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THE CLINICAL IMPORTANCE OF FIBROSITIS IN GENERAL PRACTICE *

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Everyone will agree that any contribution to the understanding and treatment of pain is of fundamental importance in practice. My remarks are directed solely to one cause of pain, that arising from some pathological condition of, or injury to, white fibrous tissue. There is need for much clearer clinical appreciation of white fibrous tissue pain. Such a conception should be taught more systematically in the schools and described more clearly in the textbooks. The word "fibrositis," connoting a definite pathology, has only come into anything like general usage in the last twenty years or so, and even now its implications are not fully realized. Only the other day I came across a remark made by a distinguished surgical colleague to the effect that he was rather sceptical about the condition (fibrositis), saying that "it was one physicians found, but surgeons rarely found it."

When this tissue undergoes pathological change (either acute or chronic inflammation, injury, or chronic strain) it becomes *painful*; and having regard to its widespread presence in the body it must be obvious that many cases of pain can be explained in this way. Not only does it become painful, but it tends to undergo an inflammatory proliferation of varying type and degree, forming either linear, stringy thickenings, thickened plaques or sheets, or fibrous lumps or nodules; the last consisting of fibrous septa enclosing muscle fibres and bundles of characteristically vague and ill-defined outline. The pain is variable; it may be continuous or intermittent, dull and aching or sharp and paroxysmal, sometimes of knife-like intensity, even mimicking true trigeminal neuralgia; with a notable variability under conditions of bodily health and weather. From these facts it is clear that the basic conception of a white fibrous tissue pathology is essential for the analytical study of pain in general. I want to emphasize that until this fundamental idea is fully grasped not only will many everyday conditions escape accurate diagnosis, but many serious diagnostic errors will continue to be made.

Certain special methods of clinical investigation are required. White fibrous tissue is to a very large extent accessible to direct palpation, and it is in these more accessible areas that its pain-producing pathology is liable to become manifest. The first point to be realized is that when fibrous tissue has undergone these pathological changes it is *always more or less tender to pressure or strain*, and this even when it is not actually giving rise to pain apart from pressure or strain. Strain may be caused by any form of pulling and dragging, and therefore the pain is particularly liable to be associated with movement.

Dr. Stockman¹ has pointed out that the pathology of "toxic" fibrositis consists in a swelling between, and a proliferation of, the tissue fibres, together with changes in the finest vessels and nerve endings. The small blood vessels are distinctly thickened in all their coats, and therefore the affected area is liable to congestion and consequent increased irritation of the inflamed nerve endings. This fact explains why the pain is frequently so much worse when the patient is warm in bed, tending to get better after being up for some time.

The term "fibrositis" is coming into more general adoption, but the condition has, of course, received other names in the past. Most commonly it has been called "muscular rheumatism"; inaccurately, for it is neither muscular nor rheumatic, though there are close anatomical and clinical associations. The fibrous tissue, in its septa, sheaths, and tendons, being affected, many of the resulting thickenings and swellings are felt to be in, and therefore thought to be of, the muscular tissue itself, to which the pain is not unnaturally but erroneously referred. "Neuritis" is another popular term, and is only accidentally and partially accurate; its frequent use seems to depend in part on its having a "superior" sound as compared with the commonplace and old-fashioned term "muscular rheumatism."

The true rheumatic infection, particularly in younger subjects, is a common cause of fibrositic pain. This is clinically recognized as the "growing pains" and other aches of the rheumatic state in childhood. Yet it is important to emphasize that, curiously, the true rheumatic nodule (itself almost reserved to childhood) is not only different in anatomy, pathology, and distribution from the nodular formations of the fibrositic condition, but is still further differentiated by being absolutely painless, even on palpation. We may have, therefore, in true rheumatism a definite nodular formation which has nothing to do with the rheumatic pain, as well as true secondary fibrositis (in early life due to the rheumatic poisoning), and this is also to be distinguished from the articular manifestations of the disease.

Aetiology

The aetiology, as might be expected, is complex. There are three main factors to be recognized.

1. *Septic and Toxic Influences.*—Among these influenza is common and important, and the widespread pains during the height of the disease and frequently persisting afterwards are due to this cause. The reaction of the white fibrous tissue to gonorrhoea is well known, and as has already been pointed out, it is a secondary result of the rheumatic infection. It is found in many other toxic and infective conditions, ranging from oral sepsis to

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erythema nodosum. Gout undoubtedly predisposes to white fibrous tissue pain.

