gram, (3) depending on an abnormally strong contraction of muscle group (6 muscles) around the vertebral artery just before the atlanto-occipital membrane, caused by a trauma, there is a strong possibility of effects on the transient insufficiency of circulation in the vertebral and basilar arteries. (4) hypotension or orthostatic hypotension in some cases effect this disease as an exciting factor.

In this summary, considerations for the treatment of this disease are omitted.

20. Influence of Arterial Hypotension and Intracranial Hypertension upon the Brain Tissue pO_2

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Brain tissue pO_2 decreases to 70% of original value when the systolic blood pressure falls to 60–80 mmHg, below which danger of irreversible tissue damage arises. We defined this level as critical. By ligating both carotid and vertebral arteries brain tissue pO_2 reflects the collateral circulation to brain. This fails below systolic blood pressure of 90 mmHg. Also pO_2 decreases in accordance with the elevation of intracranial pressure. When the compensatory blood pressure rise: Cushing phenomenon occurs, most brain tissue pO_2 decreases far below critical level, whereas pO_2 of the medulla oblongata remain high. This shows that the Cushing phenomenon is not caused by medullary ischemia, but triggered by ischemia of another site.

21. Studies on Experimental Head Injuries

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Experimental head injuries were produced in dogs using the special vibration apparatus and extra dural compression methods of gum balloon