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A REMARKABLE EFFECT OF  
KOCH'S LYMPH.

CLINICAL LECTURE DELIVERED AT MERCY HOSPITAL, CHICAGO.

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BY EDMUND ANDREWS, A.M., M.D., LL.D.,

Professor of Clinical Surgery in the Medical School of the Northwestern University;  
Surgeon-in-Chief of Mercy Hospital; Consulting Surgeon of Chicago Hos-  
pital for Women and Children, and for Michael Reese Hospital.

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GENTLEMEN,—Koch's lymph, though at present almost forgotten, possesses some surprising qualities. In proof of this I bring before you a patient, now quite well, except for a stiff knee, who was admitted to the wards of Professor Wyllys Andrews some fifteen months ago on account of a very bad case of tuberculosis of that articulation.

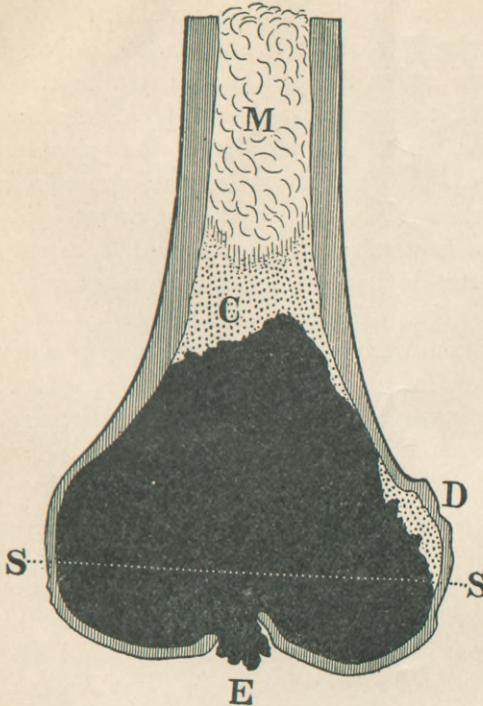
The patient's knee had been slowly enlarging for many months, and at the time of his admission had all the appearance of tuberculosis, but presented no evidence of suppuration.

That the history of the case may be the better understood, I will recall to your memory the action of Koch's lymph. This remedy is a concentrated extract of the bacillus tuberculosis, cultivated for the purpose on a large scale in laboratories. It is preserved in a fifty-per-cent. solution of glycerin, and in the concentrated form is said to be a stronger poison than that of any rattlesnake or viper. For use, it is diluted one-hundred-fold, and is given hypodermically under the skin of the patient's back. Koch alleged, and experience proves it, that the effect on a tuberculous patient is to excite a fever and to cause the death of tuberculous tissue, with a sharp inflammation of the tissues around it, but that the dead tissue is gradually absorbed, and when it is gone, the continued injections cease to excite any fever.

Professor Wyllys Andrews gave this man the lymph, and, in accordance with Koch's statement, there arose an active fever, with a sharp inflammation and redness of the knee and considerable swelling. The lymph was continued five weeks in increasing doses, and at the end of that time the swelling was reduced, the lymph in large doses produced no fever, and it really seemed that the remedy might ac-

compish what has been claimed for it ; but the patient became restive, declared that he would wait no longer to try new-fangled remedies of doubtful value, and demanded an operation. As we had not any positive proof that the lymph would really restore his limb to use-

fulness, Professor Andrews yielded, and performed the operation of excision of the joint.



This drawing shows in diagram the condition of the bone. The view is a section of the lower end of the femur. The dotted cross-line indicates where the saw passed through. *M* is the medullary cavity ; *C* is cancellated tissue. Below *C* the whole condyloid portion was excavated into a cavity with thin walls of healthy bone. *D* shows where a little healthy cancellated tissue still remained inside the shell. The dotted line *SS* shows the track of the saw. The whole cavity

was filled with a firm black clot of dead blood, with no mixture of pus and no odor of decomposition. It was perfectly aseptic. At *E* there was a small hole in the shell of living bone where a projection of the clot bulged down into the joint. The operator, with antiseptic precautions, inserted his finger upward into the clot the whole length of the digit, and found no pieces nor spicules of dead bone. He therefore withdrew the finger and left the clot in position. The patella was also hollow and filled with a similar clot. I present before you here the portion of the bone which was sawn off, with the clot still in it. The tibia was healthy. The bones were wired together, and the limb was dressed antiseptically, and placed in a resection splint. In three weeks the wound was entirely healed. In about twelve weeks the bone was united, and in a few months he was able to walk about on the limb, as you see him doing to-day.

I suppose the internal history of the joint was this: first, there was a chronic tuberculosis. The tubercular tissue invaded the whole of the condyles, causing the absorption of the spiculæ of the spongy bone, and filling the cavity with tubercular granulations of the non-suppurating variety. The spongy tissue of the interior of the patella suffered the same degeneration, but the tibia was not invaded.

Koch's lymph was now administered for five weeks. The living tubercular masses in the femur and in the patella underwent mortification, exactly as Koch stated tubercular tissue would do. As the ligaments and skin were intact, no septic germs could find entrance, and suppuration did not ensue. The dead tubercular masses remained aseptic and were gradually absorbed, exactly as a dead catgut ligature or a decalcified bone drainage-tube will when buried in aseptic tissues. The absorption of the dead tubercle left an empty cavity, which was filled with blood effused from the adjacent unsupported capillaries. Had the patient been willing to wait the slow progress of the cure, I think he would have had a good and movable joint at last.

This is the most striking instance of the power of Koch's lymph to cause the death of tubercle which I ever heard of. I know nothing equal to it in any records, and, although I was not personally the operator, I am permitted to bring the case before you for your instruction.

This tendency to hemorrhage after absorption of the tubercle explains the dangerous hemorrhages from tubercular lungs in some cases after using the lymph-injections.

Although Koch's remedy is at present under a cloud, and has been dropped by the profession as hastily as it was taken up, I cannot but think that such marvellous powers over tubercular tissue are worthy of further study, and that the lymph will yet be found to have a career of usefulness.