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THE OPERATIVE TREATMENT OF GRAVES'S DISEASE.¹

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MY contribution to this discussion is made with a good deal of diffidence and hesitation, because my experience of the operative treatment of Graves's disease is quite a small one, and I regard many of the most interesting problems of the subject as being so far from solution as not profitably to be entered upon here. Limited as one's experience is, and it is based on less than 50 cases, it has enabled one to come to certain rough practical conclusions which I will attempt briefly to put before you.

In comparing the medical and surgical treatments of Graves's disease it must be kept clearly in mind that the former does not attempt to influence directly the course of the disease, but is limited to putting the patient under favourable conditions while the disease runs its natural course, to end in arrest, spontaneous cure, or death. Operative treatment, on the other hand, is intended to be specific and to deal directly with the disease itself. It is clear, therefore, that we have to take into account not merely the comparative mortalities of the two methods, but also the length of the natural course of the disease and the condition of the patient during its progress. That the condition of a patient with severe Graves's disease is a very miserable one is common knowledge and is strikingly shown by the willingness of the patients to submit to operation, although they are rendered morbidly nervous by the disease and have usually been told before they come to the surgeon that the operation is an excessively dangerous one.

While I do not attempt to minimise the fact that the mortality of the operation is a considerable one, and possibly greater than that of the untreated disease, I am convinced that it would be justifiable to run a good deal of risk if it were the means of avoiding the years of miserable illness which are the lot of so many of the patients. It seems to me, therefore, that now we know the operation can be done without, at any rate, a very great mortality, the principal interest centres round the results rather than around the actual death-rate. I confess that to me discussions as to the relative death-rates of the untreated disease and of the operation—now we know that they are not widely different—seem to be comparatively useless, whereas the question of what relief can be obtained by operation is of the utmost importance. Unfortunately it is a most difficult question to solve in a way satisfactory to any fairly sceptical inquirer.

There is no disease more difficult to deal with statistically than exophthalmic goitre. Not only does the fully developed disease include certain well-defined types, but this central group is surrounded by very numerous forms which constitute an unbroken series, from unmistakable Graves's disease on the one hand to wholly non-toxic goitres on the other. It is the actual difficulty in drawing sharp lines of distinction which makes one look upon all statistics of the disease, surgical or medical, with a certain caution. The same ambiguity renders the statement of results equally difficult to interpret. Anyone who has some experience of the operative treatment knows that all grades of relief are met with, from total and permanent disappearance of all symptoms to the mere temporary subsidence which follows all operations. To divide the results into classes according to cure, much improvement, no improvement seems to me to put much too great a strain upon the judgment of the observer, and can only be of any considerable value when the material dealt with is of enormous size.

Again, the selection of a single objective sign such as pulse-rate, exophthalmos, or body weight as a measure of improvement is open to equally serious objections. Exophthalmos or tachycardia may, as is well known, become

stereotyped and persist as an isolated phenomenon while the patient is perfectly well in every other respect. The body weight is at first sight a more valuable standard. Experience has shown me—though I do not believe the fact is generally recognised—that the body weight may show abnormal variation in *both* directions in Graves's disease—a pathological diminution being succeeded by a pathological increase, or *vice versa*.

I may mention two cases which illustrate how fallacious a mere record of weight may be. In each of them the first sign of disease the patient noticed was that she became very fat. As the disease developed severe emaciation came on, and at the time of the operation both patients were extremely wasted, the weight of one, for example, having fallen from the abnormal figure of 11 st. to below 6 st. In each case after the operation the patient rapidly put on flesh, and there was great improvement in all the symptoms. Then a stage was reached when the patient was uncomfortably fat, and though much better than before yet had a distinct residuum of symptoms. A second operation was now done. Following it all the symptoms completely disappeared and the patient actually lost weight, the one in whose case I have given the figures losing over a stone and settling down to 10 st., her normal weight.

In view of these and similar facts it would, in my opinion, be useless for me to attempt to set the results of my small experience before you in tabular form, and I shall therefore merely try to give as frankly as I can such practical general conclusions as I have come to.

