as to after-treatment would then always be possible, and, in the transfer of medical responsibility from hospital control to that of the practitioner, continuity of medical care would not be lost. Failing this, I think it is incumbent on the surgeon to communicate directly with the practitioner where a patient is discharged from hospital, and give him all necessary information. Much help can be afforded the patient by the personal advice of the surgeon. The condition found and the nature of the operation should be suitably explained, and he should be reassured whenever possible as to the future. He should be warned of the possibility of minor symptoms that may arise during convalescence, and of the dangers that ensue from morbid introspection. Particular cases require special advice—for example, enormous help may be given by instruction in the management of a colostomy. Some patients must be compelled to live within definite limits after certain operations. This is notably so in abdominal disease, especially after operations for gastric and duodenal ulcers, gall-stone operations, and when a condition of visceroptosis with intestinal stasis is present. In these instances I have found it most convenient to use printed charts of general instructions with special instructions as to diet.

The charts that follow are used in cases after operations for gall stones and duodenal ulcer.

INSTRUCTIONS AFTER OPERATION FOR GALL STONES.

Take frequent small meals rather than heavy meals.
Take a tumblerful of hot water night and morning.
Take a drink of hot water at the end of each meal.
Take salts in the morning once or twice a week.

Diet Advised.—Skimmed milk. Tea. Soups made with milk. Vegetables. Tapioca. Rice, etc. Cereals, oatmeal, etc. Fish, such as whiting, turbot, brill, sole. White meat and lean meat, boiled, grilled.

or roasted. Potatoes, mashed or in their jackets. Turnips. Spinach. Artichokes. Mild cheese. Fruit after three months.

Forbidden.—Fat and eggs. Stewed and fried foods. Sweetbreads. Liver. Duck. Kidneys. Pork. Black puddings. Game. High or spiced dishes. Oily fish. Soft roe. Herrings. Salmon. Sardines. Cooked butter. Peas. Cabbage. Raw vegetables. Strong cheeses. Aerated waters. Alcohol.

DIET AFTER GASTRO-ENTEROSTOMY.

Guides to Diet:

1. Easily digested food.
2. Large meals should never be taken.
3. Preferably there should be no drinking during meals.
4. Food and drinks should not be taken hot.
5. Eat slowly, masticate thoroughly, avoid bulky meals.
6. One glass of milk between meals and one before retiring.

Breakfast.—Carefully made porridge. Egg—lightly boiled. White fish, boiled or baked. Cocoa or weak tea with plenty of milk. Cold dry toast and margarine or butter. Cold boiled ham.

Other Meals.—Oysters. A little roast beef, well cooked, mutton or veal. Clear gravy. Boiled beef. Chicken. Tripe. Spinach. Cauliflower. Mashed potatoes. Macaroni. Milk puddings. Junket. Blanc-mange. Custard.

Forbidden.—Fried fish in fat. Smoked fish. Bacon. Sausage. Meat pies. Meat puddings. Stews. Made-up dishes. Re-cooked meats. Cabbage. Brussels sprouts. Carrots. Turnips. Parsnips. Watercress. Fried potatoes. Pepper. Mustard. Vinegar. Pastry. Cake. Brown bread. Jam. Sweets. Cheese. Coffee. Alcohol.

My investigations have shown that success or failure in the treatment of gastric and duodenal ulcers depends far more on proper after-care than the exact type of operation chosen. I am strongly convinced that the attitude of those surgeons who affirm that they have no use for any operation which does not completely cure the patient is entirely wrong.

A change of air greatly assists the convalescent. He gets away from the environment of his illness. He sees new scenes and new people and gets new interests. Routine and regularity should mark the period. Each day should be mapped out with the proper intervals of rest and

graded exercise, and the amount of mental recreation should be apportioned. While it is difficult to estimate accurately the effects of post-operative respiratory exercises and physical exercises on the Swedish principle, there is no doubt that the general circulation is improved, the bodily functions are more normally performed, muscular weakness is diminished, and the patient returns to complete health more quickly. I hold strongly that systematic exercises should be a routine measure in the convalescent period. The various measures of physiotherapy also hold a high place in conducting to rapid recovery.

