MUSCULAR RHEUMATISM

LOCAL INJECTION TREATMENT AS A MEANS OF RAPID RESTORATION OF FUNCTION

BY

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I choose the term "muscular rheumatism"—by which I mean such conditions as stiff neck, lumbago, and the similar malady sometimes affecting the lower limb that I will allude to as "pseudo-sciatica"—because it makes no pretence to a knowledge of pathology we do not in fact possess. The clinical features of these cases are stiffness of the affected muscles, associated with localized tender spots and, in the more chronic forms, a reference of the pain to remote parts of the segmental arc concerned. Cases having a traumatic origin are aetiologically in a separate class; they run a course like that of the chronic forms of muscular rheumatism, and often prove amenable to treatment on similar lines.

My excuse for these notes is to bring forward a method of treatment which secures not only immediate relief from pain but prompt restoration of function. Owing to the number of working hours lost to the nation the latter at the present time is of great importance.

Some years ago, when disabled by an attack of lumbago, it occurred to me that the injection of a local anaesthetic into the painful part would at least enable me to move. Much to my surprise, not only was pain abolished and function restored within a matter of minutes but the attack failed to return. I have now had experience of enough cases to convince me that in the acute forms, at least, the success of this method of treatment can be relied upon. Though I have since become aware that the same idea has occurred to others, I believe the method is not so widely known and adopted as it deserves to be.

Technique

It is necessary to use a local anaesthetic of such strength that up to 25 c.cm. may safely be employed at one treatment. I have found the preparation sold under the name "novutox" convenient and satisfactory, though I have no doubt that any 2 per cent. mixture of novocain and adrenaline would be equally efficacious.

In choosing the site I am guided by the position of the pain brought on by active movement and by the point of maximum tenderness on deep pressure. I have obtained the best result by placing the injections one-eighth of an inch beneath the surface of the fascia covering the affected muscle, the needle being inserted obliquely through the skin, and the fascia then being felt for with the point. Experience has taught me that 0.5 c.cm. at this level is more effective than a larger quantity injected into the substance of the muscle. On this account I now use a 2-c.cm. syringe, and through a single skin puncture inject one-quarter of this amount, in three or four directions, through separate punctures in the fascia.

Owing to the fact that when two or more painful stimulations are present at the same time only the strongest of these is appreciated, it is usually found that, though the pain complained of has been relieved, attempts at movement will reveal that other sites are affected.

In acute cases the injection is painful, especially if done rapidly. It is advisable, therefore, to warn the patient of this, and to inject the first few minims slowly in each new direction. On psychological grounds it is also as well to warn the patient of the tremor which follows the administration of adrenaline, and to see that a few minutes after treatment the affected muscle can be put through a full range of active movement without pain. An hour's rest

suffices for recovery from the effect of the adrenaline, after which the patient should get up and move about, resuming his occupation as soon as possible. Neglect of this advice may result in recurrence, which, though not so severe, calls for further injections if complete restoration of function is to be secured. Stiffness is usually felt in the affected part for several days, whether as the result of the treatment or the malady I am unable to say. It passes off, however, without the need for further intervention.

Clinically, non-traumatic forms of muscular rheumatism may be divided into acute and chronic types, though the one may merge into the other.

Non-traumatic Rheumatism: Acute Types

Stiff neck and lumbago may be taken as examples of the acute forms.

In stiff neck, with the needle directed forwards, I begin the injection beneath the fascia covering the posterior triangle, at the junction of the middle and upper thirds of the sternomastoid. At this level the external jugular vein is avoided. The needle is gradually pushed on till it enters the sheath of the sternomastoid, injections being made at short intervals to the amount of 2 c.cm. The pain so caused is momentarily intense, and may radiate over the occiput to the scalp, as well as down to the upper borders of the spinous and acromion processes of the scapula. Sometimes the affected muscle appears to be the trapezius, in which case the needle is directed medially, and injections may be required at two or three levels.

Lumbago almost always requires the injection of two or three sites, on one or both sides according to whether or not the pain is bilateral. The commonest of these sites is beneath the fascia covering the erector spinae at the level of the interval between the third and fourth lumbar spines. A second site usually requiring injection is the fascia occupying the angle between the sacral spines and the posterior part of the iliac crest, 2 to 4 c.cm. being used at each, according to the relief obtained. After this the patient should be able to touch his toes while the knees are extended, or as nearly to accomplish this as would be normal for the individual concerned. This exercise I regard as essential, not only to stretch the fascia while still anaesthetic but to re-establish confidence in the ability to move without pain. In a few cases pain may be felt then, or a day or two later, in the upper and inner quadrant of the buttock. In this site it is especially desirable to limit the depth of the needle to the level suggested above, for muscular branches of the superior gluteal arteries are here both numerous and large.

