of the type of material used. This factor alone might be of value, as temporary separation between a cerebral wound and an overlying structure could possibly produce a prevention of the complicated scar formation that is usually observed with brain wounds.

36. Experimental Study on Repair of Dural Deffect

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Many experimental or clinical studies have been done on the substitute of dural defect with tissues, metals or new synthetic materials, but there has not been reported any ideal substitute. Hyelastic dimethylpolisiloxan (D.M.P.S.), polyethylene, vinyl, OMS membrane A-2, Jk membrane, fascia lata and preserved dura in 70% alcohol, were used experimentally as a dural substitute in dogs. Experimental dogs were sacrificed after 1, 2, 3 and 4 weeks, 2, 3 and 6 months post-operatively and were studied pathologically, especially the adhesion between brain surface and dural substitute, and about the glial reaction in brain substance.

It was concluded that DMPS membrane seemed to be an ideal substitute.

37. Experimental Studies on the Mechanism of Cerebral Hemorrhage.

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Mortality due to cerebral vascular accidents has increased gradually in recent years and it was more than 20% in this country last year. Most of its causes were cerebral hemorrhage. We have, therefore, investigated to establish therapeutic procedure and prophylaxis of cerebral hemorrhage and also studied the mechanism of the occurrence of cerebral hemorrhage. Recently, we have succeeded to produce an experimental cerebral hemorrhage in dogs, similar to that in a man. A decrease of active blood flow due to obstruction or stenosis of cerebral vessel is a necessary factor producing cerebral hemorrhage. Compensatory capacity of collateral circulation in the damage area and intensity of the necrotic process of cerebral vessel walls are important factors. That is, the process from the necrosis to the outbreak of the cerebral vessel wall influenced the disturbance of hemodynamica, hypertensive factor (adrenaline, noradrenaline), the anticoagranths (heparin), and the promoting substance of vessel necrosis (old

autologous blood clots extract). It is especially accelerated by the hypertensive factor. If compensatory capacity of cerebral circulation is sufficient, intercerebral vessel hemorrhagic lesion seems to be minimal and it changes to a red or white softening and sometimes intracerebral lesion is not discovered.

38. Clinical and Electroencephalographical Studies on Cases with Circulatory Disturbances of the Brain

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Electroencephalographical studies on cerebrovascular disturbances have been reported by many authors, but the relation between electroencephalographical changes and clinical symptoms or localization of disturbances is not always invariable.

This investigation is on five cases of intracranial fistula and a case of pulseless disease and cases with cerebral arteriosclerosis, cerebral thrombosis, cerebral embolism and hemorrhage which were attempted from the viewpoint of circulatory disturbances of brain, and these cases were examined electroencephalographically. Abnormal findings of electroencephalogram appeared remarkably in a severe state of circulatory disturbances of brain, especially in cases of intracranial fistula some abnormal findings appeared frequently at the decompensation of circulation.

39. Acquired Heart Diseases and Hemiplegia

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From March, 1955 till December, 1959, 878 patients with acquired heart diseases were admitted to the Japan Heart Institute, among them 67 patients had episodes of hemiplegia. We will report here the results of investigation of these patients.

67 patients, that is, 39 patients with Mitral Stenosis, 14 patients with Mitral Stenoin insufficiency, 8 patients with Complicated Valvular Diseases, 3 patients with Mitral Insufficiency, 1 patient with Myxoma, 1 patient with S-A Block and 1 patient with A-V Block, had some episodes of hemiplegia. Episodes of hemiplegia were found most frequently in Mitral Stenosis, showing a percentage of 8.0%. The next frequency of episodes of Hemiplegia was in Mitral Stenoin insufficiency, showing a rate of 7.8%.