In the first place I propose to deal shortly with the question of mortality. The operation is one which shows a marked contrast with all other operations on the thyroid. Of these latter, as is well known, there is practically no death-rate. In a considerable experience of thyroid operations, excluding exophthalmic goitre but including a fair proportion of malignant and of intrathoracic goitres, I have never lost a case from the operation, and that, of course, is the common experience. Graves's disease, on the other hand, shows a mortality which was in the early days heavy and is even now considerable. The mortality, however, presents this encouraging peculiarity, that it can be, and invariably is, reduced as the surgeon acquires experience in the special requirements of the operation.

Taking the experience of representative surgeons on the continent, you will find that out of the first 50 cases of any given surgeon he will usually lose 5 as a direct result of the operation. This 10 per cent. mortality is usually considerably reduced in a surgeon's later work, and is no doubt to some extent to be regarded as a measure of the difficulty in acquiring the special kind of knowledge which goes to successful operating on these cases. I should be inclined to venture the opinion that a reduction to 5 per cent. should be generally possible, and I think that if that could be established as a standard figure the operation could be regarded as having made out at any rate a strong *prima facie* case for being tried on a large scale.

In my own cases I have had a mortality of 10 per cent. This is undoubtedly, as I have already said, a high figure, and I may add by way of comment that it is based on a strict definition of the disease and an unwillingness to admit the larval forms except on very good evidence. Moreover, I have never felt justified in refusing to operate on a patient on account of the severity of the symptoms, for it is just the worst cases which are most urgently in need of relief, and for which if the operation is survived the most brilliant results can be attained.

Turning now to the results, one may begin with the general statement that all patients who get over the operation show some more or less permanent improvement, while in some all symptoms disappear as if by magic within a few days.

The two most definite statements one can make are, first, that patients with a small firm thyroid and marked symptoms scarcely ever show more than a temporary improvement. In them the operation is never seriously dangerous and never really satisfactory. The class is not a large one; I have dealt with not more than three or four definite cases.

Secondly, early mild cases—that is, cases without an abrupt onset, and showing a well-marked interval between the appearance of the physical signs and the development of the symptoms—invariably do well and are cured by a single operation. This class is well-defined, easy to identify, and allows of a positive prognosis being made. They constitute

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about a quarter of my material. The operation seems entirely free of danger, and no such case has ever given me any anxiety.

The bulk of the cases—more than half my material—presented the disease in a severe form, the symptoms being marked as well as the physical signs and the goitre well developed. In such cases the improvement seems to vary with the amount of thyroid removed, and in about half of them is permanent and more or less complete. A second operation may be necessary because of a residuum of symptoms being left or because a recurrence takes place. I am inclined to say of this class that at least half can be permanently cured, though some need a second operation to secure this result. Of the rest, the disease can be greatly relieved or brought to a standstill in most.

Anything more detailed than this rough analysis would not, in my estimation, at the present time be of much value, but I should like to add that I am deliberately giving cautious and conservative estimates of the results.

To turn for a moment to the more technical aspects of the subject I should like to add a few words as to anæsthesia and technique of operating. I have used chloroform, open ether, ether by intravenous infusion, and local analgesia.

There seems to be a strong current of feeling at the present day against the use of chloroform in these cases, and I must admit that I have been influenced by it. There can be no doubt that the drug is more toxic than ether, and I feel that we are not justified in adding any risk, however small, to those necessarily contingent upon the operation. Still, I should like to say that in all my earlier cases chloroform was used and gave satisfactory results in some of the severest. The pulse-rate practically always diminished during the anæsthesia. Of course, such an anæsthetic should never be given except by the most accomplished expert, and I was fortunate in having for the most part the assistance of my friend Dr. Herbert Scharlieb. Ether by infusion I do not regard as presenting any considerable advantage except possibly in the elderly where pneumonia is to be feared.

At present I rely entirely upon ether by the open method in combination with atropine, morphia, and scopolamine, and in certain cases upon local analgesia. In connexion with the use of ether I should like to lay stress upon the importance of the preliminary atropine and upon the anæsthetist satisfying himself that this drug is acting before he begins the anæsthetic.

With regard to the actual operation, the choice of the time for its being done is in my opinion very important. I do not, however, acquiesce in the view that has been expressed that the patient should be submitted to several months' medical treatment as a preliminary. After all, this merely means watching the course of the disease for such a period, and I think that after some experience one can estimate the type of the disease and the course it is likely to follow without an expenditure of time so discouraging to the patient. As to the existence of an acute exacerbation, I should not hesitate to operate at such a time if I thought the patient's life was being endangered by the condition, though as a general rule it would be better to wait. Bronchitis, tonsillitis, and acutely inflamed cervical glands which are common complications I regard as absolutely contra-indicating operation for the time.

