Current Practice

JOINTS AND THEIR DISEASES

Arthropathies and Allied Disorders

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The terms "rheumatism" and "arthritis" are used by the lay public as though these terms referred to single entities and meant something specific. Rheumatism in this lay sense usually means only pain and discomfort. "I have rheumatism in my neck" simply means "I have pain in my neck," though possibly with superadded stiffness and dysfunction. Taking arthritis to refer to inflammatory and arthrosis to degenerative conditions of joints, I have now listed 179 conditions where one or other, or both, or allied conditions can occur (Table). The arthropathies therefore cover the whole of medicine and the whole of the world. There is no specialty or subspecialty in which they may not occur, and no country or clime from which they are absent. They may be primarily infective in origin and due to bacteria—for instance, gonococcal arthritis—or to a virus—for example, rubella arthritis. They may be postinfective, as are rheumatic fever and Reiter's disease. They may be of unknown aetiology, as is rheumatoid arthritis, or due to an abnormal metabolic state, as is gout. They may be secondary to blood dyscrasias, as is haemophilic arthropathy. As the Table overleaf shows, the picture is a large and complex one. Though there are certain forms of treatment common to most of the arthropathies—for instance, the use of analgesics—there are also specific forms of therapy applicable to many—for instance, cloxacin or ampicillin for certain infective arthropathies, antituberculous drugs for arthropathies of tuberculous origin, and so on.

Infective Arthropathies

As a glance at the list will show, there are a large number of bacteria which can infect articular structures; joints affected by inflammatory disease such as rheumatoid arthritis are particularly vulnerable to such infections, and, if any rheumatoid patient suffers an acute inflammatory exacerbation of disease in one joint only, diagnostic aspiration and culture is a wise precaution. Infection not only causes an acute arthropathy, but if it is not rapidly cured it also leads to secondary, permanent changes in the affected tissues. A good example of diffuse residual crippling caused by severe infection from which the patient recovered is the picture described by Jacob's of a patient recovering from severe leptospirosis icterohaemorrhagica (Weil's disease) at the expense of diffuse irreversible changes in the spine and hip joints. Tuberculosis of bone and joint is less common than it was, and may today tend to be forgotten. Our teachers of yesterday reminded us in diagnosis never to forget syphilis: this is still true, but tuberculosis is almost as readily forgotten today, while yesterday it was high in any list of differential diagnosis.

Arthropathies due to viruses are perhaps more common than was previously thought. In Britain rubella may be accompanied by an arthropathy very like rheumatoid arthritis, except that it remits rapidly and leaves no sequelae. Overseas intriguing disorders occur, which—very similar and sometimes possibly identical—carry different names in different countries. O’nyong-nyong fever, for instance, which spread from Northern Uganda to Tanzania, had affected two million persons by 1961. In some areas 91% of the population was affected. This condition is due to an arbovirus carried by a vector, Anopheles funestus, and manifests itself as a painful condition of the joints, mostly the large joints, with fever, rash, and lymphadenitis. A similar and possibly identical condition was present in Tanzania in 1952, 60%–80% of the inhabitants of certain villages suffering from a condition known locally as Chikungunya or "that which breaks up." The vector here was probably Aedes aegypti. The same syndrome was reported from Thailand, India, and Rhodesia. Again, it was the large joints which were the most painful, the condition being essentially a large-joint febrile arthralgia rather than a true arthritis. Another epidemic arthralgia observed first in 1928 in Australia and New Guinea was in later epidemics found to be associated with a rise in antibodies to certain group A arboviruses, and more recently a presumed aetiological agent designated as Ross River virus has been isolated. Other rare arthropathies are those due to the virus of mumps and of smallpox. The subject is interestingly reviewed by Smith and Sanford.

There is one other uncommon clinical picture which, for want of a better name, I have entitled "septic focus syndrome." Here diffuse aches and pains and stiffness are relieved by removal or drainage of a septic focus. There is no true arthritis and no pus in the joints, but relief follows treatment rapidly and dramatically. It may have been the success of such therapy in these patients, who do not have rheumatoid arthritis, that led some years ago to the wholesale attack on teeth, sinuses, tonsils, even gall-bladders in rheumatoid arthritis in the hope that similar success would follow. It did not.

