the tumors which originate at or adjacent to the tentorial edge are neurologically less manifest and afford many difficulties, above all localization of the tumor attachment. In such cases, roentgenological examination will give a clue to solving the difficulties in the diagnosis and makes it possible for the neurosurgeon to find an approach appropriate for each case.

Recently, we have had six cases of tumors of this region. Three were extracerebral and the others were intracerebellar, that is in the culmen and in the lobus quadrangularis. Surgically, the supratentorial approach is the first choice. The suboccipital approach does not seem to be adequate in these tumors. In some cases, however, the latter approach was also necessary following the former, that is, combined supra and infratentorial approach simultaneously. For the purpose of this approach, we employed the big hockey-stick shaped skin incision with the handle extending along the midline from the parietal to the nuchal region. The operative results were good. There was no operative death. Two cases had postoperative sequelae and the other four fully recovered.

e-19. Merits and Limitation of Microsurgery in the Neurosurgical Field

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Operative microscope which was developed in the otological field has also found more frequent application in the neurosurgical field, but not to the extent as previously expected. Merits and demerits of the operation under microscope will be discussed from our experiences. Our experiences of operation under microscope are showed in the table.

Facilities:

1) As the direction of the light and the gaze is the same, the microscopic technic is favorable for operation in deep place with narrow opening. Operative microscope has an advantage over head light equipment in this respect, though magnification of the image is not significant, because of no need of wide opening in the skull.

2) Bleeding from all capillaries can be satisfactorily controlled throughout the operative route when it is limited space; for example, dissection of inter-hemispheric space between both anterior lobes when anterior communicating aneurysm is attacked through interhemispheric route.

3) Distinction of the important nerves and vessels from tumor tissue is easy under microscope. For this reason microscope was indispensable in operation of translabyrinthine approach to acoustic neurinoma and intracranial section of the vestibular portion of the acoustic nerve for Mènière's disease and some other

Table 1.

Mènière's Disease	1
Tic douloureux	3
Third ventricle tumors	2
Cerebellopontine angle tumors	3
Tumors on or near the motor area	4
Intracranial aneurysms	10
Tumors around the sella	4
Spinal tumor	1
Biopsies from motor or speech area	2
Arteriovenous malformation	1
Posterior fossa tumors	3
Extracranial peripheral nerve operation	1
Intracranial deep explorations	2
Total	37

operations in the skull base.

4) Separation of the tumor tissue from important brain gyrus is easier under microscope when the tumor lies adjacent to the motor area or speech area. Obtaining the biopsy specimen from the bottom of sulcus in motor area after opening of the sulcus under microscope did not leave motor palsy.

Inconvenience:

1) While the limited and magnified visual field makes detailed technic feasible, it is inconvenient for multiple and variable technics referable with each other in wide operative space.

2) The operative field must be always kept dry when microscope is used. Image is not distinct when the field is wet, which is not always avoidable when secretion, blood or c.s.f. flows out.

3) When surface of the base of the brain which must be operated is nearly perpendicular to the lens surface, operative technic is more difficult than with the naked eyes, because of the limitation of depth of focus. If distinct image is needed, violent elevation of the base of the brain will bring unexpected brain damage.

Conclusion: Because of multiplicity and variability of the technic in the wide operative field, present operative microscope which was developed in otological field must be improved to be suitable for neurosurgery, for example the depth of focus must be widened for this purpose.