

FIBROMYALGIA

Dr John Tanner discusses the syndrome and research into its treatment

Fibromyalgia is a diagnosis increasingly used by specialists these days to describe a syndrome. A syndrome is a cluster of symptoms and signs (symptoms are what the patient tells the doctor and signs are what the doctor sees). The symptoms of fibromyalgia include fatigue, stiffness, muscle pains in many regions of the body and sleep disturbance. In many cases there is a history of physical trauma such as whiplash or back injury.

The only sign is multiple tender points on sites of the body (see diagram). For fibromyalgia to be diagnosed, at least eleven out of eighteen possible sites need to be painful to pressure of 4kg/cm^2 applied by the examiner's digit. (A rule of thumb is that the pressure applied is sufficient to blanch the nail-bed of one's thumb when pressed firmly on the forehead.)

Fibromyalgia is not a new syndrome but a resurrection of the old diagnosis "fibrositis". In the past fibrositis was used rather loosely to characterise a region of soft tissues (muscles, connective tissues, ligaments, tendons) that felt fibrous in texture and was clearly a source of tenderness and pain.

BREAKTHROUGH

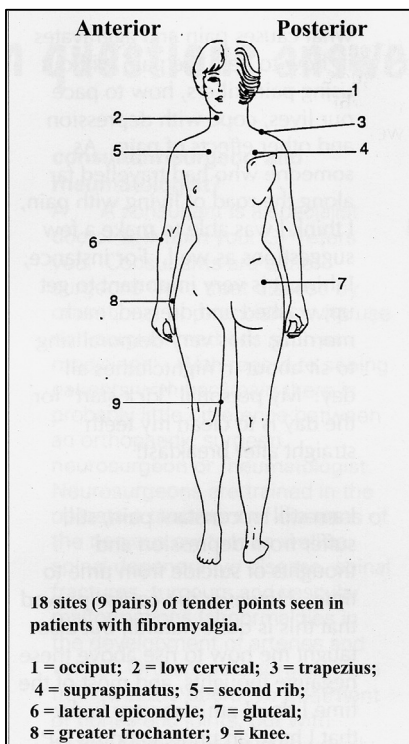
A breakthrough in our understanding of the condition came in 1975, when a doctor called Moldofsky studied sleeping patterns in sufferers. Using electroencephalogram (EEG) he discovered abnormalities in the brain's wave patterns during sleep. Technically, he identified an abnormal intrusion of alpha waves into the delta phase of deep sleep. This explains why sufferers of fibromyalgia experience daytime fatigue and do not find their sleep refreshing. Further experiments were conducted on normal volunteers who were deprived of various phases of their normal sleep rhythm – within a few days they all developed muscle pains.

People with this clear combination of sleep disturbance and widespread muscle pains are very likely to benefit from Amitriptyline 10-25 mg at night because it improves sleep quality and reduces central pain transmission in the nervous system. This kind of fibromyalgia is termed *primary* although no-one is sure whether the sleep disturbance is the actual cause or whether it occurs as a result of the muscle pains and stiffness.

Secondary fibromyalgia applies to those patients who gradually develop muscle pain and stiffness following a mechanical strain or injury, e.g. to the neck or upper back. The pain and stiffness gradually spread further and further from the site of the original injury.

Finally there is *concomitant fibromyalgia* which simply means the syndrome is associated with other diseases such as osteoarthritis or rheumatoid arthritis.

By now you will be clear that diagnosis is a problem. There is no laboratory test, x-ray or scan that can be done to confirm the condition. Even the cellular structure of the painful muscle itself is normal when examined under a microscope.



A number of biochemical and hormonal abnormalities have been found in fibromyalgia patients. Their importance in the cause of the disease or in its diagnosis is at present unknown. Here I list the main abnormalities that have been found. There is a decrease of phosphate energy stores in red blood cells and muscles. Sympathetic nervous system activity (the part of the nervous system which controls unconscious functions, e.g. heart and intestines) is reduced and there is a decrease in certain chemicals in the central nervous system (brain and spinal cord). These chemicals are neurotransmitters and they normally reduce the number of pain signals coming through to the higher cortex of the brain. Also there is an increase in the chemicals involved in the development of inflammation and pain. One of the main hormonal control systems in the body is also affected. This is the communication between the hypothalamus in the brain, the pituitary gland at the base of the brain and the adrenal glands which lie next to the kidneys. This is known as the hypothalamus-pituitary-adrenal axis and is a major controller of our metabolism. The adrenal gland produces cortisol, which is the hormone that helps you cope with stress. This hormone is reduced in fibromyalgia patients. Another hormone from this system, growth hormone, is also reduced. Growth hormone aids transport of glucose into the body's tissues from the blood for energy utilisation.

