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Cancer Campaign: Cash and Compassion

During the second decade of this century the idea grew up among surgeons, pathologists, and others that the needs for research in the field of cancer were not being met adequately by the Imperial Cancer Research Fund's policy of spending money only in its own laboratories. Medical men who spent much of their working lives observing and treating patients with different forms of cancer developed theories about this group of diseases but lacked funds to test them by scientific research. Thus the energy generated by their observations and ideas was being wasted. In 1923 Sir Richard Garton, an industrialist, provided the opportunity for this need to be met when, on the suggestion of Mr. Lockhart-Mummery, the senior surgeon at St. Mark's Hospital, he provided £20,000 to cover the expenses of setting up the British Empire Cancer Campaign. During its first year the Campaign awarded £2,500 each to the Middlesex Hospital and the Cancer Hospital and £330 to Dr. Louis Sambon for investigations in Italy into the possible link between vermin and the spread of cancer. The brief account in the now renamed Cancer Research Campaign's latest annual report[1] of how, from these small beginnings, it grew into an organization which spent over £3m. on research during 1972 is a fascinating piece of history, especially as many of the dramatis personae are still very much of the present. For this reason the more serious student of medical history will have to wait another decade or so for a searching analysis of the events, the people, and the philosophies which have guided cancer research in this country since the beginning of the century.

In some senses cancer research has always suffered from a faulty appraisal of the problem. The superficial similarity between the manifestations of cancers of different primary sites and types has led to too much laboratory research being undertaken on the assumption that there is but one disease to investigate. Secondly, local fund-raising organizations have too often entertained the hope that research financed directly by their efforts and undertaken locally in their own laboratories would solve the problem of cancer once and for all to the eternal credit of all concerned in that locality. These misconceptions have only gradually been dispelled since the second world war. Many of the autonomous councils of the Campaign—for example, those in Rutland, Lincolnshire, Kent and Sussex, Lancashire, Cheshire, and North Wales—remained in being until after the war, and only thereafter were they absorbed into its central organization.

At a higher level the rivalry between the Campaign and the Imperial Cancer Research Fund has persisted up to more recent times. Competition in some spheres is a valuable spur, but in this it has been an impediment. The recently formed Cancer Co-ordinating Committee, which draws members from both the Imperial Cancer Research Fund and the Campaign as well as from the Medical Research Council has, both by its very existence and by the nature of the decisions it has been making, sped the erosion of this kind of parochialism. Nevertheless, much effort in cancer research is still being wasted because local pride and a misconception of the problems by those who raise funds lead to the intellectual isolation of small groups of scientists, sometimes in laboratories that lack the best and latest facilities and equipment.

The decision recently announced by the Secretary of State for Social Services to establish four oncological centres[2] is likely to have at least as much impact on what happens to patients with cancer in this country during the next ten years as any advance achieved by laboratory research. Often a long interval separates an advance in basic knowledge from the first appearance of its practical benefits. The last 10 to 15 years have seen an explosion of basic knowledge of the causation, prevention, and earlier diagnosis of cancer and of the treatment and terminal care of patients. The plan is for each of the proposed oncological centres to have the facilities and highly trained staff needed to apply this new knowledge effectively.

The new chairman of the Cancer Co-ordinating Committee, Sir Richard Doll, recently startled some people by his advice to the elderly to live a little dangerously. No one who knows this compassionate man would have interpreted his words—as some have done—in the sense that old people may be written off. He was saying no more than that man is mortal and that we should pay more attention to life's quality than to its mere extent, particularly if prolonging it is to destroy its quality. One of the benefits of increased knowledge in the cancer field to which the Cancer Research Campaign has contributed greatly during the 50 years of its being has been that treatment now enables many patients with cancer to live comfortable and effective lives

until just a few weeks or days before they die. And it is important that organizations such as the Campaign should continue to allocate some of their resources for further advances in this direction even if this means that a little less money is available for studies at, say, the level of molecular biology.

[1] *Cancer Research Campaign, 50th Annual Report 1972.* London, Cancer Research Campaign, 1973.
[2] *British Medical Journal*, 1972, 4, 565.

Transient Synovitis and Perthes's Disease

Much commoner in boys than in girls, Perthes's disease affects children most commonly between the ages of 4 and 9. There is a family history in 20% of cases, and the condition may occur in identical twins. Little is known about the factors predisposing to it.

