FIBROSITIS AMONG INDUSTRIAL WORKERS

By GERALD SLOT

A LARGE number of disability certificates are signed every week for industrial workers suffering from fibrositis. It has been noticed that some of these have been associated with their occupations. They can be classified:

1. Fibrositis of Neck Muscles.—This includes market porters, especially fish and vegetable porters, who carry heavy weights on their heads—the weight of the contents of their pile of baskets may reach between 50 and 100 pounds. Taxi drivers and lorry drivers are also represented in this group.

2. Fibrositis of Arm and Hand Muscles.—This group includes bus conductors, locomotive firemen, gardeners, and dustmen.

3. Fibrositis of the Back and Gluteal Muscles.—Sufferers from this form the largest group of occupational fibrositis. It includes bus drivers, miners, policemen, gardeners, milk roundsmen with heavy trolleys to push, tram drivers, iron workers, and stokers. Women engaged in lifting (shop and warehouse workers) are often among the group.

4. Fibrositis of the Foot Muscles.—This is a difficult group to classify, as foot defects—pes planus, etc.—should be separated. Arthritis of the feet is common, as also is referred pain from a sciatic lesion. Foot strain is a common association. The employments especially liable to this condition are shop girls who have to stand for long periods of time, recruits in the Army, and bus, lorry, and locomotive drivers.

The common factor in these varied conditions is muscle fatigue and trauma. The trauma may be slight but recurrent. The aetiology of these conditions is obscure, and because the condition is non-fatal, proof by biopsy can seldom be made. Other common factors are heat, humidity, and exposure to cold. The pathology may show small nodules under the skin—it is difficult to excise these as they slip away from under the forceps. On examination they are found to consist of small aggregations of round cells and fibrous tissue.

Though various workers have tried to grow organisms from
these nodules, results have been variable and unconvincing, and the author and his colleagues have never yet succeeded in growing an organism from a nodule removed either from a case of fibrositis or rheumatic fever.

Further changes include swelling and reddening of the fascia and a slight oedema of the surrounding tissue. Small punctate haemorrhages—as if caused by the rupture of an attachment between fascia and muscle or fascia and skin—are sometimes seen. Pain in varying degrees is present and a slight rise of temperature is frequent. Trotter and Davis have explained the hyperesthesia by assuming that there have been multiple minute injuries and that during the subsequent regeneration the nerve fibres growing from a central source fail to develop sheaths and neurilemma which insulate them from surrounding tissues. Head's explanation is that the hyperesthesia is due to the liberation from the controlling and regulating influence of the touch fibres which may be affected by the inflammatory change. Some of these fibrositic nodules must be largely oedematous, because they disappear so rapidly, and the speed of their onset and disappearance makes one postulate an allergic mechanism of onset in some cases.

In industrial fibrositis, strains of muscles and ligaments are important predisposing causes. This is important, as workers exposed to similar conditions of work and climate so often suffer differently. In one hospital largely attended by transport workers it has been noticed that the omnibus workers, divided into the two groups of drivers and conductors, suffered differently. The drivers were frequently group 3 and complained of sciatica or lumbago, while the conductors were groups 2 and 4, suffering more from fibrositis of the hands and feet.

Common factors to all these sufferers is that they are cold-sensitive. They nearly always have bluish limbs and have frequently suffered from chilblains. They need hot-water bottles in their beds at night and are poor sea bathers.

The incidence of rheumatism in miners has been discussed by Buckley, who found fibrositis to be more common among miners than among moulders, glass blowers, furnacemen, and other workers exposed to high temperatures. He also stresses the greater incidence among outdoor workers subject to more exposed conditions than among indoor workers. Arising out of this it is interesting to note that fibrositis is not common among
postmen, who, although outdoor workers, maintain good circulation by constant walking, and I am informed that it is not an outstandingly important cause of ill health in the Army.

The occupational fibrositis of the neck type, group 1, usually starts with a feeling of discomfort in the neck muscles. Sometimes there is a fairly severe headache, located to the posterior part of the head, for a day or two. These neuralgic headaches frequently precede the actual fibrositic attack, and some patients never get beyond the headache stage, and diagnosis is then difficult. This type of headache is possibly due to an occipital fibrositis, and it disappears quickly on injection with procaine in the appropriate way. The pain then localizes itself definitely in the complexus and trapezius muscles, and the patient will complain that he is unable to carry the same weight on his head and sometimes that he cannot move his head with former freedom. The pain is continuous, burning, and radiating through the neck. Movement intensifies it and the patient finds that lying flat is difficult, as the posture of the head extends the neck muscles. Why has market portering caused this? It is due to an accumulation of small injuries to the muscles, of which the attachments are stretched and even ruptured. Small punctiform hæmorrhages occur in the muscle sheath. Sometimes grosser hemorrhages, which can be seen under the skin, are present, and the further tension of the tissues increases the pain. These attacks sometimes come on acutely without any previous warning, and are then often precipitated by strain and cold.