The specialist's job is to exclude other causes for your symptoms such as thyroid hormone excess or deficiency, metabolic disease, polymyalgia rheumatica, chronic infection (even a hidden dental abscess can cause widespread symptoms), anaemia and depression.

You need to have experienced the symptoms continuously for more than three months and have at least eleven tender points in the eighteen classical sites and have disturbed sleep. Since fibromyalgia is often associated with other conditions such as irritable bowel syndrome, migraine and obstructive sleep apnoea, the presence of these in your medical history may provide supportive evidence.

Most people have been suffering such symptoms for years and have been to a variety of therapists. Commonly manipulative therapists (such as chiropractors and osteopaths) may have helped since muscle shortening and pain often respond temporarily to joint manipulation. This can mislead practitioners towards diagnosing mechanical disorders of the spine. This is particularly so when the condition seems to have developed from a whiplash injury or a back strain (secondary fibromyalgia).

OVERLAP WITH ME

Because of the frustration, lack of positive help or direction, and failure of various treatments, people often become depressed and distressed. Furthermore, there is a strong overlap with "chronic fatigue syndrome" (ME) since fatigue is a common feature. The search for a viral or bacterial cause usually has proven fruitless. There is a temptation for doctors to ascribe the whole condition to stress or psychosocial factors, particularly since a history of physical or sexual abuse is more common in sufferers. However, it is just as likely that some people are inherently more vulnerable to becoming chronically disabled and certainly less able to cope with the frustrations of fibromyalgia.

It is the failure to cope and the resulting impact on a person's working, social, emotional life and relationships that leads us to the best current approach to management. First it is important to realise there is no cure, as in many diseases such as arthritis. There are only ways of helping yourself to cope. Many people have become overwhelmed by the pain and fatigue and become increasingly inactive and unfit.

PAIN MANAGEMENT

Multidisciplinary approaches have proven effective in helping people to live a more normal life. The pain management service at your district hospital may run a pain management programme (see below). These incorporate cognitive behavioural therapy (changing attitudes and beliefs about illness), graduated exercise programmes, coping techniques such as learning to pace yourself, relaxation and stress reduction. Following such a programme, community support is available in fibromyalgia support groups, which are now widely established throughout the country. Amitriptyline to improve sleep, anti-depressants to combat depression, and diet (decreasing sugar intake) have also proven effective.

Some people claim to have derived benefit from a variety of dietary supplements including magnesium supplements, gamma linolenic acid (evening primrose oil), omega fatty acids (fish oils), malic acid, tryptophan, etc. In practice only a minority derive any real long-term benefit and, because the condition is prone to wax and wane like any long-term condition, it is often difficult to be sure what is actually making the difference. There is no doubt that more research is needed into the nutritional factors in this condition.

My own belief is that the condition is not primarily a musculoskeletal disorder but a chronic pain disorder that occurs as a result of disturbed central pain mechanisms in the brain. The muscle tenderness and increased pain on exercise is a result of secondary hyperalgesia (increased sensitivity to pain). This is why some doctors report success in the use of centrally-acting local anaesthetics (intravenous lignocaine drips).

About the author

Dr John Tanner works at Oving Clinic, Chichester and Salisbury District Hospital, where he is a member of the Pain Management Team. He is author of *Better Back* (Dorling Kindersley).

Further information

- A list of local pain clinics and pain management centres is available from The British Pain Society, 3rd Floor, Churchill House, 35 Red Lion Square, London WC1R 4SG, www.britishpainsociety.org.
- Fibromyalgia Association UK, P0 Box 206, Stourbridge, West Midlands DY9 8YL, Helpline 0845 345 2322, www.fibromyalgia-associationuk.org. Publishes a newsletter and leaflets. Details of support groups and helplines throughout UK available.