For the convalescent period the hospital patient's own home does not, as a rule, provide an environment conducive to rapid recovery, and though many may be sent to convalescent homes there will always be a large proportion of patients for whom it is not possible to provide accommodation in these institutions. I strongly believe that there should be a convalescent department attached to each hospital. In this way we should eliminate the neglected period that now prevails between the completion of active surgical treatment and the time of return to full occupation. To this department there could be attached a social service, for it has been estimated that 30 per cent. of patients discharged from hospital require help in this direction. The medical staff in charge should be specially trained in convalescence. Here patients would be completely investigated and graded; their requirements as to diet, discipline, and physical and mental recreation would be determined, and any disabilities that arose or whose presence had been overlooked could be dealt with and the malingering eliminated. Advantage could be taken in many instances to improve the general health.

THE RESULTS OF INSULIN THERAPY IN DIABETES MELLITUS.*

BY

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ABOUT four years have elapsed since insulin became generally available in this country for the treatment of diabetes mellitus. This is not a very long period in which to judge the ultimate effect of insulin on diabetes, but it is sufficient to enable us to come to some definite conclusion as to its more immediate and direct influence on the disease. The theoretical considerations which govern the action of insulin in diabetes are quite clear. The oxidation of our food-stuffs requires the presence of a substance which is normally supplied by the pancreas. When, for some reason, the specialized pancreatic islet cells fail to supply this substance in the necessary amount, an interference with the burning up of sugar and fat results. This is the basis of diabetes mellitus. Since it is now possible to supply this essential substance in the form of insulin, it might be thought that the treatment of diabetes should no longer present any difficulties, and that all that is necessary is to supply sufficient insulin to make up for the deficiency in any particular patient.

The difficulty, however, is to supply the exact amount of insulin necessary for the varying requirements of the organism. In the body there is a mechanism which regulates the production of insulin in accordance with the tissue needs at any given time. The amount of insulin required by the body is dependent on many factors, and varies under different conditions. The artificial use of insulin by injection is attended by the drawback that we cannot regulate the amount required to supply the exact demands at any given time. It is true that in some patients we can get fairly close to the theoretical needs, but this can only be accomplished by paying great attention to

various factors, such as diet and exercise. Often it is impossible to regulate the artificial supply of insulin so as to simulate the normal mechanism. Though we can now supply the necessary insulin when the body can no longer secrete it, we can, so far, do but little to reproduce the results of the normal automatic mechanism which regulates the production of insulin according to the prevailing needs at the moment. This is one of the main difficulties in insulin therapy, but under ordinary conditions this drawback can generally be more or less overcome. It is when diabetes becomes complicated by various infections that our troubles really assume a serious aspect. In certain of these conditions insulin seems to lose its normal activity, and, in spite of greatly increased dosage, the patient may sometimes succumb. The healthy individual when suffering from a similar infection usually shows no disturbance of metabolism such as is seen in diabetes; it must, therefore, be assumed that insulin, when supplied naturally by the body tissues, is more effective in these conditions than it is when given artificially by injection. Indeed, in certain cases of diabetes complicated by severe infection, insulin artificially administered proves of little or no benefit.

Before considering the effects of insulin in diabetes it will be necessary to consider the results obtained by diet in the days before insulin was available.

Results of Dietetic Treatment of Diabetes.

For some years before the isolation of insulin much attention was paid to the dietetic treatment of diabetes, and many claims were made on behalf of this method. While it was generally agreed that the only means of influencing the disease in any way was by means of properly regulated diet, the outlook for the average patient suffering from the disease was gloomy in the extreme. Generally, it was found that suitable diet had a wonderful effect to begin with, but, in spite of the greatest care, the patient after a time gradually began to show his old symptoms, and soon a point was reached at which the strictest dietetic measures no longer prevented the occurrence of severe glycosuria and ketosis. From this point the patient usually went steadily downhill, and soon coma or some intermittent infection terminated the scene. The duration of life under dietetic treatment depended, of course, on the

* A paper opening a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Edinburgh, 1927.