Microsurgical Approach to Cerebro-Spinal Lesions

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Contents

Preface ........................................................... XII

Extracranial-Intracranial Arterial Bypass for Cerebral Ischemia
O. Gratzl, P. Schmiedek and R. Spetzler, Munich/San Francisco, Calif... 1

Introduction.............................................................. 2
Clinical Material ........................................................ 5
Preoperative Findings ................................................. 5
Angiographic Findings .............................................. 7
Regional Cerebral Blood Flow Studies ......................... 8
Computerized Tomography ......................................... 9
Surgical Procedure.................................................. 11
Postoperative Findings ............................................ 12
Postoperative Angiography ....................................... 14
Postoperative rCBF Measurements ........................................ 17
Doppler Sonography .................................................... 18
Complications .................................................................. 19
Discussion ........................................................................ 19
Effect of EIAB on Cerebral Ischemia .............................. 19
Prevention of TIAs ....................................................... 20
Recovery and Prevention of Strokes in PRIND Patients .......... 20
EIAB for Acute and Progressive Strokes ......................... 21
EIAB for Prevention of Further Infarction ....................... 21
Extra-Intracranial Bypass in Nonarteriosclerotic Vascular Obstructions ..... 22
Indications for the EIAB .................................................. 23
Summary ......................................................................... 23
References ...................................................................... 23

Contents VI

Carotid Endarterectomy. Evaluation of Carotid Surgery in the Reduction of Cerebral Infarction
D. L. Erickson and S. N. Chou, Minneapolis, Minn. ................. 30

Introduction ........................................................................ 31
Natural History of Ischemic Cerebral Vascular Disease .......... 32
Cerebral Infarction ............................................................ 33
Transient Ischemic Attacks ............................................... 34
Predictive Value of TIA .................................................... 35
Asymptomatic Carotid Stenosis ......................................... 35
Summary .......................................................................... 36
Diagnosis .......................................................................... 36
Clinical Evaluation ........................................................... 36
Noninvasive Screening ..................................................... 37
Angiography ..................................................................... 37
Summary .......................................................................... 39
Carotid Surgery ............................................................... 39
Patient Selection .............................................................. 39
Cerebral Protection during Endarterectomy ......................... 41
Surgical Technique .......................................................... 43
Surgical Morbidity and Mortality ....................................... 44
Discussion ........................................................................ 45
Natural History of Carotid Artery Disease ......................... 45
Benefits of Carotid Endarterectomy .................................. 47
Summary .......................................................................... 50
References ...................................................................... 51
Microsurgery of the Aneurysms of the Internal Carotid Artery and its Branches
M. G. Yasargil, R. D. Smith and C. Gasser, Zurich .................... 58

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>59</td>
</tr>
<tr>
<td>Pathophysiological Aspects</td>
<td>60</td>
</tr>
<tr>
<td>Aneurysm Formation and Rupture</td>
<td>60</td>
</tr>
<tr>
<td>Infarction</td>
<td>62</td>
</tr>
<tr>
<td>Hematoma</td>
<td>63</td>
</tr>
<tr>
<td>Cisternal Hematomas</td>
<td>64</td>
</tr>
<tr>
<td>Intracerebral Hematomas</td>
<td>64</td>
</tr>
<tr>
<td>Intraventricular Hematomas</td>
<td>64</td>
</tr>
<tr>
<td>Subdural Hematomas</td>
<td>65</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>65</td>
</tr>
<tr>
<td>Cerebral Edema</td>
<td>66</td>
</tr>
<tr>
<td>Cerebrovascular Spasm</td>
<td>66</td>
</tr>
<tr>
<td>Introduction</td>
<td>66</td>
</tr>
<tr>
<td>Cerebral Blood Flow</td>
<td>67</td>
</tr>
<tr>
<td>Experimental Vasospasm</td>
<td>67</td>
</tr>
</tbody>
</table>

