

tumor, while fibrous elements predominate. Absorption without breaking down is the more likely to occur.

If improvement occurs the toxins should be continued until either the tumor has entirely disappeared or until it has become evident that the injections have lost their controlling influence, as evidenced by the further increase in size.

The question of harm resulting from long continued injections is a very important one. That the toxins may be given for very long periods without injury to the patient has already been proved. In one patient with a three times recurrent rapidly growing carcinoma of the breast and axilla the toxins were administered for two and a half years. The doses were moderate and averaged two a week. The tumor disappeared, the patient gained ten pounds in weight and her general health remained good, until at the end of this time there was both a local recurrence and abdominal metastasis, the disease running a very rapid course and causing death in six months.

In another patient with eight times recurrent spindle celled sarcoma of the chest wall, the toxins were administered with occasional intervals for nearly four years. The disease was held in check by small doses. The patient, who was a well known physician, is at present in perfect health, nearly six years from the beginning of the treatment.

In order to properly explain the curative action of streptococcus of erysipelas and its toxins upon sarcoma, I am convinced more than ever that this action can be explained only on the theory that sarcoma is of a micro-parasitic and infectious origin. I will even go further and say that I believe this action of the toxins furnishes additional evidence in support of the infectious origin of sarcoma and carcinoma. In view of the steady accumulation of successful cases, the early attempts to explain the disappearance of these tumors, upon the theory of mistaken diagnosis or spontaneous disappearance, no longer requires serious consideration. It would be clearly unfair to rule out the cases cured with toxins on the ground of error in diagnosis without including in the same manner the cases cured by operation. Both classes of cases have been submitted to the same standards of diagnosis with one important exception, viz. that the cases treated with toxins have been submitted to far more severe tests. In the majority of these cases the clinical and microscopical diagnosis was confirmed by a number of the best surgeons and pathologists, instead of by a single individual.

After an experience of upwards of eight years with this method of treatment, the question may be fairly asked,