Supplementary Table 1: The results of inter-group balance tests of possible confounding factors among different surgical method in each volume subgroup.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Hematoma Volume=20–40ml (n=112) | | | | |  | Hematoma Volume=40–80ml (n=253) | | | | |  | Hematoma Volume≥80ml (n=96) | | | | |
|  | | Total | SA  (n=93) | EE  (n=12) | OC  (n=7) | P value |  | Total | SA (n=134) | EE (n=69) | OC (n=50) | P value |  | Total | SA (n=36) | EE (n=16) | OC (n=44) | P value |
| Gender | Male | 55 | 48 | 2 | 5 | **0.0354\*** |  | 153 | 79 | 44 | 30 | 0.7996 |  | 70 | 25 | 13 | 32 | 0.6760 |
| Female | 57 | 45 | 10 | 2 |  |  | 100 | 55 | 25 | 20 |  |  | 26 | 11 | 3 | 12 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age(years) | <60 | 80 | 65 | 9 | 6 | 0.6432 |  | 146 | 73 | 44 | 29 | 0.4464 |  | 54 | 17 | 12 | 25 | 0.1752 |
| >=60 | 32 | 28 | 3 | 1 |  |  | 107 | 61 | 25 | 21 |  |  | 42 | 19 | 4 | 19 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Consciousness | Drowsy | 40 | 35 | 3 | 2 | 0.8132 |  | 35 | 23 | 8 | 4 | **<.0001\*** |  | – | – | – | – | 0.1590 |
| Lethargic | 40 | 31 | 6 | 3 |  |  | 66 | 37 | 21 | 8 |  |  | – | – | – | – |  |
| Light Coma | 32 | 27 | 3 | 2 |  |  | 118 | 64 | 37 | 17 |  |  | 47 | 20 | 10 | 17 |  |
| Deep Coma | – | – | – | – |  |  | 34 | 10 | 3 | 21 |  |  | 49 | 16 | 6 | 27 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Smoking | Yes | 24 | 23 | 1 | 0 | 0.1546 |  | 59 | 24 | 23 | 12 | **0.048\*** |  | 29 | 11 | 5 | 13 | 0.9903 |
| No | 88 | 70 | 11 | 7 |  |  | 194 | 110 | 46 | 38 |  |  | 67 | 25 | 11 | 31 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Diabetes | Yes | 13 | 11 | 2 | 0 | 0.5425 |  | 15 | 10 | 4 | 1 | 0.3770 |  | 5 | 2 | 0 | 3 | 0.5715 |
| No | 99 | 82 | 10 | 7 |  |  | 238 | 124 | 65 | 49 |  |  | 91 | 34 | 16 | 41 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hypertension | Yes | 99 | 82 | 11 | 6 | 0.9145 |  | 207 | 112 | 58 | 37 | 0.2770 |  | 77 | 31 | 13 | 33 | 0.4600 |
| No | 13 | 11 | 1 | 1 |  |  | 46 | 22 | 11 | 13 |  |  | 19 | 5 | 3 | 11 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| History of Craniocerebral Disease | Yes | 13 | 11 | 2 | 0 | 0.5425 |  | 27 | 13 | 9 | 5 | 0.7546 |  | 11 | 5 | 0 | 6 | 0.2885 |
| No | 99 | 82 | 10 | 7 |  |  | 226 | 121 | 60 | 45 |  |  | 85 | 31 | 16 | 38 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Herniation | Yes | – | – | – | – |  |  | 36 | 13 | 4 | 19 | **<.0001\*** |  | 41 | 11 | 5 | 25 | **0.0367\*** |
| No | – | – | – | – |  |  | 217 | 121 | 65 | 31 |  |  | 55 | 25 | 11 | 19 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interval Between Onset and Operation (hours) | ≤8 | 21 | 18 | 2 | 1 | 0.9286 |  | 55 | 33 | 6 | 16 | **0.0049\*** |  | 39 | 15 | 7 | 17 | 0.9263 |
| >8 | 91 | 75 | 10 | 6 |  |  | 198 | 101 | 63 | 34 |  |  | 57 | 21 | 9 | 27 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rehabilitation Treatment | PRT | 50 | 44 | 4 | 2 | 0.1440 |  | 90 | 44 | 29 | 17 | 0.9361 |  | 24 | 3 | 7 | 14 | 0.1291 |