Postinfective Arthropathies

Rheumatic fever is the best example of a common infection triggering off a chain of events in a minority of subjects, the majority suffering haemolytic streptococcal throat infection without rheumatic sequelae. Reiter's (Brodie's) disease is also a postinfective condition, differing from gonococcal arthritis (an infective arthritis) in that no gonococci are present in affected joints or other tissues. Brodie's disease, well described by Brodie in this country in 1818, 98 years before Hans Reiter's description in 1916, is much more common than gonococcal arthritis, which is today an extremely rare condition in the United Kingdom. Of the two, gonococcal arthritis is the easier to treat, as it usually responds satisfactorily to penicillin and abates relatively rapidly. Brodie's disease may run on and cause incapacity for many months.

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or even years, and aortic incompetence has been reported as a complication.^

Traumatic Arthropathies

We all grow gently older, and our cartilages become less elastic and more worn from our 21st birthday onwards, but trauma, usually mild but frequently repeated, often plays a major part in aggravating and accentuating these degenerative changes. In the osteoarthritic changes seen in the terminal interphalangeal joints of women at and after the menopause, endocrine and familial factors obviously play a major part, but so does trauma; and the housewife, busily using her hands in the house, rushes out into the garden at the first breath of spring to traumatize them even more. These repeated "microtrauma" are seen par excellence in the repeatedly traumatized professional wicket-keeper's thumbs and fingers, and in the U.S.A. the baseball catcher's hands. In Britain, however, it is seen at its best and most frequently in the female, enthusiastic, amateur gardener of middle-age. Certain occupations and a local osteoarthritic hazard, as the rather facetious list indicates. One's hospital and private practice is full of painters with aching elbows, ball players with spatulate thumbs, professional puppeteers with stiff elbows, even gentlemen who strain their wrists supporting their heads while standing thereon in their daily yoga exercises.

Drugs

In these days of applied (and misapplied) pharmacology, one would perhaps expect a bigger list than the attached one, which, though meant to be inclusive of every arthritic syndrome ever described, cannot claim to be so. The systemic lupus-like hyaline syndrome is seen also with a number of drugs—procainamide, penicillin, sulphonamides, griseofulvin, guan-oxan and several others.6 Recently from Michigan Bole, Friedlaender, and Kent-Smith7 reported rheumatic symptoms and serological abnormalities induced by oral contraceptive drugs. In each case in the serum antinuclear antibodies were detected which disappeared in the five patients where the drug was withdrawn. L.E. cells were detected in six patients on therapy, disappearing in five cases after the drug was stopped. Schleicher8 had previously reported finding L.E. cells in 10 apparently healthy young women receiving oral contraceptives, all reverting to normal four to eight weeks after stopping the drug. Oral contraceptives can therefore be added to the already large list of therapeutic agents capable of causing the hyaline (or reversible systemic lupus) syndrome. It is, however, rare, and Gill10 considers rheumatic complaints no more frequent in patients on oral contraceptives than in population surveys in patients not receiving them. Nevertheless, it is as well to know that arthralgia, myalgia, and articular or general morning stiffness may occur, sometimes with objective signs of synovitis in two or more joints, and that L.E. cells and antinuclear factor may be found in the serum of such patients.

Dietetic Causes

The disability now known as Kwok's quease or the Chinese restaurant syndrome was described by R. Ho Man Kwok11 in 1968. Half an hour after starting a Chinese meal the victim experiences a burning sensation in the back of the neck spreading later to arms and chest, with a feeling of tightness in the muscles of the face and jaw, lachrymation, palpitations, and occasionally syncope. These unpleasant symptoms happen off rapidly, but can recur with further courses. It is due to monosodium glutamate, which is used as a flavouring agent in the cooking. The aetiology of Kashin-Beck's disease12 is

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**Arthropathies and Allied Disorders**

(1) **CONGENITAL**
- Achondroplasia
- Arthrogryposis multiplex-congenita
- Camptodactyly
- Congenital indifference to pain
- Disaccharidase deficiency
- Ehlers-Danlos syndrome
- Familial dysautonomia (Riley-Day syndrome)
- Hereditary progressive arthropathies
- Hurler's disease (gargoylism)
- Hypermobility syndrome
- Marfan's syndrome
- Morquio-Brailsford osteochondrodysplasia
- Niemann's syndrome
- Osteo- dysplasia
- Osteogenesis imperfecta
- Werner's syndrome

