had secondary Graves's disease, were not seriously ill, and improved rapidly under treatment; the remaining eight were young females (average age 26 years) with primary Graves's disease, who either improved rapidly with treatment, or were in such domestic and financial circumstances as to allow of prolonged rest under supervision. In one of them the result could not be called "good" until as long as six years after commencing treatment, and as long as eleven years from the onset of the disease.

Those that received surgical treatment (Table III) can be classified about equally in the primary and secondary groups, with average ages of 29 and 44 years respectively.

TABLE III.—*Treated by Thyroidectomy.*

Type.	Total Number.	Average Age.	Results.			
			Good.	Poor.	Bad.	Died.
Primary	10	29 years	8	1	0	1
Secondary	14	44 years	7	4	1	2
	24		15	5	1	3

One only of the deaths occurred immediately after operation; the other two patients (aged 44 and 49 years) who died had one lobe only removed, and died later in acute relapses, three and six years following the operation. Of the six patients in whom the results are recorded as

"poor" or "bad," one has recently had a third operation, at which the thyroid gland was found to have grown to a considerable size from the remnant left at the previous operations, and is now doing well. The remaining five may require further operative treatment also, but in their case there are factors that make a decision difficult.

CONCLUSIONS.

The number of patients is too small to be of statistical value, nor are the groups strictly comparable, but the results after periods varying from five to ten years after discharge from hospital confirm the impression gained from the experience with a much larger number that have not been under observation for so long, or have not been studied so carefully. The nature of the results in the patients treated by surgery will depend, of course, on the experience and skill of the surgeons available. The following conclusions, however, seem justifiable. Of patients whose condition is severe enough to require admission to hospital, surgical treatment is indicated in the present state of knowledge in those with secondary Graves's disease. It is indicated, also, in those with primary Graves's disease who do not improve rapidly, or who continue to relapse and become chronically ill in spite of satisfactory management, or who for financial or other reasons cannot submit to adequate observation and treatment. In a number of the younger patients with primary Graves's disease recovery takes place without surgical treatment, but observation and treatment extending over years may be necessary.

THE AFTER-HISTORY OF HEALED SURGICAL TUBERCULOSIS.

BY

E. D. TELFORD, F.R.C.S.,

PROFESSOR OF SYSTEMATIC SURGERY, UNIVERSITY OF MANCHESTER.

THE treatment of non-pulmonary tuberculosis has passed through various phases in the last thirty years. In the earlier days treatment was mainly by operation, and tuberculosis was regarded as a local disease to be eradicated by painstaking removal. Hence, free and often elaborate excisions of joints were widely practised. In the end the unfortunate outcome as regards the local disease, no less than the frequency of disastrous functional results, caused the methods of radical excision and erosion to fall into deserved disuse.

This was hastened when it was realized that tuberculosis of a joint is not the primary condition, but is a pyaemic manifestation in a patient already infected in another spot. Obviously, if this view is correct—and there can be little doubt that it is—the most extensive local procedure will not cure the disease. In conformity with this view, treatment then swung over to conservative methods aiming to raise the resistance of the body by general treatment and handling the local condition by rest in the optimum position for a prolonged period. The results of this method are on the whole good, but they fall short of ideal, and in recent years the question of operative treatment has again been seriously raised by thoughtful surgeons.

It is clear that in the present state of our knowledge our main curative agent in tuberculosis is rest. The rest given by any form of external splint, however carefully applied, is at the best incomplete. If by operation we can induce ankylosis of a tuberculous joint, either by intra-articular or extra-articular technique, that joint will almost certainly heal. The object of the modern revival of operation is therefore not immediate eradication of disease, but ultimate cure by production of an ankylosis.

Any surgical method, however sound in theory, must in the end stand or fall by its results, and it is unfortunately very difficult to estimate with any accuracy the end-results in surgical tuberculosis. This communication has been written in no spirit of controversy, but simply with the object of contributing certain data which may be useful in any discussion of the respective merits of the conservative and operative methods. The author has had the

advantage of treating this type of case during twenty-six years in one institution by conservative methods, involving, in addition to the usual resources of general treatment, a somewhat rigid fixation by plaster or appliance. In these respects the series has the advantage of being very homogeneous, but the difficulties in arriving at an accurate idea of the results are great.

