Short Notes and Clinical Cases.

A CASE OF HERPES ZOSTER, APPARENTLY DUE TO INVASION OF THE GANGLIA BY ROUND-CELL SARCOMA.*

By H. H. P. MORTON, EPSOM.

THOUGH much has already been written concerning herpes zoster, it is hoped the case about to be described will prove of interest, particularly from the point of view of the causation of this disease.

CLINICAL HISTORY.

The patient, a woman, age thirty-three, was admitted to hospital suffering from valvular disease of the heart. About a fortnight before her death, which was due to the condition of the heart, she complained of pain over the right side of the chest, and this was soon followed by a typical eruption of herpes zoster, in the region corresponding to the distribution of the fibres passing from the fifth and sixth dorsal root ganglia on the right side. The eruption was present at death.

A specimen of the cord from the fifth to the ninth dorsal segment was prepared for examination. The specimen included the fifth, sixth and eighth dorsal ganglia on the right side with the corresponding intercostal nerves and the nerve roots and, on the left side, the sixth and seventh dorsal ganglia, also with the corresponding nerves and roots.

There was evidence of hæmorrhage into the fifth right dorsal ganglion, a deep red focus being visible macroscopically.

In the immediate neighbourhood of the sixth left dorsal ganglion a small reddish mass was present, closely bound up in fatty tissue and adherent to the mixed nerve and rami. A similar mass was also found occupying a like position with regard to the seventh left dorsal ganglion.

Sections were prepared from the fifth, sixth and eighth dorsal ganglia on the right side and from the sixth and seventh ganglia, and from the masses in their neighbourhood, on the left side. The nerve roots and nerves and the corresponding levels in the cord were also examined microscopically.

* From the Pathological Laboratory of the London County Mental Hospitals, Maudsley Hospital.

MICROSCOPICAL EXAMINATION.

Fifth Right Dorsal Ganglion.—Microscopically the connective tissue coat of the ganglion showed an infiltration with round cells. The hæmorrhage was situated in the principal group of cells, where a marked change was apparent. Staining by the hæmatoxylin and eosin method demonstrated an entire absence of neurilemma cells (see *Fig. 1*). The ganglion cells were seen in various stages of destruction, some being entirely destroyed, while the spaces were filled with blood corpuscles. Very few round cells, however, were present, a most noticeable feature. By the Nissl method some of the cells were stained a faint blue and some showed a faint nucleus, but in none of them were any Nissl granules to

FIG. 1.

be seen. The other groups of cells presented a very different appearance. Amongst these there was no hæmorrhage, but a marked invasion of round cells was apparent (see *Fig. 2*). Most of the cells were well stained by the hæmatoxylin and eosin method and many, by the Nissl method, were seen to contain Nissl granules. A certain degree of vacuolation, however, was noted. Round-cell infiltration was apparent to a marked degree in the nerve roots, both before and after entering the ganglion. The intercostal nerve was similarly affected (see *Fig. 3*). The corresponding ganglion on the left side was, unfortunately, not removed.

Fifth Dorsal Segment of Spinal Cord.—Sections of the cord here, the level of the lesion, were stained with hæmatoxylin and eosin. The posterior horn on the right side showed some slight round-cell infiltration but that on the left side was apparently normal. Other sections in

this situation, stained by the Marchi method, showed an annular degeneration, rather more marked in the posterior columns, which may have

FIG. 2.

been due to the hardening. The posterior roots, in transverse section, where attached to the cord, showed no evidence of degeneration either

FIG. 3.

on the right or the left side. Longitudinal sections of the posterior and anterior nerve roots were cut for comparison, just before they enter the

cord, and, in the posterior roots only, a few degenerated fibres were seen.

Sixth Right Dorsal Ganglion.—This ganglion showed no signs of hæmorrhage. In sections stained with hæmatoxylin and eosin there seemed to be an increase in the nuclei of the neurilemma sheath, and in places there was a collection of round-cells, suggesting a slight inflammatory change, but not nearly so marked as in the fifth right dorsal ganglion. A few round-cells were seen in the nerve roots. By the Nissl method most of the cells appeared normal, but a few showed various stages of chromatolysis.

Sections of the spinal cord at this level, stained with hæmatoxylin and eosin, showed a slight round-cell infiltration in the right posterior

FIG. 4.

horn. There was no apparent change in the meninges. By the Marchi method a few degenerated fibres were to be seen in the posterior columns. The nerve roots, where attached to the cord, appeared normal, but longitudinal sections of the posterior roots showed a few degenerated fibres, which were likewise apparent in the intercostal nerve at this level on the right side.

Eighth Right Dorsal Ganglion.—There was nothing abnormal to note in this ganglion, in the corresponding level of the cord, or in the intercostal nerve, in sections stained with hæmatoxylin and eosin. Sections of the cord, stained by Marchi's method, showed some annular degeneration, more marked in the region of the posterior columns. No degeneration was evident in the eighth right intercostal nerve.

Sixth and Seventh Left Dorsal Ganglia.—No hæmorrhage or round-cell infiltration was seen in sections of these ganglia but, in places, there appeared to be a slight proliferation of the nuclei of the neurilemma sheaths. The nerve roots and the intercostal nerves on the left side appeared to be normal. Sections of the reddish masses, found in the immediate neighbourhood of these ganglia, were stained with hæmatoxylin and eosin. They proved to consist of small nodules of round-cell sarcoma, most of which were invested by a fibrous capsule (see *Fig. 4*), those in the mass near the seventh ganglion being somewhat the larger. Although adherent to the nerves the growths did not appear to have involved them in any way.

CONCLUSIONS.

It would seem probable that sarcoma cells, from the nodules found on the left side, had spread by way of the lymphatics to the fifth and sixth dorsal ganglia on the right side and had invaded them, thus setting up a disturbance capable of producing all the signs and symptoms of herpes zoster, exactly comparable to those found in the cases usually considered to be due to an acute specific virus.

Head reported a case of herpes in Clifford Allbutt's *System of Medicine* (1899) in which the ganglia were invaded by multiple growths of lymphatic sarcoma, which had spread into the intervertebral canals from a mass of glands on the anterior surface of the vertebral column.

Charcot and Cotard, in 1865, described the case of a woman, suffering from cancer of the breast, who developed typical vesicles over the third and fourth cervical areas, in which secondary growths were found to have invaded many vertebræ, especially in the cervical region.

The case under consideration seems to bear out the theory that herpes zoster is due to injury to the posterior ganglia, whether that injury be caused primarily by an acute specific virus or by any other form of trauma.

I have to express my thanks to Dr. E. W. G. Masterman, Medical Superintendent of St. Giles' Hospital, Camberwell, for his kindness in furnishing me with the specimen and the notes on the case, and to Mr. C. Geary, of the Pathological Laboratory, Maudsley Hospital, for his valuable assistance with the sections and photographs.