

and is one of the marked features of the book. The volume contains about 500 pages, and is well printed. It is a very interesting and readable book, and contains a fund of practical information not often found in ordinary text books.

PARENCHYMATOUS INJECTIONS OF CARBOLIC ACID AS AN ANTIPHLOGISTIC.

We reproduce almost textually, from the *Centralblatt* of January 24, an important article bearing this title, from the pen of Professor Heuter, of Greifswald.

Although (he observes) the antiphlogistic action of carbolic acid as a dressing for wounds is sufficiently well known, and subcutaneous injections of it have been used as an antipyretic in intermittents, the parenchymatous employment of carbolic injections as an antiphlogistic, as I have used them in my clinic with such distinguished results, has not as yet been made known. I can believe that this mode of applying carbolic acid may excite a certain amount of not unjustifiable fear on the ground of the danger of producing general carbolic acid poisoning. On this account, I at first proceeded with these injections with the greatest circumspection, and only after I had, by experiments on frogs, assured myself that the general action of the means is confined to the influence of the carbolic acid on the red corpuscles of the blood. In the subcutaneous and parenchymatous employment of the acid, it is essentially only a lymphatic absorption which takes place, and only the most fractional portions can gradually enter into the circulation of the blood, when the whole dose does not become combined with lymph in the lymphatic apparatus which it traverses, whereby all intoxication of the blood is avoided.

1. In *synovitis hyperplast. granulosa* (white swelling or fungus inflammation) of the knee. The injection was thrown into the most central part of the joint, so that the needle came in contact with its walls. The effect was—cessation of pain, diminution of long-enduring elevation of the temperature at night, and a remarkable diminution of the swelling. On account of the chronic nature of the case, the injections had to be repeated at intervals of two or three days. 2. In *subacute glandular swellings with tendency to suppuration*, and buboes whether in the inguinal or femoral region. Effects: cessation of pain, the redness of the skin and the œdema disappearing; the gland became rounded in form,

and gradually returning to its normal condition. Several injections have been necessary to secure complete recovery. 3. In *acute phlegmon of the subcutaneous and subfacial connective tissue*. The most peripheric part of the phlegmon is to be chosen, so that the lymphatic vessels may convey the acid in a central direction. In extensive phlegmons, two syringefuls may be injected at different points. Effects: Shrivelling of the tissues in a few hours; immediate cessation of pain; and recovery without suppuration (if this had not already been developed), although it seemed imminent. 4. In *traumatic erysipelas*. In this disease I have injected at different points along its border, in order to prevent erysipelas of the forehead, for example, passing over to the hairy scalp. This end has been attained; but as yet I have not ventured to inject the whole border of the erysipelas in numerous places in order to cut short its course.

I lay great stress on the parenchymatous character of these injections, whereby the carbolic acid is conveyed into the cavities of the largest joints, into the perivascular connective tissue, and into the interior of the glandular substance, and is enabled there to develop its local antiphlogistic power, where almost every method hitherto employed, with the exception of the knife, has failed of success. In this sense I consider that the parenchymatous injection of carbolic acid constitutes the most powerful antiphlogistic means with which the employment of ice, the abstraction of blood, or any local application cannot compete. I hope that it will not only be employed in surgical practice, for an important field is presented for its action among the diseases of internal organs. There ought to be no essential difficulty in injecting the parenchyma of the lung, spleen, liver, or kidney; but the effects of this must be tried first on animals before one feels justified in proceeding thus far. In all cases, the direct injection of this substance into a vein must be avoided, in order that an acute carbolic intoxication may not be produced. In order to be certain on this point, a preliminary puncture should be made with the needle, and observation made whether drops of blood flow out. When this is the case, the needle should be either drawn somewhat back or thrust deeper in, and the injection made only when no blood issues from the canula. In the treatment of non-malignant tumours, e.g., fibroma, the same good effects may be expected from these injections; but I have no instance of complete recovery to adduce, and I forbear to offer too enthusiastic a recommendation in this direction. Malignant tumours also may be brought experimentally within the province of this investigation, especially as the injections act as anæsthetics, not as irritants. It is, however, to be borne in mind that in the employment of the carbolic injections in very vascular tissues and tumours, carbolic intoxication may be easily induced.

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