In other cases a deep-seated pain in the back persists after injection of the posterior lamella of the lumbar fascia. Relief may be obtained by injecting behind—that is, superficial to—the middle lamella. The needle is inserted at the outer border of the erector spinae and directed inwards and forward, depth being gauged by a finger of the left hand placed on the tip of an adjacent transverse process. Sometimes pain radiates to the abdomen, and is usually felt as a deep-seated ache in one or other iliac fossa. For this, injection along the outer border of the erector spinae, with the needle directed laterally, usually gives relief.

Illustrative Cases of Acute Type

A clerk in the Post Office, soon after reporting for duty in the morning, was taken with such severe pain in the back that he was unable to move. On arrival I found him grey in the face, which, with forehead and scalp, was wet with perspiration. The pulse was thready and rapid. The aspect, in fact, was that of an acute abdominal emergency, while the

erect posture proclaimed that the trouble was behind the spine. The injection of 2 c.cm. of novutox into the sheath of the right erector spinae and another 2 c.cm. into the sacro-iliac angle of the same side immediately relieved all spasm and pain. He was, however, still shocked from the intensity of the latter, and I took him home in my car. He resumed work the following morning completely recovered.

The wife of a working-man sent for me on account of pain in the leg. I found her sitting up in bed sobbing with pain and unable to put her foot to the ground. She has been a patient of mine for over twenty years, and I have never known her hysterical or disposed to magnify her ailments. Extension of the ankle provoked great pain in the region of the belly of the tibialis anticus. The point of maximum tenderness was over this muscle, about two inches below the tibial tuberosity. An injection of 4 c.cm. of novutox was introduced beneath the fascia in this region, and resulted in complete relief from pain and immediate restoration of function. Three days later she again sent for me, complaining of pain on movement in the peroneal part of the same leg. This was less severe, but prevented walking. A single injection of 2 c.cm. beneath the fascia in the region indicated abolished the pain, and there was no further recurrence.

Non-traumatic Rheumatism: Chronic Types

The commonest forms of chronic muscular rheumatism are pseudo-sciatica and deltoid rheumatism. The distinction "pseudo-sciatica" is no mere academic quibble of terms. The textbooks refer to "stiff neck" and "lumbago" under the headings "fibrositis" and "myofibrositis," but no niche appears to have been carved out for the equally prevalent muscular rheumatism occurring in the lower limb. The term "sciatica" is rightly restricted to a neuritis affecting the sciatic nerve, and if the local treatments recommended—injections, acupuncture, and stretching of the nerve itself by manipulative or operative measures—be applied to cases of muscular rheumatism the results are likely to be not only fruitless but harmful.

While it is true that the onset of pseudo-sciatica is often confined to a day, its duration under the usual regime is as often a matter of months. The pain is generally described as extending down the whole of the back of the thigh and not infrequently to the calf and ankle, as in true sciatica; but little help can be obtained from the patient in the matter of location. I have found, however, that injections at three sites, given on several occasions at intervals of two or three days, produce the best results. The first site is along the line of the gluteal fold, using from 4 to 6 c.cm. The second site is beneath the fascia covering the popliteal space: here it is advisable to keep to the upper half to avoid the termination of the short saphenous vein. The third site is on the antero-lateral aspect of the leg, about two and a half inches above the external malleolus, in the neighbourhood of emergence of the musculo-cutaneous nerve.

In deltoid rheumatism pain and tenderness are most pronounced at the origin of the muscle from the acromion and outer end of the scapular spine, and at its insertion into the humeral shaft. About 6 c.cm. of local anaesthetic is required at the upper site, while 2 c.cm. is usually enough at the insertion. Occasionally the clavicular origin requires injection, and sometimes the fascia covering the body of the muscle. It is seldom possible, on the first attempt, to locate all the places requiring injection, and it is better not to try to do too much at one time. The pain of deltoid rheumatism often radiates to the elbow and sometimes down the radial side of the forearm as far as the wrist. This radiated pain, however, disappears after treatment in the deltoid region.