2. *Injury*.—This may be acute in any form of injury by contusion or laceration, and this type of fibrositis presents certain differences, both of pathology and of localization, from the infective and toxic types. Yet it calls for inclusion under the general term "fibrositis," because the repair processes of the damaged tissue (due to an ordinary leucocytic exudate which is not present in the other forms) gives rise to the characteristic pain. In the more chronic trauma caused by strain we have a very large group of cases. The strain may be single, as from the act of winding up a car or lifting a weight, or repeated and persistent from the adoption of certain strainful attitudes. The most typical strain manifestation is seen in ordinary lumbago.

3. *Climate*.—The variability of fibrositic pain with the weather has long been known; indeed, some people are so sensitive as to be almost human barometers. There are personal differences, however; not everybody reacts in the same way to a particular change of weather. Usually the pain is intensified before the advent of rain rather than with its onset; and exposure to cold east wind, etc., as preceding or accompanying an attack is too well known to need emphasis. The exact mechanism by which atmospheric conditions operate is obscure, in spite of their undoubted and frequent incidence.

Special Clinical Manifestations

If the basic conception of white fibrous tissue pathology and pain, as briefly outlined, is thoroughly understood the various clinical manifestations cannot easily escape recognition. But there are some which deserve special mention, either on the grounds of frequency or importance, or amenability to treatment; and it is remarkable that some of them have for so long escaped their full meed of recognition.

FIBROSITIC HEADACHE

This is one of the most striking examples of the truth of the preceding sentence. Even to-day I doubt if the majority of practitioners, general or special, know what is meant by the term "fibrositic headache." Attention was first drawn to it by the Scandinavians, particularly in their schools of massage, and when the exponents of this treatment came to this country (incidentally teaching us most of the practical massage we now know) they were laughed at for saying they could cure headache by massaging the back of the neck. I laughed myself. But because I have made it an invariable rule never to reject without examination anything seriously maintained by intelligent people, I was led to a full understanding of the clinical importance of the "white fibrous tissue pathology."

It is the commonest cause of chronic continuous or intermittent headache, yet sufferers from it are still sent in their thousands to the ophthalmic surgeons, who seem to know less about it than anybody else. It has characteristics which are well defined, enabling a diagnosis to be made with easy accuracy. The headache is recurrent and persists for varying periods, from a few hours, days, or weeks, and varies much in intensity from time to time. It is often worse in the morning, passing off as the day goes on; although quite frequently it develops towards evening. In the first case the aggravation is due to the congestion which occurs during the night; and in the second to the effects of strain (and possibly other causes) during the day. It is essentially a "nape-of-the-neck" pain, concentrated in the basi-occipital area and extending down the muscles at the back of the neck, and thence becoming in many cases a generalized headache. The whole fibrous area of the scalp may be tender and painful;

this is frequent in the temporal regions and the fibrous tissue round the supra-orbital nerve, tending to grip it with thickened fibrous tissue as it goes through the notch: if unilateral it may have a distribution mimicking true hemicrania.

In every case of persistent headache this cause should be borne in mind and investigated. When palpation-pressure is applied to the tissues at the base of the skull its aponeurosis and tendons arising therefrom are found to be tender to such pressure, sometimes exquisitely tender, even when at the moment no headache is being experienced. Now a normal nape is not tender in this way. This tenderness is of a variable extent and distribution; it is most commonly found in the situations I have indicated, and also extends down the fibro-muscular tissues of the cervical spine and into the muscles of the supra-spinous fossae. Very often these areas are quite obviously thickened or nodular to the skilled touch (it must be a skilled touch), and more or less well-defined infiltration can be noted in the suboccipital and other muscles.

The attention to the four diagnostic features—persistence, thickening, nape-of-the-neck localization, and tenderness on pressure—will enable the diagnosis to be made with certainty, though it must be remembered that other causes of headache may also be present and must be borne in mind and investigated—for example, renal disease and high blood pressure. Most marvellous relief from the proper treatment is possible; indeed, if these remarks were of no further service than to help the recognition of the frequency and curability of this type of headache, while it would doubtless deprive ophthalmic surgeons of some part of their practice, patients would benefit considerably.