Its mode of presentation varies. Sometimes the patient complains of pain in the hip or pain referred to the front of the thigh or knee and has a limp and limited hip movements but no abnormal radiological signs. If it presents in this way, Perthes's disease is indistinguishable from transient synovitis. More commonly it presents with pain, a limp, and typical radiological signs indicating that the disease has already been present for several weeks if not months. Sometimes careful questioning will disclose that there had been an earlier transient phase of pain and limping which probably represents the initial episode of hip disease. But many patients deny any earlier symptoms, and occasionally florid radiological signs of Perthes's disease may be found by chance in a patient complaining of no symptoms at all and showing no abnormal physical signs. The extent to which epiphysis and metaphysis are affected varies from one person to another and is modified considerably by the patient's age at the onset of disease.[1] When to its obscure aetiology, varied presentation, and difficult diagnosis there is added our inadequate knowledge about the precise effects of conservative or operative treatment, Perthes's disease presents as one of the most difficult problems in paediatric orthopaedics.

Pathological studies have necessarily been limited in scope. Avascular necrosis of the upper femoral epiphysis can be produced experimentally in some animals by drastic measures such as circumferential ligation or cauterization of the vessels of the femoral neck,[2] but the pathological and radiological changes resulting from such experiments only partly simulate the clinical and radiological findings in children. Perthes's disease occurs naturally in certain breeds of dogs, notably in miniature poodle and West Highland terrier puppies, while other breeds such as beagles and Jack Russell terriers are resistant to the disease. Using susceptible breeds, with resistant breeds as controls, H. B. S. Kemp[3] has performed an elegant series of experiments to produce a range of pathological and radiological abnormality closely corresponding to naturally occurring Perthes's disease in puppies. He achieved this by artificial raising of intracapsular pressure by infusion of dextran at various pressures and for varied lengths of time. One effect was to compress the vessels that run in the subsynovial layer to supply the upper femoral epiphysis and metaphysis. When the pressure is released, the vessels can fill again immediately, a situation different from that produced by vessel ligation. The progressive changes form a basis for comparison with the clinical and the radiological findings in children suffering from Perthes's disease and transient synovitis.

In children Kemp identifies four degrees of change corresponding with the pathological and radiological changes in animal experiments.

Firstly, transient synovitis is seen with no radiological changes apart from lateral bulging of the capsule due to an effusion within it and no subsequent radiological changes.

Secondly, transient synovitis is associated with subsequent lateral displacement of the femoral epiphysis relative to the pelvis by up to 2 mm and an apparent increase in joint space. These changes are seen at approximately four weeks after the onset of symptoms and may resolve completely or progress to the later development of coxa magna or osteoarthritis.[4]

The third category is Perthes's disease due to transient anoxia. The sequence of radiological changes includes lateral displacement of the femoral epiphysis of more than 3-4 mm followed by deposition of new bone. This appears as an increase in epiphysial density and is first seen six to eight weeks after the onset of symptoms. After that the dead bone at the centre of the head is removed and replaced, and the epiphysis is particularly liable to infraction as a result of bearing weight or even by muscular contraction. This results in epiphysial fragmentation and delay in healing, leading to flattening and deformation of the femoral head. If infraction is prevented or avoided, normal bone is deposited round the circumference of the dense epiphysis with the characteristic appearance of the "head within the head." It is suggested that it is the epiphysial infraction that leads to the pain that brings the child to hospital at this stage of the disease.

The fourth category is Perthes's disease due to absolute anoxia. This condition, which is not produced by tamponade in animals but is produced by ligation or cautery of the vessels of the femoral neck, results in completely different radiological changes. There is some lateral displacement and increase in the joint space but no increase in density of the femoral head. The epiphysis and metaphysis broaden, and there is a slow removal of epiphysial bone and replacement by new bone, the changes progressing centrally from the circumference. The process is much more indolent than in transient anoxia and repair takes many months.

These findings are of help in deciding on the management of synovitis and Perthes's disease. Consideration should be given to aspiration of the hip in acute transient synovitis whenever there is evidence suggesting increased pressure in the hip joint. All children with transient synovitis should be examined radiologically at the end of four weeks. It lateral displacement of the femoral head is less than 2 mm the patient can safely resume activity. If it is more than this, treatment in abduction traction or in an abduction splint is indicated until further radiographs taken at the third or fourth month have excluded the development of Perthes's disease, which is recorded as occurring in up to 12% of patients with transient synovitis.[5] If epiphysial density has developed, the principle of containment of the femoral head by some type of abduction splintage is now almost universally accepted, and Kemp's studies suggest that the success of this form of treatment depends on the prevention or minimization of the effects of epiphysial infraction by keeping the infracted portion of the epiphysis within the cover of the acetabulum.