NOTES ON TREATMENT OF THE RHEUMATIC DISEASES IN THE B.E.F.¹

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The importance of this group of diseases is being gradually realized in civil life, largely owing to the work of the Empire Rheumatism Council. It was recently found that they constitute 14 per cent of all sickness amongst the insured population of Great Britain (Glover and Coneybeare), and in view of this figure it is surprising that so little attention had previously been given by national and local authorities, on account of the great loss which this must represent.

As regards the B.E.F., it is known that the incidence of these diseases in the peace-time army is fairly high. It is extremely unlikely under active service conditions, which inevitably involve an increase in exposure, and other contributory factors, that this incidence will be lowered. Herringham, writing in the history of the last war on the tremendous wastage of human material and effort from medical causes, stated that more man-power was lost through so-called minor illness, amongst which "rheumatism" takes a very high place, than combined casualties and major sickness. It is the belief of the writer that so far as "rheumatism" is involved such loss is avoidable by comparatively simple means.

Classification.

The term "rheumatism" may be used to include a fairly large group of diseases, and this is convenient, provided that a basic classification of this group exists and is clearly understood. The classification recommended by the Committee of the Royal College of Physicians in 1936 seems the best, and is as follows:

1. Acute rheumatism (rheumatic fever)
   1a. Acute
   1b. Subacute (apyrexial).
2. Articular rheumatism (arthritis)
   2a. Rheumatoid type (polyarticular; generally infective origin).
   2b. Osteo-arthritic (monarticular degenerative or traumatic origin).
3. Non-articular rheumatism (fibrositis)
   This will often take a special name from the site in which it occurs, e.g. lumbago, sciatica, brachial neuritis, torticollis, pleurodynia, etc.

Incidence.

It is impossible to state the incidence of this group amongst the forward units, but reports received suggest that it is relatively high, and accounts

¹ Read before the British Medical Society of the Dieppe area on January 13, 1940.
for the loss of considerable working time. The number of cases which arrive at the base hospitals can be ascertained, although they are often sent under widely differing diagnoses. An analysis of the total admissions to No. 3 General Hospital during the first four months of the present war shows that 15 per cent fall into the rheumatic category, whilst it accounted for 26 per cent of all admissions in the medical division. Similar figures were reported from No. 2 General Hospital (Majors Rossdale and Underhill).

The first hundred cases examined fell into the following categories, and probably represent a fair cross-section of the rheumatic sufferers in the B.E.F. It is worthy of note that the average age of the whole group was only 29·6 years: Rheumatic fever (acute and subacute), 15 per cent; arthritis of rheumatoid type (polyarticular), 6 per cent, of the osteo-arthritic type 9 per cent; fibrositis of all types, 70 per cent. The osteo-arthritis appeared to be of traumatic origin in most cases, whilst a large proportion of the fibrositis cases were suffering for the first time, and attributed this largely to unaccustomed exposure. In addition, during this period 15 cardiac cases were referred to the rheumatism department for an opinion, and of these six were diagnosed as rheumatic carditis, three were considered to be functional, and in the remaining four cases no cardiac abnormality was detected, but precordial pain was complained of, and was found to be due to small fibrositic nodules in that area, the pain being reproduced by pressure on these, and in one case running down the left arm.

Patients were not infrequently sent up incorrectly diagnosed as rheumatism. Such cases were found to include hyperpiesia, new growth, progressive muscular atrophy, muscle hernia, ruptured muscle fibres, fractured transverse vertebral process, Raynaud’s disease, recurrent dislocation of the clavicle, T.B. hip, metatarsalgia, sacro-iliac strain, pleurisy, oxaluria, shingles, and neurosis.

If the figures above be taken as representing a fair picture of the incidence of “rheumatism” in the B.E.F., it follows that there will be at any time 12 to 15 per cent of such cases in every hospital although this may show some seasonal variation. Assuming that there will be several hospitals of this type with the B.E.F., the problem will be to secure adequate treatment for the many patients of this group, nearly all of which should be capable of being returned to duty as the result.

**TREATMENT.**

The treatment of these cases will be determined to some extent by their aetiology. This does not differ, however, from that found in civil hospitals, with the exception that, with the increasing mechanization of the Army, traumatic cases appear to be increasing, whilst exposure and strain are more common than in civil life, and is potent in provoking both first attacks and relapses. The problem of focal sepsis has no added significance from the military point of view, but is of course equally important. The methods of treatment adopted for use in this group of diseases may be tabulated roughly
as follows: Rest and other general measures, medicinal, injections of various types including vaccines, physiotherapy, which is perhaps the most important single group, and manipulation. There are other methods to which this paper does not refer as they are inapplicable in the present circumstances.

