

THE RADICAL TREATMENT OF BONE AND JOINT TUBERCULOSIS

Introduction

Previous to the use of streptomycin, we tried to excise foci which lay near the joint at an early stage, before they had time to penetrate and attack the adjacent joint. Frequently, however, the tuberculosis had already attacked the joint capsule, therefore the result of the operation was not the one desired, and a fistulous process ensued. At later stages of the disease, radical operations, resections and arthrodeses were performed with good results, but fistulae, which suppurred for a long time, occurred even then. In 1934, some Japanese (Ito, Tsuchiya, Asami) described 10 cases of spondylitis, treated by radical operation, but the report was not encouraging enough to warrant copying their methods¹.

With the introduction of chemotherapeutics and antibiotics, streptomycin in particular, the treatment of bone and joint tuberculosis has entered upon another phase. The employment of these medications generally, by mouth, by intramuscular injection, and locally, by injections into abscesses, has brought results which are as a rule better than before. In America, these methods have often been employed in connection with surgical intervention, while in France, mainly in the form of conservative treatment. In these experiments a certain plan, worked out by the U.S. Veterans Administration, has been followed for the purpose of comparing the results. A similar plan has been devised by Sorrel in France.

Since it has been possible to obtain chemotherapeutics and antibiotics, tests have been made at the Orthopedic Department of St. Görans sjukhus respecting their employment in the treatment of bone and joint tuberculosis. To begin with, these experiments were quite sporadic but, later, when we began to test them in combinations, they

¹ Ito, Hiromu, Junichi Tsuchiya and Goichi Asami: A new radical operation for Pott's disease. *J. Bone and Joint Surg.* 16: 499-515. July 1934.

became more systematically specific. A definite form developed after the treatment of some cases in the spring of 1949, when para-aminosalicylic acid, hereafter referred to as PAS, was used as the basic medication and streptomycin as general and local protection in connection with the operative intervention. The post-operative course of these cases was particularly favourable. Roentgenographs were shown at the State Medical Meeting held in Stockholm on November 1949, and an account of the cases was given in "Svenska Läkartidningen" December 1949.

Since then we have continued to perform operations in the treatment of bone and joint tuberculosis, according to a definite scheme with PAS basically and under the "streptomycin umbrella", with the purpose of:

1. radical elimination of the bone foci,
2. evacuation of cold abscesses, and,
3. if intervention is impossible, performing stabilization operations with prolonged conservative therapy.

This procedure has shown that such operations, which are sometimes far reaching, are possible under the protection of chemotherapeutics and antibiotics, without any real risk of the tuberculosis spreading poisonous effects from the antibiotics, or of the development of resistance on the part of the bacteria. The combination of *chemotherapy and radical operation* of the local process seems to give the best results. In conservative treatment with antibiotics, it is difficult to judge the effect of the medication.

If it should be found in the future that the active operative procedure is the best, it will be the concern of the orthopedic surgeon to discover new methods and ways of radically eliminating the bone foci, in order to safeguard against recurrence. The difficulty is greatest in removing bone foci from the vertebrae, owing to the anatomic situation. Great difficulty is also met in the treatment of joint tuberculosis which should be attacked at a suitable stage, and in such a manner that the mobility of the joint can be restored and not, as hitherto, lost. The reliability of the diagnostic methods, especially with reference to the localization of the foci, is obviously of great importance¹.

Our colleagues at the hospital rendered good service in working out the methods of treatment. Dr. Per Hedlund at Statens Bakteriolo-

¹ The results of this treatment were reported at a Meeting of the Nordisk Orthopedisk Förening at Härnösand in 1950. I myself gave a general survey of the principles of the treatment and my assistants at the clinic, Carl Hirsch, Olof Lindahl and Per Östman reported on special parts of the clinical material.

giska Laboratorium has also been of assistance in tests with streptokinase and streptodornase, and Dr. Christian Lingen gave a helping hand in pediatrics. Drs. Felländer and Hierton are investigating the absorption and distribution of streptomycin in the blood and abscesses, etc. In this way, the doctors of the clinic, and doctors from other institutions, have formed a team for the purpose of securing a sufficient and completely treated clinical material as speedily as possible, in order that one may judge the value of chemotherapy in the surgical treatment of bone and joint tuberculosis.

The results of the study are still preliminary. The follow-up period is too short to allow any opinion to be formed as to the risk of recurrence etc. For this reason we shall follow the cases and hope to give some definite information in a few years' time. What we now wish to point out are the increased possibilities of healing which the employment of chemotherapeutics and antibiotics affords in radical operative treatment of the bone foci; and that, as a rule, primary healing from abscesses in bone and joint tuberculosis takes place; also that the evacuation of the abscesses results in improvement of the general condition. Under such circumstances as these, there are great prospects that the treatment of bone and joint tuberculosis will be considerably shortened especially if, in the future, the risk of recurrence can be eliminated.

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