The main stumbling-block is diagnosis. How is one to be sure that a given case is really tuberculosis? In the series here discussed all that can be said is that every case has been taken, by clinical examination, by skiagram, and, where available, by examination of aspirated material, before a diagnosis of tuberculosis was accepted. While the grosser errors—for example, syphilis, actinomycosis, haemophilia, the varying dystrophies of the type of pseudo-coxalgia, and the more obvious infective joints—can be eliminated, who is to say what other conditions may still be hidden in the dump we call surgical tuberculosis?

In a previous communication¹ I endeavoured to estimate the more immediate results of conservative treatment; the object of the present inquiry is to estimate, as far as may be, the ultimate fortune of those patients who are discharged as cured.

The investigation concerns a total of 170 cases of children who have been under my care for tuberculous disease of the larger joints. These patients comprise 67 suffering from disease of the spine, 71 with disease of the hip-joint, and 32 where the lesion was in the knee-joint. All these patients were discharged between the years 1906 and 1924 with the observation "apparently cured." None of the patients examined has been discharged from the institution for a shorter period than six years, and the length of time which has elapsed since their apparent cure ranges from six to no less than twenty-four years.

Of the 170 patients, I have been able to find 129, and their present condition is exactly known. The proportion of cases traced must be regarded as satisfactory when one considers the very floating nature of the population in a large industrial city.

In classifying the results, the method adopted is as follows:

Class A includes all patients found to be in good health with no sign of activity in the old disease and no fresh focus of tuberculosis. They are all either at work or quite capable of doing active work. These number 110.

Class B comprises cases in which there is complete arrest of the disease, as in Class A, but the functional result is not good; these patients, who number 7, must be regarded as cripples.

Class C contains those cases which show the original disease in a still active form, or have had some other sign of tuberculous infection. Of these there are 6.

Class D includes patients who have died since discharge. There are 6 of these, and with one possible exception, in which death is stated to have been due to "influenza," they have all died of tuberculosis of lung or kidney.

The main fact which emerges is that out of 129 patients who are known, no fewer than 110 remain perfectly well. These figures are in welcome contrast to the gloomy views often expressed, which are usually the vaguest of impressions not backed by any actual figures. Pessimism in tuberculosis is due mainly to the fact that, as with other diseases, it is chiefly the failures that come back.

Finally, it is contended—and probably with reason—that operative treatment may shorten the length of the time needed for recovery. In this respect it is worth noting that the average residence in the institution of these 170 patients was three years and two months.

REFERENCE.

¹The Results of Institutional Treatment in Surgical Tuberculosis. *British Medical Journal*, July 2nd, 1921.

RADIUM IN THE TREATMENT OF MENORRHAGIA AND IRREGULAR UTERINE HAEMORRHAGE.*

BY

MALCOLM DONALDSON, M.B., F.R.C.S.,
PHYSICIAN ACCOUCHEUR, WITH CHARGE OF OUT-PATIENTS,
ST. BARTHOLOMEW'S HOSPITAL.

So much work has been done in the treatment of malignant disease by radiotherapy that it is easy to overlook the value of such treatment in non-malignant conditions, such as haemorrhage and menorrhagia caused by fibroids or associated with the menopause.

Twenty or thirty years ago students were taught that if a patient was diagnosed (after curettage) as having "menopausal haemorrhage" it was only necessary to use palliative remedies and to reassure the patient that all would be well in a year or so, when the "change of life" was over. In actual practice this meant that the unfortunate woman was doomed to a C3 life for several years, and only if she became dangerously anaemic was hysterectomy resorted to. Nowadays all that is entirely changed.

DIAGNOSIS OF IRREGULAR HAEMORRHAGE.

At the present time it would be superfluous to emphasize the importance of a careful physical examination if a patient complains of this symptom. Irregular haemorrhage is so often the first symptom of malignant disease that every student is taught that to treat a patient suffering from irregular haemorrhage or menorrhagia without such an examination is malpraxis almost amounting to criminal negligence.

