Periscope

SPINAL SYMPTOMS IN CHLOROMA AND LEUKÆMIA.

Although the spinal manifestations of the severe disorders of the blood-forming organs are not actually uncommon, they have received little mention in the literature compared with the cerebral symptoms. In many cases their association has thus been overlooked, and the spinal symptoms attributed in consequence to other causes.

Chloroma and leukæmia are here regarded as of essentially similar nature, the main distinction being that in chloroma there is (1) a greater tendency to "heterotopies" or leucocytic infiltration *en masse*; (2) a characteristic green tint to the cell masses; and (3) an acute course. As heterotopies may occur in other varieties of leukæmia, and typical green coloration may also be seen, chloroma and other forms of leukæmia may be regarded as varieties of a wider group of hæmoblastosis.

Paraplegia in these disorders may result from:—

(1) *Localised or diffuse leucocytic infiltration of the spinal cord.* This is not a common cause of paraplegia, and does not seem to occur in the chloromatous types.

(2) *Localised or widespread softening of the spinal cord.* Hypertrophy or hyaline degeneration of the spinal blood vessels, particularly of the middle coat, predisposes to accumulation of masses of leucocytes and subsequent occlusion of the vessel. In this way more or less extensive areas of myelomalacia are formed.

(3) *Hæmorrhages into the spinal meninges.* Only one case of this seems to be known. The hæmorrhages were extensively distributed throughout the meninges of the brain and spinal cord, especially in the first, third, and fifth thoracic segments. There was no actual compression of the spinal cord, and the symptoms during life were those of severe cramps without paralysis in the strict sense.

(4) *Infiltration of the spinal meninges by leucotic or chloromatous masses.* This is the commonest cause of paraplegia, and is particularly common in chloroma, where there is a special tendency for cellular masses to form in relation to the dura mater. Four such cases are described here. These cell masses usually lie between the inner aspect of the vertebræ and the spinal cord. The epidural fat becomes infiltrated and ultimately replaced by the heterotopy. As a rule the mass is of some length and may extend from one end of the spinal cord to the other. They may totally encircle the spinal cord. The symptoms seem to be due, not so much to actual compression of the spinal cord by the cell masses as to anæmia or ischæmia of the spinal cord produced by compression or thrombosis of the spinal arteries, and so lowering the nutrition of the nervous tissues as to lead to its disintegration.

(5) *Infiltration of the spinal nerve roots.* This is not common, but may occur in chloroma where an infiltration of the spinal roots of the

Periscope

lumbar and sacral plexuses may cause paraplegia without any actual involvement of the spinal cord itself.

(6) *Infiltration of the peripheral nerves of the lower extremity.* This is also a rare cause, and has been referred to as "leukæmic polyneuritis." It has been suggested some obscure toxin may also be partly responsible.

(7) *Manifestations of subacute combined degeneration of the spinal cord occurring in association with leukæmia.* This is a very rare condition, and does not seem to be associated with the leukæmias in the same way as it is met with in anæmias of the "pernicious" type.

The physical signs of leukæmic paraplegia present nothing characteristic, although it is striking how complete the degree of paraplegia can be. A step-like ascent of the level can sometimes be seen. The occurrence of a sudden paraplegia, preceded for a time by severe pain in back or legs, and followed by fever, pallor, and loss of weight should, when occurring in a young adult, suggest the possibility of a leukæmic or chloramatus origin.

M. CRITCHLEY and J. G. GREENFIELD (*Brain*, 1930, liii., 11-37 (7 figs.)).

EXPERIMENTAL DIABETES INSIPIDUS.

Tumours of the brain-stem are sometimes associated with either temporary or permanent polydipsia or diabetes insipidus. In the present research an attempt was made to puncture the brain-stem near the pituitary gland in thirty-six female rats, and a definite place was located in the skull through which a puncture with a scarpel regularly produced a polydipsia and polyuria, the former apparently preceding the latter. Although the effect is permanent, the curve of the increased urinary flow varies considerably. The maximum increase may be reached on the first day after the puncture, or the increase may be very gradual, so that the maximum is not reached for several months later. The increase in water intake may be very great as one animal drank almost twice its body-weight each day. The effects of these brain-stem punctures are limited to the increase in water intake and urine output. There is no increase in the food intake, and body-weight remains unaffected. There are no constant changes in the spontaneous running activity or in the sexual cycles. One animal showed marked loss of hair on the inside of the legs. The absence of changes in the sex cycle suggests that the pituitary body was not injured in these operations.

CURT P. RICHTER (*Brain*, 1930, liii., 76-85 (7 figs.)).

A. N. B.