

Selected Communications.

DYSPNOEA IN LEUCÆMIA.

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(Translated for the CANADIAN PRACTITIONER.)

Concluded from last issue.

We are aware, from chemical examinations which have been made of the blood in leucæmia, that there exist in it many substances which are abnormal, as acetic acid, lactic acid, leucin and various other substances, which are formed for the most part in the spleen. All these collect and increase in the blood, and it is very probable that one or other of them, or a combination of some of them, cause abnormal excitation of the respiratory centre in the brain. This would also explain, partially, how it is that the dyspnoea in leucæmia is not in all cases proportionate to the degree of increase of the colorless elements. It is possible that under certain circumstances these abnormal substances form and increase in the blood, but are again excreted by the kidneys and the skin, and such is their volatile nature, perhaps by the respiratory organs also. If then, in some cases, they accumulate in the blood and are not eliminated by the excretory organs, one can suppose that through the abnormal excitation they may lead to severe forms of dyspnoea.

Among other symptoms which are very frequent in leucæmia, sometimes occurring in the earlier stages, is the tendency to hemorrhages. Bleeding from the nose and gums and more rarely from the urinary and sexual organs occur, and in women profuse menstrual discharges. In some of our patients this tendency shows itself in the form of petechiæ in the skin, the formation of papules which develop into pustules, and around about these pustules small hemorrhages take place and appear in some places as small hemorrhagic sloughs. There exists besides a peculiar, hard, firm infiltration of the skin. This is very probably not so much an œdema as an exudation of fluid containing blood elements, because in certain places, as for instance around about the left knee joint, one often observes a greenish transparency, such as is seen in blood extravasation at a certain

depth. The œdema further stands in no relation to albuminuria and can not be explained in this way. We find this hydræmic œdema particularly when the blood has become impoverished of its solid constituents, the number of the red corpuscles having sunk to half, and the fluids in the circulation being in a proportionate degree increased lead on to serous transudation. It is remarkable also that there is no appreciable transudation into the serous cavities, neither into the peritoneal cavity, the pleuræ, nor the pericardium.

Further we learn from the history that the patient has repeatedly suffered in the beginning of his illness from fever. This is, indeed, a very frequent symptom in leucæmia, and remarkable inasmuch as it occurs without known cause. In most of the leucæmia cases which we have had opportunity of observing in later years, there were occasional increases of temperature to between 38° and somewhat over 39° C. The temperature does not as a rule go very high, but sometimes lasts for days at a time, and is repeated quite irregularly. What the origin of the fever is, is not with certainty known; probably the conditions are analogous to those which I have referred to as causing the dyspnoea, namely, an irritation of the heat-centre in the brain, produced by the abnormal change-products which have accumulated in the system.

With regard to the prognosis there is not much to be said, because we know that an advanced case of leucæmia is almost absolutely certain to terminate fatally. As for the etiology our patient is left in the same forlorn condition as in many other affections, now and then one can prove a connection with some preceding illness, relatively most certainly with expiring intermittent fever. Here and there cases occur in which, as a result of intermittent fever, an enlargement of the spleen remains behind, and develops a leucæmic degeneration of the blood. It is more frequent, however, that the splenic enlargement exists for years, or even decades, without producing any abnormal change in the condition of the blood. The connection which is said to exist between leucæmia and preceding typhus, puerperal processes and similar affections, is much less certain. Occasionally,