Contents VII

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative Vasospasm</td>
<td>69</td>
</tr>
<tr>
<td>Conclusion</td>
<td>69</td>
</tr>
<tr>
<td>Hypothalamic Damage</td>
<td>69</td>
</tr>
<tr>
<td>Preoperative Considerations</td>
<td>70</td>
</tr>
<tr>
<td>Diagnostic Techniques</td>
<td>70</td>
</tr>
<tr>
<td>Lumbar Puncture</td>
<td>70</td>
</tr>
<tr>
<td>Angiography</td>
<td>70</td>
</tr>
<tr>
<td>Computerized Tomography</td>
<td>71</td>
</tr>
<tr>
<td>Timing of Operation</td>
<td>73</td>
</tr>
<tr>
<td>Routine Delay of 1-2 Weeks</td>
<td>74</td>
</tr>
<tr>
<td>Increased Cerebrospinal Fluid Pressure</td>
<td>74</td>
</tr>
<tr>
<td>Angiographic Cerebrovascular Spasm</td>
<td>74</td>
</tr>
<tr>
<td>Anesthetic Considerations</td>
<td>75</td>
</tr>
<tr>
<td>Methods to Reduce Intracranial Volume</td>
<td>75</td>
</tr>
<tr>
<td>Lumbar Puncture</td>
<td>75</td>
</tr>
<tr>
<td>Mannitol</td>
<td>75</td>
</tr>
<tr>
<td>Hyperventilation</td>
<td>76</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>76</td>
</tr>
<tr>
<td>Intraoperative Hypotension</td>
<td>76</td>
</tr>
</tbody>
</table>
### Hypothermia

### Operative Considerations

### Microsurgical Technique

### Techniques of Aneurysm Treatment

- **Clipping Method**
- **Ligation Method**
- **Wrapping and Encasement Methods**
- **Induced Thrombosis**

### Extracranial Procedure

- **Craniotomy**

### Rationale and Development

- **Frontotemorosphenoidal (Pterional) Craniotomy**

### Aneurysms in Specific Locations

- **Internal Carotid Artery Aneurysms**
- **Anterior Communicating Artery Aneurysms**
- **Middle Cerebral Artery Aneurysms**
- **Distal Anterior Cerebral Artery Aneurysms**

### Surgical Results

### Conclusion

### References

### Treatment of Aneurysms of the Posterior Cranial Fossa

- **C. G. Drake, London, Ont.**

### Historical Aspects

### Morbid Anatomy
Basilar-AICA Aneurysms ............................................ 154
Vertebral-Basilar Junction Aneurysms ................................. 157
Vertebral Aneurysms ............................................... 159
Giant Aneurysms ................................................... 161
Multiple Aneurysms ................................................. 179
Intact Aneurysms ................................................... 180
Older Patients (Over 60 Years) ........................................ 180
Current Experience ................................................. 180
The Future .........................................................181
References ............................................................. 182
Appendix .............................................................. 185

Cerebral Arteriovenous Malformations. Modern Aspects of
Investigations and Treatment
J. Cophignon, Cl. Thurel, R. Djindjian, A. Rey, A. Visot, Y. Le Besnerais
and R. Houdart, Paris .............................................. 195

Introduction............................................................ 196
Preoperative Investigations ............................................. 196
Surgical Treatment ....................................................203
Basic Principles..................................................... 203
Microsurgery ......................................................203
Adjuvants to Surgical Procedure ...................................... 204
Results of Surgical Removal and Conclusions for Surgical Indications.....204
Special Problems ....................................................207
Nonsurgical Methods ....................................................207
Radiotherapy ......................................................207
Cryocoagulation....................................................208
Embolization and other Intravascular Technics ............................208
Superficial AVMs .......................................................210
Located in the Speech and Sensory Motor Areas (Small and Medium Sized) 210
Huge Angiomas Involving the Greater Part of a Hemisphere..............210
Cerebellar Angiomas................................................211
Giant AVMs in Infancy..............................................211

Contents IX

Deep AVMs ...........................................................211
AVMs of the Corpus callosum .......................................211
Aneurysms of the Great Vein of Galen ...............................214
AVMs of the Central Grey Nuclei ....................................217
Choroidal AVMs .......................................................221
AVMs of the Hippocampal Fissure Area (Bichat’s Fissure) ..................224
AVMs of the Brain Stem and Cerebellopontine Angle .....................224
Participation of Meningeal Vessels in the Presence of Cortical AVM ..........228
Corticodural Angiomas ......................................................228
Olfactory Groove Angiomas Fed by Anterior Ethmoidal Artery ..........229
Conclusion .............................................................................232
References ...............................................................................232

Arteriovenous Malformations of the Spinal Cord. Clinical,
Anatomical and Therapeutic Considerations: A Series of 150 Cases
M. Hurth, R. Houdart, R. Djindjian †, A. Rey and M. Djindjian, Paris ... 238

Introduction .............................................................................238
Major Diagnostic Criteria ......................................................240
Etiological Factors .................................................................240
Subarachnoid Hemorrhage ......................................................243
Progression and Natural History ...............................................244
Contribution of Para-Clinical Investigations ..................................247
Anatomical Considerations ......................................................249
Anatomical and Surgical Classification of Intramedullary and Mixed AVMs 249
Formation of Pseudoaneurysms ................................................254
Treatment ................................................................................258
Pathophysiological Changes ......................................................258
Technical Approaches ..........................................................259
Indications for Therapy ..........................................................260
Results ....................................................................................261
Posterior Extramedullar Malformations ......................................261
Intramedullary and Mixed Malformations ..................................262
Conclusions .............................................................................264
References ...............................................................................264