The cases of rheumatic fever must be treated primarily with rest in bed if cardiac symptoms are to be avoided, and since this period of rest needs to be prolonged, they should probably always be evacuated to the United Kingdom once the diagnosis is certain, although a fair proportion of these cases will become again serviceable subsequently.

Most cases of true articular rheumatism (arthritis) of whatever type, will also need more prolonged treatment than is justified in the base hospitals of an expeditionary force, and should also be evacuated to a special centre. There remain, therefore, the group of non-articular cases, which constitute 60 to 70 per cent of the total. These should all prove curable within a reasonable time if adequately treated in an early stage in their complaint. At present they often tend to be rather forgotten amongst their more "interesting" war companions, and it is not uncommon to find that they remain in hospital for considerable periods before being put on to special physical or other treatment such as they almost invariably require for their cure, by which time it may be too late to cure them.

The necessary treatment, although comparatively simple, is not always available, and may need improvising. Broadly speaking these cases, more particularly if they result from exposure, need rest, warmth, purgation, sweating—if possible followed by massage, and for a period a diet low in carbohydrates. The first three items can be provided in any base hospital. An efficient and simple method of inducing sweating is to arrange a steam bath two towel-rails on three sides of an ordinary canvas chair and cover the whole with several layers of sacking. The patient, wrapped in a blanket or towel, is then sat in this, and steam is led under the sacking through a rubber tube attached to a large kettle or tin which is boiling on a primus stove nearby (fig. 1). Another method which has proved successful is to place two bed-cradles over the patient who is lying on a stretcher or trolley, and to cover these with blankets. The end of a piece of ordinary stove-piping is then led into this "hot-air bath," the other end being placed over the flame of a primus stove or some other source of heat (fig. 2). Massage is desirable after each method to break down gradually the fibrositic nodules which are the source of the patient's disability. This must be vigorous and progressive, since it is after these have been rendered soft by the heat that the most beneficial effect is likely to be produced.

Where local rather than general heat is indicated, and normal sources such as radiant heat or infra-red ray lamps are not available, improvisation may again be necessary. The illustration (fig. 3) shows a radiant heat lamp which was devised and successfully used at No: 3 General Hospital for several months, during which period electricity was not available. It is
manufactured from two petrol tins with a further sheet of metal behind to act as a reflector. The source of the heat is a plate of cast iron or a bundle of gas "elements" placed over a primus stove and allowed to glow to a dull
red. In this way infra-red as well as radiant heat rays are produced. Six of these are placed along a six-foot table and the patients sit on a form in front of them and expose the affected part for fifteen to twenty minutes daily. One masseur is able to supervise the treatment of a large number of patients daily whilst himself attending to the necessary massage. In some cases moist heat is found to be more successful than the application of dry heat, and for this purpose the local clay-containing mud was found to be ideal when mixed with olive oil and glycerine to an even consistency, and was extensively employed as packs. For the treatment of extremities ordinary pails filled with hot, strong brine solution, or sometimes dry salt, or sand, heated to a high temperature, were used successfully, the limbs being immersed in these for a period daily prior to massage and exercises, which the patient was ultimately instructed to practise alone.

Space does not permit of a full consideration of all methods of treatment of the rheumatic diseases available in the field, but certain of these may be considered briefly in addition to the physical methods already discussed.
Sodium salicylate remains the favourite remedy in cases of both acute and subacute rheumatic fever, although there is no evidence that it has any protective action on the heart. For this reason it can never supersede the necessity for prolonged rest. Aspirin is more successful in controlling the pains of other types of rheumatism—more particularly if they are associated with nasopharyngeal infection, whilst it is generally wise to alternate this with short courses of iodine, in any form. For the articular type of disease sulphur and guaiacol are both worthy of a trial on empirical grounds.

Vaccine treatment is of necessity a method requiring great accuracy, both in the original investigations and in the control of dosage, if successful results are to be obtained. It requires also considerable periods of time for any results to occur, and for both of these reasons does not appear to be a method which can usefully be employed as a routine in war-time hospitals for the treatment of rheumatism.

In fibrositis where a definite tender nodule can be isolated in the muscles, an injection of 1-5 c.c. of 0·5 per cent novocain accurately into its centre will destroy it, and will often thus relieve the pain and spasm which may have been affecting a large area as the result of referred pain. Where several such nodules are present each one must be dealt with in similar fashion, and "miraculous" cures of old-standing fibrositic disability may be brought about as the result of sufficient search for the nodules and accuracy in their destruction. This method takes considerable time and is sometimes difficult to achieve, but is of great value.