What is the effect of cold? In these patients it causes a local vasocongestion—the muscles are working hard and the products of muscle metabolism are not removed sufficiently quickly. This gives rise to cramp, especially in a loaded muscle. The part played by humidity may be that when fatigue products accumulate in a muscle, water is attracted and the muscle becomes larger. In a humid atmosphere the interchange is less readily effected. Occupations, therefore, in which strain of the neck muscles and exposure to cold and/or damp exist are likely to give rise to this group.

An obvious example of the part played by trauma is the fibrositis of taxi or lorry drivers, often seen in the shoulder region. Their driving-cab is exposed, and because they have the habit of opening the door by pushing the right shoulder against it, fibrositis is more common in the right than in the left
shoulder. They present a constant history—a grumbling pain followed by rigidity and a severe pain extending up the side of the neck and over the shoulder girdle. This prevents adequate arm movement, and if untreated lasts four to five days. On examination, apart from the restricted movement and tenderness of the trapezius and deltoid muscles, certain spots about the size of a sixpence can be identified. These are indurated and more tender than the surrounding area. In some cases actual nodules can be felt in the muscles.

Fibrositis of the arm muscles in gardeners, dustmen, and conductors presents the same picture of pain, usually in one arm, radiating down the arm to the wrist, the distribution not following any segment but involving the whole limb. In the “arm” suffering there is tenderness over the biceps and the flexor group rather more than in the extensor group. The condition is of course quite different from “writer’s cramp,” which from the combination of pain, spasm, loss of control, and tremor suggests the basal ganglia as the focal point of the breakdown which produces the disability. In all these craft palsies (telegraphist’s cramp, gold-beater’s cramp, milkman’s cramp, etc.) the pain is always in the muscles and never in the joint. The factors again present in this group are strain, exposure, and trauma.

The third group is the largest. Cases of fibrositis of the lumbar and sacral muscles may be present merely as a pain in the back or as a severe lumbago or sometimes—as in a case recently seen—may be so acute as to make a differential diagnosis from a calculus in the urinary tract very difficult.

Patients may start with intense pain of a colic type which “doubles me up, doctor,” and with great tenderness over the lumbar and abdominal muscles. Temperature and other manifestations of a feverish illness are often present. This type of fibrositis is commoner among drivers, and is as frequent among tram drivers, who stand, as among trolley and ordinary bus drivers, who sit. The onset is sometimes gradual, but more often sudden. The patient complains of a pain in the small of the back, and often also of pain in the back radiating down the back of the thigh and thence to the calf to be fixed in the heel. Pain is caused by extending the leg, and local hyperæsthesia is almost always present. Deep pressure over the posterior superior spine is painful and rotary movements of the spine are impossible. One case seen recently resembled an acute abdomen
in its dramatic onset and abdominal tenderness and rigidity. Repeated questioning produced a history of a recent soaking, and grumbling pains over the back on the day previous to examination, and thus led to the right diagnosis. These cases are difficult because they tend to recur and are completely incapacitating. Three weeks is a common period of illness, and one attack seems to predispose to further attacks. There is some difficulty in securing industrial conditions which afford relief.

Fibrositis of foot muscles must be distinguished from lesions of the foot itself. In many cases there is a pes planus, or unsuitable footwear may be the cause of strain. Arthritis of the feet is of course common. Some of these cases of so-called fibrositis of the feet have on investigation proved to be cases of intermittent claudication. We have had seven or eight of these under treatment simultaneously and found no common industrial occupation—among the patients were two general labourers, a bus conductor, a tailor, and a typewriter mechanic.

In treatment, focal sepsis must be considered, although it is only a factor—and a small one in some cases. Certainly removal of carious teeth or tonsils does not cure the majority of these sufferers although it helps to improve the general condition. Other important aids to this end are fresh air, regular bowel movement, attention to the hypochlorhydria often present, by giving 10 m. of dilute hydrochloric acid three times a day, and treatment of the secondary anaemia, by the administration of iron with vitamins A and D. We have not found vitamins B and B1 of any value, whether given by mouth or hypodermically, in these cases. General ultra-violet light is of value.