Intravascular Approach in Neurosurgical Management
A. J. Luessenhop, Washington, D. C........................................267

Introduction............................................................ 268
Techniques of the Intravascular Approach ................................. 270
Catheter Techniques.......................................................... 270
Materials for Embolization................................................... 274
Cerebral Arteriovenous Malformations....................................... 276
Embolization for Headache ............................................... 277
Preface

It has always been the aim of the editors of this series to keep the neurosurgeons up-to-date in areas in which recent progress has occurred. We now wish to provide a useful broad review about the newest technical development during the last decade. The senior editor has pointed out in his Special Lecture at the Fourth International Congress of Neurological Surgery, New York, 1969: ‘Surgery is, and must always remain, an art, but its progress and thus its vitality depend on the maximum application to it of
new methods. The development of the bipolar coagulator, of the binocular surgical microscope with stereoscopic vision, the magnification from 6 to 40 times and the great illuminating power have made these instruments a useful adjunct to neurological surgery. The particular anatomical and physiological features of the central nervous system call not only for especially designed surgical microscopes and microinstruments, but also for new surgical techniques.’

This volume 9 is now an eloquent expression of this new Technical Approach to Cerebro-spinal Lesions and elucidates without any doubt the remarkable operative results with lowering of morbidity and mortality rates. Already in volume 6 of this series (1975), J. Hardy and G. Nicola had demonstrated and convinced the neurosurgeon about the trans-sphenoidal Microsurgical Removal of Pituitary Micro-Adenoma and of Pituitary Adenomas with Extrasellar Extension.

Microvascular surgery is the type with indication par excellence. Gratzl, Schmiedek and Spetzler discuss the extra-intracranial arterial by-pass procedures in the treatment and prevention of Cerebral Ischaemia. Clinical benefit is gained in the prevention of future strokes and the elimination of transient ischaemic attacks. Carotid endarterectomy, not necessarily

Preface XIII

with microsurgical techniques, is evaluated in the reduction of cerebral infarction by Erickson and Chou. In general it must be said that for exact answer to indications one still needs randomized series. Microsurgery of the Aneurysms of the internal carotid artery and its branches is beautifully described by Yasargil et al. on the basis of 726 personal cases with a mortality rate of 3.8%. Ideally the aneurysm is excluded from the circulation with no retraction or disturbance of brain tissue and atraumatic dissection of the aneurysm from its surrounding vascular structures. The operating microscope allows the surgeon to approach this ideal. And Drake gives his impressive results based on a personal experience on 408 patients with aneurysms on the vertebrobasilar circulation dissected by vision magnification, first with loupes, later with the surgical microscope.

Cerebral and Spinal Arteriovenous Malformations are admirably discussed by the French Groups of Cophignon et al. and Hurth et al. and total surgical excision of the malformation is reported as the ideal treatment. This enthusiasm has been generated by the progress in neuroradiology so well developed by R. Djindjian. These authors also discuss embolization procedures, which subject is critically evaluated by Luessenhop in the chapter on ‘The intravascular approach in neurosurgical management’. The
indications for the catheter techniques are clearly described. The intravascular approach will require a team effort with the neurosurgeon responsible for patient selection and clinical results. Besides vascular surgery the surgical microscope has proved its worth in the surgical management of large structures such as cerebral tumours at the base of the skull. As an example, two contributions deal with the total removal of Acoustic Neurinomas. Fisch discusses the oto-neurosurgical approach of these tumours and he wisely considers only acoustic neuromas showing symptoms confined to the VIIIth nerve suitable for oto-neurosurgical removal. Intrameatal acoustic neuromas up to 8 mm in diameter were removed by the subtemporal extradural approach to the middle cranial fossa. Tumours penetrating into the cerebellopontine angle, not exceeding 2.5 cm in diameter, were approached through the mastoid and posterior labyrinth. His excellent results were presented. Larger tumours involving other cranial nerves are referred to the neurosurgeon for a suboccipital transmeatal approach. This is in excellent agreement with the contribution of Ojemann and Crowell who describe the microsurgical suboccipital operative technique and the excellent results are given. Other suboccipital approaches by the otologists are shortly mentioned. It is of special interest to compare these two different approaches by very competent otologists and neurosurgeons. In both contributions the very low mortality rate and the high percentage of protection of the facial nerve are remarkable.

This volume is a fine example that the art of surgery has been promoted by a revolutionary approach to surgery and that much original work has been achieved in the last decade.

The Editors