

THE NATURE OF CEREBRAL PRESSURE AND THE PRINCIPLES OF TREATMENT OF THE SO-CALLED BRAIN PRESSURE SYMPTOMS. BY PROFESSOR ADAMKIEWICZ.

TRANSLATED BY J. W. STIRLING, M.B., &C.

The old theory of brain pressure was based upon the idea that the cerebral nerve tissue was incompressible, and that there was an increased tension of the cerebro spinal fluid arising from its displacement by an intracranial growth. This increase of pressure would occlude the cerebral capillaries, causing cerebral anæmia. The abnormal cerebral symptoms therefrom arising were embraced in the term "brain pressure symptoms."

Adamkiewicz, by the following experiment, has proved that the brain tissue is compressible. He inserted a piece of laminaria between the dura mater and the brain of an animal. This became imbedded in the brain tissue as in soft mass, and on its removal left a depression in the brain corresponding to its form and size. The microscope showed the nerve elements to be evidently diminished in size and crowded together.

The mechanical explanation is as follows:—

The skull is composed of porous bones perforated by many small canals, through which the cerebral fluids are in free communication with the lymph and blood-vessels of the rest of the body. Every foreign body or growth inside the skull will thus form a cavity of sufficient size for itself, expressing an amount of fluid from the compressed brain tissue corresponding in volume to its own size, this fluid being forced into and escaping by the blood and lymph vessels from the cranium. There is no increase of tension of the cerebro-spinal fluid.

He proved in the foregoing experiment, by using the graphic method, that during the swelling of the laminaria there was no alteration of the pressure in the jugular or carotid.

Intracranial growths hence do not alter the normal blood current in the brain. At the moment of pressure the liquor cerebri, instead of compressing the capillaries, re-enters the blood-vessels or leaves the skull by some similar way.