The removal of the industrial cause is often fraught with difficulty. Doctors should at times visit the workshops, factories, and garages to see for themselves the kind of work entailed. No one who has not driven a heavy lorry or bus on a dark winter night—especially under black-out conditions—realises the big physical and mental strain involved.

To give rest is essential. The patient is usually unable to change his occupation, and before his return to work the careful doctor will consider how, if the conditions of the job cannot be altered, those of the workman can. Advice to keep the driving-cab window closed, the use of an air cushion for long journeys, and the provision of efficient protection against weather
the worker is exposed, is all of value. Advice on the wearing of warm underclothing and the adjustment of boots by wedging or other means must also be given. It is possible and desirable to improvise methods of home therapy, as the nature of the disease or the distance of the patient from a hospital may sometimes make travelling difficult. Expense is also a factor, and for those unable to walk it invariably means that a friend is required to accompany the patient. Add to this the loss of time in waiting and the subsequent going out into the cold, and one is sometimes driven to say that the result from attending a hospital or clinic may bring more harm from exposure and exhaustion than benefit from the fifteen minutes or so of therapy that may be given.

The cardinal medicament is heat, and preferably hot moist heat. A really hot bath (105°F.), in which \( \frac{1}{2} \) pound or more of magnesium sulphate has been placed, is of value. The patient is instructed to soak in this and to try to move his painful limb or back gently under the water. The water should support the weight of the limb during this proceeding. An electric pad, associated with some analgesic such as lin. methyl. salicyl., is also useful. Failing this a hot-water bottle or kaolin poultice. Hot fuller's earth is good. A convenient method is to place 1 pound of the earth in a double saucepan, add about 5 ounces (or just sufficient to make a thick paste) of water, and heat until it is about 150°F. Then tip the paste out on to a piece of cellophane—large enough to cover a considerable part of the area affected—roll it flat with a rolling pin to the thickness of about \( \frac{3}{8} \) inch, and tuck in the cellophane to make an envelope. Cut a window in the cellophane with a pair of scissors and place over the affected part covered by a piece of gauze. The cellophane and the earth can be used repeatedly. This method is of great value in home treatment.

For fibrositis of the hands it is helpful to fill rubber gloves with boiling water, run the water out and when fairly dry put on the hand, closing the wrist area with a rubber band. Contrast hot and cold baths for the feet are easily arranged at home, and are of value, especially if a rubefacient such as mustard is placed in the hot bath.

In the clinic the most useful methods are infra-red rays, gentle massage, and diathermy. For the continuous fibrositis galvanism is helpful, particularly if associated with salicylate
ionisation. One of the most valuable of all methods is the injection of 1 per cent. procaine into the muscles. About 5 to 10 c.c. can be injected in various painful areas at one time, and in some cases the relief of pain is almost immediate. The nodules should be transfixed by the needle and about $\frac{1}{2}$ c.c. of procaine injected into them.

With sciatica I have had the best results from epidural therapy and manipulation.

Drugs are of secondary importance. There is no specific drug. Gold is contra-indicated in these cases. Analgesics such as veganin or aspirin are the most helpful. Twenty to thirty grains of Dover's powder at the beginning of an attack is useful, as is the use of salicylates in daily dram doses. In the few cases in which sulphonamide therapy was tried we noted no success. Iron and arsenic are useful if there is general anaemia.

Sleep is important. Barbitone soluble or phenobarbitone or amytal-aspirin at night will usually ensure it. We have not found vaccine therapy to be of any value.

Diet should be confined to light, simple foods. Plenty of fluid is needed.

Above all, a day or more in bed is of great value. Complete physical rest is important and a vital part of any scheme of the treatment. It must be remembered that many of the patients are over-tired and physically exhausted not only by their work and the constant recurrence of the conditions causing the disease, but also by their efforts to continue in the presence of fibrositis. The effort needed to do this is very great.

It is clear that this urgent problem must be tackled in the same way as tuberculosis, with efficient centres of treatment under skilled guidance. Various industrial and municipal schemes exist at Bermondsey and other places, but cannot be described here.

Always, however, there will be a place for home treatment and for improving conditions of work so that sufferers will not be so numerous.