(2) **DEGENERATIVE**

Aneurysm velebral hyperostosis
- (Zuckergusswieschule)
- Basal ganglia syndrome
- Osteoarthritis

(3) **DITETIC**

- Kashin-Beck
- Kwok's quease
- Rich's disease
- Scurvy

(4) **ENDOCRINE**

Acromegaly
- Cushing's and myxoedematous arthropathy
- Hyperparathyroidism
- Thyrotoxic acroosteolysis

(5) **HAEMATOLOGICAL**

- Myeloma
- Haemophilia
- Leukaemia
- Sickle cell disease

(6) **INFECTION**

- Aneurysm venal hyperostosis
- Bartonella (retinitis, acute retinal
- Carcinoid disease
- Dermatomyositis
- Epidemic tropical acute polyarthritis
- Enchondromatosis
- Familial Mediterranean fever
- Fibromyalgia
- Intermitted hydrarthrosis
- Osteochondrodysplasia
- Osteoarthritis
- Palindromic rheumatism
- Periarthritis shoulder

(7) **INFECTION DUE TO BACTERIA, streptococci, and mycophoma**

- Abortus (brucellar arthritis)
- Ankylosis
- Brucella melitensis
- Cossart's joints
- Diphtheria
- Erysipelas
- Glanders
- Gonococcal
- Haverhillia
- Legrosy
- Meningococcal fever
- Mycoplasma pneumoniae (Eaton's agent)
- Paratyphoid fever
- Pneumococcus pneumoniae
- Pelvic (acute pyogenic)
- Secondary syphilis
- Septic focus syndrome
- Subacute and chronic bacterial endocarditis
- Tuberculosis
- Typhoid and paratyphoid
- Whooping cough syndrome (leptospira lep-thermonhaemorrhagia)

- Yaws
  - Infections due to viruses:
    - Brucella's syndrome
    - Syphilitic (Leptospira interrogans)
    - Typhoid fever
    - Cholera
    - Echovirus infection
    - Epidemic Australian arthritis
    - Glandular fever
    - Infective and serum hepatitis
    - Influenza

(8) **POSTINFECTIVE AND POSTINFLAMMATORY**

- Osteitis pubis (post-prostatectomy syndrome)
- Post-coronary thrombosis syndrome
- Post-dysenteric arthritis
- Post-scaphitellar
- Reiter's (Brodie's) syndrome
- Rheumatic fever and Jacquot's syndrome
- Subacute bacterial endocarditis

(9) **METABOLIC**

- Arthrogryposis
gangrenosa corpis diffusum
- (Pigmented nodular hypochromia)
- Angiokeratoma corporis diffusum
- (Fabry's disease)
- Biliary cirrhosis (hypercholesterolaemia)
- Calcium oxalate deposits
- Calcium oxalates
- Chondrocalcinosis articularis
- Disseminated lipogranulomatosis
- Familial lipoprotein (gigantum arthritis)
- Gout
- Haemochromatosis
- Lipoidosis
- Malignant endocarditis
- Nodular calcification
- Myositis ossificans
- Osteitis pubis
- Osteomalacia
- Osteoradionecrosis (primary hypercholesterolaemia)

(10) **MISCELLANEOUS**

- Acro-osteolysis syndrome
- Degos' syndrome
- Dupuytren's contracture
- Erythema infectiosum
- Family-like arthritis
- Gout
- Haemophilia
- Hurler's syndrome
- Hyperlipidaemia
- Infiltrative arthritis
- Infiltrative arthritis
- Intermittent haemorrhage
- Interstitial lung disease
- Kawasaki's disease
- Leukaemia
- Myeloma
- Nephrosis
- Rheumatoid arthritis
- Syphilis
- Typhoid fever
- Weil's disease
- Yaws
- Xanthomatosis
- Xanthomatosis
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still uncertain. It is a condition endemic in certain valleys in Eastern Siberia, where the summers are wet and warm and the winters very cold but free from snow. The disorder starts as episodes of painful swelling of many joints recurrently over the years, leading eventually to widespread diffuse premature osteoarthrosis. It mainly affects the young and affects normal growth, leading to osteochondrosis and necrosis of the epiphyses. Those moving into the area where the disease was endemic were affected as well as those born there, suggesting that the causes were environmental and not inherited. It was found that cereals grown in the area were heavily infected with fusaria, and when this fungus was given to rats many developed osteoarthritis lesions. The incidence is said to have dropped since the introduction of imported cereals from outside the area, but the aetiology has not as yet been fully proved.