Illustrative Cases of Chronic Type

A lady in the sixties, of no occupation, complained of "neuritis" in the right arm. Previous attacks had lasted for

two or three months, and then completely disappeared. She did not think that treatment of any kind had benefited her much. There was no sugar in the urine and no apparent focus of infection. Most of the pain was in the deltoid region, but it often extended down the outer aspect of the arm to the elbow and occasionally to the radial side of the wrist and hand. Tenderness was felt at the deltoid origin from the acromion and outer end of the clavicle as well as at the deltoid insertion. There was also tenderness just above the external humeral epicondyle. A definite elongated thickening was present in the substance of the muscle about an inch below the acromion. An injection was made into this without producing much pain or affording any relief to the "neuritis." Four c.cm. was then injected along the acromial origin of the muscle, giving rise to momentary acute pain, which she said went down to her wrist. Two c.cm. was now injected into the tender spot at the deltoid insertion. The "neuritis" was worse next day, and a week later I had difficulty in persuading her to agree to any further injections. On this occasion I again injected the same sites, with the addition of 1 c.cm. in the region of the epicondyle. A great improvement followed this, and a week later the only remaining tenderness was at the clavicular origin and along the anterior border of the deltoid. These sites were injected, after which all pain disappeared and normal function was restored.

A lady aged 40, accustomed to an athletic life—golf and tennis—had suffered from pseudosciatica of gradual onset for twelve months. During the first three months the attacks were intermittent. During the last nine months she had never been free from pain, though it was worse at times. Six months after the onset the teeth had been radiographed: an apical abscess was discovered and the tooth was removed. No improvement having occurred in the next six weeks, she went to an orthopaedic surgeon, who treated her by manipulation; the pain after this was much worse. She then had a course of exercises, radiant heat, and massage. The exercises were very painful, and no improvement followed this treatment. I gave an injection in the line of the gluteal fold and upper half of the popliteal space without affording much relief. In two days the injections were repeated, considerable improvement resulting. Two days later further injections were made in the same sites and, in addition, in the neighbourhood of emergence of the musculo-cutaneous nerve. After this the patient was able to sit with her back to the wall and legs extended without experiencing pain. The last injections were given a week later, and more than four months have now elapsed without recurrence.

Traumatic Type of Rheumatism

Traumatic cases are of long duration. Common examples are "tennis elbow," "painful heel," and "pectoral pain." The history is that of sudden onset during muscular exertion, which, curiously enough, is usually not of a violent nature. "Pectoral pain," for example, generally originates during coughing, and "painful heel" during walking.

The site can be located by the patient by active movement of the affected muscle against resistance, and confirmed by the fact that it is the point of maximum tenderness to finger-tip pressure. A small injection of local anaesthetic in the right spot will effect a cure, whereas a large one in the surrounding neighbourhood will, when the anaesthetic effect has passed off, merely add a bruised feeling to the original pain on movement. Evidence that the right spot has been found is afforded when the pain of the injection reproduces the pain complained of on movement. If this is explained to the patient beforehand helpful co-operation can be obtained. This is fortunate, for experience has taught me that in this type of rheumatism accuracy to within one-eighth of an inch in placing the injection is essential for success.

Illustrative Cases of Traumatic Type

A general labourer was referred to me by a colleague as a "query chronic appendix." He complained of a chronic ache in the right iliac fossa, which, intensified on movement, had

prevented him from working for the past eleven months. My colleague informed me that he had exhausted his medicinal remedies upon the man without success. The patient had also been sent to another hospital, where he had been operated on for bilateral inguinal hernia in the hope of curing the pain. This measure also failed to relieve him. Examination revealed that there was neither tenderness nor increased resistance of the muscles covering the right iliac fossa. Careful questioning disclosed that the pain had arisen while he was employed in "ditching," and that the clay was sticky and often failed to leave the shovel when being thrown up from the ditch. Further examination elicited tenderness above the anterior part of the iliac crest, and finger pressure in this region increased the pain in the right iliac fossa. Injection of the tender region abolished the iliac pain, and the man expressed himself as being completely recovered. Next day, however, he complained of an ache in the right half of the upper abdomen. A tender point was found at the tip of the tenth costal cartilage. This site was injected, when the pain and tenderness immediately disappeared. The man was kept in hospital a further two days for observation and was able to return to work a week later.

Fifteen days after operation for compound comminuted fracture of the patella a plumber, subject to chronic bronchitis, developed intercostal pain which prevented coughing. The temperature began to rise, and by the seventeenth day coarse rales were heard at the base on the painful side. The operation wound having healed by first intention, and neither redness nor tenderness being present in the neighbourhood, I concluded that the pyrexia was due to the pulmonary condition. An injection of 4 c.cm. of novutox into the fascia at the painful site restored the power of painless coughing. Much sputum was expectorated during the next forty-eight hours, during which the temperature gradually fell, reaching normal on the twenty-first day.

