

Under pathological conditions the pressure of the cerebro-spinal fluid frequently rises. These conditions are always, according to Quincke, within the cranium, as it is here that the chief secretion and chief absorption both take place. The conditions which may give rise to increased pressure may come under the three headings of (a) proliferation of tissue which decreases space, such as tumors, etc., (b) purulent or serous exudates either within or without the brain, (c) effusions of blood either into the brain or between its membranes.

Frequently in diseased conditions the pressure reaches 300, 500 is high, 700 extremely high, but 1,000 has been recorded. As elsewhere in the body, a rapid rise will produce more acute symptoms than a gradual accumulation of a much greater extent. The nervous structures are able to accommodate themselves to an increased pressure if only given time.

There is apparently no relation between the pressure of the cerebro-spinal fluid and the blood pressure. In one of our cases, one of cerebral abscess following middle ear disease, the cerebro-spinal fluid pressure was 230, and yet the systolic blood pressure was only 90 mm. of mercury. On the other hand the blood pressure may be high, and yet the cerebro-spinal fluid pressure not raised as in a case recently observed in which there were periodical attacks of cerebral compression accompanying a cerebral tumor not of the base. During one of these attacks the cerebro-spinal fluid dropped rather slowly from the canula, showing that there was probably no marked increase in the pressure of the fluid, and yet the systolic pressure was well over 200 mm. This case was observed before we had begun to actually measure the pressure, which deprives the observation of much of its value.

When in various diseased conditions, especially in meningitis, when it is considered advisable to draw off some of the cerebro-spinal fluid the actual measurement of the pressure is of great importance.

The drainage can then be done via the glass gauge, and we can accurately know when the pressure has fallen to normal and hence the drainage should cease. Suppose, for example, that the pressure be found to be 500 mm. we could allow the fluid to escape until the pressure fell to 150, and then stop. To reduce it to below the normal suddenly would probably incur the risk of producing hemorrhage into the central nervous system from the removal of the support to the surface of the brain and spinal cord.