Conclusions

Troubles in bones and joints embrace the whole of medicine and the entire world. There is no specialty and no country free from arthropathy. Each carries its own particular diagnostic and therapeutic problems. When faced with local trouble in a joint—for example, the knee—it is well to remind oneself that the range of possible diagnoses is from prepatellar bursitis and guinea-worm arthropathy to rheumatoid arthritis and Charcot's joint. It is this that makes rheumatology such an interesting specialty.

My thanks are due to Drs. Richard Taylor and Edward Huskisson for their help in compiling and categorizing the list of arthropathies.

TODAY'S DRUGS

Drugs for Angina

With the help of expert contributors we print in this section notes on drugs in current use.

In most patients angina occurs only on effort, and variations in the level of activity or slight alterations in the daily routine can make a considerable difference to the frequency of attacks of pain. In critical cases changes in the distribution of peripheral blood flow as a result of vasoconstriction in different parts of the body, such as may be produced by emotion, cigarette smoking, or left ventricular failure, are sufficient to lead to an increase in the severity of angina. Thus it is not surprising that the value of drugs in the treatment of angina remains a controversial subject.

Short-acting Nitrites

In the management of the individual attack the short-acting nitrites, particularly trinitrin and amyl nitrite, are of undoubted value. However, in many patients angina of effort subsides so quickly when the provocative exercise is stopped that it is doubtful whether the use of trinitrin or amyl nitrite offers any advantage. Nevertheless, some patients find that having a rapidly acting preparation at hand gives them more confidence in continuing their normal way of life.

The choice of preparation to be used under these circumstances is not of critical importance. There seems little need to seek liquid or finely powdered preparations with a very fast effect, and the standard trinitrin tablet is generally satisfactory. Amyl nitrite may have a slightly faster onset of action, but its pungent smell will cause undue attention to be drawn to the patient if it is used in a public place. In patients who have longer attacks of cardiac pain not provoked by exertion trinitrin or amyl nitrite may help to abort the attack. The fear that these drugs will cause a harmful fall of blood pressure if taken in the opening stage of a cardiac infarction seems unjustified, perhaps because the blood pressure is usually normal or high at the beginning of an attack.

The main use of the rapidly acting nitrites is as short-term prophylaxis to prevent an attack of angina in circumstances which might be expected to produce cardiac pain. Trinitrin has an effective prophylactic action for about 20 minutes after it is taken by mouth, and this may allow the patient to attempt more strenuous exertion than would otherwise be possible. The improvement in exercise tolerance may be enough to allow the patient to climb a difficult flight of steps to the office, or walk to the station without difficulty, so that he can continue his usual occupation after angina has developed. Sexual intercourse can often be managed successfully in the same way.

There is some evidence that repeated use of trinitrin may lead to tolerance to the beneficial effect of the drug. Tolerance to the headache caused by nitrite certainly develops in a few days, but as some patients take many trinitrin tablets each day with effective action against their angina for several years there seems little justification for restricting the use of the drug from fear that it will lose its effect.

Though the nitrites are known to be potent vasodilators, the mechanism by which they give relief is still uncertain. They increase the diameter of normal coronary arteries, but this action is unlikely to be effective when there is extensive disease of the arterial wall. Vasodilatation of collateral coronary arteries has been suggested but cannot play a part in the relief of angina in aortic stenosis, in which trinitrin seems to be as effective as in coronary artery disease. Some studies show a fall in blood pressure and cardiac output several minutes after the drug has been taken, suggesting that a reduction in myocardial work is the effective mechanism.

Long-acting Vasodilators

The beneficial effect of the short-acting nitrites led to the introduction of many long-acting vasodilators in the treatment of angina. The action of these drugs is relatively slight com-