"TRIGEMINAL" NEURALGIA

Even less known than fibrositic headache is the fact that there are many cases so closely resembling true trigeminal neuralgia as to receive this diagnosis. I desire to emphasize that it is as imperative to investigate such cases from the point of view of fibrositic pathology as in chronic headache. However severe and paroxysmal the pain may be, if on palpation of the muscles of the jaw and face one finds the characteristic reaction of pain on pressure, treatment by (skilled) massage should certainly be tried. I have now had so many cases yield to this line of treatment that I am coming to the conclusion that there are more cases of fibrositic "trigeminal" neuralgia than of true trigeminal neuralgia.

CHEST CASES

These are extremely interesting, and their recognition will enable many minor and a few major diagnostic errors to be avoided, as well as procuring gratifying relief to the patients. First of all the rib cases. The white fibrous tissue of the ribs and their cartilages and the muscular attachments thereto are prone to localized and often quite small areas of fibrositic thickening (whether perceptible as such or not) and tenderness. Owing to the continuous respiratory movements the pain is very frequently of a continuous kind, though modified by respiratory movement. I have known three cases of chest pain (two of them in doctors of eminence) in which a definite diagnosis of aneurysm was made; yet all the trouble was due to a small tender fibrositic spot in or near the aortic area, yielding the characteristic definite and localized pain on palpation, which cleared up with a few days' massage. The error was due to the particular localization combined with lack of knowledge of "rib fibrositis."

A very large number of cases are diagnosed as heart disease when these pains occur in or near the praecordia. Many are due to strain conditions (often forgotten by the

patient) affecting the pectoral muscles, which is not surprising. In women the pain sometimes leads to a suspicion of cancer, but unfortunately if the true nature of the pain is not recognized relief is unlikely to follow. Most cases of pleurodynia are of this nature, and one need scarcely comment upon the fact that no rub is heard. I regard this as a serious diagnostic error, because on the known fact that most pleurisy, in the absence of any other definite cause, is tuberculous in pathology, so to label a case is a serious matter; almost as serious as failure to realize the tuberculous pathology of "idiopathic" pleurisy.

Heart disease, again, is a label which is often so applied by the doctor, and still more frequently by the patient, to these simple cases. One of the earliest examples of this in my experience was a young policeman who had complained of persistent pain about the lower end of the sternum, which led to his being invalided from the force with the label of "heart disease." The heart was perfectly normal, but he had marked localized fibrositic tenderness of, and near to, the xiphisternum, which very rapidly and completely cleared up under massage, leaving him grateful but grumbling, though these emotional reactions were differently directed.

ABDOMINAL CASES

In this field a knowledge of fibrositic pain is particularly useful, as the incidence of such cases is frequent and often puzzling. The fibrous tissue connected with the abdominal muscle sheaths or attachments is particularly liable to be affected in this way. Should the pain be located, even approximately, in the right lower quadrant of the abdomen, a patient is lucky to escape the surgical knife. Diagnoses of gastric ulcer and cholecystitis are sometimes made with a certainty which is only rivalled by the negative findings at operation.

The characteristic pressure pain, which is such a valuable criterion when palpating over a hard bony surface such as the nape of the neck or the ribs, is a factor that is much less reliable over the abdominal wall; sometimes, indeed, a certain diagnosis cannot, or should not, be made. Far better that an abdomen should be opened with a negative result than that cases of organic visceral disease should be overlooked with possible resulting catastrophe. It is obvious that fibrositic pain is more superficial because of its parietal origin; whereas pain of visceral origin will be deeper. There is one method of palpating the abdomen in pursuit of this differential diagnosis that has very largely escaped notice and certainly systematic teaching and demonstration. I refer to the difference in pain results from what I call "finger-tip" pressure as compared with "flat-hand" pressure. From the localization of the painful tissue in the abdominal wall it is first and most directly accessible to pressure by the exploring hand. In the true fibrositic cases this pain is readily elicited by the focalized searching-out pressure of the tip of a finger; with the practised touch this pressure can be practically confined to the tissues of the abdominal wall without causing any notable pressure upon the abdominal contents.

Search in this way in a fibrositic case will reveal that the pain is brought out sharply and quickly; it may be localized to one spot (which may or may not be a localization characteristic of visceral disease); but it is also very frequently elicited in several focalized areas in the abdominal wall. The rectus muscle, for instance, is very commonly affected, and there are often numerous spots of tenderness (with or without thickening) throughout its area. The absence of muscular rigidity in this affection is also specially noteworthy. Sometimes the pain will be marked on pressure over the bony margins of the abdomen, whether ribs, xiphisternum, or pubic crest;

in these situations it is clear that finger-tip pressure cannot be exerted on subjacent viscera.