Histamine acid phosphate (1 mgm. per c.c.) is a substance which has an intensely vaso-dilatory effect and which may be used either for its systemic or its local effect. In the former case the most suitable patients are those who complain of stiffness and paraesthesiae of the hands and feet—particularly in the mornings. In these cases a subcutaneous injection of 0·1 c.c. on alternate days will often help considerably. It is, however, perhaps more useful still when used as an intracutaneous injection over the site of severe fibrositic pain. The injections should be very small, and several should be made in the same area. In the case of sciatica a dozen or more should be given in the course of the pain. The total dose which should be given is that amount which just causes the face to flush. For this purpose it is best to use 0·1 c.c., and after this wait for a few minutes each time before continuing the injections.
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Oxygen injections may be given by attaching an ordinary syringe needle to a rubber tube connected with the cylinder, and inserting the point of the needle to such a depth that it lies below the subcutaneous tissues and above the muscles. At this depth considerable "ballooning" of the skin by the gas will occur, and is desirable. The chief use of these injections is in cases of sciatica, and they are often very successful, although it is generally necessary to repeat them in two or three days if the result is to be permanent. If these are given in the afternoon it is generally advisable to order the patient a sleeping draught for that night, as the gradual extension of the emphysema often tends to produce considerable restlessness a few hours later.

Another method of sciatic injection is to use large quantities of normal saline, with or without 0·25 per cent novocain; in this case, however, the aim is to penetrate the sheath of the nerve, and the injection must be made much deeper. A lumbar puncture needle is best for this type of injection.

Manipulation.

This method of treatment is most useful in many old-standing fibrositic, and other, cases. This is more particularly so when the back is affected, and when the original onset was due to strain and trauma. Manipulation of this type can be carried out on the patient's bed, provided that fracture boards are substituted for a mattress, and an injection of evipan or pentothal-sodium, with some premedication, gives sufficient relaxation in most cases. The aim of this procedure is to free the small inter- and intramuscular adhesions which occur as the result of progressive fibrosis, and which limit the contractility and extensibility of muscles and other soft tissues such as joint capsules which may become affected. Manipulation must, however, always be followed up immediately and vigorously with movements, and later active exercises, in order that the separated adhesions may not join up again, and to redevelop the muscles which have been freed, since some degree of atrophy due to disuse is likely to have occurred. Where manipulation has proved unsuccessful in a properly selected case, the fault very frequently lies in poor "follow-up" treatment. This is as important as the actual freeing of the affected muscles by the manipulation.

Comment.

It is suggested in view of the special features of the rheumatic group of diseases that the severer cases might with advantage be centralized at an early stage in one or more hospitals, in the same way that infectious and other cases are at present dealt with. This would allow of the application of special methods of treatment, such as are referred to above, being applied before the case had become a chronic one. Some such method would have the dual advantage of avoiding the necessity to multiply expensive apparatus for physical treatment in every hospital and, what is perhaps of greater importance, it would stimulate a special interest in this type of case, which
does not exist widely to-day, in spite of the high incidence of these diseases. Psychologically the presence of this keenness stimulates the patients themselves to co-operate towards their recovery, and the experience of work in peace-time amongst industrial patients shows that this combination of interest with active treatment where it can be obtained leads to considerably quicker end-results than are otherwise obtained. The majority of the rheumatic cases in No. 3 General Hospital have recently been grouped into a special ward with the permission of Colonel A. L. Foster and Lieutenant-Colonel F. Holmes, and it has been found that in spite of adverse factors and the employment of physiotherapy of primitive design that the grouping of the patients in this way has improved the results obtained.

If a similar plan were to be employed on a larger scale it would probably be necessary to evolve an intensive course of treatment which could be made routine as far as possible for all cases of similar type, and which would be of definite duration.

If patients were referred to such a centre at an early stage three or four weeks' treatment should prove an adequate period. Indeed it is suggested that all cases which had not responded satisfactorily at the end of that period might well go before a standing medical board for further examination, and might subsequently be evacuated to a similar centre elsewhere, where longer term cases could be catered for, including possibly rheumatic fever.

It is suggested that the special treatment of cases of rheumatic disease would prove worth while in view of the fact that it would serve (a) to save considerable invalidity ultimately, by sorting out at an early stage those cases likely to become serious or permanent, and (b) to get less serious sufferers back to the line more quickly than is usual at present, and without them having developed the "chronic" mentality.

**Summary.**

(1) The importance of the rheumatic diseases as a common source of wastage of man-power is discussed. It is suggested that much of this might be prevented. The incidence and classification of these diseases is dealt with.

(2) Methods of treatment which are available under war-time conditions are briefly described, including methods of improvising some common physiotherapeutic apparatus. Results of treatment.

(3) The suggestion that severe cases of rheumatism occurring in the Army might be centralized for purposes of study and early treatment is discussed.