Since writing these notes the Editor has drawn my attention to papers bearing on the subject in the *Journal* of February 12, 1938—namely, "Suggestions relating to the Study of Somatic Pain," by Sir Thomas Lewis (p. 321), and "A Preliminary Account of Referred Pains arising from Muscle," by J. M. Kellgren (p. 325).

I am indebted to Dr. Harold Gardiner-Hill, F.R.C.P., for kindly criticism and advice.

CHRONIC BLEPHARITIS IN CHILDREN

ITS TREATMENT WITH ANILINE DYE COMPOUND

BY

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The primary object of this investigation was to effect a comparison between the treatment of chronic blepharitis in school children with the use of ung. hyd. ox. flav. in a certain group and an aniline dye compound in another group. It was found, however, that in a large proportion of the cases "golden eye ointment" had previously been tried at one time or another, and this fact, coupled with the difficulty experienced in inducing the patients receiving this form of treatment to attend the clinic as regularly as was necessary, led me to adopt the "blue compound" (aniline dye) treatment in all cases and to study its effects. This study was extended to cover the association with blepharitis of seborrhoea, visual defects, and subnormal nutrition.

The children treated were not merely those found at routine medical inspection, but comprised all the known cases of chronic blepharitis in the Lancashire County district of which I was medical officer of health at the time. There were sixty-eight cases in a total school popu-

lation of 7,317, giving an incidence rate of approximately 1 per cent.; forty-four of these attended the clinic during the treatment period of eight weeks.

References to brilliant-green treatment of blepharitis are meagre (Tulipan, 1936; Krylov and Rostovtsev, 1934), and therefore the present study may be of interest. Tulipan stated that

"a 1 per cent. aqueous solution of brilliant green painted on the eyelids daily for several weeks has proved efficacious in the treatment of a few patients with blepharitis associated with sycosis vulgaris."

Aetiology and Pathology

Chronic blepharitis is commonly regarded as a non-infective disease of the eyelashes, the causal organism being a staphylococcus (Barber, 1934). Gurd (1939) and Abu-Saif (1934) mention two types: a squamous and an ulcerative. While Gurd associates the occurrence of seborrhoea and dandruff with the squamous variety, Dowling (1937) says that Sabouraud draws a sharp line of distinction between seborrhoea and dandruff in relation to blepharitis. Dowling therefore speaks of seborrhoeic blepharitis (Greenbaum, 1934) and a second severe type, or sycosis of the eyelashes. Barber (1934) refers to adolescent seborrhoea and a severe type in childhood. Clark (1937) draws a distinction between seborrhoeic blepharo-conjunctivitis occurring in adolescent or adult life, and blepharitis marginalis, a mild disease "occurring in poorly nourished children." His adolescent type is "almost always associated with seborrhoeic dermatitis of some other part of the body, usually of the scalp, which is characterized by dandruff or alopecia, or both."

In the present cases, all of them school children under 14 years of age, no such type was found, but the cases fell naturally into two groups:

(a) A mild type, characterized by flaky incrustations on the lid margins, slight swelling of the lids, but no ulceration, which I shall call the squamous type; and

(b) A severe form, characterized by small ulcers at the roots of the eyelashes, swollen and discoloured lid margins, destruction of lashes, and occasional conjunctivitis, which I shall refer to as the ulcerative type.

I was unable, although all cases were examined for it, to prove any preponderance of either dandruff or seborrhoea of the scalp in either category. Dandruff was no more prevalent than in any group of children selected at random.

Again, it is mentioned by various writers that blepharitis is a disease of badly nourished children. Almost all of my cases could be classified under the modern nutritional Standard B—that is, within the limits of normality (1 Standard A and 3 Standard C). Therefore in no case was cod-liver oil and malt given as part of the cure. All cases were examined by Dr. McCann, consulting ophthalmologist to the Lancashire County Council, but in only two were visual defects found. These were corrected; but I feel, like Gurd (1939), that "errors of refraction should be corrected, but this alone will not alleviate the condition." Somerset (1939), in criticizing the report of the Committee of Inquiry into Problems connected with Defective Vision in School Children (some 2,625 cases), gives a very exhaustive review of 300 cases at White Oak Hospital, London, and arrives at the conclusion that "there is no significant difference in the spherical refractive error in children suffering from blepharitis in comparison with the normal child," and that "causes other than errors of refraction must be sought for in blepharitis of children."

Finally, in order to prove the value of early treatment I endeavoured to show that the milder type of blepharitis could pass into the ulcerative or severe form, but honesty