**Table 1. Morphological characteristics of the middle cerebral artery giant aneurysms**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Location of the aneurysm** | **Patient number, N (%)** | **Aneurysm shape** | | **Partially thrombosed** | **Wall sclerosis** | **Aneurysm size, mm** | | |
| **Saccular** | **Fusiform** | **25–30** | **31–40** | **> 40** |
| М1 segment | 11 (20) | 1 | 10 | 11 | 2 | 4 | 4 | 3 |
| MCA bifurcation | 33 (60) | 30 | 3 | 23 | 16 | 22 | 8 | 3 |
| М2 segment | 7 (12.7) | 1 | 6 | 6 | 2 | 6 | 1 |  |
| М3 segment | 4 (7.3) |  | 4 | 4 | 1 | 3 | 1 |  |
| Total, N (%) | 55 (100) | 32 (58.2) | 23 (41.8) | 44 (80) | 21 (38.2) | 35 (63.6) | 14 (25.5) | 6 (10.9) |

MCA, middle cerebral artery

**Table 2. Types of surgical procedures for middle cerebral artery giant aneurysms**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Aneurysm location** | **Patient number, N (%)** | **Type of procedure** | | | | |
| **Neck clipping** | **CFAL** | **Bypass** | **Wall wrapping** | **EI** |
| М1 segment | 11 (20) | 1 |  | 8 | 1 | 1 |
| MCA bifurcation | 33 (60) | 26 |  | 6 | 1 |  |
| М2 segment | 7 (12.7) | 1 | 2 | 4 |  |  |
| М3 segment | 4 (7.3) |  |  | 1 |  | 3 |
| Total, N (%) | 55 (100) | 28 (50.9) | 2 (3.6) | 19 (34.5) | 2 (3.6) | 4 (7.3) |

CFAL, clipping with formation of the arterial lumen; EI, endovascular intervention; MCA, middle cerebral artery

**Table 3. Complications of the surgery for middle cerebral artery giant aneurysms**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aneurysm location** | **Patient number, N (%)** | **Intraoperative complications** | | **Postoperative deterioration of the symptoms** | **Ischemia** | | | **Hematoma** |
| **Rupture** | **Arterial thrombosis** | **LSA** | **М2 and М3 branches** | **Pontinal veins** |
| М1 segment | 11 (20) | 1 |  | 4 | 2 | 2 |  |  |
| MCA bifurcation | 33 (60) | 3 | 3 | 19 | 6 | 5 | 6 | 1 |
| М2 segment | 7 (12.7) | 1 | 2 | 3 |  | 1 | 2 | 1 |
| М3 segment | 4 (7.3) |  |  | 3 |  | 2 | 1 |  |
| Total, N (%) | 55 (100) | 5 (9.1) | 6 (10.9) | 28 (50.9) | 8 (14.5) | 10 (18.2) | 9 (16.4) | 2 (3.6) |

LSA, lenticulostriate artery; MCA, middle cerebral artery

**Table 4. Causes of the postoperative arterial ischemia**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Type of ischemia** | **Intended artery occlusion** | **Arterial thrombosis after thrombectomy** | **Unintended artery occlusion** | **Vasospasm** | **Bypass failure** | **Total** |
| Ischemia in the M2–M3 MCA branch supply zone | 2\* | 3 |  | 3 | 2 | 10 |
| Ischemic foci in the LSA supply zone | 3\*\* | 2 | 3 |  |  | 8 |

LSA, lenticulostriate artery; MCA, middle cerebral artery

\* Endovascular procedure with M3 segment occlusion for fusiform giant aneurysms

\*\* LSA in the trapping zone of the bypass

**Table 5. The degree of the giant aneurysm occlusion depending on the middle cerebral artery segment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Aneurysm location** | **Patient number, N (%)** | **Total occlusion** | **Partial occlusion** | **No occlusion** |
| М1 segment | 11 (20) | 8 | 2 | 1 |
| MCA bifurcation | 33 (60) | 26 | 6 | 1 |
| М2 segment | 7 (12.7) | 5 | 2 |  |
| М3 segment | 4 (7.3) | 4 |  |  |
| Total, N (%) | 55 (100) | 43 (78.2) | 10 (18.2) | 2 (3.6) |

MCA, middle cerebral artery

**Table 6. Long-term results of surgery for giant aneurysms of the middle cerebral artery**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aneurysm location** | **Patient number, N (%)** | **Modified Rankin Scale Score** | | | | | | | | |
| **At discharge** | | | |  | **At follow-up** | | | |
| **0–2** | **3–4** | **5** | **6** |  | **0–2** | **3–4** | **6** | **No data** |
| М1 segment | 11 (20) | 7 | 3 | 1 |  |  | 7 | 1 | 3 |  |
| MCA bifurcation | 33 (60) | 23 | 10 |  |  |  | 24 | 6 | 1 | 2 |
| М2 segment | 7 (12.7) | 5 | 1 |  | 1 |  | 5 | 1 | 1 |  |
| М3 segment | 4 (7.3) | 3 | 1 |  |  |  | 4 |  |  |  |
| Total, N (%) | 55 (100) | 38 (69.1) | 15 (27.3) | 1 (1.8) | 1 (1.8) |  | 40 (72.7) | 8 (14.5) | 5 (9.1) | 2 (3.6) |

MCA, middle cerebral artery