I have come to regard the mental state of the patient as perhaps the most important feature of the case in prognosis both as to the danger of operation and as to the final result. All the patients are nervous—that is, of course, part of the disease; but not all are frightened, and the really frightened patient is the most dangerous of all. To explain this, I do not think it necessary to invoke the changes in the cerebral cells of frightened animals described by Crile. A much simpler explanation seems to me available. Fear acts by precipitating an access of tachycardia during which the pulse-rate is perhaps uncountable for hours. In such circumstances the anæsthetic does not produce the usual steadying of the pulse, and the shock of the operation or the least amount of cyanosis from laryngeal spasm may be fatal. It is in these cases that the modern method of ether administration is so valuable. In hospital nowadays in my cases the patient is always anæsthetised in bed in the ward.

In the actual operation itself speed is no doubt valuable, but it is much less important than gentleness of manipulation which is absolutely indispensable. A large incision is essential to give easy access to the gland, and any kind of

pulling is to be strictly avoided. In getting out the upper pole traction is very easily transmitted to the superior laryngeal nerve with the immediate result of causing laryngeal spasm and cyanosis—a most dangerous complication. Drainage is sometimes necessary when the anæsthetic is ether, to allow of the escape of blood. Otherwise I never use it, and I have not seen the slightest evidence that the thyroid secretion can cause symptoms by being absorbed from the wound.

The operation done in my cases has always been a partial thyroidectomy, usually the removal of one lobe and the isthmus.

The chief causes of death are shock during or immediately after the operation, an exacerbation of the disease within the next 24 hours, or pneumonia in the first week. I have lost two cases from shock, one from an acute exacerbation and one from pneumonia, and I am convinced by the study of that experience that the danger of the occurrence of such complications can be greatly reduced. This is to be effected by adequate mental and physical preparation of the patient, the choice of the best time for operating, the right anæsthetic for the given case, and the most careful avoidance of any traction upon or crushing of the gland. Such conclusions have been entirely borne out by my later experience.

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"ACHING THROAT."¹

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IT is known to us all that there are certain affections of everyday occurrence which, while not having the immediate destructive effect upon life which appertains to the various forms of malignant disease, yet in a way have considerable importance, since by their persistent character and worrying nature they, as it were, gnaw their way into the comfort and happiness of their unlucky victims, constantly obtruding themselves on their consciousness and interfering with their pleasures like spectres at a feast. To one of these I have given the name of "aching throat," and I have decided to submit to your notice and consideration a few facts concerning it, because, although from childhood upwards we are all familiar with "sore-throat," yet aching throat, although more troublesome because more permanent, has not, I think, for some reason received the amount of attention it deserves.

The patients who come complaining of this trouble have generally arrived at, or are approaching, middle life, and the aching may vary very considerably in degree and somewhat in character. On examination they may be found to have the signs of chronic pharyngitis, with swelling, congestion, and catarrh, hypertrophy of the pharyngeal bands and granular patches, associated with coughing, hawking, and other efforts, varied and anomalous, some voluntary, others reflex, to clear the throat. Also there may be associated with it enlargement of the post-nasal, faucial, and lingual tonsils, the first least, the last most commonly, or nasal obstruction and discharge, also enlarged veins, bad teeth, and enlarged glands. All of these I have observed, but not one of them is pathognomonic, for in some of the worst cases one comes across they are absent. It is a somewhat curious fact, at least as far as my experience goes, that those cases of pharyngitis with swollen deeply congested pharynx, soft palate and uvula, with great irritability and excess of mucus, such as one sees often in persons indulging in excess of alcohol and tobacco, are but seldom troubled with aching throat, though dryness may be a marked symptom, and, on the other hand—indeed, in some of the worst cases—I have seen the pharynx when examined show very little or no evidence of disease at all.

As regards general condition, these patients are sometimes anæmic or their history or other parts of the body point to gouty or rheumatic tendencies; much more commonly, however, the patient suffers from dyspepsia of the flatulent variety which may have to be carefully inquired into, for if simply asked whether or no he suffers from indigestion the patient generally replies in the negative, as he has neither abdominal pain nor vomiting, but is distended with wind,

¹ A paper read before the Medical Society of London on Feb. 12th, 1912.