| NPRE | 31 | 23 | 6 | 2 |  |  | 71 | 35 | 24 | 12 |  |  | 11 | 2 | 6 | 3 |  |
| NRT | 16 | 12 | 1 | 3 |  |  | 17 | 10 | 5 | 2 |  |  | 8 | 0 | 1 | 7 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Decompressive Craniectomy | Yes | – | – | – | – |  |  | 55 | 7 | 8 | 40 | **<.0001\*** |  | 48 | 11 | 3 | 34 | **<.0001\*** |
| No | – | – | – | – |  |  | 198 | 127 | 61 | 10 |  |  | 48 | 25 | 13 | 10 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tracheotomy | Yes | – | – | – | – |  |  | 46 | 17 | 16 | 13 | **0.0514\*** |  | 29 | 11 | 7 | 11 | 0.3753 |
|  | No | – | – | – | – |  |  | 207 | 117 | 53 | 37 |  |  | 67 | 25 | 9 | 33 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lumbar Puncture | Yes | – | – | – | – |  |  | 61 | 17 | 31 | 13 | **<.0001\*** |  | 20 | 2 | 9 | 9 | **0.0002\*** |
| No | – | – | – | – |  |  | 192 | 117 | 38 | 37 |  |  | 76 | 34 | 7 | 35 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| External Lumbar Drainage | Yes | – | – | – | – |  |  | 30 | 15 | 10 | 5 | 0.7118 |  | 11 | 6 | 2 | 3 | 0.3841 |
| No | – | – | – | – |  |  | 223 | 119 | 59 | 45 |  |  | 85 | 30 | 14 | 41 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

SA= Stereotactic Aspiration, EE= Endoscopic Evacuation, OC= Open Craniotomy. PRT=Professional Rehabilitation Treatment, NPRT=Un-professional Rehabilitation Treatment, NRT=No Rehabilitation Treatment. \*: The difference have statistical significance, –: Not Applicable.

Supplementary Table 2: The results of inter-group balance tests of possible confounding factors among different surgical method in survivors in each volume subgroup.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | Hematoma Volume=20–40ml (n=95) | | | | |  | Hematoma Volume=40–80ml (n=168) | | | | |  | Hematoma Volume≥80ml (n=41) | | | | |
|  | Total | SA (n=78) | EE (n=11) | OC (n=6) | P value |  | Total | SA (n=82) | EE (n=57) | OC (n=29) | P value |  | Total | SA (n=5) | EE (n=15) | OC (n=21) | P value |
| Gender | Male |  | 47 | 42 | 1 | 4 | **0.0144\*** |  | 106 | 49 | 37 | 20 | 0.6368 |  | 32 | 3 | 12 | 17 | 0.5806 |
| Female |  | 48 | 36 | 10 | 2 |  |  | 62 | 33 | 20 | 9 |  |  | 9 | 2 | 3 | 4 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age(years) | <60 |  | 74 | 60 | 9 | 5 | 0.8851 |  | 110 | 51 | 41 | 18 | 0.4517 |  | 29 | 4 | 12 | 13 | 0.4448 |
| >=60 |  | 21 | 18 | 2 | 1 |  |  | 58 | 31 | 16 | 11 |  |  | 12 | 1 | 3 | 8 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Consciousness | Drowsy |  | 33 | 29 | 3 | 1 | 0.6322 |  | 29 | 18 | 8 | 3 | **<.0001\*** |  | – | – | – | – | 0.1887 |
| Lethargic |  | 36 | 27 | 6 | 3 |  |  | 55 | 31 | 17 | 7 |  |  | – | – | – | – |  |
| Light Coma |  | 26 | 22 | 2 | 2 |  |  | 71 | 33 | 29 | 9 |  |  | 23 | 4 | 10 | 9 |  |
| Deep Coma |  | – | – | – | – |  |  |  | 0 | 3 | 10 |  |  |  | 1 | 5 | 12 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Smoking | Yes |  | 22 | 22 | 0 | 0 | **0.0442\*** |  | 45 | 16 | 21 | 8 | **0.0757\*** |  | 16 | 2 | 5 | 9 | 0.8454 |