When a broader pressure by part of the flat hand is employed the pain reaction will be very much less, even with relatively considerable pressure deep in the abdomen. If, on the other hand, the pain is due to visceral disease this is not elicited characteristically by the finger-tip pressure, but is brought out by the broader and stronger pressure more deeply into the abdominal cavity. It is obvious that one needs to be educated in these methods of differential palpation, an education which is largely neglected in regard to this particular method of exploring abdominal pain. Indeed, it is my impression that the fibrositic causes and varieties of abdominal pain are among the most forgotten things in surgical teaching. Perhaps it is because there is the feeling that ninety-nine innocent appendices should suffer rather than that one sinful one should escape surgical execution. However, as a physician I still counsel the academic desirability of accurate diagnosis, even in these days of specialized and mechanical investigation whereby delicate palpation is rapidly in danger of becoming a lost art.

To sum up the diagnostic criteria; in fibrositic abdominal pain the following tendencies are observed: (1) The painful areas tend to be more or less localized; they are frequently multiple and are easily and sharply defined by finger-tip pressure, while they are relatively unaffected by flat-hand pressure. (2) They may occupy positions not usually associated with visceral disease; they are often found on the bony margins where the pain cannot be due to pressure on subjacent diseased viscera. (3) There is great variability in intensity; the pain may be intermittent, and there is a frequent relation to strain or to weather. (4) Careful investigation of the history fails to reveal a syndrome characteristic of visceral disease, and this in many cases is confirmed by the good general health of the patient. The differential diagnosis might be much further elaborated, of course, but much reliance may be placed on these points provided they are applied with the necessary skill and duly tempered by diagnostic discretion.

LUMBAGO

This is either a localized or a diffuse fibrositis; in the former it causes those cases of agonizing pain which lock one in a fixed attitude or prevent one from normal locomotion or bending. The recognition of the true pathology will lead logically to those methods of treatment which will almost certainly bring relief, and will eliminate many of those unnecessarily prolonged periods of rest in bed so often prescribed.

SCIATICA

It is true to say that just as fibrositis is the commonest cause of chronic headache so it is of sciatica. The gluteal muscles, as might be supposed, are very often affected by a fibrositis in the septal tissue strands. When this fibrositis spreads to the sciatic nerve as it emerges from the pelvis, a secondary perineuritis results, just as is seen in the case of the supra-orbital nerve. Two signs are usually present: (1) marked and usually maximal pain on deep palpation over the sciatic nerve at its point of emergence; and (2) pressure pain in other areas of the gluteal region remote from this diagnostic spot.

These two findings almost invariably go together in a fibrositic sciatica. It is, of course, possible to get a gluteal fibrositis without sciatica; indeed, this is quite common. But very rarely does one find this type of sciatica without a more widespread invasion of the gluteal fibrous tissues; such a case is theoretically conceivable, and, I suppose, sometimes occurs, though I have never seen one. The practical application of this clinical fact

is that most cases of sciatica call for and yield to massage, always providing that it is skilfully given—a very important proviso.

OTHER SITUATIONS

These are too numerous for detailed analysis; peri-arthritic cases are common, and it is this type which improves so wonderfully with massage. The pain, particularly in the lower limbs, is so often described as a searing or burning pain; but careful exploration of the site will result in the characteristic pain on pressure of the periarticular and aponeurotic structures. "Fibrositic heel," which can be a very refractory condition, deserves recognition; a corresponding condition may be met with at the point of the elbow.

Nodular Cases

Much confusion appears to have resulted from the use of the term "nodular," in that it has led observers to expect sharply defined, very obvious, and possibly visible nodules (they sometimes are). As a matter of fact, fibrous tissue when affected in this way always tends to thicken; but the thickening, as I have already said, may be slight and in such guise—as strands, tracts, or sheaths—as to escape tactual recognition. Then again, fingers are so different, and skilled finger education is not too common, and is certainly receiving less and less emphasis in the teaching of these days. The nodules are occasionally obvious and visible, but such cases are the exception. For those who desire a fuller description I would refer to Dr. Stockman's most valuable book, and also to a paper of my own² with a description of a very marked case, the publication of which seemed to have been largely responsible for "great expectations" in regard to these nodules. Occurring as fibro-muscular thickenings, their perception is often subtle, and it may need a vaselining of the surface and much delicacy to appreciate them. They are, however, objective and demonstrable, although still in the minds of many they are only accessible to the finger of faith.