It is unfortunate that the public is not equally aware of the importance of irregular haemorrhage and menorrhagia. It is true that very often such symptoms are of a temporary nature and have no serious consequences, and it is this fact that makes it so difficult to educate women to regard them as needing immediate attention. In the past the medical profession has contributed to this attitude of mind by the "wait and see" principle of treatment, which was very frequently adopted, especially in cases of menopausal haemorrhage.

What, then, are the rules which should be laid down for dealing with the patient who complains of menorrhagia or irregular bleeding? The first thing is to take a careful history, which, together with a general physical examination, will exclude such conditions as haemorrhage connected with pregnancy, high blood pressure, etc. Next, a physical examination of the genital organs, especially the cervix uteri, will exclude such conditions as carcinoma

of the cervix, fibroids, etc. If there are no gross abnormalities, it is then permissible to treat the patient symptomatically for a week or two. If at the end of a month there is no improvement the uterus must be explored. Only after such exploration is it justifiable to say that the condition is due to an endocrine disturbance, such as is found at the time of the menopause.

TREATMENT.

Having now decided that the patient is suffering from an endocrine disturbance which is not benefited by drugs, the question of treatment will depend, first, on the age of the patient. If the patient is over 40 then there is no doubt that the right treatment is to create an artificial menopause by means of radiotherapy.

Before discussing the particular technique it is as well to consider the pros and cons of such a procedure. The advantage of getting rid of this troublesome symptom of haemorrhage once and for all is obvious, and borne out by the numerous letters of gratitude that one receives. What, then, are the disadvantages?

The objection, of course, is the onset of menopausal symptoms—namely, flushing, sweating, headaches, etc. The question has been asked whether these symptoms are any more pronounced in a menopause which is artificially produced than those which occur when nature brings about the menopause in the course of time. It is a point which it is almost impossible to solve by means of statistics, but my impression is that, after the age of 40, there is really very little difference.

If, however, the question arises of producing an artificial menopause in a patient under the age of 40, the problem is very different. First, there is an obvious objection to cutting short the youthful characteristics of such a patient at an early age. Secondly, there is some evidence that the symptoms caused are distinctly more severe than those found in patients over 40. It is true that in some of the young patients in whom those symptoms have been noticed the treatment has consisted of a small dose of irradiation, purposely administered in the hope of causing a temporary amenorrhoea, and it is possible that the increased symptoms are due to a partial destruction of the ovarian activity. The same sequelae have been observed in a patient who has had an operation leaving only a small portion of one ovary.

When once the decision has been made that it is advisable to create an artificial menopause, the question arises as to what method should be employed. There are two radiological methods by which the artificial menopause may be brought about: (a) radium, (b) x rays.

If a patient is suffering from irregular haemorrhage it is impossible without exploring the uterus to exclude a cause, such as malignant disease or a polypus. For this examination an anaesthetic is necessary, and under these circumstances the correct procedure is to place 50 mg. of radium in the uterus. If, on the other hand, the patient is suffering purely from menorrhagia, then it is fairly certain that the condition is not due to malignant disease. In these circumstances it is justifiable to use x rays without any exploration of the uterus, the advantage of this method being the fact that no anaesthetic is required, and the patient is not obliged to lie up in bed.

Technique of Radium Treatment.

The technique for using radium in the case of a patient who is over 40 is very simple. The patient is given an anaesthetic, and after a careful bimanual examination the uterus is dilated and carefully curetted. If nothing abnormal is discovered, then a tube containing 50 mg. of radium element, the length of which is not more than 2 inches, is placed inside the cavity of the uterus. The walls of this tube must be the equivalent of at least 0.5 mm. of platinum, and in addition it is better to screen the metal filter with 2 mm. of rubber so as to cut off secondary rays. The length of time which this tube should be left in is still a matter of controversy. The majority of gynaecologists consider twenty-four hours sufficient, but in a large uterus, with the ovaries near the pelvic wall, this sometimes fails to produce a permanent

*Read in opening a discussion in the Section of Radiology at the Annual Meeting of the British Medical Association, Winnipeg, 1930.