| No |  | 73 | 56 | 11 | 6 |  |  | 123 | 66 | 36 | 21 |  |  | 25 | 3 | 10 | 12 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Diabetes | Yes |  | 10 | 8 | 2 | 0 | 0.4975 |  | 7 | 4 | 2 | 1 | 0.9034 |  | 3 | 0 | 0 | 3 | 0.2141 |
| No |  | 85 | 70 | 9 | 6 |  |  | 161 | 78 | 55 | 28 |  |  | 38 | 5 | 15 | 18 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hypertension | Yes |  | 84 | 69 | 10 | 5 | 0.8966 |  | 138 | 67 | 48 | 23 | 0.8456 |  | 34 | 5 | 12 | 17 | 0.5549 |
| No |  | 11 | 9 | 1 | 1 |  |  | 30 | 15 | 9 | 6 |  |  | 7 | 0 | 3 | 4 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| History of Craniocerebral Disease | Yes |  | 8 | 7 | 1 | 0 | 0.7449 |  | 17 | 8 | 7 | 2 | 0.7277 |  | 1 | 0 | 0 | 1 | 0.6138 |
| No |  | 87 | 71 | 10 | 6 |  |  | 151 | 74 | 50 | 27 |  |  | 40 | 5 | 15 | 20 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Herniation | Yes |  | – | – | – | – |  |  | 14 | 1 | 3 | 10 | **<.0001\*** |  | 15 | 1 | 4 | 10 | 0.3118 |
| No |  | – | – | – | – |  |  | 154 | 81 | 54 | 19 |  |  | 26 | 4 | 11 | 11 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interval Between Onset and Operation (hours) | ≤8 |  | 17 | 15 | 1 | 1 | 0.7113 |  | 26 | 14 | 5 | 7 | 0.1509 |  | 15 | 1 | 6 | 8 | 0.7086 |
| >8 |  | 78 | 63 | 10 | 5 |  |  | 142 | 68 | 52 | 22 |  |  | 26 | 4 | 9 | 13 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Rehabilitation Treatment | PRT |  | 50 | 44 | 4 | 2 | 0.3181 |  | 85 | 40 | 29 | 16 | 0.9593 |  | 22 | 3 | 7 | 12 | 0.1899 |
| NPRT |  | 31 | 23 | 6 | 2 |  |  | 67 | 33 | 23 | 11 |  |  | 11 | 2 | 6 | 3 |  |
| NRT |  | 14 | 11 | 1 | 2 |  |  | 16 | 9 | 5 | 2 |  |  | 7 | 0 | 1 | 6 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Decompressive Craniectomy | Yes |  | – | – | – | – |  |  | 32 | 3 | 7 | 22 | **<.0001\*** |  | 19 | 2 | 2 | 15 | **0.0025\*** |
| No |  | – | – | – | – |  |  | 136 | 79 | 50 | 7 |  |  | 22 | 3 | 13 | 6 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tracheotomy | Yes |  | – | – | – | – |  |  | 33 | 12 | 12 | 9 | 0.1526 |  | 19 | 3 | 7 | 9 | 0.7873 |
| No |  | – | – | – | – |  |  | 135 | 70 | 45 | 20 |  |  | 22 | 2 | 8 | 12 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lumbar Puncture | Yes |  | – | – | – | – |  |  | 48 | 13 | 26 | 9 | **0.0006\*** |  | 16 | 0 | 9 | 7 | **0.0437\*** |
| No |  | – | – | – | – |  |  | 120 | 69 | 31 | 20 |  |  | 25 | 5 | 6 | 14 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| External Lumbar Drainage | Yes |  | – | – | – | – |  |  | 18 | 8 | 8 | 2 | 0.5550 |  | 5 | 0 | 2 | 3 | 0.6709 |
| No |  | – | – | – | – |  |  | 150 | 74 | 49 | 27 |  |  | 36 | 5 | 13 | 18 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

SA= Stereotactic Aspiration, EE= Endoscopic Evacuation, OC= Open Craniotomy. PRT=Professional Rehabilitation Treatment, NPRT=Un-professional Rehabilitation Treatment, NRT=No Rehabilitation Treatment. \*: The difference have statistical significance, –: Not Applicable.