genic. Other grouping discharges, such as cogwheeling in Parkinsonian rigidity or cerebellar intention tremor, could also be intensified by stimulation of this nuclear area. It seems the most effective target for both rigidity and tremor is the area, where both muscle tone system and the system for grouping phenomena are covering together, which was described above as the well-recognized target.

Stereoecephalotomy has wider application in other kind of hyperkinetic movement disorders, such as perinatal choreo-athetosis, dystonia, hemiballism or Huntington's chorea. Each of these different conditions was interpreted from the clinical neurophysiological viewpoint. The other big field for this technique is the psychosurgical one for the emotional problems, specially in elipetics and the problem of pain control. These were also briefly introduced.

Stereotaxic surgery, specially in Japan, has developed on the firm basis of applied neurophysiology, without which it can not be the proper device of treatment or of brain research.

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SL-II. Progress of the Diagnostic Neuroradiology

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Diagnostic neuroradiology has been developed markedly during the past 20 years by following two factors which affect each other. The one consists of the radio-anatomical, physiological and pathological study of the nervous system. The other includes examination technique, contrast medium, equipment and observation technique.

One of the most remarkably developed equipments is the rapid film changer, by which many useful findings are to be obtained. Automatic injector is necessary not only for protection from the radiation, but for rapid injection of the contrast medium. Seldinger's method is one of the most useful examination techniques. This method is applied for the vertebral angiography, four vessels angiography and selective cerebral angiography.

The vertebral angiography is valuable for diagnosis of the cerebellar tumor or other posterior fossa tumors. Various kinds of findings obtained by this angiography in the cerebellar tumors were shown in the schema.

For description of the findings in the vertebral angiograms, the author's designation of vertebral artery and its tributaries were noted.

Diagnostic value of the pneumoencephalography for brain tumors has been renewed by the fractional method. Pneumoencephalography can demonstrate cisternal parts and give the more precise findings than pneumoventriculography. Even if pneumoencephalography can not demonstrate the ventricular system, cist-
ternal findings give some informations about localization of the tumors. Aut-
tomographic method is useful for pneumoencephalography and ventriculography.

For precise examination of the brain, special kinds of skull tables which can be used for laminagraphy, fluorography and angiography have been devised.

Radiological anatomy of the arteries in the basal region has been studied and these arterial findings are utilized for diagnosis of tumors in the thalamus and its adjacent structures. In these arterial groups are included following arteries, i.e. the anterior, middle, and posterior striate artery and the anterior, postero-lateral and postero-medial choroidal artery, and the thalamoperforate artery. The thala-
moperforate artery shows various findings about the mass in the posterior thalamus and its adjacent structures, and upward herniation of the cerebellum. Splaying of this artery is shown in A-P view in dilatation of the third ventricle, because this artery is passing by the third ventricle.

Category of the incisural tumor, described by Taversas, is of importance for diagnosis, because extracerebral tumor in the incisural portion may have the possibility for operation. To decide the localization of the tumor, vertebral angiography combined with pneumoencephalography and carotid angiography is very useful.

Whether the tumor is meningeoma or not is an important problem for treat-
ment. For this purpose, hypertrophy of the meningeal arteries is an important finding. The meningeal arteries arising from the internal carotid and vertebral artery have attracted attention. These arteries are known as follows:
1) Branches from the ophthalmic artery
   a) Anterior falx artery, b) Anterior ethmoidal artery, c) Middle ethmoidal artery, d) Posterior ethmoidal artery, d) Recurrent artery.
2) Tentorial or meningo-hypophyseal artery
3) Cerebellar falx artery which is divided from the vertebral artery and supplies the falx cerebelli and cerebri.

To observe these small arteries or other findings, subtraction method is very useful. Recently, subtraction in neuroradiology and the equipment for subtraction has been developed. On the other hand, venogram is also of importance and its precise description was done by Johanson and Huang.

Cerebral angiography with 4-time direct magnification X-ray unit (by Takahashi, et al.) and laminographic angiography devised by Fredzell and Greitz will be developed in the future.

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SL-III. Recent Advances in Clinical Neurophysiology

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