Treatment

First there is the discovery of the causal factor, particularly whether that be direct trauma or its postural or strain variety, or any toxic or infective condition: I have already mentioned some of these, but it is important not to forget dental sepsis, more particularly perhaps the pyorrhoeic cases and abscessed roots. More frequent resort should be had to x-ray examination of the teeth rather than to the wholesale clearing of the mouth, comparable to the light-hearted way that "fibrositic" appendicectomies are performed. Preliminary rest is called for in certain types of case, as to which general experience and common sense is a sufficient guide. This is very marked in post-influenzal and some of the gonorrhoeal cases. The juvenile rheumatics also demand rest, because their fibrositic pain is so often coeval with an insidious cardiac damage. On the other hand, rest is not indicated in headache or in many of the chest cases, particularly in the "pseudo-cardiac" examples; and but seldom in abdominal cases when diagnostic certainty has been arrived at. Many lumbagos and sciaticas also receive a far greater amount of rest than the nature of their case merits.

Drug treatment is only palliative to relieve exacerbations of pain, but is often called for. Outstanding is aspirin, which in many cases is given in far too small doses. While it is a wise procedure to test a patient's reaction to aspirin for the first time the drug is exhibited—though it is seldom that any medical man to-day has this opportunity—it is equally certain that once a patient's tolerance is known there is too much timidity

about the dosage. The value, and safety, of a 20-grain dose (repeated in half an hour if necessary, which it very seldom is) has to be known from experience to be appreciated.

Before the war massage and movement as a form of treatment for fibrositis, apart from the purely traumatic varieties connected with the obvious injuries, such as fractures, dislocations, etc., was very little used. The English schools (of massage) originally seemed to avoid any massage that directly touched and exacerbated the painful spot, with the result, naturally, of little or no benefit. In supposed fibrositis, and if the massage does not relieve, either the diagnosis or the technique of treatment is wrong; and even to-day this most important form of treatment is, in my opinion, not adequately expounded and demonstrated in the English training schools. It is the only curative treatment, and demands much more extensive use than it is even yet receiving. The massage clinics of hospitals are encountering an ever-expanding need in this direction; for in inveterate and widespread cases effective treatment is tedious, long-continued, and relatively costly. This latter factor is of great importance to the less wealthy middle-class patients, who do not resort to hospitals. Masseurs now abound, and competition reduces charges; but high-grade skill (and experience) in the fibrositic cases is still not too easily come by. Therefore a poor result does not necessarily invalidate the diagnosis.

REFERENCES

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TUBERCULOSIS IN HOME-CONTACTS

A NOTE ON INCIDENCE AND THE ROLE OF HUMAN CONTAGION*

BY

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Incidence of Tuberculosis in Home-contacts

Investigations of tuberculous infection in home-contacts have been carried out by comparing the frequency of positive tuberculin tests in home-contacts and in non-contacts, or children having no history of exposure to tuberculosis. A critical summary of these investigations has been made by Hart (1932). Among the more important recent workers in this connexion must be mentioned Bernard and Debré (1920), Parisot and Saleur (1925), Opie and McPhedran (1926), Schlesinger and Hart (1930), and Dow and Lloyd (1931). Consideration of their researches leads to the following conclusions.

The incidence of tuberculous infection is much greater in home-contacts than in non-contacts, the younger the child the more marked the difference. The great variation found in the figures of different investigators may be accounted for by several factors: the environment in which the investigation was carried out—for example, town or country, hospital, dispensary, or school; the care with which controls are chosen as regards excluding contact with tuberculosis in the history and cases of clinical tuberculosis in the non-contacts, and whether children who are attending hospitals and dispensaries or only healthy school children are employed; the hygienic conditions of the households (Bennighof, 1925; Dow and Lloyd, 1931); and the number of children investigated, which may be too small.

* An extract from a report, "The Prevention of Tuberculosis in Childhood, with Special Reference to Methods of Separation." Work done during the tenure of a Dorothy Temple Cross Research Fellowship in Tuberculosis, 1933-5, awarded by the Medical Research Council.